

111th Annual Research Report

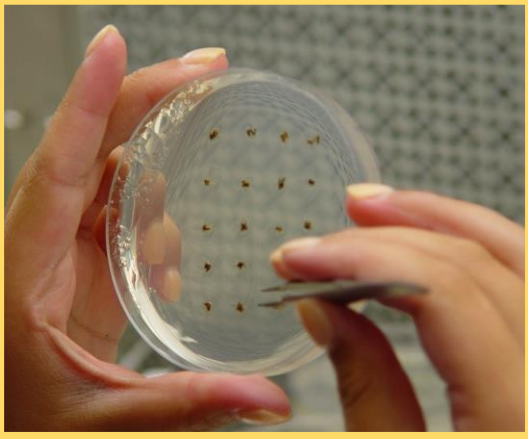
H. Rouse Caffey Rice Research Station

Crowley, Louisiana

2019

LSU AgCenter
Research · Extension · Teaching

www.LSUAgCenter.com

Cover Photos

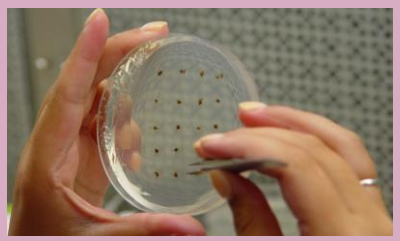
Planting the Breeding Project plots at the H. Rouse Caffey Rice Research Station.

Harvesting the Agronomy Project plots.

Photo of one of the Breeding Project plot.

Emasculating rice florets prior to crossing.

Packaging 50-lb bags of foundation seed rice.



Anthers from breeding line samples being plated on media to regenerate rice plants.

111th Annual Research Report

H. ROUSE CAFFEY
RICE RESEARCH STATION

Crowley, Louisiana

2 0 1 9

Louisiana State University Agricultural Center
Louisiana Agricultural Experiment Station
Louisiana Cooperative Extension Service
Louisiana College of Agriculture

William B. Richardson, LSU Vice President for Agriculture

H. Rouse Caffey Rice Research Station

Donald E. Groth, Resident Coordinator

T A B L E O F C O N T E N T S

INTRODUCTION

Research at the H. Rouse Caffey Rice Research Station (HRCRRS), Crowley, LA, is conducted by scientists with the LSU AgCenter's Louisiana Agricultural Experiment Station. The 2019 rice research program included breeding/variety development, biotechnology, variety testing, fertilization, soil and water management, cultural practices, weed control, insect control, disease investigations, rice economics, and agronomy extension programs. Crops grown in rotation with rice were evaluated relative to increasing the efficiency of land use. The aquaculture research program places emphasis upon production practices, forages, and multi-cropping of crawfish with agronomic crops. Another important area of work is the production and distribution of foundation seed. The HRCRRS also conducts research studies in improving species for coastal restoration. In addition, the statewide rice extension agronomist conducts numerous educational programs from the HRCRRS. Although most research work was performed by members of the Rice Station faculty, several faculty members from the Baton Rouge campus conducted research at this station as well.

The research activities of this station include both fundamental and applied research; although, the latter predominates because of the mission of the HRCRRS. Research accomplishments and general progress of the HRCRRS during 2019 are presented in this report representing the 111th Annual Research Report of the H. Rouse Caffey Rice Research Station, Louisiana Agricultural Experiment Station, and LSU Agricultural Center. It is significant that this research facility has been providing new technology to the Louisiana rice industry for more than 100 years.

In addition to research responsibilities of the HRCRRS faculty and cooperators, many farmers, extension personnel, and others were trained and otherwise contacted during 2019. Approximately 500 people attended the annual HRCRRS field day to view plots and participate in discussions of research findings. Field days were also conducted in Acadia, Calcasieu, Evangeline, Jefferson Davis, Morehouse, St. Landry, and Vermilion parishes. In addition, the faculty participated in industry meetings, both on and off the station, and worked individually with farmers and others in solving immediate problems. Several thousand people received services from the HRCRRS during 2019.

Projects at this station are conducted under the supervision of research scientists from the HRCRRS and by cooperating personnel from certain departments of the Louisiana Agricultural Experiment Station. Following the reports, station personnel and cooperators in 2019 are listed.

MONTHLY RAINFALL DATA
H. ROUSE CAFFEY RICE RESEARCH STATION - CROWLEY, LA
2019

DATE	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	YEAR TOTAL
1	.08		.45	.02		.20		.10				.18	
2	.26								.34				
3	1.90		.12		.20		.03						
4	1.09		.25	1.25	2.53		.28						
5		.04		2.20	.72	.92	.02						
6						6.20							
7								.03		.20			
8				1.41	.13	.48		.03			.05		
9				.13	.55		.12	.46					
10					4.45								
11					.10							.15	
12	.02	.17		.12	1.20		.27	.33		.06	.10	.02	
13	.15	.13			.10		.03						
14				.05			2.00			.10			
15			.02				.09	.04		.70	.02		
16			.21				.51	.12		1.57			
17	.06					.20			.12	.21		.99	
18		.05				.10		.10	.04				
19	.73	.08		3.89	1.95		.19		.66				
20	.05	.29		.03	.22		1.53	.10	.13				
21		.89					.03		.45	.05		.02	
22		.11						.17		.62		.02	
23	.22	.10					.90	.73			.95		
24	.12	.59				.71	.10	.08					
25						.37		.72		.32			
26		.33		1.43		.06		.21		1.27			
27		.42									1.24	.03	
28		.07				.05	.24						
29	.17					.80	.03	.28		.18	.03	.03	
30						.05	1.20					.18	
31			.44				.66			1.12			
MONTH TOTAL													
2019	**4.85**	**3.27**	**1.47**	**10.53**	**12.15**	**10.14**	**8.23**	**3.50**	**1.74**	**6.40**	**2.39**	**1.62**	**66.31**
2018	5.14	4.56	2.56	4.17	.23	2.06	6.52	8.51	9.64	6.1	6.85	8.65	64.99

RICE BREEDING

GENETIC IMPROVEMENT OF RICE FOR LOUISIANA PRODUCTION[1]

A.N. Famoso, K.F. Bearb, C.A. Conner, G.J. Guidry, and B.L. Williams

INTRODUCTION

The primary objective of the Rice Breeding Project is the development of superior varieties for the Louisiana rice industry. The Breeding Project is developing improved genotypes of both long- and medium-grain types, which are both important in the state and region. A major area of emphasis is the development of Clearfield and Provisia herbicide-resistant varieties. The project is also placing emphasis on the development of special purpose types.

In addition to the primary objective of varietal development, the Breeding Project also conducts other research that may have direct and/or indirect contributions for varietal development. Included here are studies on milling quality, mutation breeding, date of planting, and herbicide tolerance of new varieties and experimental lines.

The 2019 rice breeding nursery included more than 50,000 breeding rows. Over 400 new breeding crosses were made, and 50 populations were screened in the greenhouse through Marker-Assisted Selection (MAS) focusing primarily on key traits, such as amylose, gel temp, grain shape, aroma, plant height, and blast resistance. On- and off-station testing included 8,800 yield plots. Preliminary Yield testing included over 2,100 new lines evaluated in 4,200 plots. The Regional Yield Test (RYT) was a new stage of testing that was added in 2018. In 2019, the RYT consisted of 150 entries in their second year of yield testing. The RYT was conducted over five locations and 1,500 plots. Advanced stages of testing included the Cooperative Uniform Regional Rice Nursery (URN), which contained 240 experimental lines and checks (51 Louisiana entries). The Commercial Advanced (CA) trial consisted of 80 entries and was tested across seven locations.

[1] This research is supported in part by funding provided by rice producers through the Louisiana Rice Research Board.

COMMERCIAL ADVANCED TRIAL

The Commercial Advanced (CA) trial is a multi-location test conducted by the Rice Breeding Project in the major rice growing regions in Louisiana. The objective of this trial is to evaluate the adaptation and stability of commercial rice varieties and advanced experimental lines for a number of important agronomic and yield characteristics.

Test locations in 2019 included the H. Rouse Caffey Rice Research Station (HRCRRS) at Crowley and six on-farm test sites in Evangeline, Vermilion, Acadia, Calcasieu, St. Landry, and Tensas parishes.

Eighty entries were tested in a randomized complete block design with two replications. Varieties and hybrids were seeded at 90 and 38 lb/A, respectively. Planting dates were: HRCRRS, March 14; HRCRRS-Late, May 1; Acadia, March 23; Evangeline, March 23; St. Landry, March 27; Vermilion, March 13; Calcasieu, March 28; and Tensas, May 10. Harvest dates were: HRCRRS, July 27; HRCRRS-Late, Aug. 30; Acadia, Aug. 23; Evangeline, Aug. 9; St. Landry, Aug. 21; Vermilion, Aug. 1; Calcasieu, Aug. 13; and Tensas, Sept. 17. Results from these trials are shown in Tables 1-9.

Table 1. Entry number, pedigree, grain type, and source information for entries in the Commercial Advanced trial, 2019.

Entry	Pedigree	Grain Type[†]	Source[‡]
201	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/ CPRS/KBNT//WLLS/CFX18	L	LAES
202	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	L	LAES
203	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/ 9502008/4/CLR9/5/…	L	LAES
204	CL162/3/TRNS//CCDR/JEFF	L	LAES
205	KBNT/CL111	L	LAES
206	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/C PRS/KBNT//9502008A	L	LAES
207	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/ CFX29/AR1142/LA2031	L	LAES
208	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	L	LAES
209	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	L	LAES
210	CHNR/3/CCDR//CFX29/CCDR	L	LAES
211	CCDR/JEFF//CFX26/9702128/3/CL151	L	LAES
212	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	L	LAES
213	CCDR/JEFF//CFX26/9702128/3/CL151	L	LAES
214	CCDR//CFX29/CCDR/3/CCDR	L	LAES
215	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	L	LAES
216	TRNS//TRNS/CL131	L	LAES
217	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/C PRS/KBNT//9502008A	L	LAES
218	CL131/TRNS	L	LAES
219	TRNS//TRNS/CL131	L	LAES
220	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	L	LAES
221	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	L	LAES
222	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/4/ 9302065/3/CFX29/AR1142/LA2031	L	LAES
223	1002146*4//JZMN/08CLR004	L	LAES
224	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	L	LAES
225	TGRT/3/TRNS//CCDR/JEFF	L	LAES

Continued.

Table 1. Continued.

Entry	Pedigree	Grain Type†	Source‡
226	CHNR/MRMT	L	LAES
227	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	L	LAES
228	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	L	LAES
229	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	L	LAES
230	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	L	LAES
231	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	L	LAES
232	CTHL/4/CPRS/KBNT//9502008/3/CCDR	L	LAES
233	TRNS//CCDR/JEFF/3/AR1188/CCDR//9502008/LGRU	L	LAES
234	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	L	LAES
235	NPTN//BNGL/CL161/3/NPTN	M	LAES
236	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/ MERC//MERC/3/9902028	M	LAES
237	CFFY/CL261	M	LAES
238	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	M	LAES
239	MRMT/JPTR	M	LAES
240	NPTN/JPTR	M	LAES
241	LAH169 (HYBRID)	L	LAES
242	CPRS/BASF1-14	L	LAES
243	DREW/BASF1-4	L	LAES
244	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NPTN	M	LAES
245	CTHL/BASF2-22	L	LAES
246	9302065/BASF1-6	L	LAES
247	CHNR/BASF1-6	L	LAES
248	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	L	LAES
249	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	L	LAES
250	CTHL/BASF2-18	L	LAES
251	DIAMOND	L	AAES
252	MERMENTAU	L	LAES
253	RT7301	L	RiceTec
254	GEMINI214CL	L	RiceTec
255	RT3201	L	RiceTec
256	TITAN	M	AAES
257	CL111	L	LAES
258	CL151	L	LAES
259	CL153	L	LAES
261	CHENIERE	L	LAES
262	PVL01	L	LAES
263	CL272	M	LAES
264	JUPITER	M	LAES
265	CLJ01	L	LAES
266	CL172	L	MAES
267	CL163	L	MAES
268	LAKAST	L	AAES
269	COCODRIE	L	LAES
270	DELLA2	L	LAES

Continued.

Table 1. Continued.

Entry	Pedigree	Grain Type[†]	Source[‡]
271	JAZZMAN2	L	LAES
272	CLM04	M	LAES
273	CLH161 (Hybrid)	L	LAES
274	THAD	L	MAES
275	CLL15	L	AAES
276	EARL/9902028//JPTR	M	AAES
277	CAFFEY	M	LAES
278	PRESIDIO	L	TAES
279	16R-T321-44	L	Nutrien
280	2051-22-1	L	Nutrien

[†] L = Long grain and M = Medium grain

[‡] LAES – H. Rouse Caffey Rice Research Station, Louisiana Agricultural Experiment Station, LSU AgCenter, Crowley; AAES – Arkansas Agricultural Experiment Station, Stuttgart, AR; MAES – Delta Research and Extension Center, Stoneville, MS; TAES, USDA – Texas A&M Research and Education Center, Texas Agricultural Experiment Station, U.S. Department of Agriculture, Beaumont, TX.

Table 2. Grain and agronomic performance of entries in the 2019 Commercial Advanced trial. Acadia Parish, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	83	38	9832
044	1802174	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NPTN	4	86	37	7891
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	3	88	39	6931
035	1902174	NPTN//BNGL/CL161/3/NPTN	5	85	35	6895
058	CL151	CL151	4	83	36	6891
053	RiceTec	RT7301	5	80	39	6813
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	83	38	6728
072	1601030	CLM04	4	86	39	6660
056	1301021	TITAN	4	82	37	6594
031	1902202	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	4	82	39	6554
040	1902227	NPTN/JPTR	5	87	35	6509
046	1902094	9302065/BASF1-6	4	81	38	6494
038	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	4	85	36	6450
054	RiceTec	GEMINI214CL	4	86	27	6234
026	1702140	CHNR/MRMT	5	85	41	6224
030	1902194	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	4	82	39	6216
027	1802162	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	4	85	34	6140
073	1602071	CLH161 (HYBRID)	6	88	44	6128
049	1802102	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	4	82	36	6126
041	1602082	LAH169 (HYBRID)	6	90	45	6115
063	0202183	JUPITER	5	88	38	6103
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	5	82	37	6087
048	1802098	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	4	81	36	6038
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/…	4	83	36	5981
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/…	4	84	38	5960
037	1702165	CFFY/CL261	3	85	39	5945
033	1902212	TRNS//CCDR/JEFF/3/AR1188/CCDR//9502008/LGRU	4	82	37	5942
077	0702162	CAFFEY	3	84	37	5936
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	3	83	36	5925
067	0801081	LAKAST	4	85	43	5777
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	4	83	35	5748

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	86	38	5728
032	1902207	CTHL/4/CPRS/KBNT//9502008/3/CCDR	3	83	38	5687
007	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/...	5	83	40	5678
052	0702085	MERMENTAU	5	85	39	5678
010	1902130	CHNR/3/CCDR//CFX29/CCDR	4	81	40	5677
059	1402134	CL153	6	86	41	5659
051	1301084	DIAMOND	4	87	41	5620
025	1902186	TGRT/3/TRNS//CCDR/JEFF	3	80	39	5555
014	1902138	CCDR//CFX29/CCDR/3/CCDR	3	84	39	5543
055	RiceTec	RT3201	4	79	38	5517
068	9502008	COCODRIE	4	83	38	5502
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	3	82	36	5400
029	1902190	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	3	81	40	5302
036	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/…	4	85	41	5294
005	1902106	KBNT/CL111	4	89	40	5291
057	0902011	CL111	4	83	37	5276
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	3	84	33	5263
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	4	86	37	5260
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//…	4	89	37	5221
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/…	3	85	36	5192
045	1902090	CTHL/BASF2-22	4	86	33	5184
047	1802094	CHNR/BASF1-6	4	87	40	5143
060	0002174	CHENIERE	4	86	37	5065
034	1902217	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	3	82	36	5043
062	1402008	CL272	3	84	36	4991
075	1601111	RU1302048/RU1302045	4	85	36	4980
019	1902154	TRNS//TRNS/CL131	4	86	38	4944
018	1602097	CL131/TRNS	5	87	38	4931
016	1902146	TRNS//TRNS/CL131	5	85	38	4881
028	1802166	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	5	84	37	4805
066	1104122	CL163	3	86	38	4636
039	1902222	MRMT/JPTR	4	88	37	4600

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/…	3	83	39	4449
004	1902037	CL162/3/TRNS//CCDR/JEFF	4	82	36	4333
064	1602088	CLJ01	3	88	34	4318
074	1104077	THAD	6	87	40	4307
042	1802110	CPRS/BASF1-14	4	86	39	4215
069	1202158	DELLA2	4	91	40	4148
079	Nutrien	16R-T321-44	4	93	39	4141
080	Nutrien	2051-22-1	4	87	40	4096
065	1201102	CL172	3	87	36	4095
061	PVL01	PVL01	3	91	39	4094
071	0802149	JAZZMAN2	5	90	34	3995
023	1902170	1002146*4//JZMN/08CLR004	4	88	38	3984
050	1902098	CTHL/BASF2-18	3	88	37	3947
078	9903092	PRESIDIO	4	88	39	3947
076	1701121	EARL/9902028//JPTR	5	88	38	3338
043	1902086	DREW/BASF1-4	4	87	39	3299
070	0402125	JAZZMAN	5	91	37	3169

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 3. Grain and milling yields and agronomic performance of entries in the 2019 Commercial Advanced trial. Evangeline Parish, LA.

ENT	SOURCE	PEDIGREE	YIELD
072	1601030	CLM04	7375
054	RiceTec	GEMINI214CL	6983
067	0801081	LAKAST	6751
035	1902174	NPTN//BNGL/CL161/3/NPTN	6456
073	1602071	CLH161 (HYBRID)	6397
076	1701121	EARL/9902028//JPTR	6207
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	6195
030	1902194	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	6150
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/…	6132
061	PVL01	PVL01	6115
038	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	6081
032	1902207	CTHL/4/CPRS/KBNT//9502008/3/CCDR	6001
055	RiceTec	RT3201	5930
062	1402008	CL272	5855
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	5663
025	1902186	TGRT/3/TRNS//CCDR/JEFF	5602
034	1902217	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	5583
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/CPRS/KBNT//WLLS/CFX18	5566
018	1602097	CL131/TRNS	5527
058	CL151	CL151	5522
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	5484
026	1702140	CHNR/MRMT	5449
053	RiceTec	RT7301	5441
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	5435
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	5423
031	1902202	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	5404
059	1402134	CL153	5369
057	0902011	CL111	5343
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	5316
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	5277
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/4/9302065/3/CFX29/…	5240

Continued.

Table 3. Continued.

ENT	SOURCE	PEDIGREE	YIELD
080	Nutrien	2051-22-1	5190
039	1902222	MRMT/JPTR	5130
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	5097
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	4979
077	0702162	CAFFEY	4951
037	1702165	CFFY/CL261	4945
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	4920
004	1902037	CL162/3/TRNS//CCDR/JEFF	4867
068	9502008	COCODRIE	4836
007	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/CFX29/AR1142/LA2031	4770
036	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/3/9902028	4720
051	1301084	DIAMOND	4716
063	0202183	JUPITER	4695
041	1602082	LAH169 (HYBRID)	4620
066	1104122	CL163	4594
028	1802166	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	4592
044	1802174	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NPTN	4583
040	1902227	NPTN/JPTR	4570
010	1902130	CHNR/3/CCDR//CFX29/CCDR	4493
064	1602088	CLJ01	4490
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	4478
046	1902094	9302065/BASF1-6	4427
071	0802149	JAZZMAN2	4374
033	1902212	TRNS//CCDR/JEFF/3/AR1188/CCDR//9502008/LGRU	4349
042	1802110	CPRS/BASF1-14	4341
019	1902154	TRNS//TRNS/CL131	4327
079	Nutrien	16R-T321-44	4300
056	1301021	TITAN	4269
029	1902190	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	4164
043	1902086	DREW/BASF1-4	4042
047	1802094	CHNR/BASF1-6	4002

Continued.

Table 3. Continued.

ENT	SOURCE	PEDIGREE	YIELD
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	3967
027	1802162	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	3965
005	1902106	KBNT/CL111	3929
045	1902090	CTHL/BASF2-22	3866
069	1202158	DELLA2	3864
052	0702085	MERMENTAU	3847
016	1902146	TRNS//TRNS/CL131	3810
049	1802102	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	3747
074	1104077	THAD	3709
078	9903092	PRESIDIO	3669
070	0402125	JAZZMAN	3636
023	1902170	1002146*4//JZMN/08CLR004	3590
050	1902098	CTHL/BASF2-18	3500
048	1802098	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	3208
065	1201102	CL172	3197
075	1601111	RU1302048/RU1302045	3170
014	1902138	CCDR//CFX29/CCDR/3/CCDR	3124
060	0002174	CHENIERE	1991

Table 4. Grain and milling yields and agronomic performance of entries in the 2019 Commercial Advanced trial. H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
054	RiceTec	GEMINI214CL	3	87	50	11298	62.6	70.6
056	1301021	TITAN	3	77	38	11104	69.0	70.8
053	RiceTec	RT7301	4	85	42	10888	63.6	70.9
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	4	81	41	10159	64.6	70.6
059	1402134	CL153	3	84	40	10143	61.9	70.0
016	1902146	TRNS//TRNS/CL131	4	79	42	10064	65.1	70.6
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	4	83	39	9998	64.0	70.5
055	RiceTec	RT3201	4	79	45	9943	68.4	71.2
058	CL151	CL151	3	84	40	9913	65.7	71.5
018	1602097	CL131/TRNS	4	84	40	9829	54.2	68.3
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/…	4	84	39	9806	63.9	70.7
073	1602071	CLH161 (HYBRID)	7	81	49	9749	64.6	71.0
067	0801081	LAKAST	3	83	42	9717	64.0	71.0
057	0902011	CL111	2	79	39	9705	64.8	71.0
007	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/CFX29/AR1142/…	5	82	39	9586	64.2	70.8
076	1701121	EARL/9902028//JPTR	5	86	39	9559	66.1	70.1
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/4/9302065/3/CFX29/…	3	82	42	9547	63.7	70.7
072	1701121	EARL/9902028//JPTR 072-089 SWITCHED IN PLANTING	3	84	42	9543	65.5	70.5
029	1902190	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	3	84	38	9495	63.4	70.3
041	1602082	LAH169 (HYBRID)	7	78	43	9492	62.8	70.4
033	1902212	TRNS//CCDR/JEFF/3/AR1188/CCDR//9502008/LGRU	4	79	37	9458	64.7	70.9
004	1902037	CL162/3/TRNS//CCDR/JEFF	3	82	39	9387	63.3	70.5
014	1902138	CCDR//CFX29/CCDR/3/CCDR	4	84	42	9378	63.0	70.8
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//…	4	84	42	9292	64.9	71.1
032	1902207	CTHL/4/CPRS/KBNT//9502008/3/CCDR	3	84	39	9278	63.4	71.2
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	4	83	37	9275	64.5	71.4

Continued.

Table 4. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
064	1602088	CLJ01	3	85	39	9261	67.3	71.3
037	1702165	CFFY/CL261	4	83	40	9261	64.2	70.4
075	1601111	RU1302048/RU1302045	3	84	38	9244	63.5	70.0
038	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	4	84	41	9240	64.8	70.2
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	4	83	40	9193	62.0	70.0
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/ CPRS/ KBNT//…	4	84	39	9181	64.4	70.9
034	1902217	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	4	81	38	9176	62.5	70.5
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	4	84	41	9165	65.5	71.1
005	1902106	KBNT/CL111	4	86	41	9130	65.5	71.3
028	1802166	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	4	83	38	9103	64.0	70.5
035	1902174	NPTN//BNGL/CL161/3/NPTN	5	83	37	9074	66.2	70.6
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	2	84	40	9053	64.4	70.8
048	1802098	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	5	79	38	9051	60.3	69.5
027	1802162	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	4	83	37	8877	64.4	71.3
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	4	86	41	8854	62.3	69.9
077	0702162	CAFFEY	3	85	38	8794	66.4	70.2
040	1902227	NPTN/JPTR	4	84	36	8790	62.5	69.9
066	1104122	CL163	3	86	41	8761	64.8	70.5
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	84	39	8744	62.0	70.4
026	1702140	CHNR/MRMT	4	84	39	8734	62.9	71.3
025	1902186	TGRT/3/TRNS//CCDR/JEFF	4	82	39	8730	63.4	70.8
010	1902130	CHNR/3/CCDR//CFX29/CCDR	5	81	41	8729	65.8	72.1
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	4	83	40	8705	62.6	69.3
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	4	85	42	8691	64.7	70.4
068	9502008	COCODRIE	3	83	39	8636	63.8	71.1
049	1802102	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	6	79	40	8631	57.9	68.9
080	Nutrien	2051-22-1	3	85	39	8610	64.8	70.6
030	1902194	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	4	82	38	8607	64.7	71.1

Continued.

Table 4. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
062	1402008	CL272	3	84	41	8597	66.0	70.5
019	1902154	TRNS//TRNS/CL131	4	85	40	8570	64.9	71.4
023	1902170	1002146*4//JZMN/08CLR004	4	79	38	8568	63.4	70.3
047	1802094	CHNR/BASF1-6	3	83	42	8539	65.9	71.6
044	1802174	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NPTN	5	84	38	8510	66.1	69.6
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/CPRS/KBNT//…	3	86	41	8462	61.8	71.8
063	0202183	JUPITER	4	85	40	8458	65.4	70.5
045	1902090	CTHL/BASF2-22	5	82	36	8250	62.0	70.0
052	0702085	MERMENTAU	4	84	38	8246	64.6	71.0
036	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/3/…	4	83	43	8216	63.4	69.6
031	1902202	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	4	84	38	8190	63.7	70.8
065	1201102	CL172	2	86	37	8113	64.7	71.0
051	1301084	DIAMOND	3	83	42	8050	60.9	69.3
046	1902094	9302065/BASF1-6	5	76	40	8019	63.3	69.9
039	1902222	MRMT/JPTR	4	87	37	7850	65.1	69.7
043	1902086	DREW/BASF1-4	4	85	38	7833	59.6	68.8
060	0002174	CHENIERE	4	84	38	7647	62.3	70.6
069	1202158	DELLA2	3	87	41	7348	64.5	70.8
074	1104077	THAD	7	85	40	7346	63.7	69.9
078	9903092	PRESIDIO	3	83	38	7314	67.6	71.1
079	Nutrien	16R-T321-44	4	91	40	7278	66.2	71.4
042	1802110	CPRS/BASF1-14	4	86	42	7268	62.8	69.9
050	1902098	CTHL/BASF2-18	3	85	39	7137	60.1	69.7
061	PVL01	PVL01	3	93	41	6847	57.4	68.8
070	0402125	JAZZMAN	3	87	40	6712	64.9	71.1
071	0802149	JAZZMAN2	5	82	35	6199	62.6	69.5

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 5. Grain and milling yields and agronomic performance of entries in the 2019 Commercial Advanced trial. H. Rouse Caffey Rice Research Station – Late, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
054	RiceTec	GEMINI214CL	3	68	40	10651	61.0	68.6
040	1902227	NPTN/JPTR	3	71	39	9694	66.2	69.7
077	0702162	CAFFEY	3	69	42	9264	64.2	68.6
063	0202183	JUPITER	3	70	44	9151	64.3	68.5
055	RiceTec	RT3201	3	69	43	8935	66.2	69.4
039	1902222	MRMT/JPTR	3	70	43	8835	63.8	68.7
044	1802174	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NPTN	2	73	41	8763	63.3	67.8
027	1802162	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	2	70	45	8762	59.7	69.7
035	1902174	NPTN//BNGL/CL161/3/NPTN	2	70	44	8748	62.9	67.9
056	1301021	TITAN	3	69	40	8703	63.2	68.1
041	1602082	LAH169 (HYBRID)	3	70	43	8602	59.8	69.1
034	1902217	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	2	69	43	8264	56.2	67.8
074	1104077	THAD	2	69	41	8253	59.8	66.7
053	RiceTec	RT7301	3	68	40	8192	59.9	68.3
028	1802166	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	3	72	39	8150	62.5	69.3
032	1902207	CTHL/4/CPRS/KBNT//9502008/3/CCDR	3	69	41	8046	62.1	69.5
072	1601030	CLM04	2	70	41	7950	60.9	66.6
060	0002174	CHENIERE	3	69	41	7938	65.0	70.6
076	1701121	EARL/9902028//JPTR	2	71	42	7928	63.6	68.3
070	0402125	JAZZMAN	3	69	39	7901	61.6	68.3
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	3	69	44	7828	62.2	69.7
052	0702085	MERMENTAU	3	69	45	7824	59.5	68.2
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	70	44	7720	63.0	68.6
037	1702165	CFFY/CL261	3	69	46	7719	62.1	68.1
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	2	71	41	7693	59.7	67.7
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	2	71	40	7667	62.4	69.8
005	1902106	KBNT/CL111	3	70	39	7661	63.2	69.0

Continued.

Table 5. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
065	1201102	CL172	2	69	42	7649	61.8	68.6
075	1601111	RU1302048/RU1302045	3	69	42	7638	60.9	67.9
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	2	70	41	7634	60.5	67.7
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	3	68	45	7586	59.2	67.8
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	3	69	43	7564	61.0	68.2
031	1902202	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	3	67	42	7538	60.3	67.9
051	1301084	DIAMOND	3	70	42	7509	58.1	67.8
010	1902130	CHNR/3/CCDR//CFX29/CCDR	2	70	44	7431	59.9	69.8
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/CPRS/KBNT//WLLS/CFX18	2	69	40	7402	62.3	69.1
033	1902212	TRNS//CCDR/JEFF/3/AR1188/CCDR//9502008/LGRU	3	69	42	7367	63.2	69.5
030	1902194	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	3	70	42	7359	59.3	68.0
078	9903092	PRESIDIO	3	70	43	7346	62.2	69.5
038	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	2	70	45	7252	57.9	66.2
062	1402008	CL272	2	69	44	7225	60.2	66.8
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	3	70	41	7156	61.1	68.6
019	1902154	TRNS//TRNS/CL131	2	71	42	7154	61.4	68.4
069	1202158	DELLA2	3	69	43	7075	58.5	65.9
064	1602088	CLJ01	2	68	43	7055	63.5	69.5
079	Nutrien	16R-T321-44	3	69	43	7016	57.6	66.3
025	1902186	TGRT/3/TRNS//CCDR/JEFF	2	71	44	6884	59.9	68.2
045	1902090	CTHL/BASF2-22	2	74	43	6883	53.6	65.5
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/4/9302065/3/CFX29/…	2	70	42	6827	58.6	67.7
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	70	46	6730	63.4	69.3
071	0802149	JAZZMAN2	3	70	41	6639	61.2	68.6
059	1402134	CL153	3	69	42	6619	59.5	68.4
067	0801081	LAKAST	2	70	43	6591	58.6	68.4
036	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/3/9902028	3	69	45	6579	55.8	64.5

Continued.

Table 5. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
066	1104122	CL163	2	71	44	6533	57.4	65.8
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	3	71	44	6451	59.5	68.9
026	1702140	CHNR/MRMT	4	69	42	6416	59.2	68.1
007	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/CFX29/ AR1142/LA2031	2	71	43	6396	60.7	68.8
023	1902170	1002146*4//JZMN/08CLR004	2	69	43	6333	63.4	70.3
058	CL151	CL151	2	68	44	6297	59.4	68.6
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	71	43	6215	60.0	67.1
029	1902190	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	2	69	43	6211	57.8	66.3
068	9502008	COCODRIE	2	69	42	6209	59.5	68.6
061	PVL01	PVL01	3	70	42	6065	52.9	65.1
073	1602071	CLH161 (HYBRID)	2	70	45	6038	58.8	68.3
016	1902146	TRNS//TRNS/CL131	3	69	45	5913	59.5	67.2
049	1802102	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	3	69	43	5860	57.0	67.4
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/9502008/4/ CLR9/5/…	3	70	43	5829	58.5	67.1
057	0902011	CL111	3	69	40	5825	61.1	69.2
004	1902037	CL162/3/TRNS//CCDR/JEFF	3	69	44	5635	57.0	67.2
018	1602097	CL131/TRNS	3	69	43	5499	57.9	66.5
048	1802098	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	2	68	44	5426	61.3	67.0
014	1902138	CCDR//CFX29/CCDR/3/CCDR	2	69	42	5144	52.2	65.8
043	1902086	DREW/BASF1-4	2	74	43	5113	47.5	65.2
080	Nutrien	2051-22-1	2	69	43	4847	59.0	67.4
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	3	70	43	4626	53.9	66.9
050	1902098	CTHL/BASF2-18	3	68	41	4537	56.6	66.1
046	1902094	9302065/BASF1-6	3	73	43	4390	58.7	68.1
042	1802110	CPRS/BASF1-14	3	68	43	4238	53.5	66.0
047	1802094	CHNR/BASF1-6	2	73	40	4204	60.1	69.1

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 6. Grain performance of entries in the 2019 Commercial Advanced trial. Vermilion Parish, LA.

ENT	SOURCE	PEDIGREE	YIELD
054	RiceTec	GEMINI214CL	11673
053	RiceTec	RT7301	9035
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	8406
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/…	8354
072	1601030	CLM04	7650
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	7367
038	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	7303
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	7254
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	7187
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/CPRS/KBNT//WLLS/CFX18	7052
063	0202183	JUPITER	6922
014	1902138	CCDR//CFX29/CCDR/3/CCDR	6917
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	6878
073	1602071	CLH161 (HYBRID)	6863
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	6861
055	RiceTec	RT3201	6840
062	1402008	CL272	6765
004	1902037	CL162/3/TRNS//CCDR/JEFF	6672
080	Nutrien	2051-22-1	6662
065	1201102	CL172	6654
079	Nutrien	16R-T321-44	6643
056	1301021	TITAN	6603
018	1602097	CL131/TRNS	6566
005	1902106	KBNT/CL111	6392
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	6369
066	1104122	CL163	6242
058	CL151	CL151	6167
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/4/9302065/3/CFX29/…	6080
016	1902146	TRNS//TRNS/CL131	6034
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	6034
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	6013

Continued.

Table 6. Continued.

ENT	SOURCE	PEDIGREE	YIELD
023	1902170	1002146*4//JZMN/08CLR004	6007
035	1902174	NPTN//BNGL/CL161/3/NPTN	5986
037	1702165	CFFY/CL261	5946
039	1902222	MRMT/JPTR	5882
057	0902011	CL111	5813
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	5652
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	5648
028	1802166	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	5619
010	1902130	CHNR/3/CCDR//CFX29/CCDR	5600
019	1902154	TRNS//TRNS/CL131	5499
007	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/CFX29/AR1142/LA2031	5232
064	1602088	CLJ01	5220
036	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/3/9902028	5121
075	1601111	RU1302048/RU1302045	4901
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	4722
067	0801081	LAKAST	4379
047	1802094	CHNR/BASF1-6	4203
042	1802110	CPRS/BASF1-14	4184
076	1701121	EARL/9902028//JPTR	4077
033	1902212	TRNS//CCDR/JEFF/3/AR1188/CCDR//9502008/LGRU	3862
077	0702162	CAFFEY	3724
059	1402134	CL153	3658
050	1902098	CTHL/BASF2-18	3381
044	1802174	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NPTN	3315
048	1802098	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	3292
043	1902086	DREW/BASF1-4	3269
049	1802102	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	3253
045	1902090	CTHL/BASF2-22	3220
046	1902094	9302065/BASF1-6	3184
041	1602082	LAH169 (HYBRID)	3073
027	1802162	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	3052
026	1702140	CHNR/MRMT	3005

Continued.

Table 6. Continued.

ENT	SOURCE	PEDIGREE	YIELD
034	1902217	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	2856
070	0402125	JAZZMAN	2582
040	1902227	NPTN/JPTR	2494
030	1902194	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	2485
060	0002174	CHENIERE	2473
078	9903092	PRESIDIO	2276
061	PVL01	PVL01	2159
051	1301084	DIAMOND	2115
031	1902202	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	2063
032	1902207	CTHL/4/CPRS/KBNT//9502008/3/CCDR	1997
068	9502008	COCODRIE	1761
029	1902190	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	1695
069	1202158	DELLA2	1575
052	0702085	MERMENTAU	1562
025	1902186	TGRT/3/TRNS//CCDR/JEFF	1341
071	0802149	JAZZMAN2	1312
074	1104077	THAD	802

Table 7. Grain performance of entries in the 2019 Commercial Advanced trial. Calcasieu Parish, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
054	RiceTec	GEMINI214CL	2	73	47	9171
053	RiceTec	RT7301	4	73	42	8442
073	1602071	CLH161 (HYBRID)	7	70	48	7418
055	RiceTec	RT3201	3	72	44	6793
045	1902090	CTHL/BASF2-22	4	76	39	6703
032	1902207	CTHL/4/CPRS/KBNT//9502008/3/CCDR	4	75	40	6564
063	0202183	JUPITER	3	78	38	6433
041	1602082	LAH169 (HYBRID)	6	73	46	6415
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	76	41	6403
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/…	3	76	39	6315
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	3	75	37	6297
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/…	4	75	37	5974
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	4	77	37	5821
005	1902106	KBNT/CL111	5	78	41	5821
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	74	40	5797
079	Nutrien	16R-T321-44	4	82	41	5775
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/…	3	79	38	5518
040	1902227	NPTN/JPTR	3	77	37	5483
007	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/…	5	78	38	5473
035	1902174	NPTN//BNGL/CL161/3/NPTN	3	78	39	5435
065	1201102	CL172	2	76	36	5433
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	3	78	39	5428
057	0902011	CL111	3	71	40	5343
030	1902194	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	4	75	40	5301
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	76	38	5254
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/…	3	74	40	5158
016	1902146	TRNS//TRNS/CL131	3	72	39	5109
080	Nutrien	2051-22-1	2	76	39	5109
031	1902202	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	4	75	41	5013
070	0402125	JAZZMAN	3	79	42	5005
078	9903092	PRESIDIO	3	74	40	5002

Continued.

Table 7. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/…	3	77	41	4969
044	1802174	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NPTN	3	79	37	4923
060	0002174	CHENIERE	3	77	38	4888
023	1902170	1002146*4//JZMN/08CLR004	3	73	38	4880
025	1902186	TGRT/3/TRNS//CCDR/JEFF	4	75	41	4877
046	1902094	9302065/BASF1-6	5	73	43	4847
019	1902154	TRNS//TRNS/CL131	4	77	42	4791
047	1802094	CHNR/BASF1-6	2	73	41	4692
027	1802162	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	3	78	37	4560
064	1602088	CLJ01	3	77	37	4532
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	3	73	38	4442
075	1601111	RU1302048/RU1302045	3	76	37	4404
033	1902212	TRNS//CCDR/JEFF/3/AR1188/CCDR//9502008/LGRU	4	74	37	4175
004	1902037	CL162/3/TRNS//CCDR/JEFF	3	75	38	4163
056	1301021	TITAN	3	75	40	4084
072	1601030	CLM04	2	78	39	4075
039	1902222	MRMT/JPTR	3	78	37	4036
077	0702162	CAFFEY	2	78	39	3944
014	1902138	CCDR//CFX29/CCDR/3/CCDR	3	75	39	3943
043	1902086	DREW/BASF1-4	4	79	37	3852
028	1802166	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	4	78	38	3769
052	0702085	MERMENTAU	5	77	39	3744
026	1702140	CHNR/MRMT	3	75	41	3739
068	9502008	COCODRIE	4	76	40	3710
076	1701121	EARL/9902028//JPTR	3	80	40	3642
018	1602097	CL131/TRNS	4	76	38	3641
049	1802102	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	4	74	38	3614
067	0801081	LAKAST	3	77	45	3471
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	4	76	35	3444
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	4	79	38	3417
059	1402134	CL153	5	77	37	3370

Continued.

Table 7. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
037	1702165	CFFY/CL261	3	78	39	3350
050	1902098	CTHL/BASF2-18	3	77	38	3271
051	1301084	DIAMOND	3	78	42	3183
010	1902130	CHNR/3/CCDR//CFX29/CCDR	5	74	38	3077
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	5	77	37	3046
071	0802149	JAZZMAN2	5	78	37	3025
036	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/…	3	76	44	2982
069	1202158	DELLA2	4	79	39	2966
034	1902217	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	4	75	37	2814
048	1802098	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	4	74	36	2776
038	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	3	78	40	2583
029	1902190	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	4	78	38	2501
061	PVL01	PVL01	5	84	39	2427
062	1402008	CL272	3	79	36	2410
058	CL151	CL151	4	77	39	2401
066	1104122	CL163	3	77	40	2401
074	1104077	THAD	6	77	40	2370
042	1802110	CPRS/BASF1-14	3	75	38	2136

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 8. Grain performance of entries in the 2019 Commercial Advanced trial. St. Landry Parish, LA.

ENT	SOURCE	PEDIGREE	HTE	YIELD
054	RiceTec	GEMINI214CL	45	10178
053	RiceTec	RT7301	41	9375
055	RiceTec	RT3201	44	8783
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	39	8522
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	38	8332
051	1301084	DIAMOND	42	8320
067	0801081	LAKAST	43	8309
058	CL151	CL151	40	8210
048	1802098	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	38	8201
044	1802174	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NPTN	38	8149
027	1802162	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	37	8123
070	0402125	JAZZMAN	41	8039
026	1702140	CHNR/MRMT	39	8011
077	0702162	CAFFEY	37	8003
034	1902217	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	37	7981
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	38	7941
076	1701121	EARL/9902028//JPTR	38	7927
039	1902222	MRMT/JPTR	39	7905
018	1602097	CL131/TRNS	42	7880
074	1104077	THAD	41	7874
062	1402008	CL272	40	7872
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	40	7823
033	1902212	TRNS//CCDR/JEFF/3/AR1188/CCDR//9502008/LGRU	36	7782
030	1902194	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	38	7753
016	1902146	TRNS//TRNS/CL131	41	7750
066	1104122	CL163	38	7742
073	1602071	CLH161 (HYBRID)	45	7705
072	1601030	CLM04	42	7671
005	1902106	KBNT/CL111	41	7639
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	39	7627
047	1802094	CHNR/BASF1-6	43	7619

Continued.

Table 8. Continued.

ENT	SOURCE	PEDIGREE	HTE	YIELD
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	37	7590
049	1802102	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	40	7531
079	Nutrien	16R-T321-44	39	7526
068	9502008	COCODRIE	40	7525
056	1301021	TITAN	39	7445
010	1902130	CHNR/3/CCDR//CFX29/CCDR	40	7436
052	0702085	MERMENTAU	38	7419
029	1902190	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	39	7407
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	42	7393
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/4/9302065/3/…	41	7364
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	37	7351
040	1902227	NPTN/JPTR	36	7350
014	1902138	CCDR//CFX29/CCDR/3/CCDR	41	7350
080	Nutrien	2051-22-1	38	7325
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//…	40	7146
032	1902207	CTHL/4/CPRS/KBNT//9502008/3/CCDR	39	7120
028	1802166	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	38	7117
036	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/3/…	42	7111
007	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/CFX29/AR1142/…	40	7088
035	1902174	NPTN//BNGL/CL161/3/NPTN	36	7079
057	0902011	CL111	40	7078
060	0002174	CHENIERE	38	7058
041	1602082	LAH169 (HYBRID)	43	7055
042	1802110	CPRS/BASF1-14	40	7047
031	1902202	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	42	7034
004	1902037	CL162/3/TRNS//CCDR/JEFF	38	7032
075	1601111	RU1302048/RU1302045	39	7018
025	1902186	TGRT/3/TRNS//CCDR/JEFF	42	7014
059	1402134	CL153	39	7002
019	1902154	TRNS//TRNS/CL131	39	6933
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//…	38	6917
063	0202183	JUPITER	38	6917

Continued.

Table 8. Continued.

ENT	SOURCE	PEDIGREE	HTE	YIELD
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	42	6915
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	41	6901
037	1702165	CFFY/CL261	39	6883
043	1902086	DREW/BASF1-4	38	6831
045	1902090	CTHL/BASF2-22	37	6677
064	1602088	CLJ01	40	6675
078	9903092	PRESIDIO	39	6664
065	1201102	CL172	40	6492
046	1902094	9302065/BASF1-6	39	6491
038	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	40	6375
061	PVL01	PVL01	39	6293
050	1902098	CTHL/BASF2-18	38	5933
069	1202158	DELLA2	41	5848
071	0802149	JAZZMAN2	36	5696
023	1902170	1002146*4//JZMN/08CLR004	41	5529
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	38	4746
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/CPRS/KBNT//…	38	4271

Table 9. Grain performance of entries in the 2019 Commercial Advanced trial. Tensas Parish, LA.

ENT	SOURCE	PEDIGREE	YIELD
054	RiceTec	GEMINI214CL	11879
076	1701121	EARL/9902028//JPTR	11061
039	1902222	MRMT/JPTR	10854
053	RiceTec	RT7301	10704
027	1802162	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	10647
072	1601030	CLM04	10599
063	0202183	JUPITER	10555
038	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	10553
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	10505
034	1902217	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	10451
035	1902174	NPTN//BNGL/CL161/3/NPTN	10383
044	1802174	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NPTN	10330
075	1601111	RU1302048/RU1302045	10168
067	0801081	LAKAST	10105
036	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/3/9902028	9948
029	1902190	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	9939
040	1902227	NPTN/JPTR	9906
051	1301084	DIAMOND	9834
062	1402008	CL272	9833
018	1602097	CL131/TRNS	9775
066	1104122	CL163	9738
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	9726
077	0702162	CAFFEY	9717
031	1902202	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	9674
016	1902146	TRNS//TRNS/CL131	9614
043	1902086	DREW/BASF1-4	9589
033	1902212	TRNS//CCDR/JEFF/3/AR1188/CCDR//9502008/LGRU	9575
052	0702085	MERMENTAU	9550
073	1602071	CLH161 (HYBRID)	9526
026	1702140	CHNR/MRMT	9504
059	1402134	CL153	9500

Continued.

Table 9. Continued.

ENT	SOURCE	PEDIGREE	YIELD
058	CL151	CL151	9475
079	Nutrien	16R-T321-44	9449
032	1902207	CTHL/4/CPRS/KBNT//9502008/3/CCDR	9408
030	1902194	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	9366
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	9312
065	1201102	CL172	9282
080	Nutrien	2051-22-1	9269
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/…	9260
060	0002174	CHENIERE	9244
061	PVL01	PVL01	9234
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	9159
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	9101
068	9502008	COCODRIE	9077
070	0402125	JAZZMAN	8978
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	8959
004	1902037	CL162/3/TRNS//CCDR/JEFF	8954
025	1902186	TGRT/3/TRNS//CCDR/JEFF	8947
056	1301021	TITAN	8843
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	8832
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	8823
005	1902106	KBNT/CL111	8653
048	1802098	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	8639
074	1104077	THAD	8634
037	1702165	CFFY/CL261	8632
049	1802102	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	8584
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	8540
064	1602088	CLJ01	8420
007	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/CFX29/AR1142/LA2031	8154
069	1202158	DELLA2	8151
028	1802166	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	8122
010	1902130	CHNR/3/CCDR//CFX29/CCDR	8098

Continued.

Table 9. Continued.

ENT	SOURCE	PEDIGREE	YIELD
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	8070
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/CPRS/KBNT//WLLS/CFX18	7960
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	7929
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/4/9302065/3/CFX29/…	7905
041	1602082	LAH169 (Hybrid)	7823
042	1802110	CPRS/BASF1-14	7746
014	1902138	CCDR//CFX29/CCDR/3/CCDR	7716
071	0802149	JAZZMAN2	7621
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	7621
057	0902011	CL111	7608
047	1802094	CHNR/BASF1-6	7602
078	9903092	PRESIDIO	7396
045	1902090	CTHL/BASF2-22	7216
046	1902094	9302065/BASF1-6	7214
019	1902154	TRNS//TRNS/CL131	7108
050	1902098	CTHL/BASF2-18	6906
055	RiceTec	RT3201	6207
023	1902170	1002146*4//JZMN/08CLR004	5386

REGIONAL YIELD TEST

Regional Yield test locations in 2019 included the H. Rouse Caffey Rice Research Station (HRCRRS) at Crowley and three on-farm test sites in Calcasieu, Vermilion, and Tensas parishes.

One hundred fifty entries were tested in a randomized complete block design with two replications. Varieties were seeded at 90 lb/A. Planting dates were: HRCRRS, March 14; HRCRRS-Late May 1; Calcasieu, March 20; Vermilion, March 13; and Tensas, May 10. Harvest dates were: HRCRRS, July 27; HRCRRS-Late, Aug. 30; Calcasieu, Aug. 13; Vermilion, Aug. 1, and Tensas, Sept. 17. Results from these tests are shown in Tables 1-5.

Table 1. Grain and agronomic performance of entries in the 2019 Regional Yield test, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
141	RiceTec	CLXL745	3	80	47	11569	63.2	71.6
098	181M1748	CFFY/3/BNGL/9502065//EARL	3	85	40	10626	65.9	70.2
143	Titan	Titan	3	79	39	10498	68.6	71.4
043	182L1592	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	84	45	9995	62.8	70.3
020	182L1236	TRNS//TRNS/CL131	4	79	46	9975	62.2	68.3
008	182L2137	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9602065/3/ CFX29/…	4	83	42	9940	65.9	71.5
025	182L1337	CL131/CHNR/4/CPRS/KBNT//9502008A/3/CCDR/JEFF	4	86	39	9940	66.4	71.8
146	CL153	CL153	3	86	40	9908	65.1	71.3
041	182L1584	CPRS/KBNT//WLLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	2	85	43	9897	64.0	70.6
145	CL151	CL151	3	85	43	9884	64.7	70.9
099	181M1763	NPTN/JPTR	3	86	39	9823	64.4	68.5
075	181L1593	TRNS//CCDR/JEFF/4/9502008A//AR1188/CCDR/3/CCDR/JEFF	4	84	38	9819	66.2	72.5
074	181L1588	CCDR/3/TRNS//CCDR/JEFF	4	86	39	9767	61.7	68.9
035	182L1486	CL131/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9302065/3/CGX-29/AR1142/LA2031	4	86	39	9739	65.3	70.9
100	171M1867	LFTE/BNGL//CFFY	4	79	38	9717	65.8	71.0
013	182L2180	CL153/LKST	4	83	40	9712	65.7	71.7
022	182L1240	TRNS//TRNS/CL131	4	79	40	9691	62.4	69.0
003	182L2043	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT// 9502008A	3	83	41	9662	65.8	71.6
032	182L1478	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CFX18//CCDR/9770532 DH2/3/…	3	80	40	9616	63.9	70.9
068	181L1544	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	4	82	42	9605	65.8	71.9
021	182L1237	TRNS//TRNS/CL131	4	79	42	9592	62.8	68.7
002	182L2041	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT// 9502008A	3	85	41	9577	64.5	70.5
097	181M1747	CFFY/3/BNGL/9502065//EARL	3	83	40	9553	66.7	70.6
040	182L1583	CPRS/KBNT//WLLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	3	86	44	9547	61.0	69.0
050	182L1681	CL151/CL111	4	83	43	9520	62.3	70.1
122	183L2069	PVL01/CTHL	3	80	41	9485	63.0	71.1
140	Mermentau	Mermentau	3	81	41	9476	66.7	72.0
096	181M1740	LFTE/BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	4	82	40	9467	67.8	71.7
094	181M1729	BNGL//MERC/RICO/3/MERC/RICO//BNGL /4/BNGL/9502065//EARL	4	87	38	9451	65.8	71.1

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
011	182L2166	1502082/CL172	3	86	44	9429	65.8	72.2
072	181L1577	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	3	83	41	9390	62.7	70.7
006	182L2076	DREW/5/CPRS/3/9502008A//AR1188/CCDR/4/CPRS/9502008A/3/CFX29//AR1142/LA2031	3	87	38	9373	63.5	71.4
053	172L3156	CPRS/KBNT//CFX29/CCDR/3/06CFP952/4/9502008A/DREW//CLR20/3/CL111	3	86	47	9373	62.0	69.7
037	182L1506	CL151/4/CL131/3/CPRS/KBNT//9502008A	4	88	41	9363	65.6	72.0
009	182L2164	1502082/CL172	4	85	40	9360	66.5	71.7
069	181L1550	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	3	81	44	9324	63.9	70.7
064	182M1928	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	4	86	42	9322	65.2	70.7
059	182M1792	NPTN//BNGL/CL161/3/NPTN	3	85	43	9259	65.6	69.7
071	181L1576	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	4	84	42	9245	62.8	69.9
017	182L1136	CCDR/JEFF//CFX26/9702128/3/CL151	3	84	40	9237	63.4	70.9
005	182L2066	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/CHNR	4	85	42	9213	63.4	70.0
010	182L2165	1502082/CL172	5	85	44	9191	64.9	70.8
055	172L3323	CL131/CHNR//TRNS	4	81	39	9179	65.2	71.1
042	182L1587	CPRS/KBNT//WLLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/…	4	86	40	9154	65.3	71.7
066	181L1537	TGRT/3/TRNS//CCDR/JEFF	5	86	41	9136	66.4	69.6
144	CL111	CL111	3	82	39	9127	63.5	70.4
038	182L1558	CTHL/4/CCDR/3/CPRS/KBNT//WLLS/CFX18	4	85	41	9114	65.9	72.3
135	183L1170	CHNR//CCDR/JEFF/3/BASF2-22	5	87	39	9112	64.2	69.4
015	182L2195	CL172/CL153	4	86	44	9112	66.4	70.9
136	183L1180	CHNR/BASF1-12	5	82	38	9104	64.4	69.5
054	172L1204	CCDR/JEFF//CFX-26/9702128/3/CL151	4	83	35	9341	58.0	67.4
021	172L2030	FRANCIS/5/LGRU/CLR 22/4/96020653CFX-29/AR 1142/LA 2031	4	90	42	9332	57.9	69.3
149	CHNR	CHENIERE	4	88	35	9310	60.6	72.0
042	172L1135	CHENIERE/6/CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	4	88	37	9297	58.4	69.7
024	172L2065	CPRS/5/LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031	4	90	38	9272	64.9	71.0
035	172L1098	CCDR/CL131	4	89	34	9265	54.3	69.3
058	172L1247	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CPRS/KBNT//9502008-A/3/CFX-18//…	4	90	36	9259	59.5	68.9
118	171M1810	NEPTUNE/4/9502065/3/MERC//MERC/4/9902028	5	92	34	9254	65.2	69.6
048	172L1151	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	4	85	36	9234	58.2	70.0
056	172L1216	TRNS//TRNS/CL131	4	84	34	9227	55.4	65.9

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
012	172L3114	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/4/CFX-18//CCDR/9770532 DH2/3/…	5	90	37	9213	60.9	68.8
046	172L1141	CHENIERE/3/CCDR//CFX-29/CCDR	4	87	36	9200	55.3	68.0
100	172M1681	NEPTUNE/3/NEPTUNE//BNGL/CL161	4	91	36	9194	61.9	68.7
037	172L1129	CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031/4/CPRS	4	87	37	9172	61.5	69.8
019	172L2001	MBLE/4/CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A	4	89	33	9155	57.7	68.9
116	171L1785	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	5	90	34	9149	57.5	68.9
079	172L1410	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/ 9502008-A/…	4	90	38	9147	58.3	68.8
130	171M1872	LFTE/BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	4	88	35	9141	52.9	69.7
020	172L2028	FRANCIS/5/LGRU/CLR 22/4/96020653CFX-29/AR 1142/LA 2031	4	90	38	9138	59.7	67.8
150	JPTR	JUPITER	4	93	36	9129	56.7	67.3
119	171M1813	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/4/9902028	4	90	33	9123	58.5	69.8
018	172L3329	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/…	4	87	34	9115	57.7	69.6
066	172L1319	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	91	38	9074	61.3	69.9
115	171L1783	TAGGART/3/TRNS//CCDR/JEFF	4	89	35	9056	54.7	67.6
032	172L1074	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3…	4	88	36	9047	60.4	69.3
030	172L1060	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/CHENIERE	4	90	34	9029	53.0	69.2
014	172L3147	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CL111/CHENIERE	4	91	35	9012	54.7	68.5
147	CL153	CL153	3	90	33	9011	56.8	68.7
005	172L3045	PRESIDO/CL111	4	89	37	8997	60.8	69.2
106	171L1610	TAGGART/3/TRNS//CCDR/JEFF	5	93	34	8993	44.0	67.4
067	172L1326	CL131//DREW/CLR 13/4/9502008-A/TACAURI//CLR 5/3/DREW/CFX-42	5	90	35	8989	57.9	69.6
117	171L1786	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	5	91	34	8986	59.4	70.0
039	172L1132	CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031/4/CCDR/JEFF//CFX-26/9702128	3	90	36	8975	58.6	69.2
071	172L1338	9502008-A/DREW//CLR 20/3/TRNS//CCDR/JEFF	4	90	35	8975	59.7	69.6
068	172L1331	9302065/4/CFX-18//CCDR/9770532 DH2/3/9502008-A//AR 1188/CCDR	4	89	33	8972	50.3	68.2
015	172L3149	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CL111/CHENIERE	4	92	36	8946	60.3	68.5
102	172M1690	NEPTUNE//BNGL/CL161/3/BNGL/CL161//CAFFEY	4	91	36	8946	57.3	70.4
008	172L3059	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/CL161	4	95	38	8941	56.1	67.6
050	172L1159	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/ 6/ CHENIERE//…	4	87	34	8919	54.7	69.6
146	CL111	CL111	3	84	36	8906	60.4	69.5

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
072	172L1339	9502008-A/DREW//CLR 20/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT//9502008-A	4	87	33	8899	58.8	68.4
076	172L1352	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CATAHOULA	5	85	33	8869	59.0	70.0
122	171M1849	9502065/3/MERC//MERC//4/9902028/4/BNGL//MERC/RICO/3/EARL	5	92	33	8816	64.8	70.4
143	173L2048	CPRS/BASF 1-14	4	90	37	8756	57.1	68.3
031	172L1067	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/4/CFX-18//CCDR/9770532 DH2/3/…	4	88	34	8701	60.6	70.2
112	171L1718	CATAHOULA/4/CPRS/KBNT//9502008-A/3/CCDR	4	88	35	8688	51.2	68.3
062	172L1263	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/DREW//CLR 20	5	90	35	8678	58.0	67.1
128	171M1863	NEPTUNE/9302065	3	94	37	8662	64.4	68.9
028	172L1019	CPRS/4/CL131/3/CPRS/KBNT//9502008-A	4	87	35	8657	55.6	65.9
088	172A1735	JZMN/08CLR004//RU0802146/3/JZM2/4/ JZMN/08CLR004//RU0802146/3/JZM2	3	90	32	8648	60.7	68.3
120	171M1827	NEPTUNE/5/BNGL/SHORT RICO/4/9502065/3/MERC//MERC/4/9902028	4	92	33	8634	52.4	72.1
142	173L2039	CHENIERE//CCDR/JEFF/3/BASF 2-22	4	89	35	8633	46.5	66.9
140	173L2019	9302065/BASF 1-6	5	81	35	8623	54.8	66.0
026	172L2078	CPRS/5/LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031	3	90	35	8623	31.4	68.6
064	172L1293	WELLS//CL131/CHENIERE	6	90	33	8609	58.3	69.3
009	172L3067	CHENIERE/CL 111	4	93	36	8602	57.3	67.7
002	172L3015	CPRS/4/CL131/3/CPRS/KBNT//9502008-A	4	90	33	8600	57.8	68.5
105	171L1530	RU0902028/CTHL	5	89	34	8597	49.1	68.6
023	172L2059	KBNT/CL111	4	93	35	8594	64.0	70.9
069	172L1332	CCDR/4/CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031	4	92	36	8567	63.3	71.1
136	173L2005	CATAHOULA/BASF 2-22	4	90	32	8538	39.4	64.0
060	172L1252	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/9502008-A/…	4	90	36	8531	57.5	69.8
001	172L3007	CPRS/4/CL131/3/CPRS/KBNT//9502008-A	4	89	33	8520	57.9	67.8
121	171M1843	CAFFEY/3/BNGL/9502065//EARL	5	88	33	8512	46.6	69.2
141	173L2029	CATAHOULA/BASF 2-18	4	92	39	8507	38.0	62.9
134	PVL108	CHENIERE/BASF 1-6	4	86	39	8483	62.4	70.9
080	172L1424	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/…	4	86	36	8437	60.7	69.1
145	PVL01	PVL01	3	93	36	8430	53.4	69.1
059	172L1251	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/9502008-A/…	4	89	36	8425	55.4	68.4

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
006	172L3047	PRESIDO/CL111	4	90	35	8401	45.4	69.4
063	172L1265	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/DREW// CLR 20	5	89	34	8391	60.0	67.8
089	172A1737	JZMN/08CLR004//RU0802146/3/JZM2/4/ JZMN/08CLR004//RU0802146/3/JZM2	3	93	37	8335	59.7	68.0
135	173L2004	CATAHOULA/BASF 2-22	5	91	34	8332	37.7	66.0
082	172L1540	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/…	5	85	36	8332	62.4	69.7
086	172A1729	RU1002146*4//JZMN/08CLR004	4	87	37	8320	64.1	70.2
114	171L1772	CHNR/RU0901121	5	89	35	8320	54.8	68.0
011	172L3113	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/4/CFX-18//CCDR/9770532 DH2/…	5	89	35	8311	60.7	69.5
003	172L3024	CPRS//CATAHOULA/CL 111	4	92	37	8257	60.2	68.1
074	172L1345	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS CFX 18	5	90	35	8178	55.4	66.4
016	172L3182	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/PRESIDIO	4	90	37	8167	58.3	68.7
137	173L2016	9302065/BASF 1-6	6	84	35	8128	51.2	67.6
138	173L2017	9302065/BASF 1-6	5	84	38	8112	47.9	64.6
061	172L1262	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/DREW// CLR 20	5	89	33	8085	32.1	67.8
004	172L3038	PRESIDO/CL111	4	89	35	8084	59.9	70.9
087	172A1730	RU1002146*4//JZMN/08CLR004	4	86	34	8034	65.2	70.8
017	172L3318	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/9502008-A/…	4	95	39	8031	34.4	65.3
010	172L3098	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/CHENIERE	4	92	37	8029	59.7	70.8
090	172A1739	JZMN/08CLR004//RU0802146/3/JZM2/4/ JZMN/08CLR004//RU0802146/3/JZM2	4	93	34	8019	61.2	68.8
070	172L1334	DREW//CCDR/CLPY 003	4	89	35	7978	59.7	69.4
104	171L1529	RU0902028/CTHL	6	82	34	7895	53.1	68.5
025	172L2075	CPRS/5/LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031	4	91	35	7888	63.8	69.3
007	172L3054	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/CL161	4	94	38	7840	62.2	69.7
077	172L1358	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/…	4	90	34	7446	62.9	70.8
144	173L2058	CHENIERE/BASF 2-31	4	88	38	7439	46.8	69.8
139	173L2018	9302065/BASF 1-6	5	90	37	7439	56.0	67.5
075	172L1350	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/DREW//CHENIERE/LMNT	5	81	31	7370	62.4	69.9
132	173L1026	PRESIDIO/BASF 1-12	4	75	36	7116	40.3	65.8
013	172L3127	CL131/3/TRNS//CCDR/JEFF	5	91	33	6986	61.0	68.5
133	173L1029	CHENIERE/BASF 1-6	5	75	35	6743	37.8	66.3
027	172L1009	KBNT/CL111	5	89	32	6678	57.4	66.9

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 2. Grain and agronomic performance of entries in the 2019 Regional Yield test, H. Rouse Caffey Rice Research Station - Late, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
141	RiceTec	CLXL745	2	63	43	9887	63.3	70.2
100	171M1867	LFTE/BNGL//CFFY	2	67	40	9451	66.1	70.6
099	181M1763	NPTN/JPTR	2	71	39	9428	65.9	69.2
025	182L1337	CL131/CHNR/4/CPRS/KBNT//9502008A/3/CCDR/JEFF	3	71	38	8933	62.2	70.4
112	181L2083	CTHL/CL153	2	71	41	8794	60.2	69.0
110	181L2063	CPRS/LKST	2	67	42	8702	62.2	70.0
083	181L1657	CTHL/MRMT	3	67	43	8685	62.6	70.5
075	181L1593	TRNS//CCDR/JEFF/4/9502008A//AR1188/CCDR/3/CCDR/JEFF	2	67	38	8650	61.7	69.5
098	181M1748	CFFY/3/BNGL/9502065//EARL	2	69	39	8648	65.5	69.8
095	181M1736	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL	2	71	39	8616	63.9	68.1
097	181M1747	CFFY/3/BNGL/9502065//EARL	2	70	41	8486	66.2	69.7
143	Titan	Titan	2	66	40	8468	66.5	69.8
066	181L1537	TGRT/3/TRNS//CCDR/JEFF	3	68	38	8416	60.7	69.5
096	181M1740	LFTE/BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	3	66	40	8396	66.2	70.5
017	182L1136	CCDR/JEFF//CFX26/9702128/3/CL151	2	68	40	8352	58.6	68.1
150	Jupiter	Jupiter	3	71	38	8321	61.8	67.0
042	182L1587	CPRS/KBNT//WLLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/ KATY/CPRS//KATY	2	71	39	8315	61.4	69.8
082	181L1654	CTHL/MRMT	3	70	42	8255	64.0	71.3
105	181L2015	JZMN2/CTHL	3	66	41	8205	61.7	68.8
071	181L1576	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	3	66	41	8205	58.0	67.6
094	181M1729	BNGL//MERC/RICO/3/MERC/RICO//BNGL /4/BNGL/9502065//EARL	3	70	36	8196	56.6	66.1
084	181L1660	CTHL/MRMT	3	68	41	8188	61.2	69.8
139	Diamond	Diamond	2	69	43	8137	56.9	67.5
119	183L2064	PVL01/CTHL	2	70	44	8113	61.0	68.9
008	182L2137	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9602065/3/CFX29/ AR1142/…	3	66	40	8092	58.2	68.6
076	181L1599	FRAN/LKST	3	68	42	8089	56.9	67.1
108	181L2027	MS4077/CTHL	3	74	42	8074	60.6	68.0
073	181L1578	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	2	66	41	8050	59.4	67.8
102	181L2005	CTHL/MRMT	3	67	42	8026	60.3	68.7
021	182L1237	TRNS//TRNS/CL131	2	66	42	8021	57.7	67.6
093	181M1725	NPTN/4/BNGL//MERC/RICO/3/MERC/RICO//BNGL	2	73	38	7997	62.9	67.8

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
002	182L2041	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	69	39	7952	59.6	67.4
089	181L1694	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	2	64	42	7920	58.7	69.5
013	182L2180	CL153/LKST	3	66	41	7886	60.9	69.2
038	182L1558	CTHL/4/CCDR/3/CPRS/KBNT//WLLS/CFX18	2	67	42	7861	56.6	67.6
113	181L2112	CL172/PSDO	3	69	42	7860	60.9	67.9
022	182L1240	TRNS//TRNS/CL131	4	66	39	7850	60.4	67.6
069	181L1550	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	2	67	41	7844	57.9	69.5
078	181L1602	FRAN/KBNT	3	71	43	7836	59.8	69.7
035	182L1486	CL131/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9302065/3/CGX-29/AR1142/LA2031	3	69	40	7828	56.4	65.9
020	182L1236	TRNS//TRNS/CL131	3	64	44	7748	56.9	65.4
074	181L1588	CCDR/3/TRNS//CCDR/JEFF	3	69	40	7740	57.3	68.2
023	182L1278	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/MBLE	2	70	41	7734	61.2	68.9
005	182L2066	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/CHNR	2	70	40	7720	62.2	69.0
111	181L2074	CTHL/MRMT	3	66	39	7718	58.4	68.6
014	182L2194	CL172/CL153	3	70	41	7715	63.3	69.4
011	182L2166	1502082/CL172	3	71	40	7656	62.1	68.8
079	181L1603	FRAN/KBNT	3	71	44	7644	55.7	66.9
090	171L1647	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	3	66	40	7640	59.3	69.0
015	182L2195	CL172/CL153	2	70	44	7633	62.6	68.4
045	182L1597	TRNS//CL111/CHNR	2	68	41	7633	59.3	67.4
103	181L2007	CTHL/MRMT	3	67	42	7597	61.9	70.4
104	181L2008	CTHL/MRMT	3	66	41	7581	59.1	68.0
006	182L2076	DREW/5/CPRS/3/9502008A//AR1188/CCDR/4/CPRS/9502008A/3/CFX29//AR1142/LA2031	3	72	37	7570	60.4	68.6
144	CL111	CL111	2	66	40	7566	59.5	68.2
024	182L1318	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/5/9502008A/DREW/3/…	2	70	42	7560	57.7	66.7
122	183L2069	PVL01/CTHL	2	67	42	7536	60.6	68.7
003	182L2043	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	68	41	7535	58.5	67.2
004	182L2046	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	2	70	42	7502	60.1	68.2
081	181L1637	FRAN/CPRS	3	71	44	7479	55.5	66.6
009	182L2164	1502082/CL172	3	70	38	7456	63.5	70.5
010	182L2165	1502082/CL172	3	69	40	7439	59.9	67.7

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
018	182L1138	CCDR/JEFF//CFX26/9702128/3/CL151	3	69	42	7382	56.3	65.7
106	181L2016	JZMN2/CTHL	2	66	40	7373	58.1	67.2
085	181A1664	JZMN2/CTHL	3	67	43	7328	60.2	69.4
080	181L1604	FRAN/KBNT	3	69	44	7327	57.8	68.8
145	CL151	CL151	2	68	42	7313	58.1	68.3
107	181L2018	MS4077/CTHL	3	71	41	7278	60.6	68.1
137	183L1227	MRMTBCR048-7	2	60	42	7261	58.7	66.9
092	181M1716	NPTN/4/9502065/3/MERC//MERC/4/9902028	2	70	36	7240	60.6	66.7
087	181L1691	MS4077/CTHL	3	65	43	7236	61.4	70.5
072	181L1577	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	3	65	41	7199	59.3	68.4
036	182L1498	CL161/CHNR	3	70	40	7196	60.1	68.2
007	182L2094	CPRS/KBNT//WLLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/ KATY/CPRS//KATY	2	69	40	7183	58.9	67.4
019	182L1170	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/3/9502008/4/ CLR9/6/CL161	3	69	41	7165	52.0	64.5
086	181L1689	MS4077/CTHL	4	73	38	7158	56.0	66.9
016	182L1134	CCDR/JEFF//CFX26/9702128/3/CL151	2	69	41	7156	59.4	67.6
029	182L1427	CHNR/CL111	3	71	38	7149	61.4	68.5
055	172L3323	CL131/CHNR//TRNS	2	66	39	7095	58.4	67.7
033	182L1479	CPRS/KBNT//WLLS/CFX18/3/MBLE/3/CL151	2	70	43	7076	54.0	66.9
088	181L1692	MS4077/CTHL	3	74	41	7065	52.0	65.3
027	182A1367	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	2	68	37	7049	55.5	68.5
046	182L1625	CL163/CL153	3	68	43	7029	62.0	68.6
120	183L2066	PVL01/CTHL	2	67	38	6995	57.7	67.2
121	183L2067	PVL01/CTHL	2	67	43	6985	56.9	66.5
070	181L1559	TRNS//CCDR/JEFF/3/MRMT	3	67	38	6977	59.1	67.7
049	182L1633	9502008A/DREW//CFX26/WLLS/4/CPRS/3/CFX29//AR1142/LA2031/5/RICO	2	67	40	6976	57.8	66.0
109	181L2056	FRAN/LKST	3	65	44	6970	58.9	68.8
037	182L1506	CL151/4/CL131/3/CPRS/KBNT//9502008A	3	71	39	6959	58.4	67.7
039	182L1571	CL111/CHNR/6/CPRS/KBNT//WLLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WLLS/CFX18	2	70	41	6948	59.8	67.7
065	182M1931	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	2	72	42	6925	57.7	64.6
077	181L1600	FRAN/LKST	3	66	44	6908	58.3	68.2
117	183L2052	TRNS/5/CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	2	60	40	6903	58.4	68.1

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
125	183L2078	CTHL/3/CTHL//TRNS/BASF1-10	2	62	44	6901	53.4	67.8
147	Cheniere	Cheniere	3	68	37	6884	61.4	70.0
061	182M1820	NPTN/3/NPTN//BNGL/CL161	2	71	39	6879	47.4	59.0
146	CL153	CL153	3	69	43	6875	58.0	67.2
041	182L1584	CPRS/KBNT//WLLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	3	72	41	6846	60.8	68.0
064	182M1928	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	2	67	42	6845	53.4	64.0
028	182L1425	CHNR/CL111	3	68	40	6842	57.2	68.4
050	182L1681	CL151/CL111	2	66	43	6835	55.9	66.1
048	182L1627	CL163/CL153	2	71	43	6802	59.3	67.6
140	Mermentau	Mermentau	2	65	40	6801	62.0	69.2
063	182M1926	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	2	74	40	6791	52.8	63.4
067	181L1538	TGRT/3/TRNS//CCDR/JEFF	3	69	41	6762	53.5	67.9
034	182L1485	CPRS/KBNT//WLLS/CFX18/3/MBLE/3/CL151	2	70	44	6754	55.6	67.5
135	183L1170	CHNR//CCDR/JEFF/3/BASF2-22	4	67	38	6711	60.7	67.3
052	182L1685	CL151/CL111	2	69	41	6692	57.4	67.2
136	183L1180	CHNR/BASF1-12	3	66	38	6605	55.5	65.8
142	173L2039	CHENIERE//CCDR/JEFF/3/BASF 2-22	4	66	37	6599	56.7	65.1
129	183L1050	PSDO/MRMTBCR048-5	3	63	32	6574	57.5	68.4
030	182L1430	CHNR/CL111	3	70	39	6528	59.1	68.2
044	182L1594	FRAN/6/CFX18//CCDR/9770532DH2/5/9502008/3/CPRS//82CAY21/TBNT/4/CFX18	3	69	40	6499	58.5	67.9
059	182M1792	NPTN//BNGL/CL161/3/NPTN	3	73	39	6498	54.5	63.3
062	182M1923	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	2	72	39	6470	53.9	64.4
012	182L2167	1502082/CL172	3	70	42	6438	55.9	66.7
101	181L2002	CTHL/MRMT	3	67	40	6289	61.7	69.8
149	PVL108	PVL108	2	64	43	6275	53.6	68.6
031	182L1477	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CFX18//CCDR/9770532 DH2/3/…	2	71	40	6269	54.1	65.5
068	181L1544	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	3	69	43	6189	58.4	67.1
032	182L1478	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CFX18//CCDR/9770532 DH2/3/…	3	65	41	6167	54.5	65.7
091	181M1715	NPTN/4/ORIN/3/MERC/CAM9/MARS/4/BNGL	2	71	38	6158	59.5	65.7
128	183L1049	PSDO/MRMTBCR048-5	3	66	37	6152	54.9	69.4

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
001	182L2040	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	2	69	42	6072	60.7	68.8
131	183L1059	PSDO/MRMT/MRMTBCR048-5	3	62	37	6017	58.1	69.2
132	183L1071	CHNR/MRMTBCR048-5	3	69	39	5975	56.8	67.8
043	182L1592	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	2	67	43	5921	57.5	66.3
060	182M1808	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	2	68	41	5848	48.5	61.0
115	183L2011	MRMTBCR048(5)/MRMT	3	63	44	5825	54.4	65.2
051	182L1683	CL151/CL111	3	69	38	5806	56.0	66.7
040	182L1583	CPRS/KBNT//WLLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	2	71	40	5763	52.5	64.8
114	183L2007	CHNR/BASF1-6//TRNS	2	70	43	5697	51.8	64.3
123	183L2070	PVL01/LKST	3	72	42	5666	54.2	63.6
047	182L1626	CL163/CL153	3	69	43	5533	53.6	63.6
057	182M1780	NPTN//BNGL/CL161/3/NPTN	2	72	42	5514	51.0	61.5
124	183L2073	PVL01/LKST	2	71	45	5393	50.0	62.0
053	172L3156	CPRS/KBNT//CFX29/CCDR/3/06CFP952/4/9502008A/DREW//CLR20/3/CL111	2	70	43	5388	52.2	64.0
116	183L2020	CTHL//CPRS/BASF1-13	3	61	43	5382	48.2	65.4
026	182A1366	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	2	67	40	5379	53.9	64.5
126	183L1027	9302065/MRMTBCR048-7	2	74	43	5369	51.4	61.9
138	183L1231	CTHL//CPRS/BASF1-13	3	60	44	5366	55.9	65.2
118	183L2057	PVL01/MRMT	2	64	41	5268	49.9	63.6
148	PVL01	PVL01	2	78	36	5213	49.5	60.4
130	183L1052	PSDO/MRMTBCR048-5	2	61	38	5192	50.8	67.2
134	183L1093	9502008-A//AR1188/CCDR/3/RU0602128/4/MRMTBCR048-5	2	64	41	5017	52.7	62.6
127	183L1042	PSDO/MRMTBCR048-5	2	65	40	4787	55.2	66.4
058	182M1790	NPTN//BNGL/CL161/3/NPTN	2	72	40	4638	50.5	69.3
054	172L3157	CPRS/KBNT//CFX29/CCDR/3/06CFP952/4/9502008A/DREW//CLR20/3/CL111	2	70	45	4271	51.7	65.2
056	182M1776	NPTN/3/NPTN//BNGL/CL161	3	72	38	4195	45.0	55.2
133	183L1089	MRMT/CPRSBCR045-5	2	59	36	2187	57.9	69.0

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 3. Grain and agronomic performance of entries in the 2019 Regional Yield test, Calcasieu Parish, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
141	RiceTec	CLXL745	5	72	43	4491
122	183L2069	PVL01/CTHL	4	76	38	4430
013	182L2180	CL153/LKST	6	78	37	4249
035	182L1486	CL131/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9302065/3/CGX-29/AR1142/LA2031	4	77	39	4060
104	181L2008	CTHL/MRMT	5	78	37	4049
008	182L2137	CFX-18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9602065/3/CFX-29/AR1142/LA2031	5	77	38	3979
085	181A1664	JZMN2/CTHL	5	76	41	3851
014	182L2194	CL172/CL153	5	78	43	3822
096	181M1740	LFTE/BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	2	79	38	3806
089	181L1694	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	4	77	38	3715
025	182L1337	CL131/CHNR/4/CPRS/KBNT//9502008A/3/CCDR/JEFF	3	78	37	3711
011	182L2166	1502082/CL172	4	78	39	3665
113	181L2112	CL172/PSDO	5	79	41	3651
119	183L2064	PVL01/CTHL	4	78	44	3640
012	182L2167	1502082/CL172	4	78	40	3637
108	181L2027	MS4077/CTHL	5	80	39	3622
084	181L1660	CTHL/MRMT	4	77	39	3612
082	181L1654	CTHL/MRMT	4	77	40	3610
022	182L1240	TRNS//TRNS/CL131	3	75	39	3608
073	181L1578	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	3	80	39	3596
083	181L1657	CTHL/MRMT	4	77	38	3588
102	181L2005	CTHL/MRMT	4	78	39	3583
071	181L1576	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	4	75	40	3539
042	182L1587	CPRS/KBNT//WLLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//KATY	2	77	36	3539
023	182L1278	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/MBLE	3	77	40	3514
105	181L2015	JZMN2/CTHL	4	80	36	3466
136	183L1180	CHNR/BASF1-12	4	76	40	3465
140	Mermentau	Mermentau	4	74	39	3451
087	181L1691	MS4077/CTHL	4	77	44	3450
038	182L1558	CTHL/4/CCDR/3/CPRS/KBNT//WLLS/CFX18	3	76	39	3426
110	181L2063	CPRS/LKST	6	78	39	3376

Continued.

Table 3. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
143	Titan	Titan	3	77	40	3374
138	183L1231	CTHL//CPRS/BASF1-13	5	74	45	3372
075	181L1593	TRNS//CCDR/JEFF/4/9502008A//AR1188/CCDR/3/CCDR/JEFF	3	77	38	3351
072	181L1577	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	4	76	41	3306
017	182L1136	CCDR/JEFF//CFX26/9702128/3/CL151	3	78	38	3279
009	182L2164	1502082/CL172	5	79	38	3270
086	181L1689	MS4077/CTHL	5	79	38	3268
111	181L2074	CTHL/MRMT	7	78	37	3252
106	181L2016	JZMN2/CTHL	5	78	36	3250
120	183L2066	PVL01/CTHL	4	78	39	3240
149	PVL108	PVL108	3	75	42	3228
027	182A1367	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	79	34	3177
005	182L2066	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/CHNR	4	78	37	3157
147	Cheniere	Cheniere	4	78	36	3154
135	183L1170	CHNR//CCDR/JEFF/3/BASF2-22	6	81	38	3139
043	182L1592	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	79	42	3137
090	171L1647	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	3	78	36	3094
010	182L2165	1502082/CL172	4	78	42	3084
128	183L1049	PSDO/MRMTBCR048-5	4	79	37	3084
099	181M1763	NPTN/JPTR	4	80	37	3051
003	182L2043	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	4	77	38	3018
020	182L1236	TRNS//TRNS/CL131	4	74	44	3002
088	181L1692	MS4077/CTHL	4	80	42	2979
103	181L2007	CTHL/MRMT	4	78	38	2965
016	182L1134	CCDR/JEFF//CFX26/9702128/3/CL151	3	78	39	2948
048	182L1627	CL163/CL153	3	78	43	2946
142	173L2039	CHENIERE//CCDR/JEFF/3/BASF 2-22	5	78	37	2896
030	182L1430	CHNR/CL111	3	76	39	2886
039	182L1571	CL111/CHNR/6/CPRS/KBNT//WLLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WLLS/CFX18	3	77	38	2885
007	182L2094	CPRS/KBNT//WLLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//KATY	4	78	37	2867
121	183L2067	PVL01/CTHL	5	78	42	2863
112	181L2083	CTHL/CL153	5	79	40	2854

Continued.

Table 3. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
018	182L1138	CCDR/JEFF//CFX26/9702128/3/CL151	4	79	37	2847
036	182L1498	CL161/CHNR	4	77	38	2847
021	182L1237	TRNS//TRNS/CL131	4	75	40	2842
049	182L1633	9502008A/DREW//CFX26/WLLS/4/CPRS/3/CFX29//AR1142/LA2031/5/RICO	3	78	39	2841
046	182L1625	CL163/CL153	5	77	41	2819
150	Jupiter	Jupiter	4	79	36	2816
004	182L2046	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	4	78	40	2780
002	182L2041	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	78	38	2779
015	182L2195	CL172/CL153	5	78	41	2739
145	CL151	CL151	4	77	40	2738
069	181L1550	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	3	76	40	2723
041	182L1584	CPRS/KBNT//WLLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	2	77	39	2718
055	172L3323	CL131/CHNR//TRNS	4	76	38	2664
028	182L1425	CHNR/CL111	4	77	39	2652
137	183L1227	MRMTBCR048-7	5	77	41	2647
064	182M1928	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	3	79	38	2644
100	171M1867	LFTE/BNGL//CFFY	6	79	34	2598
037	182L1506	CL151/4/CL131/3/CPRS/KBNT//9502008A	3	78	37	2597
074	181L1588	CCDR/3/TRNS//CCDR/JEFF	4	78	38	2557
093	181M1725	NPTN/4/BNGL//MERC/RICO/3/MERC/RICO//BNGL	2	80	35	2550
101	181L2002	CTHL/MRMT	5	77	36	2542
029	182L1427	CHNR/CL111	3	78	38	2500
125	183L2078	CTHL/3/CTHL//TRNS/BASF1-10	5	80	45	2494
044	182L1594	FRAN/6/CFX18//CCDR/9770532DH2/5/9502008/3/CPRS//82CAY21/TBNT/4/CFX18	4	77	40	2489
095	181M1736	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL	2	79	39	2480
031	182L1477	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CFX18//CCDR/9770532DH2/3/ CPRS/KBNT//9502008A	3	78	38	2469
098	181M1748	CFFY/3/BNGL/9502065//EARL	3	79	38	2461
146	CL153	CL153	5	78	38	2457
144	CL111	CL111	5	77	38	2456
047	182L1626	CL163/CL153	4	78	44	2445
130	183L1052	PSDO/MRMTBCR048-5	4	75	39	2420
026	182A1366	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	75	38	2416

Continued.

Table 3. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
001	182L2040	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	78	38	2404
076	181L1599	FRAN/LKST	4	79	42	2397
006	182L2076	DREW/5/CPRS/3/9502008A//AR1188/CCDR/4/CPRS/9502008A/3/CFX29//AR1142/LA2031	4	79	35	2368
024	182L1318	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/5/9502008A/DREW/3/NWBT/ KATY//9902207x2	3	77	39	2347
109	181L2056	FRAN/LKST	6	79	42	2346
117	183L2052	TRNS/5/CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	4	75	41	2346
032	182L1478	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CFX18//CCDR/9770532DH2/3/CPRS/ KBNT//9502008A	3	77	37	2343
019	182L1170	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CL161	3	75	39	2335
097	181M1747	CFFY/3/BNGL/9502065//EARL	3	79	39	2330
051	182L1683	CL151/CL111	3	77	40	2285
129	183L1050	PSDO/MRMTBCR048-5	4	77	33	2262
050	182L1681	CL151/CL111	4	77	41	2255
091	181M1715	NPTN/4/ORIN/3/MERC/CAM9/MARS/4/BNGL	3	80	34	2251
033	182L1479	CPRS/KBNT//WLLS/CFX18/3/MBLE/3/CL151	3	78	40	2245
034	182L1485	CPRS/KBNT//WLLS/CFX18/3/MBLE/3/CL151	4	78	41	2226
107	181L2018	MS4077/CTHL	5	79	39	2218
054	172L3157	CPRS/KBNT//CFX29/CCDR/3/06CFP952/4/9502008A/DREW//CLR20/3/CL111	3	78	41	2165
066	181L1537	TGRT/3/TRNS//CCDR/JEFF	5	78	36	2134
092	181M1716	NPTN/4/9502065/3/MERC//MERC/4/9902028	4	79	35	2123
063	182M1926	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	4	82	37	2051
131	183L1059	PSDO/MRMT/MRMTBCR048-5	4	76	36	2044
059	182M1792	NPTN//BNGL/CL161/3/NPTN	3	79	37	2022
116	183L2020	CTHL//CPRS/BASF1-13	5	77	49	1993
040	182L1583	CPRS/KBNT//WLLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	3	78	37	1988
052	182L1685	CL151/CL111	3	76	39	1986
094	181M1729	BNGL//MERC/RICO/3/MERC/RICO//BNGL /4/BNGL/9502065//EARL	2	79	33	1973
065	182M1931	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	3	79	40	1945
053	172L3156	CPRS/KBNT//CFX29/CCDR/3/06CFP952/4/9502008A/DREW//CLR20/3/CL111	2	80	41	1938
068	181L1544	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	4	77	39	1934
118	183L2057	PVL01/MRMT	4	77	38	1872
133	183L1089	MRMT/CPRSBCR045-5	5	79	36	1846

Continued.

Table 3. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
079	181L1603	FRAN/KBNT	5	81	41	1844
080	181L1604	FRAN/KBNT	5	79	43	1810
060	182M1808	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	4	78	38	1807
045	182L1597	TRNS//CL111/CHNR	4	78	36	1787
081	181L1637	FRAN/CPRS	4	80	42	1778
115	183L2011	MRMTBCR048(5)/MRMT	5	75	46	1766
062	182M1923	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	5	80	36	1756
139	Diamond	Diamond	4	78	44	1697
114	183L2007	CHNR/BASF1-6//TRNS	4	80	44	1637
057	182M1780	NPTN//BNGL/CL161/3/NPTN	3	78	38	1634
070	181L1559	TRNS//CCDR/JEFF/3/MRMT	5	78	36	1601
077	181L1600	FRAN/LKST	4	77	42	1549
078	181L1602	FRAN/KBNT	4	80	44	1533
134	183L1093	9502008-A//AR1188/CCDR/3/RU0602128/4/MRMTBCR048-5	4	76	39	1524
124	183L2073	PVL01/LKST	5	79	41	1440
056	182M1776	NPTN/3/NPTN//BNGL/CL161	3	80	37	1428
061	182M1820	NPTN/3/NPTN//BNGL/CL161	3	83	39	1396
058	182M1790	NPTN//BNGL/CL161/3/NPTN	4	78	38	1343
132	183L1071	CHNR/MRMTBCR048-5	5	77	38	1244
148	PVL01	PVL01	4	82	38	1139
067	181L1538	TGRT/3/TRNS//CCDR/JEFF	3	78	37	933
126	183L1027	9302065/MRMTBCR048-7	4	79	45	822
127	183L1042	PSDO/MRMTBCR048-5	4	77	41	782
123	183L2070	PVL01/LKST	5	82	42	770

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 4. Grain and agronomic performance of entries in the 2019 Regional Yield test, Vermilion Parish, LA.

ENT	SOURCE	PEDIGREE	YIELD
141	RiceTec	CLXL745	9660
145	CL151	CL151	7664
043	182L1592	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	7451
032	182L1478	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	7346
062	182M1923	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	7306
061	182M1820	NPTN/3/NPTN//BNGL/CL161	7294
065	182M1931	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	7292
031	182L1477	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	7286
054	172L3157	CPRS/KBNT//CFX29/CCDR/3/06CFP952/4/9502008A/DREW//CLR20/3/CL111	7187
020	182L1236	TRNS//TRNS/CL131	7115
021	182L1237	TRNS//TRNS/CL131	7008
060	182M1808	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	6942
040	182L1583	CPRS/KBNT//WLLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	6905
058	182M1790	NPTN//BNGL/CL161/3/NPTN	6874
022	182L1240	TRNS//TRNS/CL131	6851
002	182L2041	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	6826
016	182L1134	CCDR/JEFF//CFX26/9702128/3/CL151	6734
064	182M1928	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	6729
057	182M1780	NPTN//BNGL/CL161/3/NPTN	6683
059	182M1792	NPTN//BNGL/CL161/3/NPTN	6660
001	182L2040	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	6561
038	182L1558	CTHL/4/CCDR/3/CPRS/KBNT//WLLS/CFX18	6540
011	182L2166	1502082/CL172	6525
140	Mermentau	Mermentau	6464
090	171L1647	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	6455
053	172L3156	CPRS/KBNT//CFX29/CCDR/3/06CFP952/4/9502008A/DREW//CLR20/3/CL111	6450
003	182L2043	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	6435
113	181L2112	CL172/PSDO	6418
018	182L1138	CCDR/JEFF//CFX26/9702128/3/CL151	6397
035	182L1486	CL131/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9302065/3/CGX-29/AR1142/LA2031	6387
041	182L1584	CPRS/KBNT//WLLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	6347

Continued.

Table 4. Continued.

ENT	SOURCE	PEDIGREE	YIELD
033	182L1479	CPRS/KBNT//WLLS/CFX18/3/MBLE/3/CL151	6330
013	182L2180	CL153/LKST	6277
012	182L2167	1502082/CL172	6275
023	182L1278	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/MBLE	6221
014	182L2194	CL172/CL153	6211
052	182L1685	CL151/CL111	6143
006	182L2076	DREW/5/CPRS/3/9502008A//AR1188/CCDR/4/CPRS/9502008A/3/CFX29//AR1142/LA2031	6039
099	181M1763	NPTN/JPTR	5922
146	CL153	CL153	5921
004	182L2046	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	5900
045	182L1597	TRNS//CL111/CHNR	5896
024	182L1318	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/5/9502008A/DREW/3/NWBT/KATY//9902207x2	5869
030	182L1430	CHNR/CL111	5861
009	182L2164	1502082/CL172	5855
034	182L1485	CPRS/KBNT//WLLS/CFX18/3/MBLE/3/CL151	5834
134	183L1093	9502008-A//AR1188/CCDR/3/RU0602128/4/MRMTBCR048-5	5829
019	182L1170	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CL161	5826
036	182L1498	CL161/CHNR	5817
039	182L1571	CL111/CHNR/6/CPRS/KBNT//WLLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WLLS/CFX18	5796
005	182L2066	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/CHNR	5760
010	182L2165	1502082/CL172	5664
143	Titan	Titan	5587
042	182L1587	CPRS/KBNT//WLLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//KATY	5536
136	183L1180	CHNR/BASF1-12	5507
097	181M1747	CFFY/3/BNGL/9502065//EARL	5490
048	182L1627	CL163/CL153	5455
049	182L1633	9502008A/DREW//CFX26/WLLS/4/CPRS/3/CFX29//AR1142/LA2031/5/RICO	5428
026	182A1366	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	5310
046	182L1625	CL163/CL153	5251
027	182A1367	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	5219
017	182L1136	CCDR/JEFF//CFX26/9702128/3/CL151	5197
015	182L2195	CL172/CL153	5181

Continued.

Table 4. Continued.

ENT	SOURCE	PEDIGREE	YIELD
098	181M1748	CFFY/3/BNGL/9502065//EARL	5176
063	182M1926	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	5104
056	182M1776	NPTN/3/NPTN//BNGL/CL161	5018
037	182L1506	CL151/4/CL131/3/CPRS/KBNT//9502008A	5010
047	182L1626	CL163/CL153	4963
028	182L1425	CHNR/CL111	4959
094	181M1729	BNGL//MERC/RICO/3/MERC/RICO//BNGL /4/BNGL/9502065//EARL	4917
025	182L1337	CL131/CHNR/4/CPRS/KBNT//9502008A/3/CCDR/JEFF	4839
055	172L3323	CL131/CHNR//TRNS	4690
074	181L1588	CCDR/3/TRNS//CCDR/JEFF	4533
044	182L1594	FRAN/6/CFX18//CCDR/9770532DH2/5/9502008/3/CPRS//82CAY21/TBNT/4/CFX18	4498
082	181L1654	CTHL/MRMT	4495
149	PVL108	PVL108	4410
095	181M1736	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL	4343
114	183L2007	CHNR/BASF1-6//TRNS	4307
051	182L1683	CL151/CL111	4291
066	181L1537	TGRT/3/TRNS//CCDR/JEFF	4203
050	182L1681	CL151/CL111	4186
132	183L1071	CHNR/MRMTBCR048-5	4116
112	181L2083	CTHL/CL153	4056
029	182L1427	CHNR/CL111	3997
100	171M1867	LFTE/BNGL//CFFY	3923
093	181M1725	NPTN/4/BNGL//MERC/RICO/3/MERC/RICO//BNGL	3887
116	183L2020	CTHL//CPRS/BASF1-13	3883
148	PVL01	PVL01	3851
077	181L1600	FRAN/LKST	3745
139	Diamond	Diamond	3740
076	181L1599	FRAN/LKST	3729
008	182L2137	CFX-18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9602065/3/CFX-29/AR1142/LA2031	3724
135	183L1170	CHNR//CCDR/JEFF/3/BASF2-22	3654
117	183L2052	TRNS/5/CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	3595
122	183L2069	PVL01/CTHL	3588
137	183L1227	MRMTBCR048-7	3554

Continued.

Table 4. Continued.

ENT	SOURCE	PEDIGREE	YIELD
120	183L2066	PVL01/CTHL	3528
072	181L1577	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	3460
007	182L2094	CPRS/KBNT//WLLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//KATY	3401
080	181L1604	FRAN/KBNT	3301
101	181L2002	CTHL/MRMT	3279
096	181M1740	LFTE/BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	3218
107	181L2018	MS4077/CTHL	2930
085	181A1664	JZMN2/CTHL	2921
115	183L2011	MRMTBCR048(5)/MRMT	2908
138	183L1231	CTHL//CPRS/BASF1-13	2897
067	181L1538	TGRT/3/TRNS//CCDR/JEFF	2892
102	181L2005	CTHL/MRMT	2882
108	181L2027	MS4077/CTHL	2881
123	183L2070	PVL01/LKST	2808
075	181L1593	TRNS//CCDR/JEFF/4/9502008A//AR1188/CCDR/3/CCDR/JEFF	2746
128	183L1049	PSDO/MRMTBCR048-5	2738
081	181L1637	FRAN/CPRS	2725
073	181L1578	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	2685
121	183L2067	PVL01/CTHL	2679
087	181L1691	MS4077/CTHL	2676
147	Cheniere	Cheniere	2650
142	173L2039	CHENIERE//CCDR/JEFF/3/BASF 2-22	2625
125	183L2078	CTHL/3/CTHL//TRNS/BASF1-10	2580
084	181L1660	CTHL/MRMT	2580
124	183L2073	PVL01/LKST	2561
089	181L1694	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	2398
109	181L2056	FRAN/LKST	2372
088	181L1692	MS4077/CTHL	2215
091	181M1715	NPTN/4/ORIN/3/MERC/CAM9/MARS/4/BNGL	2181
106	181L2016	JZMN2/CTHL	2164
079	181L1603	FRAN/KBNT	2157
083	181L1657	CTHL/MRMT	2089

Continued.

Table 4. Continued.

ENT	SOURCE	PEDIGREE	YIELD
092	181M1716	NPTN/4/9502065/3/MERC//MERC/4/9902028	2055
104	181L2008	CTHL/MRMT	2037
126	183L1027	9302065/MRMTBCR048-7	2029
119	183L2064	PVL01/CTHL	2027
078	181L1602	FRAN/KBNT	2018
070	181L1559	TRNS//CCDR/JEFF/3/MRMT	1947
130	183L1052	PSDO/MRMTBCR048-5	1944
131	183L1059	PSDO/MRMT/MRMTBCR048-5	1914
110	181L2063	CPRS/LKST	1836
103	181L2007	CTHL/MRMT	1711
118	183L2057	PVL01/MRMT	1699
129	183L1050	PSDO/MRMTBCR048-5	1597
111	181L2074	CTHL/MRMT	1576
127	183L1042	PSDO/MRMTBCR048-5	1408
069	181L1550	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	1360
086	181L1689	MS4077/CTHL	1243
105	181L2015	JZMN2/CTHL	1209
133	183L1089	MRMT/CPRSBCR045-5	1204
144	CL111	CL111	1177
068	181L1544	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	1139
071	181L1576	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	1090
150	Jupiter	Jupiter	n/a

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 5. Grain and agronomic performance of entries in the 2019 Regional Yield test, Tensas Parish, LA.

ENT	SOURCE	PEDIGREE	YIELD
066	181L1537	TGRT/3/TRNS//CCDR/JEFF	11415
099	181M1763	NPTN/JPTR	10941
095	181M1736	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL	10391
098	181M1748	CFFY/3/BNGL/9502065//EARL	10322
037	182L1506	CL151/4/CL131/3/CPRS/KBNT//9502008A	10122
139	Diamond	Diamond	10076
057	182M1780	NPTN//BNGL/CL161/3/NPTN	10023
112	181L2083	CTHL/CL153	10019
059	182M1792	NPTN//BNGL/CL161/3/NPTN	10013
069	181L1550	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	10010
123	183L2070	PVL01/LKST	10003
141	RiceTec	CLXL745	9986
093	181M1725	NPTN/4/BNGL//MERC/RICO/3/MERC/RICO//BNGL	9957
062	182M1923	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	9936
145	CL151	CL151	9923
147	Cheniere	Cheniere	9904
150	Jupiter	Jupiter	9898
065	182M1931	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	9846
148	PVL01	PVL01	9845
025	182L1337	CL131/CHNR/4/CPRS/KBNT//9502008A/3/CCDR/JEFF	9833
146	CL153	CL153	9822
074	181L1588	CCDR/3/TRNS//CCDR/JEFF	9816
115	183L2011	MRMTBCR048(5)/MRMT	9788
056	182M1776	NPTN/3/NPTN//BNGL/CL161	9755
122	183L2069	PVL01/CTHL	9705
058	182M1790	NPTN//BNGL/CL161/3/NPTN	9683
113	181L2112	CL172/PSDO	9606
067	181L1538	TGRT/3/TRNS//CCDR/JEFF	9594
094	181M1729	BNGL//MERC/RICO/3/MERC/RICO//BNGL /4/BNGL/9502065//EARL	9555
124	183L2073	PVL01/LKST	9519
096	181M1740	LFTE/BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	9481
006	182L2076	DREW/5/CPRS/3/9502008A//AR1188/CCDR/4/CPRS/9502008A/3/CFX29//AR1142/LA2031	9462

Continued.

Table 5. Continued.

ENT	SOURCE	PEDIGREE	YIELD
097	181M1747	CFFY/3/BNGL/9502065//EARL	9428
144	CL111	CL111	9428
011	182L2166	1502082/CL172	9394
022	182L1240	TRNS//TRNS/CL131	9382
061	182M1820	NPTN/3/NPTN//BNGL/CL161	9367
084	181L1660	CTHL/MRMT	9339
103	181L2007	CTHL/MRMT	9294
090	171L1647	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	9278
089	181L1694	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	9265
102	181L2005	CTHL/MRMT	9220
132	183L1071	CHNR/MRMTBCR048-5	9213
036	182L1498	CL161/CHNR	9166
126	183L1027	9302065/MRMTBCR048-7	9145
121	183L2067	PVL01/CTHL	9139
120	183L2066	PVL01/CTHL	9120
114	183L2007	CHNR/BASF1-6//TRNS	9067
031	182L1477	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	9066
082	181L1654	CTHL/MRMT	9056
083	181L1657	CTHL/MRMT	8998
020	182L1236	TRNS//TRNS/CL131	8992
108	181L2027	MS4077/CTHL	8992
064	182M1928	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	8989
060	182M1808	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	8984
063	182M1926	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	8939
042	182L1587	CPRS/KBNT//WLLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//KATY	8914
136	183L1180	CHNR/BASF1-12	8847
091	181M1715	NPTN/4/ORIN/3/MERC/CAM9/MARS/4/BNGL	8830
055	172L3323	CL131/CHNR//TRNS	8797
052	182L1685	CL151/CL111	8790
109	181L2056	FRAN/LKST	8787
072	181L1577	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	8781
077	181L1600	FRAN/LKST	8776

Continued.

Table 5. Continued.

ENT	SOURCE	PEDIGREE	YIELD
137	183L1227	MRMTBCR048-7	8755
143	Titan	Titan	8743
068	181L1544	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	8742
024	182L1318	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/5/9502008A/DREW/3/NWBT/KATY//9902207x2	8741
035	182L1486	CL131/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9302065/3/CGX-29/AR1142/LA2031	8736
021	182L1237	TRNS//TRNS/CL131	8709
107	181L2018	MS4077/CTHL	8702
101	181L2002	CTHL/MRMT	8658
054	172L3157	CPRS/KBNT//CFX29/CCDR/3/06CFP952/4/9502008A/DREW//CLR20/3/CL111	8654
005	182L2066	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/CHNR	8639
048	182L1627	CL163/CL153	8611
046	182L1625	CL163/CL153	8603
119	183L2064	PVL01/CTHL	8569
047	182L1626	CL163/CL153	8555
017	182L1136	CCDR/JEFF//CFX26/9702128/3/CL151	8544
016	182L1134	CCDR/JEFF//CFX26/9702128/3/CL151	8529
045	182L1597	TRNS//CL111/CHNR	8494
111	181L2074	CTHL/MRMT	8493
026	182A1366	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	8485
092	181M1716	NPTN/4/9502065/3/MERC//MERC/4/9902028	8481
110	181L2063	CPRS/LKST	8472
002	182L2041	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	8453
009	182L2164	1502082/CL172	8444
050	182L1681	CL151/CL111	8443
075	181L1593	TRNS//CCDR/JEFF/4/9502008A//AR1188/CCDR/3/CCDR/JEFF	8427
142	173L2039	CHENIERE//CCDR/JEFF/3/BASF 2-22	8409
071	181L1576	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	8401
140	Mermentau	Mermentau	8400
018	182L1138	CCDR/JEFF//CFX26/9702128/3/CL151	8398
076	181L1599	FRAN/LKST	8390
104	181L2008	CTHL/MRMT	8369
040	182L1583	CPRS/KBNT//WLLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	8361

Continued.

Table 5. Continued.

ENT	SOURCE	PEDIGREE	YIELD
004	182L2046	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	8360
029	182L1427	CHNR/CL111	8354
070	181L1559	TRNS//CCDR/JEFF/3/MRMT	8331
014	182L2194	CL172/CL153	8266
034	182L1485	CPRS/KBNT//WLLS/CFX18/3/MBLE/3/CL151	8265
039	182L1571	CL111/CHNR/6/CPRS/KBNT//WLLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WLLS/CFX18	8255
100	171M1867	LFTE/BNGL//CFFY	8246
019	182L1170	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CL161	8245
149	PVL108	PVL108	8207
015	182L2195	CL172/CL153	8192
073	181L1578	CPRS/KBNT//9502008A/3/CCDR/JEFF/4/MRMT	8188
051	182L1683	CL151/CL111	8165
134	183L1093	9502008-A//AR1188/CCDR/3/RU0602128/4/MRMTBCR048-5	8155
023	182L1278	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/MBLE	8139
027	182A1367	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	8125
088	181L1692	MS4077/CTHL	8116
010	182L2165	1502082/CL172	8097
032	182L1478	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	8077
043	182L1592	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	8060
001	182L2040	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	8031
118	183L2057	PVL01/MRMT	8020
003	182L2043	CL111/4/CPRS/9502008A//AR1188/CCDR/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	8019
044	182L1594	FRAN/6/CFX18//CCDR/9770532DH2/5/9502008/3/CPRS//82CAY21/TBNT/4/CFX18	8005
041	182L1584	CPRS/KBNT//WLLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	7989
007	182L2094	CPRS/KBNT//WLLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//KATY	7986
033	182L1479	CPRS/KBNT//WLLS/CFX18/3/MBLE/3/CL151	7949
087	181L1691	MS4077/CTHL	7929
081	181L1637	FRAN/CPRS	7899
135	183L1170	CHNR//CCDR/JEFF/3/BASF2-22	7861
030	182L1430	CHNR/CL111	7856
129	183L1050	PSDO/MRMTBCR048-5	7853
085	181A1664	JZMN2/CTHL	7831

Continued.

Table 5. Continued.

ENT	SOURCE	PEDIGREE	YIELD
105	181L2015	JZMN2/CTHL	7829
038	182L1558	CTHL/4/CCDR/3/CPRS/KBNT//WLLS/CFX18	7781
078	181L1602	FRAN/KBNT	7777
013	182L2180	CL153/LKST	7758
106	181L2016	JZMN2/CTHL	7712
079	181L1603	FRAN/KBNT	7696
125	183L2078	CTHL/3/CTHL//TRNS/BASF1-10	7569
028	182L1425	CHNR/CL111	7560
053	172L3156	CPRS/KBNT//CFX29/CCDR/3/06CFP952/4/9502008A/DREW//CLR20/3/CL111	7496
080	181L1604	FRAN/KBNT	7488
049	182L1633	9502008A/DREW//CFX26/WLLS/4/CPRS/3/CFX29//AR1142/LA2031/5/RICO	7392
116	183L2020	CTHL//CPRS/BASF1-13	7313
128	183L1049	PSDO/MRMTBCR048-5	7221
130	183L1052	PSDO/MRMTBCR048-5	7192
127	183L1042	PSDO/MRMTBCR048-5	7163
138	183L1231	CTHL//CPRS/BASF1-13	7082
086	181L1689	MS4077/CTHL	7056
012	182L2167	1502082/CL172	7055
008	182L2137	CFX-18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9602065/3/CFX-29/AR1142/LA2031	7047
117	183L2052	TRNS/5/CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	6993
133	183L1089	MRMT/CPRSBCR045-5	6438
131	183L1059	PSDO/MRMT/MRMTBCR048-5	6312

CLEARFIELD EXPERIMENTAL LINES

Clearfield Experimental Trial

The Clearfield Experimental trial is conducted by the Rice Breeding Project in the major rice growing regions in Louisiana and Texas. The objective of this trial is to evaluate the adaptation and stability of advanced experimental Clearfield lines for a number of important agronomic and yield characteristics.

Test locations in 2019 included the H. Rouse Caffey Rice Research Station (HRCRRS) at Crowley and three on-farm test sites in Vermilion and Richland parishes, Louisiana, and Wharton County, Texas.

Thirty-five entries were tested in Louisiana as well as in Texas in a randomized complete block design with three replications. Varieties were seeded at 90 lb/A. Planting dates were: HRCRRS, March 21; Vermilion, March 17; Richland, May 1; and Wharton, March 4. Harvest dates were: HRCRRS, Aug. 2; Vermilion, Aug. 15; Richland, Aug. 21; and Wharton, July 18. Results from these trials are shown in Tables 1-4.

Table 1. Grain and agronomic performance of entries in the 2019 Clearfield experimental trial, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
035	RiceTec	CLXL745	2	71	40	9961	60.5	71.3
018	1602097	CL131/TRNS	4	78	39	9036	64.7	70.3
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	3	78	35	8889	62.5	70.2
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	76	39	8824	63.2	70.3
016	1902146	TRNS//TRNS/CL131	3	72	38	8731	63.3	69.8
004	1902037	CL162/3/TRNS//CCDR/JEFF	4	77	35	8695	64.9	70.2
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	4	79	35	8627	66.4	72.1
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/ KATY/3/ 9502008/4/CLR9/…	4	77	36	8546	60.1	70.7
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/ CLR11/4/ 9302065/3/CFX29/…	3	77	39	8507	64.5	71.7
030	CL151	CL151	3	78	39	8466	65.1	71.3
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	3	78	40	8446	65.7	71.9
034	1602071	CLH161	7	75	43	8389	61.7	69.9
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	3	80	38	8272	62.9	70.8
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	79	38	8237	64.2	70.6
010	1902170	1002146*4//JZMN/08CLR004	5	77	39	8192	65.4	71.7
014	1902138	CCDR//CFX29/CCDR/3/CCDR	3	78	40	8138	65.0	71.2
027	1702165	CFFY/CL261	3	78	37	8100	68.7	71.8
023	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC// MERC/3/9902028	3	73	39	7941	66.1	71.3
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/ KBNT//…	3	80	36	7940	67.5	72.1
029	0902011	CL111	3	76	37	7935	64.8	72.0
005	1902106	KBNT/CL111	3	79	36	7932	66.4	71.1
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	3	80	38	7920	65.0	71.1
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	5	77	35	7903	64.3	73.7
028	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	3	80	36	7865	66.1	70.6
031	1402134	CL153	4	79	38	7861	64.5	70.5
033	1602088	CLJ01	3	80	36	7808	66.9	71.2
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	3	80	37	7710	65.3	71.7
007	1902130	CHNR/3/CCDR//CFX29/CCDR	5	75	36	7678	63.4	71.9
032	1402008	CL272	3	80	38	7602	63.9	70.2

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	4	79	34	7583	65.6	70.9
025	1902174	NPTN//BNGL/CL161/3/NPTN	6	80	32	7536	66.9	70.0
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/ 9770532DH2/3/CPRS/KBNT//…	4	77	39	7406	64.1	70.3
019	1902154	TRNS//TRNS/CL131	5	80	35	7246	64.6	70.9
026	1602088	CLJ01	5	78	40	7130	63.8	69.2
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/ CPRS/KBNT//WLLS/…	3	81	36	7100	66.9	71.4

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 2. Grain and agronomic performance of entries in the 2019 Clearfield experimental trial, Vermilion Parish, LA.

ENT	SOURCE	PEDIGREE	HDT	YIELD
035	RiceTec	CLXL745	69	10401
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	75	8807
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/…	75	8737
014	1902138	CCDR//CFX29/CCDR/3/CCDR	73	8445
028	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	78	8290
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	79	8221
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	76	8217
032	1402008	CL272	79	8121
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	78	8040
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	82	7974
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	78	7792
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	75	7695
018	1602097	CL131/TRNS	78	7666
016	1902146	TRNS//TRNS/CL131	74	7625
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	73	7621
010	1902130	CHNR/3/CCDR//CFX29/CCDR	72	7499
004	1902037	CL162/3/TRNS//CCDR/JEFF	74	7419
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	74	7397
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/CPRS/KBNT//WLLS/CFX18	80	7397
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/4/9302065/3/CFX29/…	76	7265
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	74	7233
027	1702165	CFFY/CL261	78	7220
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	77	7060
005	1902106	KBNT/CL111	79	6976
023	1902170	1002146*4//JZMN/08CLR004	74	6966
034	1602071	CLH161	78	6772
033	1602088	CLJ01	81	6661
030	CL151	CL151	77	6604
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	75	6442
007	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/CFX29/AR1142/LA2031	74	6350
025	1902174	NPTN//BNGL/CL161/3/NPTN	81	6140
029	0902011	CL111	76	5741

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	HDT	YIELD
019	1902154	TRNS//TRNS/CL131	79	5631
026	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/3/9902028	79	5400
031	1402134	CL153	77	4758

Table 3. Grain and agronomic performance of entries in the 2019 Clearfield experimental trial, Richland Parish, LA.

ENT	SOURCE	PEDIGREE	HTE	YIELD
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	35	7442
025	1902174	NPTN//BNGL/CL161/3/NPTN	35	7251
028	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	38	7133
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	38	6590
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	36	6551
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	34	6319
032	1402008	CL272	38	6112
005	1902106	KBNT/CL111	38	6105
034	1602071	CLH161	45	5972
018	1602097	CL131/TRNS	37	5963
027	1702165	CFFY/CL261	38	5917
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	36	5880
016	1902146	TRNS//TRNS/CL131	37	5879
026	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/3/9902028	41	5744
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/…	37	5729
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	38	5481
035	RiceTec	CLXL745	42	5389
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	33	5339
004	1902037	CL162/3/TRNS//CCDR/JEFF	34	5315
031	1402134	CL153	38	5308
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	36	5269
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	36	5071
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/CPRS/KBNT//WLLS/CFX18	37	5022
030	CL151	CL151	38	5016
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	39	5011
033	1602088	CLJ01	33	4782
010	1902130	CHNR/3/CCDR//CFX29/CCDR	38	4734
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	39	4696
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	37	4454
007	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/CFX29/AR1142/LA2031	36	4308
014	1902138	CCDR//CFX29/CCDR/3/CCDR	38	4200
023	1902170	1002146*4//JZMN/08CLR004	35	4135

Continued.

Table 3. Continued.

ENT	SOURCE	PEDIGREE	HTE	YIELD
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/4/9302065/3/CFX29/…	37	3889
029	0902011	CL111	38	3713
019	1902154	TRNS//TRNS/CL131	36	2759

Table 4. Grain and agronomic performance of entries in the 2019 Clearfield experimental trial, Wharton County, TX.

ENT	SOURCE	PEDIGREE	HDT	YIELD
013	1802054	CCDR/JEFF//CFX26/9702128/3/CL151	85	9337
035	RiceTec	CLXL745	80	8912
009	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	85	8879
023	1902170	1002146*4//JZMN/08CLR004	81	8805
031	1402134	CL153	85	8632
024	1702183	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	80	8605
026	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/3/9902028	85	8582
018	1602097	CL131/TRNS	82	8545
014	1902138	CCDR//CFX29/CCDR/3/CCDR	82	8436
003	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/…	80	8385
007	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/CFX29/AR1142/LA2031	81	8366
033	1602088	CLJ01	84	8357
006	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	83	8332
027	1702165	CFFY/CL261	87	8235
025	1902174	NPTN//BNGL/CL161/3/NPTN	87	8127
012	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	81	8090
004	1902037	CL162/3/TRNS//CCDR/JEFF	79	8079
021	1602195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	81	8054
015	1902142	9502008A/DREW//CLR20/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008A	83	8018
001	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/CPRS/KBNT//WLLS/CFX18	84	7998
005	1902106	KBNT/CL111	84	7885
020	1902162	DREW//CHNR/LMNT/5/9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A	85	7846
016	1902146	TRNS//TRNS/CL131	80	7821
032	1402008	CL272	87	7613
019	1902154	TRNS//TRNS/CL131	83	7560
017	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	82	7522
034	1602071	CLH161	85	7488
028	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	87	7335
011	1802050	CCDR/JEFF//CFX26/9702128/3/CL151	82	7319
010	1902130	CHNR/3/CCDR//CFX29/CCDR	81	7242
022	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/4/9302065/3/CFX29/…	83	7105
002	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	81	6868

Continued.

Table 4. Continued.

ENT	SOURCE	PEDIGREE	HDT	YIELD
029	0902011	CL111	83	6729
008	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	80	6646
030	CL151	CL151	83	6171

CLEARFIELD PRELIMINARY YIELD TRIAL

The Clearfield Preliminary Yield trials consist primarily of promising breeding nursery material that is ready to be tested in replicated yield trials. The material in these trials was screened for agronomic and grain characteristics in nurseries prior to this phase of testing. Promising experimental lines were evaluated for seedling vigor, maturity, plant height, lodging resistance, grain yield of main crop, and disease resistance.

Tests were conducted using standard agronomic practices (except that fungicides were not applied) at the H. Rouse Caffey Rice Research Station (HRCRRS) at Crowley, LA. A randomized complete block design was applied to arrange test entries. The plot size was 4.66 x 16 ft. Seeding rate was 90 lb/A. The Clearfield Preliminary Yield Long-Grain trial was drill seeded on March 5 and harvested on July 25 and 26. The Clearfield Preliminary Yield Medium-Grain trial was drill seeded on March 15 and harvested on Aug. 1 and 2. Data is presented for the long-grain test in Table 1 and for the medium-grain test in Table 2.

Table 1. Grain and milling yields and agronomic performance of entries in the 2019 Clearfield Preliminary Yield Long-Grain trial, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
276	192L1276	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	88	45	11669	64.7	71.0
748	GEMINI214CL	GEMINI214CL	4	86	46	10795	65.3	70.2
727	192L1727	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	3	83	43	10764	65.8	69.6
662	192L1662	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	84	42	10629	64.7	69.1
724	192L1724	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	3	84	40	10583	65.1	69.7
564	192L1564	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/6/TCRI/3/CPRS//82CAY21/…	4	84	39	10576	61.7	70.0
687	192L1687	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/CTHL/5/…	3	81	36	10537	66.4	71.2
738	192L1738	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	85	43	10502	66.4	70.4
219	192L1219	1502068/CL153	3	87	42	10502	63.9	70.0
463	192L1463	CL153/CL261	3	83	41	10442	66.1	72.5
081	192L1081	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	83	43	10423	67.6	72.4
343	192L1343	TRNS//TRNS/CL131	4	80	40	10275	66.0	70.8
279	192L1279	1502068/CL153	4	84	42	10219	66.0	71.5
541	192L1541	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	5	83	40	10203	59.7	70.3
596	192L1596	1502068//CL153/CL151	4	83	43	10187	66.1	70.5
376	192L1376	CL153/LKST	4	82	39	10158	64.3	69.8
120	192L1120	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	84	41	10157	64.8	69.9
072	192L1072	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	3	86	40	10155	64.4	71.0
747	CLXL745	CLXL745	3	78	45	10152	66.1	71.6
480	192L1480	9502008A/DREW//CLR20/3/CL111/4/CCDR	4	84	41	10149	66.7	71.8
511	192L1511	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	4	79	38	10140	65.0	70.3
544	192L1544	1502068//CL153/CL151	4	83	43	10139	64.7	71.1
703	192L1703	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/CTHL/5/…	3	84	40	10133	67.9	72.7
268	192L1268	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/6/TCRI/3/CPRS//82CAY21/…	4	86	36	10115	66.8	71.4
263	192L1263	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/CTHL/5/…	4	84	38	10082	66.7	72.1
563	192L1563	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	3	84	41	10080	67.3	71.9

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
614	192L1614	1502068//CL153/CL151	4	86	41	10075	65.6	71.6
017	192L1017	CL111/LKST	5	87	42	10071	66.2	71.1
008	192L1008	CL163/CL153	4	83	41	10055	66.6	71.6
188	192L1188	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	5	79	40	10047	65.8	71.4
716	192L1716	9502008A/DREW//CLR20/3/CL111/4/CCDR	4	86	42	10043	67.2	70.9
066	192L1066	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	4	86	41	10028	65.0	71.0
458	192L1458	CL153/LKST	3	81	44	10025	64.7	70.7
643	192L1643	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	83	41	10022	64.9	70.2
111	192L1111	CL163/CL153	3	86	42	10015	66.2	70.1
285	192L1285	CL111/CHNR//CL151	5	87	41	10015	65.5	71.3
289	192L1289	1402174/1502094	4	88	43	10006	66.4	70.6
486	192L1486	CL172/1502115	4	81	41	9994	65.5	70.6
329	192L1329	9502008A/DREW//CLR20/3/CL111/4/CCDR	4	83	41	9993	66.3	71.5
588	192L1588	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	82	39	9982	65.2	70.2
406	192L1406	1402174/CTHL	4	83	43	9982	64.9	71.6
433	192L1433	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/9502008A/DREW//CLR20/3/…	4	85	39	9980	66.0	71.2
049	192L1049	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	85	41	9971	65.1	70.7
014	192L1014	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	3	87	40	9970	65.5	70.7
306	192L1306	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	80	37	9965	65.8	71.2
583	192L1583	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	81	40	9946	64.2	70.0
740	192L1740	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	3	78	41	9935	63.5	68.6
313	192L1313	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	88	38	9935	67.7	71.3
595	192L1595	9502008A/DREW//CLR20/3/CL111/4/CTHL	3	84	44	9930	67.2	71.4
366	192L1366	CL153/CL261	4	84	44	9926	66.1	70.1
303	192L1303	1502068//CL153/CL151	3	85	43	9923	67.0	70.9
253	192L1253	1502068/CL153	4	84	41	9923	64.9	69.8
108	192L1108	1502068/CL153	4	88	41	9901	65.5	71.2
402	192L1402	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/6/TCRI/3/CPRS//82CAY21/…	3	87	39	9896	66.2	71.2
689	192L1689	CL163/CL153	4	86	40	9872	67.5	70.7

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
709	192L1709	CL151/CL111	3	87	41	9847	65.9	70.8
242	192L1242	9502008A/DREW//CLR20/3/CL111/4/CCDR	5	83	41	9847	65.1	70.2
160	192L1160	CL152/DREW//CPRS/3/CPRS	3	86	44	9846	64.2	71.4
721	192L1721	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	85	41	9837	68.8	73.2
171	192L1171	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/9502008A/DREW//CLR20/3/…	4	83	39	9834	65.0	70.3
288	192L1288	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	85	39	9821	68.1	72.6
698	192L1698	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	4	83	43	9814	65.2	70.4
259	192L1259	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/CPRS/KBNT//WELLS/CFX18/3/..	4	87	35	9808	65.7	70.6
265	192L1265	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	87	39	9807	65.7	70.4
178	192L1178	1502068//CL153/CL151	3	83	43	9799	65.1	69.7
311	192L1311	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	4	86	42	9799	64.1	69.2
613	192L1613	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	85	42	9795	65.1	69.8
185	192L1185	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	4	86	41	9795	66.4	70.9
711	192L1711	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	85	40	9791	65.1	69.7
079	192L1079	CL153/CL261	3	83	40	9780	62.1	70.4
737	192L1737	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	84	39	9777	67.7	72.7
661	192L1661	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	86	41	9777	66.5	71.0
139	192L1139	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	4	87	43	9776	66.8	71.6
283	192L1283	1502068//CL153/CL151	4	83	41	9774	66.9	71.4
404	192L1404	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/9502008A/DREW//CLR20/3/…	3	81	39	9772	66.9	71.4
291	192L1291	1402174/1502094	4	88	40	9765	67.5	71.7
134	192L1134	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	4	86	42	9760	65.0	69.6
574	192L1574	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	4	83	42	9756	63.4	68.3
655	192L1655	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	3	79	38	9751	64.2	70.4
685	192L1685	9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/4/CTHL/CL111	3	84	40	9748	66.0	71.6
608	192L1608	CL131/3/CPRS/KBNT//9502008A/4/9502008A/DREW//CLR20/3/9502008A/DREW//CLR20	3	83	39	9748	63.7	69.2
107	192L1107	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	3	85	41	9748	66.6	71.4
388	192L1388	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	3	80	41	9746	65.3	71.3
706	192L1706	CL261/CTHL	4	83	42	9746	67.4	72.1

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
537	192L1537	1402174/1502094	4	90	42	9738	63.1	68.6
653	192L1653	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	83	42	9735	67.8	72.4
235	192L1235	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	88	41	9732	66.1	70.7
734	192L1734	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	2	82	38	9721	64.6	68.7
525	192L1525	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/9502008A/DREW//CLR20/3/…	4	87	35	9720	66.2	71.6
117	192L1117	1402174/CTHL	3	85	40	9718	65.3	70.8
487	192L1487	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	4	82	42	9718	64.5	70.4
152	192L1152	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	3	85	40	9714	67.8	72.1
314	192L1314	9502008A/DREW//CLR20/3/CL111/4/CTHL	4	83	40	9713	63.9	69.7
552	192L1552	TRNS//TRNS/CL131	4	80	43	9713	63.3	69.0
393	192L1393	CL131/3/TRNS//CCDR/JEFF	4	84	38	9712	65.6	70.9
641	192L1641	CL153/CL261	5	83	43	9710	67.0	71.0
222	192L1222	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/4/CPRS/9502008A//AR1188/CCDR	4	83	42	9708		
089	192L1089	9502008A/DREW//CLR20/3/CL111/4/CTHL	4	86	39	9705	67.1	72.0
039	192L1039	CL152/DREW//CPRS/3/CPRS	4	86	44	9700	66.0	70.8
638	192L1638	CL261/CTHL	4	87	47	9697	64.4	69.7
423	192L1423	TRNS//TRNS/CL131	4	79	42	9697	65.2	69.6
672	192L1672	TRNS//TRNS/CL131	4	79	39	9696	64.3	70.4
708	192L1708	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	84	38	9695	67.7	71.6
245	192L1245	CTHL/3/TRNS//9502008A/DREW/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	4	81	43	9690	65.8	71.6
674	192L1674	1402174/1502094	4	90	42	9688	67.1	72.0
308	192L1308	9502008A/DREW//CLR20/3/CL111/4/CTHL	4	85	42	9688	62.8	68.7
398	192L1398	CHNR/6/CPRS/KBNT//9502008A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	4	83	40	9687	63.8	70.1
260	192L1260	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/4/CPRS/9502008A//AR1188/CCDR	3	85	40	9687	67.2	71.9
040	192L1040	CL172/1502115	3	83	39	9680	66.2	71.1
729	192L1729	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	85	40	9679	67.0	71.0

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
193	192L1193	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/4/CPRS/9502008A//AR1188/ CCDR	3	87	42	9676	58.7	67.8
148	192L1148	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	86	39	9670	66.0	70.3
217	192L1217	1402174/CTHL	3	84	41	9668	67.8	72.0
155	192L1155	1402174/CTHL	4	85	44	9668	65.6	70.5
262	192L1262	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	82	43	9667	67.5	71.8
161	192L1161	CL163/CL153	4	88	44	9661	63.9	68.0
206	192L1206	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	87	42	9661	64.6	71.5
084	192L1084	CL153/CL261	4	87	43	9659	66.3	71.5
307	192L1307	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	85	41	9659	66.0	71.0
726	192L1726	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	3	85	40	9655	65.8	69.5
581	192L1581	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/4/CPRS/9502008A//AR1188/ CCDR	3	83	40	9653	65.1	70.0
490	192L1490	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR// 9502008/LGRU	5	81	42	9649	65.8	72.3
338	192L1338	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR// 9502008/LGRU	5	83	40	9646	66.2	71.0
750	CL272	CL272	3	84	37	9638	43.2	70.3
567	192L1567	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	3	86	39	9636	65.3	70.5
714	192L1714	CL172/PSDO	3	87	43	9634	65.3	69.8
294	192L1294	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	84	40	9633	66.0	71.5
745	CL153	CL153	5	85	41	9627	67.4	71.0
597	192L1597	CHNR/CL111	3	84	42	9613	65.9	70.9
112	192L1112	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	5	81	39	9612	65.7	70.8
216	192L1216	CL151/CL111	4	83	41	9604	64.3	69.5
471	192L1471	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	83	38	9601	67.0	71.4
290	192L1290	CL151/RoyJ	3	82	42	9600	67.0	71.7
696	192L1696	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	3	86	42	9595	64.7	70.4
461	192L1461	9502008A/DREW//CLR20/3/CL111/4/CTHL	3	83	40	9591	64.3	71.1
362	192L1362	CL111/CL272	3	79	42	9590	66.3	71.2
110	192L1110	RoyJ/CL153	4	87	38	9588	67.1	71.3

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
339	192L1339	CL152/DREW//CPRS/3/CPRS	4	85	42	9587	66.0	70.0
591	192L1591	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	5	84	39	9585	68.1	72.3
535	192L1535	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008A/LGRU	5	83	44	9584	63.1	69.0
453	192L1453	JZMN/08CLR004//RU0802146/3/JZMN2/4/CLJAZZMAN	3	86	41	9583	64.9	69.9
550	192L1550	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	81	38	9578	66.3	72.2
090	192L1090	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	86	39	9578	68.4	72.7
239	192L1239	9502008A/DREW//CLR20/3/CL111/4/CCDR	5	86	43	9577	65.8	70.4
419	192L1419	9502008A/DREW//CLR20/3/CL111/4/CCDR	4	84	40	9570	64.7	69.6
390	192L1390	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	82	40	9569	64.5	70.1
561	192L1561	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	4	83	42	9566	66.8	72.3
504	192L1504	WELLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CFX18//CCDR/…	4	81	41	9565	64.3	70.5
333	192L1333	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	3	88	43	9564	63.3	68.8
640	192L1640	CPRS/KBNT//9502008A/3/CFX18//CCDR/9770532DH2/4/TRNS//CCDR/JEFF	4	82	37	9560	65.5	69.8
590	192L1590	CL163/CL153	4	85	45	9560	65.4	70.4
560	192L1560	MBLE/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	4	77	33	9558	60.9	71.9
665	192L1665	CL153/LKST	4	82	38	9558	64.0	68.9
114	192L1114	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	86	41	9558	64.3	70.6
479	192L1479	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	87	42	9557	64.0	68.2
218	192L1218	CTHL/3/TRNS//9502008A/DREW/5/TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18	6	85	43	9556	65.2	70.3
589	192L1589	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	78	39	9550	63.2	68.3
199	192L1199	CHNR/CL111	4	86	41	9547	68.7	71.9
034	192L1034	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/6/TCRI/3/CPRS//82CAY21/…	3	88	39	9546	66.1	71.2
713	192L1713	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	3	87	40	9545	65.9	70.3
441	192L1441	CHNR/CL111	4	83	42	9544	67.8	71.1
712	192L1712	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	88	38	9537	69.1	72.1
392	192L1392	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	86	40	9535	65.6	70.9
587	192L1587	CL111/CL272	3	79	39	9533	61.5	68.7

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
073	192L1073	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/CPRS/KBNT//WELLS/CFX18/3/..	4	86	36	9532	66.0	70.9
659	192L1659	CHNR/CL111	3	82	40	9531	66.7	70.9
502	192L1502	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	82	39	9529	64.7	70.3
047	192L1047	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	4	87	42	9529	65.2	70.2
538	192L1538	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	87	40	9528	66.1	71.0
428	192L1428	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	4	83	39	9522	64.2	69.6
140	192L1140	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	4	79	39	9518	65.1	69.9
346	192L1346	9502008A/DREW//CLR20/3/CL111/4/CTHL	4	85	41	9511	65.2	70.1
093	192L1093	CL111/CL272	3	81	40	9507	65.1	71.2
412	192L1412	MRMT/3/FRAN/CLR13//9502008A/DREW	5	83	36	9505	65.6	70.8
539	192L1539	CL111/MBLE	3	78	36	9505	64.7	70.5
464	192L1464	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	4	85	43	9499	66.2	71.1
669	192L1669	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	85	41	9498	67.1	71.0
425	192L1425	CL151/CL111	4	86	41	9494	64.1	70.1
512	192L1512	CL261/CTHL	4	83	44	9483	63.0	70.1
735	192L1735	CTHL/3/TRNS//9502008A/DREW/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	4	82	42	9479	64.0	68.6
181	192L1181	9502008A/DREW//CLR20/3/CL111/4/CTHL	3	84	42	9479	65.2	71.8
474	192L1474	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	87	40	9474	64.7	69.7
399	192L1399	CL151/CL111	3	84	41	9473	66.4	70.7
113	192L1113	CL152/DREW//CPRS/3/CPRS	3	87	44	9470	65.1	69.7
509	192L1509	1502068/CL153	4	84	42	9468	64.0	68.6
749	CLH161	CLH161	6	81	47	9465	64.8	70.3
258	192L1258	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	87	41	9464	66.2	70.3
115	192L1115	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	86	39	9463	67.6	72.0
742	192L1742	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	80	41	9456	67.7	71.4
501	192L1501	CL111//CTHL/CL111	3	86	41	9455	64.9	69.6
446	192L1446	CL111/MBLE	3	73	37	9454	65.2	69.8
011	192L1011	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/CPRS/KBNT//WELLS/CFX18/3/..	4	88	36	9453	64.6	70.0
127	192L1127	1502068/CL153	4	86	42	9452	64.4	69.4

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
534	192L1534	CL111/CL272	4	82	42	9452	65.7	70.8
517	192L1517	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	78	38	9451	65.3	69.3
024	192L1024	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	88	44	9443	64.3	69.7
409	192L1409	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	86	41	9441	65.8	70.2
522	192L1522	CL163/CL153	3	84	45	9440	64.4	68.7
503	192L1503	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/9502008A/DREW//CLR20/3/…	5	83	39	9431	63.8	69.7
465	192L1465	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	5	86	40	9428	63.7	69.1
061	192L1061	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	83	37	9428	67.4	72.1
389	192L1389	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	86	41	9424	64.9	70.7
571	192L1571	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	88	43	9417	66.8	70.1
215	192L1215	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	3	88	43	9415	64.1	69.0
707	192L1707	1502115/CL151	5	86	42	9413	66.2	71.0
426	192L1426	9502008A/DREW//CLR20/3/CL111/4/CCDR	4	83	41	9413	65.0	70.6
162	192L1162	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	5	81	41	9411	65.0	72.8
475	192L1475	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/6/TCRI/3/CPRS//82CAY21/…	4	87	39	9409	66.9	71.7
278	192L1278	CL261/CTHL	3	85	44	9406	60.5	69.2
015	192L1015	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	5	85	43	9401	64.6	70.4
497	192L1497	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	88	41	9393	64.7	70.5
340	192L1340	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	3	86	44	9391	65.6	70.1
255	192L1255	CL111/CL272	4	83	40	9389	66.4	71.4
225	192L1225	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	4	86	41	9384	62.5	68.4
213	192L1213	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/6/CL111/4/CPRS/…	4	88	40	9384	65.4	69.9
261	192L1261	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	85	39	9382	69.2	72.8
484	192L1484	CPRS//CTHL/CL111	4	88	42	9380	65.6	71.3
429	192L1429	CTHL/3/TRNS//9502008A/DREW/5/TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18	4	84	41	9380	65.3	70.5
043	192L1043	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/CTHL/5/…	4	81	40	9377	64.6	69.9

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
468	192L1468	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/6/TCRI/3/CPRS//82CAY21/…	3	85	39	9376	69.0	72.9
197	192L1197	1502068/CL153	3	88	43	9375	65.1	71.1
241	192L1241	CPRS/KBNT//9502008A/3/CCDR/4/CL131	4	84	37	9375	63.5	68.8
380	192L1380	1502068/CL153	4	85	42	9371	63.3	69.5
385	192L1385	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/CPRS/KBNT//WELLS/CFX18/3/..	4	87	38	9369	65.9	71.0
304	192L1304	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	4	87	42	9368	65.9	70.1
234	192L1234	CL153/CL261	3	86	46	9366	66.5	71.2
585	192L1585	CL172/1502115	4	82	42	9357	65.1	70.6
067	192L1067	CLJAZZMAN/4/JZMN/08CLR004//RU0802146/3/JZMN2	5	90	40	9354	66.7	71.2
038	192L1038	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	88	41	9350	65.1	70.6
126	192L1126	CL151/CL111	4	83	40	9347	63.0	69.1
136	192L1136	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9602065/3/CFX29/AR1142/LA2031	3	81	38	9346	67.5	72.6
699	192L1699	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	87	41	9344	66.3	71.0
646	192L1646	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	3	85	39	9340	64.6	69.7
492	192L1492	1502068/CL153	4	82	43	9338	65.0	71.4
420	192L1420	CL152/DREW//CPRS/3/CPRS	3	87	41	9338	66.6	71.0
739	192L1739	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/4/CPRS/9502008A//AR1188/CCDR	4	85	42	9337	64.5	69.0
573	192L1573	CL111/3/9502008A/DREW//CLR20	4	84	38	9332	64.2	69.1
063	192L1063	CL153/LKST	5	84	41	9332	65.6	70.7
673	192L1673	CL151/RoyJ	3	81	42	9328	65.1	69.4
083	192L1083	FRAN/5/LGRU/CLR22/4/96020653CFX29/AR1142/LA2031	3	85	39	9324	66.4	72.2
074	192L1074	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/9502008A/DREW//CLR20/3/…	4	85	39	9324	65.3	70.4
274	192L1274	CL163/CL153	3	86	46	9324	64.5	70.7
226	192L1226	CL153/LKST	3	83	41	9323	64.2	69.2
499	192L1499	CTHL/3/TRNS//9502008A/DREW/5/TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18	5	86	44	9316	66.0	71.5
682	192L1682	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/9502008A/DREW//CLR20/3/…	4	78	38	9315	66.2	70.7
299	192L1299	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	85	42	9309	66.2	71.4

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
068	192L1068	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	89	39	9309	66.3	72.5
688	192L1688	CL153/CL261	4	85	42	9307	66.2	70.5
592	192L1592	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	85	40	9307	66.8	71.4
305	192L1305	CL151/CL111	3	81	42	9306	66.4	70.9
527	192L1527	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	4	84	41	9304	64.9	70.0
221	192L1221	CL111/CHNR//CL151	3	84	38	9303	66.8	71.0
341	192L1341	RoyJ/1502094	4	82	40	9302	67.1	72.0
635	192L1635	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	85	42	9299	65.5	71.5
728	192L1728	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	85	39	9296	63.8	68.5
141	192L1141	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/6/CL111/4/CPRS/…	4	86	41	9294	64.3	69.6
100	192L1100	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/LGRU/CLR11/4/9602065/3/CFX29/ AR1142/LA2031	3	83	40	9294	64.7	71.6
369	192L1369	CTHL/3/TRNS//9502008A/DREW/5/TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18	4	84	41	9284	63.0	68.4
153	192L1153	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	79	41	9281	64.2	69.3
212	192L1212	CL153/CL261	3	84	43	9281	61.3	67.6
324	192L1324	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	7	83	40	9277	64.3	69.9
154	192L1154	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	3	88	39	9272	67.0	71.4
413	192L1413	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	84	41	9271	64.4	69.5
529	192L1529	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	86	42	9270	65.7	69.7
530	192L1530	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	4	86	40	9267	66.7	70.7
143	192L1143	1402174/CTHL	3	83	40	9267	65.2	70.3
555	192L1555	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	4	84	42	9266	68.7	72.7
424	192L1424	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	4	89	43	9266	67.4	72.4
368	192L1368	CL163/CL153	4	85	43	9258	65.1	70.0
312	192L1312	FRAN/5/LGRU/CLR22/4/96020653CFX29/AR1142/LA2031	3	86	36	9257	66.2	71.1
657	192L1657	9502008A/DREW//CLR20/3/CL111/4/CTHL	4	87	43	9255	67.3	71.7
076	192L1076	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	89	38	9255	63.6	72.3

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
315	192L1315	1502085/PSDO	4	85	39	9252	64.9	69.6
292	192L1292	CL111/CL272	3	81	40	9251	65.5	70.5
370	192L1370	1502068/CL153	4	86	42	9250	66.2	71.0
617	192L1617	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	86	40	9249	64.6	70.9
070	192L1070	CL261/CTHL	4	85	42	9245	64.9	71.9
678	192L1678	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	83	41	9245	66.1	70.7
166	192L1166	CL163/CL153	3	83	42	9245	67.1	71.3
645	192L1645	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	4	74	40	9243	63.6	68.8
010	192L1010	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	85	40	9243	64.2	69.9
679	192L1679	1402174/1502094	4	85	40	9237	68.1	72.0
690	192L1690	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	78	40	9237	66.0	71.5
233	192L1233	CL172/PSDO	4	84	42	9237	66.5	71.0
119	192L1119	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	81	38	9235	65.0	70.4
109	192L1109	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	5	86	38	9230	64.2	69.3
337	192L1337	CL131/CHNR//TRNS	4	81	37	9229	66.3	70.1
438	192L1438	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	3	84	40	9227	66.9	71.3
033	192L1033	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	90	43	9226	63.1	72.3
373	192L1373	1502068//CL153/CL151	3	84	43	9222	65.4	70.5
601	192L1601	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	3	82	38	9220	63.8	71.5
122	192L1122	CLJAZZMAN/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	89	37	9218	62.8	70.1
396	192L1396	9502008A/DREW//CLR20/3/CL111/4/CTHL	3	86	40	9218	66.5	71.2
627	192L1627	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	83	40	9215	65.7	70.0
516	192L1516	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	3	90	43	9214	63.8	69.7
650	192L1650	9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/9502008A/DREW//CLR20/4/…	3	84	38	9210	64.3	71.4
334	192L1334	1402174/CTHL	3	82	38	9207	66.4	71.3
232	192L1232	9502008A/DREW//CLR20/4/9502008/LGRU/3/CPRS//82CAY21/TBNT/5/MBLE	3	80	40	9204	64.6	69.7
065	192L1065	CL111/CL272	4	83	39	9197	66.2	71.6
344	192L1344	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	5	84	41	9197	66.6	70.8

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
189	192L1189	MBLE/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	3	77	36	9194	59.3	71.2
642	192L1642	CL152/DREW//CPRS/3/CPRS	3	87	43	9194	60.0	71.9
087	192L1087	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	84	42	9194	65.4	70.8
364	192L1364	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	86	37	9193	65.6	69.4
013	192L1013	CL152/DREW//CPRS/3/CPRS	5	89	43	9187	64.7	70.4
336	192L1336	CL153/LKST	4	85	37	9186	67.3	71.2
257	192L1257	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	83	41	9185	65.9	70.0
639	192L1639	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	3	87	43	9182	63.3	67.8
133	192L1133	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008A/LGRU	4	84	42	9180	66.2	70.7
062	192L1062	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	4	85	38	9178	65.3	70.7
719	192L1719	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	85	41	9177	64.6	69.9
095	192L1095	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	87	41	9176	66.1	71.3
700	192L1700	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	6	85	39	9175	67.4	72.2
431	192L1431	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	84	39	9175	69.2	72.8
317	192L1317	CL153/CL261	4	86	41	9167	64.5	69.4
330	192L1330	CL151/CL111	3	84	38	9165	67.7	71.3
359	192L1359	CL151/CL111	3	79	40	9163	66.8	70.7
025	192L1025	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	85	39	9162	64.7	70.0
723	192L1723	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/9502008A/DREW//CLR20/3/…	4	87	37	9151	65.5	70.2
192	192L1192	1502068//CL153/CL151	3	88	43	9150	62.3	68.1
514	192L1514	CL111/CHNR/6/CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/…	4	81	39	9149	64.5	69.5
437	192L1437	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	86	41	9147	67.0	70.8
335	192L1335	MBLE/4/DREW/CFX18/3/CFX18//CCDR/9770532DH2	3	77	37	9146	65.1	70.7
741	192L1741	RoyJ/1502094	4	86	42	9145	64.0	68.8
006	192L1006	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	4	88	41	9140	63.8	69.4
174	192L1174	CL163/CL153	4	89	43	9140	63.9	69.0
605	192L1605	CL111/CHNR/6/CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/…	3	74	38	9140	66.8	70.8
744	CL172	CL172	4	83	40	9139	66.0	69.9

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
296	192L1296	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	87	40	9137	67.3	71.3
526	192L1526	9502008A/DREW//CLR20/3/CL111/4/CCDR	4	86	43	9130	65.8	71.2
183	192L1183	CL111//CTHL/CL111	3	84	38	9125	64.2	70.1
382	192L1382	CL153/LKST	4	86	39	9122	63.8	69.2
459	192L1459	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	4	82	41	9120	64.4	71.6
663	192L1663	1402174/1502094	3	88	41	9120	65.0	70.2
602	192L1602	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/9502008A/DREW//CLR20/3/…	4	86	39	9116	64.1	68.9
128	192L1128	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	3	89	44	9107	64.5	70.3
091	192L1091	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	4	88	41	9097	65.5	71.1
732	192L1732	CL152/DREW//CPRS/3/CPRS	4	87	42	9097	64.3	68.9
103	192L1103	CL111/5/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/CTHL/6/…	4	83	41	9097	66.3	71.7
342	192L1342	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	84	39	9094	65.6	71.3
195	192L1195	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/4/CPRS/9502008A//AR1188/CCDR	4	83	40	9090	66.6	71.1
444	192L1444	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	85	42	9089	65.0	70.9
280	192L1280	9502008A/DREW//CLR20/3/CL111/4/CTHL	4	84	42	9089	65.4	70.7
736	192L1736	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	84	39	9088	66.9	71.2
473	192L1473	CL111//CTHL/CL111	4	85	39	9083	60.8	67.4
609	192L1609	MBLE/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	4	75	35	9076	67.1	71.4
462	192L1462	CL172/PSDO	4	87	43	9068	64.5	70.3
553	192L1553	CTHL/3/TRNS//9502008A/DREW/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	3	82	41	9064	65.6	72.0
135	192L1135	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	3	88	44	9064	64.3	69.1
318	192L1318	CTHL/3/TRNS//9502008A/DREW/5/TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18	4	85	41	9062	66.3	70.8
443	192L1443	CL163/CL153	3	90	46	9059	60.3	70.7
578	192L1578	PSDO/4/9502008A//AR1188/CCDR/3/CFX26/9702128/5/MRMT	3	86	42	9055	63.6	68.7
322	192L1322	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	84	40	9054	65.6	71.8
637	192L1637	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	84	41	9053	66.6	71.1
214	192L1214	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	3	81	37	9050	64.3	69.5

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
150	192L1150	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	79	38	9046	65.4	70.4
037	192L1037	CL111/MRMT	3	86	39	9038	66.3	70.7
163	192L1163	CL111/CHNR/6/CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/…	4	82	40	9037	64.9	70.0
430	192L1430	1502068//CL153/CL151	3	85	41	9035	65.0	70.5
660	192L1660	CHNR/CL111	4	80	39	9033	66.8	72.0
628	192L1628	CL152/DREW//CPRS/3/CPRS	4	83	43	9032	63.6	68.6
558	192L1558	1402174/PSDO	3	82	39	9031	64.4	70.3
478	192L1478	CL151/CL111	3	87	43	9029	62.7	68.9
159	192L1159	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	87	39	9025	68.2	71.4
358	192L1358	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/6/TCRI/3/CPRS//82CAY21/…	4	85	38	9024	65.7	71.6
604	192L1604	CL111/CHNR//CL151	3	85	43	9015	67.3	71.0
249	192L1249	CL153/CL261	4	81	40	9013	67.8	71.2
224	192L1224	1402174/PSDO	4	86	40	9012	65.5	70.3
131	192L1131	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	5	84	42	9010	65.6	70.6
715	192L1715	CL151/RoyJ	4	84	38	9008	66.3	71.0
267	192L1267	9502008A/DREW//CLR20/3/CL111/4/CCDR	4	86	43	9003	63.1	68.5
545	192L1545	CPRS/KBNT//9502008A/3/CCDR/4/CL131	4	82	37	9002	64.0	69.1
455	192L1455	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	84	39	9001	66.1	71.1
454	192L1454	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	4	78	41	8998	64.7	70.0
016	192L1016	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008A/LGRU	5	88	42	8991	66.2	70.9
528	192L1528	CL153/LKST	4	81	44	8991	63.3	69.0
566	192L1566	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	77	40	8989	66.1	71.0
611	192L1611	CCDR/JEFF//CFX26/9702128/3/CL151	3	86	40	8988	65.1	69.0
416	192L1416	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	3	87	41	8987	66.5	70.7
599	192L1599	9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/4/CTHL/CL111	4	83	42	8986	66.9	71.9
355	192L1355	PSDO/4/9502008A//AR1188/CCDR/3/CFX26/9702128/5/MRMT	4	87	41	8979	64.9	70.2
577	192L1577	CL172/CL153	5	85	42	8979	63.7	68.8
077	192L1077	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	78	40	8977	64.7	70.4

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
297	192L1297	CL131/CHNR//CTHL/CL111	3	88	39	8976	66.8	70.7
572	192L1572	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	2	85	41	8973	65.1	69.9
405	192L1405	CL152/DREW//CPRS/3/CPRS	5	85	43	8971	66.6	71.3
507	192L1507	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	2	83	39	8970	63.8	68.7
733	192L1733	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	78	41	8967	63.4	68.5
664	192L1664	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	5	86	39	8966	66.4	72.1
022	192L1022	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/ CCDR//9502008A/LGRU	4	88	38	8961	64.9	70.7
386	192L1386	CL111/CHNR/6/CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/…	4	79	38	8960	63.8	69.7
548	192L1548	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	5	86	42	8956	64.8	70.3
630	192L1630	9502008A/DREW//CLR20/3/CL111/4/CTHL	3	84	44	8952	66.1	70.9
410	192L1410	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	87	40	8952	66.9	70.9
180	192L1180	1502068/CL153	4	89	43	8950	64.3	70.2
694	192L1694	CL261/CTHL	3	85	41	8950	67.5	72.3
400	192L1400	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/ CL111	5	85	40	8944	65.4	70.1
036	192L1036	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	88	41	8943	67.5	72.1
244	192L1244	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/4/CPRS/9502008A// AR1188/CCDR	4	86	40	8943	64.5	69.2
146	192L1146	CL163/CL153	5	84	41	8942	65.3	70.5
651	192L1651	RoyJ/CL153	4	85	47	8940	65.2	70.5
718	192L1718	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	77	40	8938	65.9	70.3
422	192L1422	1502068//CL153/CL151	4	87	42	8938	66.7	71.4
064	192L1064	RoyJ/CL153	4	87	39	8937	67.9	73.0
007	192L1007	CL111/CL272	4	85	35	8931	65.6	71.4
086	192L1086	CL261/CTHL	4	83	43	8930	65.7	72.0
201	192L1201	CL151/CL111	4	86	42	8924	65.5	70.4
223	192L1223	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	85	38	8923	64.3	69.6
144	192L1144	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/6/TCRI/3/CPRS//82CAY21/…	5	88	39	8923	66.2	70.7
427	192L1427	1502085/PSDO	4	78	38	8920	66.1	71.4

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
415	192L1415	CLJAZZMAN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	88	35	8919	65.5	71.6
328	192L1328	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	78	40	8918	64.4	69.7
547	192L1547	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	83	39	8917	64.9	71.3
094	192L1094	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	85	40	8914	67.7	73.3
020	192L1020	PSDO/4/9502008A//AR1188/CCDR/3/CFX26/9702128/5/MRMT	3	87	43	8913	65.0	70.8
169	192L1169	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	3	89	41	8911	67.3	71.7
570	192L1570	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	91	43	8911	66.1	70.1
540	192L1540	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	85	39	8906	64.5	71.1
230	192L1230	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	83	40	8903	64.6	69.7
085	192L1085	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	5	86	42	8893	63.5	69.4
702	192L1702	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	4	85	42	8890	65.1	70.7
210	192L1210	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	90	41	8890	63.9	70.9
397	192L1397	CL111/CL272	3	81	40	8889	65.5	70.9
190	192L1190	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	78	39	8887	65.4	70.4
198	192L1198	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	4	85	40	8885	65.6	70.6
350	192L1350	CL111/CL272	4	82	40	8884	64.1	69.7
309	192L1309	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	5	78	44	8881	65.9	71.6
618	192L1618	CTHL/4/CCDR/3/CPRS/KBNT//WELLS/CFX18	4	88	41	8879	66.9	71.0
360	192L1360	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	84	39	8878	69.3	73.6
104	192L1104	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	88	42	8876	65.6	70.7
666	192L1666	CPRS/KBNT//9502008A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CHNR//CCDR/JEFF	3	83	35	8871	64.2	71.8
287	192L1287	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	88	37	8870	67.2	72.3
101	192L1101	1402174/CTHL	3	85	42	8867	66.2	72.4
483	192L1483	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	84	40	8866	69.0	73.3
705	192L1705	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	85	40	8856	66.9	71.1
467	192L1467	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	3	80	40	8852	61.5	67.2

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
147	192L1147	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	87	37	8849	66.4	70.8
677	192L1677	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	82	40	8847	66.7	71.7
137	192L1137	1402174/PSDO	3	82	39	8846	68.4	71.8
186	192L1186	CL152/DREW//CPRS/3/CPRS	4	86	44	8844	66.1	70.4
298	192L1298	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	86	40	8840	68.9	72.7
391	192L1391	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	3	86	39	8840	67.7	71.6
562	192L1562	CHNR/4/9502008A//AR1188/CCDR/3/CFX26/9702128	4	82	37	8840	64.3	69.5
349	192L1349	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	86	43	8840	66.7	70.4
332	192L1332	CL111/CHNR//CL151	5	87	43	8836	65.8	71.1
129	192L1129	CL111/CHNR//CL151	5	86	42	8829	65.0	70.8
251	192L1251	9502008A/DREW//CLR20/3/CL111/4/CCDR	4	86	42	8827	67.3	71.5
421	192L1421	1502115/CL151	5	88	44	8825	66.2	70.2
177	192L1177	CL131/3/TRNS//CCDR/JEFF	3	85	36	8823	63.7	68.9
118	192L1118	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/CTHL/5/…	4	84	38	8820	66.5	71.9
236	192L1236	1502085/PSDO	4	87	36	8818	64.3	69.5
248	192L1248	1402174/CTHL	4	87	42	8816	67.1	71.6
671	192L1671	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	83	40	8814	67.4	71.7
600	192L1600	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	88	43	8811	64.7	69.6
693	192L1693	CHNR/CL111	5	83	41	8808	65.6	71.6
623	192L1623	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	3	84	40	8803	63.0	68.1
352	192L1352	1502085/PSDO	3	85	39	8801	66.9	70.7
606	192L1606	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	83	41	8800	64.4	69.4
681	192L1681	CL163/CL153	5	86	44	8800	68.0	71.7
533	192L1533	CL111/CL272	3	88	42	8788	64.0	70.0
045	192L1045	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/CPRS/KBNT//WELLS/CFX18/3/..	4	88	38	8785	66.1	71.0
273	192L1273	MBLE/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	3	73	37	8782	63.2	69.9
442	192L1442	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	4	81	43	8781	67.9	72.0
569	192L1569	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	80	39	8781	65.1	70.4
048	192L1048	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	4	88	42	8780	66.2	70.0

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
316	192L1316	CL151/RoyJ	4	83	38	8780	66.6	71.7
116	192L1116	CL163/CL153	4	91	42	8779	64.7	69.5
743	CL111	CL111	3	79	42	8778	67.0	71.9
489	192L1489	1402174/PSDO	3	82	39	8773	65.1	71.3
088	192L1088	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	5	87	40	8772	67.5	72.1
184	192L1184	9502008A/DREW/3/NWBT/KATY//9902207x2/4/NWBT/KATY//…/5/CL131/CHNR	3	83	36	8770	64.5	70.5
371	192L1371	CL163/CL153	4	90	44	8770	64.5	68.9
179	192L1179	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/6/TCRI/3/CPRS//82CAY21/…	4	85	36	8765	61.3	71.8
046	192L1046	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/6/CL111/4/CPRS/…	4	86	38	8761	66.2	71.2
448	192L1448	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/9502008A/DREW//CLR20/3/…	4	85	39	8760	65.5	70.4
032	192L1032	1402174/CTHL	4	87	43	8758	66.5	71.9
295	192L1295	CL153/CL261	3	84	44	8757	66.4	71.7
491	192L1491	CLJAZZMAN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	87	36	8754	64.4	70.0
515	192L1515	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	87	40	8751	64.2	70.5
375	192L1375	LKST/5/9502008A/DREW//CFX26/WELLS/4/CPRS/3/CFX29//AR1142/LA2031	4	85	35	8749	65.6	70.2
326	192L1326	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	78	38	8740	65.5	70.4
035	192L1035	CL151/CL111	3	85	41	8737	64.7	70.6
668	192L1668	9502008A/DREW//CLR20/3/CL111/4/CTHL	4	91	42	8731	66.4	70.8
616	192L1616	CTHL/3/TRNS//9502008A/DREW/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	86	38	8730	67.3	72.0
477	192L1477	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	4	86	40	8728	64.9	70.4
634	192L1634	CCDR/JEFF//CFX26/9702128/3/CL151	4	85	38	8728	66.0	69.9
436	192L1436	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	4	80	40	8725	66.0	71.0
191	192L1191	CL111/CL272	4	81	41	8724	66.3	70.8
124	192L1124	CL111/MRMT	3	84	40	8722	64.1	69.1
310	192L1310	1402174/CTHL	4	87	41	8718	67.0	72.2
559	192L1559	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	87	39	8716	66.1	71.6
383	192L1383	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	3	85	42	8711	67.1	72.1
293	192L1293	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/4/CPRS/9502008A//AR1188/CCDR	3	86	40	8708	65.9	70.5

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
582	192L1582	CL163/CL153	3	89	42	8708	66.4	70.8
071	192L1071	MBLE/4/9502008A//AR1188/CCDR/3/CFX26/9702128	3	75	35	8702	63.3	73.9
227	192L1227	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	4	77	40	8693	63.7	69.5
387	192L1387	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	3	88	41	8688	66.8	70.9
631	192L1631	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	75	39	8686	63.0	68.2
256	192L1256	CL111/CHNR/6/CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/…	4	79	40	8685	66.0	71.1
440	192L1440	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	5	90	40	8681	65.7	69.9
439	192L1439	FRAN/5/9502008A/DREW//CFX26/WELLS/4/CPRS/3/CFX29//AR1142/LA2031	4	84	35	8680	65.9	70.1
648	192L1648	CL163/CL153	3	87	43	8677	65.1	69.1
030	192L1030	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	87	40	8674	65.9	70.9
207	192L1207	1502115/CL151	4	88	44	8671	63.8	69.2
321	192L1321	CTHL/3/TRNS//9502008A/DREW/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	4	83	37	8665	64.2	70.5
432	192L1432	CL111/CHNR/6/CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/…	4	81	37	8665	63.3	68.8
654	192L1654	CL111/MRMT	4	81	40	8665	66.4	71.2
164	192L1164	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	88	38	8662	63.9	70.5
001	192L1001	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	84	39	8661	65.8	71.3
028	192L1028	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/CPRS/KBNT//WELLS/CFX18/3/..	4	88	36	8657	60.6	68.3
019	192L1019	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/4/CPRS/9502008A//AR1188/CCDR	4	85	42	8656		
138	192L1138	CLJAZZMAN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	85	36	8652	65.0	69.4
187	192L1187	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	89	40	8652	66.0	70.6
543	192L1543	1402174/PSDO	4	82	37	8645	67.9	72.4
394	192L1394	CL111/CL272	3	83	38	8645	63.8	70.4
629	192L1629	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	87	41	8643	61.0	67.1
243	192L1243	CL151/RoyJ	4	85	40	8643	66.4	70.0
505	192L1505	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	85	41	8636	66.1	70.4
270	192L1270	CL111/MRMT	3	79	40	8633	67.6	72.1
622	192L1622	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	4	89	43	8633	65.6	69.1
132	192L1132	CL153/CL261	3	87	42	8633	66.1	70.9
003	192L1003	TRNS//TRNS/CL131	5	83	40	8629	60.3	66.2

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
518	192L1518	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	83	38	8628	67.4	71.8
302	192L1302	CL111/MRMT	4	81	41	8627	66.3	70.7
520	192L1520	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18	3	87	38	8626	67.3	71.3
549	192L1549	CL111/CHNR/6/CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/…	4	74	39	8616	64.5	70.2
361	192L1361	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	3	88	41	8613	65.4	70.3
508	192L1508	CL111/CL272	3	90	42	8613	65.9	71.0
284	192L1284	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/9502008A/DREW//CLR20/3/CL111	4	87	41	8612	64.2	69.2
080	192L1080	CL111/CHNR/6/CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/…	3	78	39	8612	65.4	71.0
450	192L1450	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	5	86	38	8604	65.0	70.1
610	192L1610	1502085/PSDO	4	80	35	8604	66.4	71.3
354	192L1354	RoyJ/1502094	3	90	42	8599	64.9	70.5
004	192L1004	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	84	40	8597	63.5	70.4
209	192L1209	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/6/CL111/4/CPRS/…	4	85	37	8588	62.6	68.7
325	192L1325	CL152/DREW//CPRS/3/CPRS	4	86	42	8582	63.2	70.2
099	192L1099	CHNR/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18	3	84	39	8579	69.2	74.0
607	192L1607	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008/LGRU	4	80	42	8573	69.6	69.0
172	192L1172	CL111/MBLE	3	74	35	8570	64.8	70.6
319	192L1319	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	4	81	39	8570	64.9	70.4
252	192L1252	CL111/CL272	5	84	40	8563	65.6	70.8
372	192L1372	CL111/CL272	3	79	40	8561	66.4	71.4
691	192L1691	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	85	41	8560	66.9	70.9
347	192L1347	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/CPRS/KBNT//WELLS/CFX18/3/..	4	88	38	8558	65.2	69.7
056	192L1056	RoyJ/CL153	4	84	38	8551	66.9	71.1
494	192L1494	CL111/MRMT	3	83	39	8545	65.1	70.4
250	192L1250	CLJAZZMAN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	89	36	8542	63.7	68.3
697	192L1697	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008A/LGRU	5	82	41	8542	65.7	71.7

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
513	192L1513	CLJAZZMAN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	90	37	8542	66.4	71.3
670	192L1670	LKST/5/9502008A/DREW//CFX26/WELLS/4/CPRS/3/CFX29//AR1142/LA2031	5	87	34	8542	66.4	71.2
023	192L1023	CTHL/3/TRNS//9502008A/DREW/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	4	89	42	8539	62.4	69.5
208	192L1208	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	5	84	40	8538	66.7	70.5
158	192L1158	FRAN/5/9502008A/DREW//CFX26/WELLS/4/CPRS/3/CFX29//AR1142/LA2031	3	86	37	8537	64.2	69.2
058	192L1058	1402174/1502094	4	87	42	8536	65.5	70.7
281	192L1281	CL153/CL261	3	84	40	8532	66.5	70.6
636	192L1636	CL163/CL153	3	91	46	8531	61.9	68.2
151	192L1151	CL111/CHNR/6/CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/…	3	79	41	8531	64.8	70.6
374	192L1374	PSDO/4/9502008A//AR1188/CCDR/3/CFX26/9702128/5/MRMT	4	87	40	8529	64.0	69.4
532	192L1532	PSDO/4/9502008A//AR1188/CCDR/3/CFX26/9702128/5/MRMT	4	85	43	8519	68.0	72.1
203	192L1203	RoyJ/1502094	3	89	43	8519	65.7	71.0
536	192L1536	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	79	41	8517	63.0	68.5
021	192L1021	1402174/1502094	4	90	39	8512	66.6	71.8
411	192L1411	9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF/4/9502008A/DREW//CLR20/3/…	5	88	37	8510	64.9	69.9
717	192L1717	1402174/1502094	4	89	41	8510	65.9	69.7
175	192L1175	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	82	41	8502	64.8	70.7
469	192L1469	1402174/CTHL	3	81	43	8499	67.2	72.1
521	192L1521	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/6/CL111/4/CPRS/…	5	90	43	8495	64.9	69.6
200	192L1200	CL153/CL261	4	86	42	8488	68.1	71.6
594	192L1594	CL163/CL153	3	91	43	8481	64.6	69.0
395	192L1395	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	83	39	8481	67.1	72.7
105	192L1105	CL172/PSDO	3	86	43	8480	65.3	70.4
176	192L1176	CL172/PSDO	4	89	45	8468	64.9	70.6
096	192L1096	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	90	40	8463	64.8	71.4
356	192L1356	1502085/PSDO	3	84	36	8461	65.5	71.5
031	192L1031	CL111/CL272	4	81	37	8446	64.3	71.4
482	192L1482	CTHL/3/TRNS//9502008A/DREW/5/TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18	5	88	41	8441	67.5	72.4

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
584	192L1584	CTHL/3/TRNS//9502008A/DREW/4/CPRS/KBNT//WELLS/CFX18/3/AR1188/CCDR//9502008A/LGRU	4	81	43	8440	64.1	69.3
593	192L1593	CL172/PSDO	3	81	40	8440	63.1	69.0
254	192L1254	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	86	39	8439	67.9	71.9
457	192L1457	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	80	40	8436	66.2	70.5
069	192L1069	CL111/MRMT	4	82	37	8431	66.5	72.0
367	192L1367	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	86	40	8425	68.3	72.6
009	192L1009	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	4	82	40	8425	65.7	70.3
619	192L1619	CL111//CTHL/CL111	4	86	41	8422	65.7	69.7
495	192L1495	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	82	38	8422	66.5	72.9
240	192L1240	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	86	38	8414	63.3	68.9
542	192L1542	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	83	38	8410	65.4	70.8
417	192L1417	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	4	85	44	8406	63.3	68.0
580	192L1580	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	5	90	40	8404	66.2	70.1
331	192L1331	CL111/CL272	3	83	38	8403	65.1	70.9
142	192L1142	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	4	85	39	8402	67.7	71.1
524	192L1524	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/6/CL111/4/CPRS/…	4	89	40	8401	64.6	69.9
018	192L1018	CL163/CL153	3	92	49	8399	63.5	72.0
220	192L1220	RoyJ/CL153	5	85	41	8388	65.1	70.4
586	192L1586	CL111/MRMT	4	85	42	8384	62.9	68.8
202	192L1202	PSDO/4/9502008A//AR1188/CCDR/3/CFX26/9702128/5/MRMT	3	84	40	8373	67.5	72.0
554	192L1554	1502085/PSDO	4	79	35	8362	64.6	71.1
644	192L1644	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	88	39	8354	65.2	70.9
102	192L1102	PSDO/4/9502008A//AR1188/CCDR/3/CFX26/9702128/5/MRMT	3	89	40	8349	64.8	70.7
238	192L1238	CL163/CL153	3	88	41	8338	63.5	68.7
506	192L1506	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	84	39	8333	63.5	69.8
435	192L1435	CL261/CTHL	4	84	45	8331	61.5	68.2
106	192L1106	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	87	43	8326	66.1	70.7
053	192L1053	CL111/CHNR//CL151	4	87	41	8320	66.0	71.3
510	192L1510	RoyJ/CL153	6	87	39	8300	65.0	70.6

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
050	192L1050	CL131/CPRS	4	84	36	8299	65.4	71.1
620	192L1620	CL111/CHNR/6/CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/…	4	81	36	8290	65.9	70.2
460	192L1460	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/6/CL111/4/CPRS/…	4	87	41	8289	66.7	71.2
500	192L1500	9502008A/DREW//CLR20/4/CPRS/KBNT//9502008A/5/CL111/4/CPRS/9502008A//AR1188/CCDR	4	83	39	8277	66.4	70.5
078	192L1078	CL163/CL153	3	89	45	8270	65.1	70.5
098	192L1098	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	85	41	8259	65.9	71.1
165	192L1165	CPRS/5/9502008A/DREW/3/NWBT/KATY//9902207x2/4/CFX18//CCDR/…	3	91	40	8258	67.0	71.6
488	192L1488	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	83	38	8255	64.9	71.0
675	192L1675	1402174/CTHL	3	83	42	8241	65.8	70.9
686	192L1686	RoyJ/CL153	5	86	40	8230	66.2	71.0
470	192L1470	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	3	79	39	8222	63.8	69.9
041	192L1041	PSDO/4/9502008A//AR1188/CCDR/3/CFX26/9702128/5/MRMT	4	86	41	8205	66.3	71.6
676	192L1676	CL153/LKST	5	88	39	8204	65.9	70.4
493	192L1493	CL111/CL272	4	86	44	8199	66.4	70.9
624	192L1624	CPRS/KBNT//WELLS/CFX18/3/MBLE/4/CPRS/KBNT//CFX29/CCDR/3/06CFP952	4	88	39	8196	65.8	70.5
365	192L1365	RoyJ/CL153	5	87	39	8186	65.3	69.6
449	192L1449	1502085/PSDO	4	85	40	8180	66.0	71.1
633	192L1633	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	3	80	40	8164	65.0	69.6
683	192L1683	CL153/LKST	4	87	39	8144	67.5	71.7
123	192L1123	CL131/CHNR/9/9602097/...//JAF4/…/6/CCDR/…/7/JAF4/8/FRAN/CLR13	4	88	38	8141	63.2	67.7
704	192L1704	CHNR/6/CPRS/KBNT//9502008A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	3	81	39	8135	60.8	69.3
568	192L1568	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	4	88	40	8132	62.4	68.9
379	192L1379	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	5	90	41	8131	65.7	70.4
357	192L1357	CL151/CL111	4	83	42	8124	67.5	72.2
055	192L1055	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	90	39	8115	65.4	70.4
167	192L1167	CL172/PSDO	4	90	44	8108	65.7	70.6
557	192L1557	CL111/MRMT	3	86	40	8101	65.8	70.1
092	192L1092	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	89	40	8099	64.8	70.6
060	192L1060	CL111/CL272	4	88	37	8098	66.3	70.9

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
418	192L1418	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	3	82	40	8093	65.3	70.6
684	192L1684	CL163/CL153	4	93	43	8091	65.2	69.6
746	CL163	CL163	3	87	42	8087	64.8	69.2
408	192L1408	CL111/CL272	3	89	39	8087	64.3	69.8
632	192L1632	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	87	40	8083	66.2	70.5
266	192L1266	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	3	88	37	8071	66.0	71.2
725	192L1725	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	84	38	8068	66.3	71.2
485	192L1485	PSDO/4/9502008A//AR1188/CCDR/3/CFX26/9702128/5/MRMT	5	86	40	8056	64.8	70.1
027	192L1027	CL111/CL272	3	88	41	8050	64.3	69.6
005	192L1005	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	5	88	40	8047	66.4	71.3
363	192L1363	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	5	88	40	8047	64.1	70.6
621	192L1621	CL172/PSDO	3	87	46	8042	63.9	68.2
701	192L1701	1402174/PSDO	3	81	38	8035	65.8	70.6
012	192L1012	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	5	89	41	8032	61.8	69.2
044	192L1044	CL172/1502115	4	88	39	8029	67.0	72.2
377	192L1377	CL111/CHNR/6/CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/…	4	79	39	8027	65.7	71.7
579	192L1579	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	3	85	40	8024	63.9	68.9
348	192L1348	RoyJ/1502094	4	88	41	8019	66.0	71.0
237	192L1237	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	90	37	8016	66.1	70.6
451	192L1451	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/6/CL111/4/CPRS/…	3	86	39	8013	66.5	70.9
603	192L1603	CL163/CL153	3	83	42	8009	62.6	69.4
275	192L1275	CL111/CL272	3	85	42	8009	65.3	70.5
029	192L1029	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	82	37	8000	64.3	70.2
269	192L1269	1502068/CL153	4	90	43	7998	6..41	70.4
170	192L1170	1502085/PSDO	3	85	38	7997	66.6	71.5
546	192L1546	CL151/RoyJ	4	90	41	7997	64.2	69.3
168	192L1168	CL111/MBLE	5	79	34	7993	65.1	70.0
626	192L1626	1402174/1502094	3	90	40	7979	64.1	69.2
196	192L1196	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	88	37	7976	65.8	70.1
323	192L1323	CL163/CL153	3	92	47	7974	63.5	69.6
556	192L1556	RoyJ/CL153	4	91	38	7974	65.6	70.4

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
720	192L1720	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/6/CL111/4/CPRS/…	4	86	40	7960	66.8	70.4
247	192L1247	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	5	86	39	7949	66.8	71.5
476	192L1476	CL111/MBLE	4	79	37	7949	66.3	71.3
481	192L1481	CPRS/KBNT//WELLS/CFX18/5/TCRI/3/CPRS//82CAY21/TBNT/4/WELLS/CFX18/6/…	4	80	39	7940	65.7	71.0
496	192L1496	1402174/PSDO	4	83	40	7940	64.7	69.9
576	192L1576	CL153/CL261	4	85	42	7933	65.3	70.0
652	192L1652	CL152/DREW//CPRS/3/CPRS	3	83	43	7931	67.4	70.7
615	192L1615	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	5	87	40	7925	65.7	70.4
182	192L1182	CTHL/6/TCRI/3/CPRS//82CAY21/TBNT/4/CFX18/5/CHNR	5	83	38	7917	63.4	69.9
082	192L1082	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	91	39	7895	64.7	70.1
286	192L1286	CLJAZZMAN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	89	37	7887	65.3	70.2
277	192L1277	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/6/CL111/4/CPRS/…	4	89	37	7883	65.6	71.6
565	192L1565	1502085/PSDO	3	83	40	7880	63.0	69.2
026	192L1026	MBLE/4/DREW/CFX18/3/CFX18//CCDR/9770532DH2	3	74	34	7877	63.6	69.4
057	192L1057	1502085/PSDO	3	85	39	7865	66.3	72.4
531	192L1531	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/5/KATY/CPRS//NWBT/KATY/6/CL111/4/CPRS/…	4	84	37	7854	65.1	69.7
054	192L1054	CL172/CL153	4	89	41	7839	64.1	69.5
407	192L1407	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX18/5/TRNS	4	79	41	7836	62.8	70.2
351	192L1351	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	4	88	39	7827	68.2	72.3
466	192L1466	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	89	38	7823	65.1	70.6
229	192L1229	CL111/MBLE	4	73	34	7817	65.3	70.7
130	192L1130	CL153/LKST	3	91	40	7806	62.7	68.2
680	192L1680	RoyJ/CL153	5	87	39	7803	67.7	71.4
194	192L1194	RoyJ/CL153	4	89	37	7769	60.5	67.2
300	192L1300	RoyJ/CL153	5	84	39	7769	68.1	71.9
722	192L1722	CLJAZZMAN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	89	36	7767	68.2	70.9
125	192L1125	CL163/CL153	4	94	43	7766	61.4	68.8

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
075	192L1075	CHNR/6/CPRS/KBNT//9502008A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	4	83	38	7741	65.4	71.7
456	192L1456	CL163/CL153	3	93	44	7707	65.6	71.6
414	192L1414	CHNR/CL111	5	86	39	7706	66.5	70.5
401	192L1401	CL131/CPRS	5	89	36	7704	63.3	69.5
097	192L1097	MRMT/4/9502008A/DREW//CLR20/3/TRNS//CCDR/JEFF	4	88	39	7695	66.0	70.9
612	192L1612	CPRS/KBNT//9502008A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/CHNR//CCDR/JEFF	4	84	36	7692	62.9	68.4
692	192L1692	CL151/RoyJ	4	84	40	7691	66.8	71.4
695	192L1695	CLJAZZMAN/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	85	36	7671	66.0	70.3
051	192L1051	CL111/CL272	4	86	39	7658	64.3	70.0
667	192L1667	CL163/CL153	3	93	44	7657	66.8	71.3
042	192L1042	1402174/PSDO	4	88	39	7635	64.7	69.7
282	192L1282	CL163/CL153	4	85	42	7616	63.9	69.5
381	192L1381	KBNT/CL111	4	88	36	7615	66.8	71.2
231	192L1231	1402174/PSDO	3	79	39	7600	64.8	70.8
445	192L1445	CL111/CL272	3	82	39	7520	64.0	70.1
649	192L1649	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	88	37	7505	58.7	65.5
498	192L1498	CCDR//CLPY003/3/CCDR/JEFF//CPRS	4	80	34	7504	66.6	71.3
472	192L1472	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	5	85	40	7484	68.1	72.7
052	192L1052	CPRS/KBNT//WELLS/CFX18/3/MBLE/6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	88	38	7482	66.0	71.1
523	192L1523	CL163/CL153	4	91	42	7482	64.1	69.4
452	192L1452	MBLE/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A	3	76	35	7476	65.1	70.7
345	192L1345	CL261/CTHL	4	84	44	7466	68.0	73.0
327	192L1327	CHNR/4/CPRS/KBNT//WELLS/CFX18/3/CHNR	5	83	39	7450	64.9	70.4
205	192L1205	RoyJ/CL153	5	92	38	7436	64.0	68.9
353	192L1353	CL163/CL153	5	92	42	7415	64.6	69.5
264	192L1264	CL163/CL153	4	93	41	7413	66.3	70.5
145	192L1145	RoyJ/CL153	5	89	42	7412	66.2	70.7
301	192L1301	RoyJ/1502094	3	90	40	7386	66.3	70.4
731	192L1731	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	3	87	39	7381	64.0	68.7

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
204	192L1204	PSDO/CL111	4	71	32	7326	64.9	71.2
658	192L1658	CL153/LKST	4	88	36	7285	64.3	69.5
384	192L1384	CL163/CL153	4	92	41	7260	67.3	71.5
271	192L1271	1502085/PSDO	3	84	40	7221	64.0	71.9
551	192L1551	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	82	37	7221	65.6	70.6
598	192L1598	CL153/CL261	5	85	42	7196	63.9	70.2
710	192L1710	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	85	39	7172	65.7	70.5
378	192L1378	RoyJ/CL153	5	90	42	7163	65.4	70.3
625	192L1625	KBNT/CL111	3	88	36	7149	64.4	69.4
519	192L1519	CL111/MBLE	4	73	34	7126	65.3	70.4
403	192L1403	CL172/PSDO	4	89	45	7090	64.2	69.8
434	192L1434	CL163/CL153	4	94	43	7076	65.3	69.9
173	192L1173	CL163/CL153	4	93	43	7000	64.9	69.8
647	192L1647	CL172/CL153	5	89	38	6997	65.9	70.2
447	192L1447	CL111/MBLE	4	77	33	6970	66.8	71.8
121	192L1121	CHNR/CL111	3	87	39	6947	68.7	72.1
059	192L1059	JZMN/08CLR004//RU0802146/3/JZMN2/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	86	41	6917	64.3	70.5
157	192L1157	CL153/CL261	5	87	45	6888	67.0	71.2
149	192L1149	CL111/CL272	4	85	39	6863	66.1	72.1
002	192L1002	CL163/CL153	4	90	45	6843	64.9	69.3
211	192L1211	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	4	94	42	6810	54.4	65.0
575	192L1575	CL261/CTHL	3	87	43	6806	64.5	69.4
730	192L1730	CL172/PSDO	3	89	41	6781	64.7	68.5
320	192L1320	CL153/CL261	3	89	40	6757	64.9	70.6
656	192L1656	CL172/PSDO	3	88	43	6631	63.6	68.3
228	192L1228	CLJZMN/4/JZMN/08CLR004//RU0802146/3/JZMN2	5	89	37	6606	65.4	70.4
272	192L1272	RoyJ/CL153	4	80	40	6518	65.7	70.5
156	192L1156	CHNR/CL111	3	87	37	6271	63.4	69.7
246	192L1246	CLJAZZMAN/4/JZMN/08CLR004//RU0802146/3/JZMN2	5	88	29	6035	67.0	71.5

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 2. Grain and milling yields and agronomic performance of entries in the 2019 Clearfield Preliminary Yield Medium-Grain trial. H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
010	192M1010	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	81	3	36	8314		
070	192M1070	CL261/JPTR	80	3	35	8284	64.4	68.8
018	192M1018	NPTN/NPTN//BNGL/CL161	81	3	33	7976	64.6	69.1
053	192M1053	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	80	3	35	7929	63.9	70.6
200	CL153	CL153	79	4	37	7915		
111	192M1111	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	81	3	35	7884	65.1	69.9
067	192M1067	NPTN//BNGL/CL161/3/NPTN//BNGL/CL161	81	3	38	7832		
161	192M1161	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	79	3	35	7828	60.8	69.6
064	192M1064	RICO/3/NPTN//BNGL/CL161	80	4	32	7806	66.7	70.4
137	192M1137	CL271/3/NPTN//BNGL/CL161	82	3	36	7748		
042	192M1042	NPTN/3/BNGL/CL161//CFFY	80	3	34	7744	66.0	70.8
147	192M1147	NPTN//BNGL/CL161/3/RICO	79	4	36	7738		
006	192M1006	RICO/3/NPTN//BNGL/CL161	76	3	38	7726		
025	192M1025	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	81	3	34	7714	64.4	70.6
065	192M1065	CL111/CL272	76	5	36	7700	59.2	72.0
199	CL151	CL151	78	3	39	7663		
153	192M1153	CL261/JPTR	79	4	35	7647	63.4	67.5
109	192M1109	CL153/CL261	76	4	39	7614	65.5	70.6
195	192M1195	CL111/CL272	76	4	36	7600	56.6	71.3
192	192M1192	CL111/CL272	78	3	37	7578	64.3	69.9
057	192M1057	NPTN//BNGL/CL161/3/RICO	80	4	36	7557	64.0	70.0
014	192M1014	RICO/3/NPTN//BNGL/CL161	79	4	32	7554	66.1	71.2
196	192M1196	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	82	3	36	7543	65.3	70.5
149	192M1149	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	81	3	35	7543		
133	192M1133	CL261/JPTR	79	4	39	7511	65.3	68.7
197	192M1197	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO/BNGL/4/BNGL/CFX18	78	3	34	7500	61.4	70.5
059	192M1059	CL271/3/NPTN//BNGL/CL161	83	3	38	7490	64.4	70.7
038	192M1038	NPTN//BNGL/CL161/3/NPTN	75	3	36	7469		
066	192M1066	CL271/3/NPTN//BNGL/CL161	81	3	36	7444	63.6	70.1

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
189	192M1189	CL111/CL272	75	4	34	7412	59.7	69.9
132	192M1132	CL271/3/NPTN//BNGL/CL161	82	3	38	7396		
095	192M1095	CL153/CL261	77	3	32	7375	65.5	71.4
130	192M1130	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/CL272	79	4	35	7370	66.2	70.9
115	192M1115	CL261/CTHL	76	3	39	7351		
152	192M1152	CL271/3/NPTN//BNGL/CL161	82	3	40	7351	62.5	69.2
046	192M1046	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	80	3	35	7328	64.5	70.1
128	192M1128	CL153/CL261	75	4	38	7327	65.3	70.7
050	192M1050	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/3/9902028	78	3	37	7313	60.0	68.7
035	192M1035	CL261/JPTR	79	4	38	7311	66.0	69.7
140	192M1140	CL272/CL261	80	4	39	7309	61.1	68.1
003	192M1003	CL271/3/NPTN//BNGL/CL161	83	3	36	7294		
061	192M1061	CL271/3/NPTN//BNGL/CL161	82	4	39	7290		
122	192M1122	NPTN/3/NPTN//BNGL/CL161	83	3	35	7288	63.5	69.4
076	192M1076	CL271/3/NPTN//BNGL/CL161	81	3	36	7269	59.9	69.4
191	192M1191	CL261/JPTR	79	4	35	7255	62.0	67.7
151	192M1151	CL271/CL272	82	3	35	7240		
069	192M1069	NPTN/3/BNGL/CL161//CFFY	80	4	32	7235		
055	192M1055	NPTN/3/NPTN//BNGL/CL161	78	3	33	7228	63.9	70.8
002	192M1002	CL272/CL261	80	4	36	7219		
198	CL272	CL272	79	2	33	7213	62.7	70.3
112	192M1112	RICO/3/NPTN//BNGL/CL161	80	3	33	7207	58.3	68.7
125	192M1125	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	81	3	34	7186	65.4	69.8
068	192M1068	CL153/CL261	79	3	38	7184		
031	192M1031	CL261/JPTR	79	3	37	7183	63.6	68.5
171	192M1171	NPTN//BNGL/CL161/3/NEPTURN//BNGL/CL161	80	3	33	7178		
013	192M1013	NPTN//BNGL/CL161/3/NEPTURN//BNGL/CL161	81	3	33	7170		
120	192M1120	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	81	3	37	7149	61.6	69.1
017	192M1017	CL153/CL261	79	4	36	7148	68.0	71.2

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
020	192M1020	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	81	3	35	7147	63.8	70.6
185	192M1185	CL271/5/BNGL//MERC/RICO/3/MERC/RICO/BNGL/4/BNGL/CFX18	80	3	35	7133		
085	192M1085	CL261/JPTR	83	4	34	7128	64.4	68.5
190	192M1190	TITN/CL272	78	4	36	7115		
041	192M1041	CL271/3/NPTN//BNGL/CL161	82	3	36	7106		
040	192M1040	CL261/CTHL	78	4	38	7096		
080	192M1080	NPTN//BNGL/CL161/3/NPTN//BNGL/CL161	80	3	34	7064		
012	192M1012	RICO/3/NPTN//BNGL/CL161	81	4	35	7056		
008	192M1008	CL271/3/NPTN//BNGL/CL161	81	3	36	7049		
009	192M1009	CL271/3/NPTN//BNGL/CL161	81	4	36	7030		
079	192M1079	CL271/CL272	81	3	37	7027		
015	192M1015	CL271/3/NPTN//BNGL/CL161	81	3	36	7022		
108	192M1108	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/NPTN	81	4	34	7021		
100	192M1100	NPTN//BNGL/CL161/3/NPTN//BNGL/CL161	80	3	36	7015		
007	192M1007	CL261/CTHL	77	4	39	7000	67.4	71.9
169	192M1169	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	81	3	36	6995		
049	192M1049	CL271/CL261	79	3	37	6990		
004	192M1004	CL271/3/NPTN//BNGL/CL161	80	4	32	6985		
107	192M1107	NPTN/3/NPTN//BNGL/CL161	80	4	35	6985		
126	192M1126	CL261/JPTR	79	4	37	6976	65.8	69.5
155	192M1155	NPTN/3/NPTN//BNGL/CL161	81	4	33	6965		
187	192M1187	CL271/CL261	80	3	37	6961		
048	192M1048	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	80	3	34	6956		
124	192M1124	CL261/JPTR	79	4	33	6940	63.5	68.0
156	192M1156	NPTN//BNGL/CL161/3/NPTN//BNGL/CL161	80	3	35	6933		
183	192M1183	CL271/3/NPTN//BNGL/CL161	81	3	35	6929		
105	192M1105	CL111/CL272	74	3	32	6929	51.2	70.8
167	192M1167	CL153/CL261	77	3	37	6928	66.9	70.8
134	192M1134	RICO/3/NPTN//BNGL/CL161	81	3	34	6920		

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
026	192M1026	CL153/CL261	80	4	36	6917		
193	192M1193	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	82	3	35	6912		
086	192M1086	NPTN//BNGL/CL161/3/CL272	81	3	34	6911		
121	192M1121	CL271/CL261	79	3	38	6904		
129	192M1129	CL271/3/NPTN//BNGL/CL161	81	4	36	6893		
114	192M1114	CL153/CL261	78	3	36	6856	66.4	70.9
138	192M1138	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	83	3	35	6855		
036	192M1036	CL153/CL261	76	4	37	6844		
016	192M1016	CL111/CL272	78	4	33	6834	66.4	71.0
176	192M1176	CL111/CL272	79	3	37	6831		
091	192M1091	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	80	3	36	6829		
119	192M1119	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/CL272	79	3	35	6828		
166	192M1166	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	82	3	35	6822		
148	192M1148	TITN/CL272	77	4	34	6798		
118	192M1118	NPTN//BNGL/CL161/3/NPTN//BNGL/CL161	83	3	36	6793		
188	192M1188	CL271/3/NPTN//BNGL/CL161	82	3	37	6792		
060	192M1060	CL111/CL272	78	4	33	6783	61.4	71.6
072	192M1072	9302065/3/RICO//PY678/CL161	82	4	32	6764		
088	192M1088	CL271/3/NPTN//BNGL/CL161	81	3	37	6755		
089	192M1089	CL261/JPTR	78	4	38	6752		
054	192M1054	CL272/CL261	79	3	35	6739		
071	192M1071	CL153/CL261	80	3	33	6733		
051	192M1051	NPTN//BNGL/CL161/3/NPTN	77	4	39	6730		
159	192M1159	CL271/CL261	78	3	35	6729		
005	192M1005	NPTN//BNGL/CL161/3/CL272	81	3	33	6702		
113	192M1113	CL271/3/NPTN//BNGL/CL161	82	3	37	6690		
063	192M1063	CL271/3/NPTN//BNGL/CL161	81	3	33	6690		
157	192M1157	NPTN/3/BNGL/CL161//CFFY	83	4	36	6684		
116	192M1116	CL261/CTHL	75	3	39	6675	65.9	70.8
136	192M1136	CL271/3/NPTN//BNGL/CL161	82	4	37	6671		

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
032	192M1032	RICO/3/NPTN//BNGL/CL161	80	3	35	6657		
073	192M1073	CL271/3/NPTN//BNGL/CL161	81	4	34	6649		
058	192M1058	CL153/CL261	76	4	33	6618		
087	192M1087	CL271/3/NPTN//BNGL/CL161	81	3	37	6613		
039	192M1039	CL261/JPTR	80	3	36	6585		
083	192M1083	CL153/CL261	80	3	35	6558		
077	192M1077	CL261/CTHL	79	4	40	6548		
044	192M1044	CL272/CFFY	81	5	31	6546		
074	192M1074	CL153/CL261	79	4	33	6546		
019	192M1019	NPTN/3/BNGL/CL161//CFFY	84	5	34	6535		
131	192M1131	CL153/CL261	81	4	37	6533		
062	192M1062	NPTN/3/BNGL/CL161//CFFY	84	4	34	6515		
056	192M1056	CL271/3/NPTN//BNGL/CL161	82	3	36	6484		
117	192M1117	CL271/CL261	80	3	37	6459		
030	192M1030	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	80	4	36	6453		
045	192M1045	CL261/CTHL	78	4	40	6442	64.0	69.5
090	192M1090	JPTR/CL272	79	5	36	6433		
037	192M1037	CL271/CL261	80	3	35	6418		
034	192M1034	NPTN//BNGL/CL161/3/NPTN//BNGL/CL161	82	4	35	6409		
141	192M1141	CL153/CL261	76	3	37	6407		
022	192M1022	TITN/CL272	78	4	31	6403		
127	192M1127	NPTN//BNGL/CL161/3/NPTN	82	4	37	6403		
144	192M1144	CL153/CL261	79	4	35	6401		
098	192M1098	NPTN/3/NPTN//BNGL/CL161	80	3	33	6399		
082	192M1082	CL271/3/NPTN//BNGL/CL161	80	4	37	6397		
021	192M1021	CL261/JPTR	79	5	34	6383		
160	192M1160	NPTN/3/BNGL/CL161//CFFY	81	4	34	6378		
178	192M1178	CL271/3/NPTN//BNGL/CL161	82	3	33	6374		
184	192M1184	CL111/CL272	76	3	38	6370		
078	192M1078	CL261/CTHL	77	4	38	6369		

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
173	192M1173	CL271/3/NPTN//BNGL/CL161	80	4	36	6363		
146	192M1146	CL111/CL272	80	3	34	6352		
029	192M1029	RICO/3/NPTN//BNGL/CL161	84	4	33	6350		
181	192M1181	TITN/CL272	80	4	35	6341		
104	192M1104	CL261/JPTR	80	4	38	6326		
084	192M1084	CL111/CL272	74	4	34	6321	54.8	69.9
186	192M1186	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	85	4	36	6306		
180	192M1180	CL261/CTHL	75	4	40	6284		
093	192M1093	BNGL/CL161/3/NPTN//BNGL/CL161	81	3	35	6273		
110	192M1110	JPTR/CL272	82	4	35	6273		
165	192M1165	CL271/CL261	78	3	34	6271		
175	192M1175	CL261/CTHL	79	3	38	6266	66.7	70.8
194	192M1194	CL271/3/NPTN//BNGL/CL161	81	3	37	6247		
170	192M1170	NPTN/3/BNGL/CL161//CFFY	82	3	33	6243		
163	192M1163	CL271/3/NPTN//BNGL/CL161	80	4	35	6237		
102	192M1102	CL261/CTHL	77	4	43	6198		
096	192M1096	CL111/CL272	81	3	33	6196	61.7	69.6
043	192M1043	CL111/CL272	80	3	30	6191	64.6	70.5
047	192M1047	NPTN//BNGL/CL161/3/RICO	79	3	30	6188		
154	192M1154	NPTN//BNGL/CL161/3/NEPTURN//BNGL/CL161	80	3	24	6178		
027	192M1027	CL271/3/NPTN//BNGL/CL161	81	3	36	6135		
172	192M1172	CL272/CL261	80	3	35	6122		
162	192M1162	CL272/CFFY	83	4	32	6118		
142	192M1142	CL153/CL261	79	4	34	6105		
150	192M1150	CL271/3/NPTN//BNGL/CL161	81	4	37	6099		
177	192M1177	CL271/3/NPTN//BNGL/CL161	83	4	37	6078		
101	192M1101	NPTN/3/BNGL/CL161//CFFY	80	4	37	6035		
106	192M1106	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/CL272	76	3	32	6029		
164	192M1164	CL261/CTHL	75	4	38	5979		

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
099	192M1099	NPTN//BNGL/CL161/3/NEPTURN//BNGL/CL161	81	3	26	5939		
028	192M1028	NPTN/3/BNGL/CL161//CFFY	81	3	31	5939		
011	192M1011	JPTR/CL272	85	5	36	5930		
179	192M1179	CL153/CL261	82	3	36	5923		
075	192M1075	CL261/CTHL	77	4	39	5862	61.8	70.0
123	192M1123	NPTN/3/BNGL/CL161//CFFY	85	5	36	5843		
168	192M1168	CL271/3/NPTN//BNGL/CL161	82	4	35	5771		
052	192M1052	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO/BNGL/4/BNGL/CFX18	80	4	24	5765		
024	192M1024	CL111/CL272	74	5	31	5765		
103	192M1103	CL261/CTHL	78	4	41	5751	64.9	70.0
094	192M1094	JPTR/CL272	82	4	36	5701		
145	192M1145	NPTN//BNGL/CL161/3/BNGL/CL161//CFFY	82	4	33	5630		
033	192M1033	CL271/3/NPTN//BNGL/CL161	82	3	35	5594		
182	192M1182	CL111/CL272	75	3	33	5593		
001	192M1001	CL271/3/NPTN//BNGL/CL161	85	3	31	5562		
135	192M1135	CL272/CL261	83	5	36	5522		
143	192M1143	CL153/CL261	79	4	35	5451	63.6	68.6
092	192M1092	CL261/CTHL	77	4	40	5438	63.7	69.0
174	192M1174	RICO/3/NPTN//BNGL/CL161	82	4	32	5407		
097	192M1097	NPTN/3/BNGL/CL161//CFFY	81	6	34	5297		
023	192M1023	CL111/CL272	74	4	32	5246		
139	192M1139	NPTN/3/BNGL/CL161//CFFY	85	4	36	5158		
081	192M1081	CL271/CL261	83	4	37	5043		
158	192M1158	NPTN//BNGL/CL161/3/NPTN	78	5	36	4186		

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

PRELIMINARY YIELD TRIAL

Preliminary Yield trials consist primarily of promising breeding nursery material that is ready to be tested in replicated yield trials. The material in these trials was screened for agronomic and grain characteristics in nurseries prior to this phase of testing. Promising experimental lines were evaluated for seedling vigor, maturity, plant height, lodging resistance, grain yield of main crop, and disease resistance.

Trials were conducted using standard agronomic practices (except that fungicides were not applied) at the H. Rouse Caffey Rice Research Station (HRCRRS) at Crowley, LA. A randomized complete block design was applied to arrange test entries. The plot size was 4.66 x 16 ft. Seeding rate was 90 lb/A. The Preliminary Yield Long-Grain trial was drill seeded on March 14 and harvested on July 26. The Preliminary Yield Medium-Grain trial was drill seeded on March 14 and harvested on August 1. Data is presented for the long-grain trial in Table 1 and for the medium-grain trial in Table 2.

Table 1. Grain and milling yields and agronomic performance of entries in the 2019 Preliminary Yield Long-Grain trial, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
131	191L1131	1502085/CTHL	3	83	56	10681	69.9	74.1
189	191L1189	1402174/CL153	4	86	43	10195	63.0	69.8
135	191L1135	CTHL/CL153	4	86	40	9652	67.3	72.5
032	191L1032	1402174/CL153	4	88	41	9567	67.2	72.0
023	191L1023	M401/4/9502008A//AR1188/CCDR/3/RU0602128	2	84	41	9533	64.2	70.4
047	191L1047	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	4	81	39	9521	69.6	73.0
094	191L1094	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	3	85	41	9504	63.9	70.6
045	191L1045	1402174/CTHL	4	86	40	9412	67.4	72.6
176	191L1176	M401/4/9502008A//AR1188/CCDR/3/RU0602128	3	84	42	9398	65.4	71.0
218	CL111	CL111	3	82	40	9371	65.9	71.8
219	CL151	CL151	3	84	41	9347	64.8	71.0
212	CLJ01	CLJ01	3	84	40	9340	67.3	71.3
137	191L1137	JZMN2/CTHL	3	81	40	9278	64.1	70.3
215	MRMT	MRMT	3	83	42	9278	64.2	70.2
122	191L1122	JZMN2/CTHL	4	83	38	9270	66.5	70.6
033	191L1033	1104077/CTHL	3	85	43	9221	67.4	72.1
076	191L1076	M401/4/9502008A//AR1188/CCDR/3/RU0602128	4	82	40	9206	65.8	70.7
177	191L1177	1502085/CTHL	3	83	40	9201	68.3	73.6
148	191L1148	1502085/CTHL	4	83	40	9194	63.2	70.1
217	CL153	CL153	3	84	41	9095	66.7	71.8
220	CTHL	CTHL	3	85	40	9069	65.7	72.9
205	INIA23	INIA23	4	88	49	9067	60.5	67.7
088	191L1088	1502085/CTHL	4	83	40	9047	64.3	70.6
125	191L1125	JZMN2/CTHL	3	82	37	9022	68.5	73.3
186	191L1186	1402174/CTHL	4	84	42	9013	64.8	71.0
126	191L1126	1402174/CL153	4	86	40	8972	66.1	70.6
129	191L1129	JZMN2/CTHL	3	84	38	8965	68.5	72.6
152	191L1152	1502085/CTHL	4	83	43	8960	62.1	69.7

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
173	191L1173	CTHL/MRMT	3	82	38	8952	65.5	72.0
183	191L1183	M401/4/9502008A//AR1188/CCDR/3/RU0602128	3	83	41	8948	63.4	70.5
140	191L1140	CTHL/MRMT	4	81	39	8935	62.2	69.2
059	191L1059	M401/4/9502008A//AR1188/CCDR/3/RU0602128	3	84	57	8920	61.0	70.8
119	191L1119	MRMT/CTHL	3	84	39	8918	67.1	72.1
216	Diamond	Diamond	3	84	41	8903	66.7	72.3
046	191L1046	1402174/CTHL	3	86	42	8902	66.7	72.1
053	191L1053	M401/4/9502008A//AR1188/CCDR/3/RU0602128	4	87	40	8888	64.0	69.8
102	191L1102	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	3	81	38	8873	64.1	70.7
028	191L1028	1502085/CTHL	5	83	39	8869	66.8	72.6
190	191L1190	1104077/CTHL	3	81	40	8868	67.8	72.4
031	191L1031	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	3	83	39	8820	67.7	72.7
204	INIA22	INIA22	3	88	50	8812	60.1	67.7
014	191L1014	1104077/CTHL	4	80	100	8803	65.6	71.8
158	191L1158	CTHL/CL153	4	85	38	8790	63.1	69.7
040	191L1040	CHNR/CTHL	4	84	39	8787	65.6	71.7
111	191L1111	1502085/CTHL	3	82	39	8775	67.9	73.3
191	191L1191	MRMT/LKST	3	84	41	8767	66.6	72.1
049	191L1049	1502085/CTHL	4	86	39	8758	68.2	73.4
056	191L1056	CL153/LKST	5	84	38	8737	64.6	71.1
085	191L1085	1402174/CTHL	4	85	42	8727	63.3	69.2
164	191L1164	CTHL/MRMT	4	85	40	8697	68.5	72.4
075	191L1075	CHNR/CTHL	3	88	41	8695	68.4	73.0
091	191L1091	1104077/CTHL	3	82	42	8693	65.3	71.0
043	191L1043	CL172/PSDO	4	84	39	8670	66.6	71.6
074	191L1074	1402174/CTHL	5	85	41	8664	66.5	71.2
020	191L1020	1104077/CTHL	4	82	42	8628	64.3	71.3
181	191L1181	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	4	83	38	8619	65.1	72.3
200	INIA10	INIA10	4	87	47	8609	62.2	68.0

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
021	191L1021	CTHL/LKST	5	82	46	8606	65.3	70.7
184	191L1184	CTHL/MRMT	5	84	40	8602	65.6	70.8
149	191L1149	CTHL/CL153	4	88	39	8520	67.2	72.4
142	191L1142	JZMN2/CTHL	3	82	37	8517	65.8	72.1
030	191L1030	1104077/CTHL	3	86	40	8492	65.8	71.4
067	191L1067	CTHL/MRMT	4	80	39	8476	65.1	71.7
185	191L1185	1104077/CTHL	3	83	42	8455	66.7	72.5
121	191L1121	CTHL/MRMT	5	84	38	8444	67.5	72.2
159	191L1159	JZMN2/CTHL	3	83	37	8443	63.8	71.5
156	191L1156	M401/4/9502008A//AR1188/CCDR/3/RU0602128	4	82	42	8406	65.1	71.1
068	191L1068	CTHL/CL153	4	87	41	8401	60.8	69.3
004	191L1004	1402174/CTHL	4	87	43	8392	65.2	71.2
123	191L1123	CTHL/LKST	5	85	38	8392	64.3	71.0
172	191L1172	MRMT/CTHL	3	83	38	8364	66.7	72.4
055	191L1055	JZMN2/CTHL	3	82	40	8356	64.3	71.3
214	CHNR	CHNR	4	84	37	8343	65.9	71.9
192	191L1192	M401/4/9502008A//AR1188/CCDR/3/RU0602128	3	84	43	8339	65.3	71.0
018	191L1018	1104077/CTHL	4	82	43	8328	65.9	71.5
039	191L1039	CTHL/CL153	5	86	42	8299	686.4	72.6
195	INIA5	INIA5	2	89	44	8298	58.0	66.1
202	INIA13	INIA13	3	84	38	8296	64.6	70.7
024	191L1024	MRMT/CHNR	5	82	39	8284	57.8	69.7
041	191L1041	CTHL/MRMT	5	81	38	8273	68.0	72.7
048	191L1048	1104077/CTHL	3	83	45	8247	67.3	71.8
034	191L1034	CHNR/CL111	5	81	42	8229	66.8	72.4
143	191L1143	JZMN2/CTHL	4	83	41	8211	67.3	71.9
132	191L1132	MRMT/CTHL	3	80	39	8204	68.3	73.5
090	191L1090	1502085/CTHL	6	81	40	8197	64.6	70.4
193	191L1193	CTHL/MRMT	4	85	40	8195	67.1	72.1
203	INIA20	INIA20	4	86	46	8188	59.9	66.8

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
078	191L1078	M401/4/9502008A//AR1188/CCDR/3/RU0602128	3	85	42	8177	64.7	70.2
207	INIA28	INIA28	3	75	43	8173	65.2	71.0
139	191L1139	CTHL/MRMT	4	85	38	8163	66.0	72.2
086	191L1086	1502085/CTHL	5	84	40	8162	65.7	71.3
165	191L1165	1402174/CTHL	4	87	39	8158	64.5	70.9
155	191L1155	1104077/CTHL	3	81	41	8154	67.0	72.0
133	191L1133	MRMT/CTHL	4	87	40	8148	65.5	72.0
070	191L1070	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	3	85	37	8140	66.1	71.1
100	191L1100	CHNR/PSDO	5	83	38	8124	64.0	69.7
042	191L1042	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	3	84	37	8114	67.8	73.6
154	191L1154	MRMT/CTHL	6	80	39	8108	64.4	70.9
071	191L1071	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	3	85	37	8100	68.0	72.0
161	191L1161	JZMN2/CTHL	3	84	37	8091	62.7	70.3
174	191L1174	1104077/CTHL	4	81	39	8091	66.0	72.0
108	191L1108	1402174/CTHL	4	85	39	8088	66.9	71.7
105	191L1105	CTHL/MRMT	4	84	38	8054	61.3	69.4
106	191L1106	1104077/CTHL	4	86	41	8026	65.2	71.3
116	191L1116	1104077/CTHL	4	86	43	8016	68.7	72.0
157	191L1157	M401/4/9502008A//AR1188/CCDR/3/RU0602128	4	84	42	8013	65.0	69.9
128	191L1128	CHNR/PSDO	4	85	40	7992	68.6	72.6
095	191L1095	JZMN2/CTHL	4	83	39	7981	66.7	72.4
150	191L1150	MRMT/CTHL	4	81	38	7965	66.1	71.9
168	191L1168	JZMN2/CTHL	4	83	38	7955	64.5	70.4
208	INIA30	INIA30	3	76	46	7953	63.7	70.5
115	191L1115	1104077/CTHL	4	83	42	7947	64.8	70.4
019	191L1019	1104077/CTHL	3	83	42	7938	64.9	70.6
199	INIA9	INIA9	4	82	38	7927	66.5	71.2
188	191L1188	FRAN/LKST	3	83	42	7926	64.1	71.7
057	191L1057	JZMN2/CTHL	3	83	37	7915	63.4	71.5

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
069	191L1069	MRMT/CHNR	4	84	37	7909	64.9	70.1
169	191L1169	CL111/MRMT	4	84	40	7893	64.8	71.4
038	191L1038	FRAN/LKST	4	84	42	7886	62.9	70.4
035	191L1035	JZMN2/CTHL	3	82	39	7863	64.1	71.7
120	191L1120	MRMT/CTHL	5	84	37	7859	68.1	72.9
036	191L1036	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	4	85	41	7837	68.2	72.3
146	191L1146	JZMN2/CTHL	4	82	38	7836	66.2	70.9
196	INIA6	INIA6	3	88	42	7833	62.6	68.4
087	191L1087	CTHL/MRMT	5	82	38	7792	65.6	71.3
167	191L1167	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	3	84	36	7784	67.1	73.0
136	191L1136	JZMN2/CTHL	3	81	36	7774	64.0	70.4
118	191L1118	CL153/LKST	4	89	39	7755	63.3	69.4
037	191L1037	JZMN2/CTHL	4	83	39	7732	69.7	73.0
064	191L1064	1104077/CTHL	4	82	38	7715	64.5	71.3
180	191L1180	CPRS/LKST	4	84	41	7707	63.9	70.3
194	INIA3	INIA3	3	87	38	7646	59.5	68.0
144	191L1144	MRMT/CTHL	5	87	36	7635	64.8	71.7
182	191L1182	JZMN2/CTHL	3	82	36	7632	65.5	71.3
060	191L1060	JZMN2/CTHL	4	83	37	7627	60.5	72.0
063	191L1063	1104077/CTHL	3	85	42	7626	63.4	70.5
002	191L1002	CL111/MRMT	4	83	40	7609	65.2	70.9
166	191L1166	JZMN2/CTHL	4	83	38	7606	64.9	70.7
206	INIA25	INIA25	4	88	46	7604	62.1	68.5
066	191L1066	JZMN2/CTHL	4	84	40	7570	61.5	69.4
006	191L1006	MRMT/CTHL	4	82	41	7561	64.0	70.8
065	191L1065	MRMT/CTHL	4	83	38	7548	64.5	71.0
211	DLLA2	DLLA2	3	89	41	7520	63.0	69.1
175	191L1175	MRMT/CTHL	5	82	36	7513	65.3	72.2
147	191L1147	CHNR/CTHL	3	85	40	7497	62.6	70.2
005	191L1005	CTHL/MRMT	5	80	41	7485	65.9	71.2
210	INIA38	INIA38	3	75	44	7485	64.0	70.9

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
209	INIA33	INIA33	3	75	43	7479	63.1	70.5
003	191L1003	JZMN2/CTHL	5	82	38	7457	65.0	72.1
025	191L1025	1104077/CTHL	4	79	37	7451	65.2	71.2
170	191L1170	MRMT/LKST	4	86	40	7442	65.0	71.8
061	191L1061	MRMT/CTHL	5	83	39	7423	65.5	71.7
138	191L1138	CHNR/PSDO	4	84	36	7413	60.9	70.6
171	191L1171	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	5	83	40	7407	63.6	70.3
080	191L1080	M401/4/9502008A//AR1188/CCDR/3/RU0602128	4	86	40	7395	63.0	70.0
112	191L1112	MRMT/CTHL	4	82	37	7378	66.3	72.3
127	191L1127	CHNR/CTHL	5	86	41	7326	66.4	72.3
103	191L1103	MBLE/CTHL	5	74	35	7324	64.2	70.9
072	191L1072	CL153/LKST	3	85	36	7309	62.0	68.2
104	191L1104	CTHL/MRMT	5	86	39	7308	63.0	71.5
058	191L1058	MRMT/MBLE	4	83	37	7297	64.3	70.1
026	191L1026	JZMN2/CTHL	4	82	39	7287	62.7	70.9
141	191L1141	MRMT/LKST	3	87	41	7276	66.1	71.9
160	191L1160	MRMT/MBLE	5	78	34	7270	64.4	71.0
163	191L1163	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	4	83	38	7264	67.3	72.3
153	191L1153	JZMN2/CTHL	4	85	41	7249	65.0	71.2
089	191L1089	CHNR/CL111	5	82	37	7220	67.4	72.0
044	191L1044	CL172/PSDO	5	85	40	7195	65.6	70.8
015	191L1015	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	6	80	40	7188	61.2	70.8
084	191L1084	CTHL/MRMT	6	83	38	7185	63.4	69.7
179	191L1179	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	3	86	42	7181	6.6	73.0
198	INIA8	INIA8	3	89	44	7173	56.0	65.3
124	191L1124	CTHL/4/CPRS/KBNT//9502008A/3/CCDR	4	83	37	7168	67.4	72.2
130	191L1130	MRMT/MBLE	4	85	37	7100	66.3	72.3
098	191L1098	JZMN2/CTHL	4	85	39	7074	66.7	71.3
009	191L1009	CL153/LKST	5	86	34	7049	63.3	70.6
081	191L1081	MRMT/CTHL	3	90	40	7049	62.7	69.2
110	191L1110	CTHL/LKST	4	86	47	7042	64.0	70.5

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
016	191L1016	CL172/CPRS	6	82	36	7015	65.2	70.1
010	191L1010	1104077/CTHL	3	87	42	7002	66.3	71.0
022	191L1022	CTHL/MRMT	4	84	40	6981	62.4	69.2
096	191L1096	1104077/CTHL	3	87	42	6978	65.0	71.1
093	191L1093	M401/4/9502008A//AR1188/CCDR/3/RU0602128	4	85	40	6947	66.1	71.1
197	INIA7	INIA7	3	91	41	6882	63.1	69.4
007	191L1007	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	6	81	39	6866	63.3	69.5
062	191L1062	MBLE/CTHL	5	80	36	6822	64.9	70.9
027	191L1027	CHNR/CL111	4	84	36	6796	61.4	69.8
079	191L1079	1104077/CTHL	5	85	42	6758	66.3	71.8
187	191L1187	CHNR/PSDO	4	86	38	6714	65.0	71.4
097	191L1097	MBLE/CTHL	4	79	35	6707	64.3	72.7
213	JZMN	JZMN	3	89	41	6682	68.9	72.8
012	191L1012	MRMT/MBLE	4	84	35	6666	64.0	70.4
013	191L1013	MRMT/CTHL	6	84	41	6621	62.7	69.4
134	191L1134	CTHL/MRMT	5	82	40	6605	63.0	72.2
178	191L1178	JZMN2/CTHL	3	83	35	6588	66.7	71.2
099	191L1099	JZMN2/CTHL	5	82	38	6575	63.4	70.9
050	191L1050	1104077/CTHL	3	88	40	6574	64.4	70.7
077	191L1077	CTHL/MRMT	5	84	39	6564	63.5	70.8
101	191L1101	MRMT/MBLE	5	85	35	6534	62.3	70.3
073	191L1073	CHNR/PSDO	4	85	39	6532	66.6	72.1
083	191L1083	MRMT/CTHL	5	89	39	6471	64.5	69.9
109	191L1109	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008A/4/PSDO	5	87	40	6394	67.0	71.0
145	191L1145	MBLE/CTHL	5	85	36	6387	64.8	70.9
117	191L1117	CTHL/MBLE	5	84	37	6384	66.1	71..03
001	191L1001	CTHL/MRMT	5	83	42	6378	64.0	71.1
051	191L1051	CTHL/MRMT	5	88	41	6344	63.8	70.2
151	191L1151	1104077/CTHL	3	89	42	6326	66.1	71.3

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
008	191L1008	CTHL/MRMT	5	87	36	6296	66.6	71.8
113	191L1113	MBLE/CTHL	5	80	35	6188	65.9	72.1
054	191L1054	CHNR/PSDO	5	82	38	5930	66.7	71.6
092	191L1092	1104077/CTHL	3	91	43	5854	66.8	71.9
011	191L1011	MRMT/MBLE	4	89	39	5829	55.9	65.7
052	191L1052	CTHL/LKST	5	84	39	5613	60.4	68.7
201	INIA11	INIA11	3	91	38	5593	55.4	66.8
162	191L1162	MBLE/CTHL	8	78	35	5549	67.1	72.3
017	191L1017	MRMT/MBLE	5	76	32	5512	63.0	69.5
107	191L1107	MBLE/CTHL	6	76	33	5135	65.8	72.2
114	191L1114	MBLE/CTHL	7	85	36	5016	65.3	71.3
082	191L1082	CTHL/MBLE	4	88	29	4386	61.4	69.8
029	191L1029	MRMT/MBLE	6	88	34	4282	61.7	68.5
011	191L1011	MRMT/MBLE	4	89	39	5829	55.9	65.7
078	191M1078	RT3201	3	72	36	8492	67.4	70.6
068	191M1068	TITN/JPTR	3	70	35	8146	66.1	69.8
171	191M1171	TITN/JPTR	3	75	41	8141	67.2	69.8
150	191M1150	RT3201	3	72	39	8134	68.2	71.0
074	191M1074	TITN/JPTR	3	69	38	7951	65.6	69.8
154	191M1154	TITN/JPTR	3	72	36	7656	63.3	69.3
017	191M1017	TITN/JPTR	3	72	39	7655	65.9	69.7
081	191M1081	TITN/JPTR	3	73	38	7609	67.5	70.6
040	191M1040	TITN/JPTR	3	72	39	7574	65.8	69.9
056	191M1056	TITN/JPTR	4	72	37	7558	65.4	69.3
113	191M1113	TITN/JPTR	4	72	37	7457	67.6	70.3
058	191M1058	NPTN/JPTR	3	71	37	7454	65.6	69.6
019	191M1019	TITN/JPTR	3	76	38	7435	67.4	70.2
192	191M1192	CFFY/TITN	3	72	37	7432	66.2	69.7
196	191M1196	TITN/JPTR	2	71	34	7431	65.5	69.6

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 2. Grain and milling yields and agronomic performance of entries in the 2019 Preliminary Yield Medium-Grain Yield trial, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
013	191M1013	TITN/JPTR	4	72	37	7424	66.3	70.0
131	191M1131	TITN/1502083	4	68	40	7358	66.7	70.5
045	191M1045	TITN/JPTR	3	72	37	7357	66.3	69.8
162	191M1162	CFFY/JPTR	3	69	37	7353	65.3	69.0
016	191M1016	TITN/JPTR	4	74	36	7301	65.8	69.7
123	191M1123	TITN	4	73	37	7281	65.1	69.1
102	191M1102	TITN/JPTR	3	65	40	7278	65.9	69.3
173	191M1173	TITN/JPTR	4	67	38	7257	68.2	70.9
075	191M1075	CLM04	3	73	36	7240	63.5	68.3
109	191M1109	CHNR/CTHL	4	73	35	7221	61.2	69.8
105	191M1105	TITN/JPTR	3	73	39	7221	64.2	69.1
112	191M1112	CFFY/TITN	3	66	38	7194	65.4	69.4
015	191M1015	TITN/JPTR	3	71	37	7193	67.7	70.4
049	191M1049	TITN/JPTR	3	71	38	7175	65.5	69.6
111	191M1111	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	4	70	39	7144	65.9	70.8
144	191M1144	TITN/JPTR	3	70	35	7117	65.8	70.2
134	191M1134	CL153	3	72	38	7104	61.7	70.4
020	191M1020	JPTR	3	73	35	7099	65.9	69.4
141	191M1141	TITN/JPTR	4	69	39	7091	66.9	70.3
073	191M1073	CFFY/TITN	3	73	38	7056	64.9	69.8
028	191M1028	CFFY/JPTR	3	73	38	7044	66.4	70.0
071	191M1071	CFFY/TITN	3	72	36	7042	63.5	68.8
128	191M1128	TITN/JPTR	3	72	38	7034	64.2	68.9
096	191M1096	TITN/JPTR	3	72	38	7029	66.8	70.8
051	191M1051	TITN/JPTR	3	73	38	7027	65.0	69.5
194	191M1194	CFFY/JPTR	3	69	39	7010	63.8	68.0
119	191M1119	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	4	71	36	7009	65.3	69.9
067	191M1067	CFFY/TITN	3	74	37	6994	67.1	70.7

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
153	191M1153	TITN/JPTR	2	70	36	6984	61.9	69.0
178	191M1178	CFFY/TITN	3	69	40	6970	63.6	69.1
035	191M1035	CFFY/TITN	3	71	38	6966	68.8	71.2
055	191M1055	CFFY/TITN	3	71	36	6955	63.7	68.5
062	191M1062	TITN	3	69	38	6941	65.9	69.9
160	191M1160	SSKI/CL272	2	71	39	6923	59.0	69.9
005	191M1005	TITN/JPTR	3	76	38	6903	66.8	69.8
118	191M1118	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	4	73	37	6873	55.8	66.0
039	191M1039	TITN/JPTR	3	76	37	6857	66.4	69.7
130	191M1130	MRMT/JPTR	3	72	38	6843	63.2	68.6
021	191M1021	TITN	2	70	37	6836	67.5	71.0
072	191M1072	CFFY/JPTR	3	77	40	6814	65.6	69.7
199	TITN	TITN	3	68	38	6805	65.7	69.8
120	191M1120	TITN/JPTR	4	70	40	6800	66.2	69.6
180	191M1180	TITN/1502083	3	73	37	6796	62.7	68.1
066	191M1066	TITN/JPTR	3	74	35	6791	65.6	69.3
008	191M1008	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	76	41	6772	67.8	71.7
140	191M1140	JPTR	3	70	36	6768	62.7	67.2
014	191M1014	CFFY/JPTR	3	71	36	6755	66.1	70.2
161	191M1161	TITN/JPTR	3	76	41	6748	66.5	69.8
110	191M1110	NPTN/3/BNGL/CL161//CFFY	4	71	37	6739	63.0	68.2
050	191M1050	TITN/JPTR	3	70	36	6718	61.8	68.3
135	191M1135	TITN/JPTR	4	71	37	6717	62.1	67.1
167	191M1167	TITN/JPTR	3	73	37	6715	63.9	69.2
095	191M1095	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	4	74	37	6674	63.7	69.2
182	191M1182	CFFY/TITN	3	74	38	6664	65.1	69.6
137	191M1137	TITN/JPTR	3	71	35	6660	65.4	68.9
168	191M1168	TITN/JPTR	3	73	36	6657	67.1	70.4
126	191M1126	TITN/JPTR	3	71	34	6619	63.7	68.7

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
152	191M1152	CFFY/TITN	3	71	36	6605	65.3	69.9
006	191M1006	CFFY/JPTR	4	75	37	6605	65.6	69.8
001	191M1001	NPTN/3/BNGL/CL161//CFFY	3	77	39	6601	60.0	66.9
094	191M1094	TITN/JPTR	3	71	36	6591	65.6	69.2
047	191M1047	TITN/1502083	3	69	37	6587	66.7	69.6
132	191M1132	CFFY/TITN	3	69	37	6580	66.8	70.8
164	191M1164	CFFY/JPTR	3	69	38	6573	62.5	69.4
159	191M1159	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	4	69	38	6561	62.4	68.0
042	191M1042	JPTR	3	68	38	6543	64.6	69.1
065	191M1065	TITN/1502083	3	73	40	6538	65.7	69.0
176	191M1176	CFFY/TITN	3	69	36	6536	64.1	68.2
098	191M1098	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	75	36	6526	59.7	67.2
084	191M1084	TITN/JPTR	3	72	36	6517	65.9	69.7
115	191M1115	CFFY/JPTR	4	73	36	6493	64.5	69.1
082	191M1082	CFFY/JPTR	3	67	35	6490	65.9	69.5
175	191M1175	TITN/JPTR	3	72	38	6484	64.4	69.0
124	191M1124	TITN/JPTR	4	71	36	6478	67.4	70.3
107	191M1107	NPTN/3/BNGL/CL161//CFFY	4	72	40	6447	62.6	67.3
122	191M1122	SSKI/CL272	3	73	37	6443	55.9	69.5
142	191M1142	TITN/JPTR	3	69	38	6440	65.9	69.6
145	191M1145	TITN/JPTR	3	72	37	6437	65.7	70.0
127	191M1127	TITN/1502083	3	70	38	6421	65.5	69.7
121	191M1121	SSKI/CL272	4	67	36	6409	60.3	67.7
034	191M1034	TITN/1502083	3	70	33	6408	66.8	69.8
158	191M1158	CFFY/TITN	3	74	36	6399	64.1	69.4
195	191M1195	TITN/JPTR	3	66	37	6366	60.9	67.0
024	191M1024	CFFY/JPTR	4	74	37	6363	65.4	70.4
054	191M1054	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	73	38	6358	63.2	68.1
179	191M1179	CFFY/TITN	3	71	38	6353	65.5	70.7

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
139	191M1139	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	70	36	6310	65.2	70.0
004	191M1004	TITN/1502083	3	66	41	6303	66.2	69.5
103	191M1103	CLL15	3	72	33	6276	55.8	66.3
108	191M1108	TITN/1502083	4	74	38	6275	61.7	67.2
018	191M1018	CFFY/JPTR	3	74	37	6235	66.0	69.1
163	191M1163	TITN/1502083	3	77	39	6214	66.2	69.9
046	191M1046	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	75	41	6213	63.4	68.5
104	191M1104	TITN/JPTR	3	72	37	6202	66.1	69.0
156	191M1156	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	2	76	38	6150	63.1	68.2
117	191M1117	CFFY/JPTR	3	69	38	6148	63.5	68.1
083	191M1083	TITN/1502083	3	77	38	6142	64.5	69.0
011	191M1011	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	77	37	6138	67.3	70.9
091	191M1091	TITN/1502083	3	72	38	6137	65.4	69.0
038	191M1038	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	69	36	6133	62.6	68.3
059	191M1059	CFFY/JPTR	3	72	36	6128	64.2	68.6
063	191M1063	CL272	3	71	39	6113	63.4	69.0
174	191M1174	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	74	38	6110	63.8	69.2
157	191M1157	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	74	38	6076	66.4	70.9
092	191M1092	CFFY/JPTR	3	72	38	6067	61.2	66.7
138	191M1138	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	68	37	6065	62.2	67.8
022	191M1022	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	66	35	6062	62.6	68.8
089	191M1089	CFFY/TITN	4	67	40	6062	64.1	69.1
010	191M1010	CFFY/JPTR	3	71	38	6055	67.0	70.9
151	191M1151	CFFY/JPTR	2	70	37	6039	66.6	70.1
189	191M1189	TITN/1502083	3	71	37	6032	65.5	69.3
188	191M1188	CL272	3	70	38	6031	62.6	68.4
097	191M1097	TITN/JPTR	4	74	36	6012	61.2	68.3
190	191M1190	TITN/1502083	3	67	38	6003	64.0	68.8
023	191M1023	TITN/1502083	3	74	38	6002	66.0	70.5

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
198	JPTR	JPTR	3	67	35	5994	63.2	67.8
069	191M1069	TITN/JPTR	4	75	33	5965	59.3	67.7
003	191M1003	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	73	39	5960	61.2	67.2
060	191M1060	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	73	37	5942	62.6	67.8
037	191M1037	TITN/JPTR	3	69	38	5940	61.6	68.0
133	191M1133	CFFY/TITN	3	74	38	5916	63.8	68.2
197	191M1197	CFFY/JPTR	3	70	37	5902		
200	CL272	CL272	3	68	36	5898	61.0	67.2
149	191M1149	CFFY/JPTR	3	76	37	5873	65.6	69.5
026	191M1026	CL272	3	72	38	5868	63.3	69.2
185	191M1185	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	73	38	5867	61.2	67.8
007	191M1007	NPTN/3/BNGL/CL161//CFFY	3	73	36	5855	63.8	69.2
044	191M1044	CL111	3	71	39	5811	59.6	70.0
080	191M1080	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	71	37	5809	64.6	69.6
041	191M1041	NPTN/3/BNGL/CL161//CFFY	3	74	38	5790	62.0	67.8
148	191M1148	NPTN/3/BNGL/CL161//CFFY	3	70	37	5785	65.0	69.9
032	191M1032	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	74	40	5778	59.2	67.0
093	191M1093	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	4	76	38	5765	65.2	69.1
030	191M1030	CFFY/JPTR	3	71	37	5755	63.4	68.8
136	191M1136	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	70	36	5740	64.8	69.7
061	191M1061	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	4	71	37	5718	60.3	061
053	191M1053	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	69	36	5714	59.0	053
186	191M1186	NPTN/3/BNGL/CL161//CFFY	3	67	37	5664	62.1	186
169	191M1169	NPTN/3/BNGL/CL161//CFFY	3	71	37	5645	60.8	169
165	191M1165	NPTN/3/BNGL/CL161//CFFY	4	71	38	5574	62.4	165
085	191M1085	CFFY/TITN	3	74	38	5518	62.2	085
036	191M1036	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	74	39	5514	61.2	036
193	191M1193	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	73	37	5487	64.3	193
147	191M1147	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	72	38	5478	60.1	147

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
087	191M1087	NPTN/3/BNGL/CL161//CFFY	4	68	39	5470	59.6	087
012	191M1012	NPTN/3/BNGL/CL161//CFFY	3	75	40	5466	66.3	012
143	191M1143	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	4	70	39	5461	57.9	143
031	191M1031	NPTN/3/BNGL/CL161//CFFY	3	68	36	5441	64.3	031
002	191M1002	NPTN/3/BNGL/CL161//CFFY	3	74	38	5440	61.6	002
155	191M1155	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	76	41	5436	61.1	155
166	191M1166	NPTN/3/BNGL/CL161//CFFY	3	72	39	5346	65.5	166
106	191M1106	NPTN/3/BNGL/CL161//CFFY	3	77	40	5323	54.5	106
181	191M1181	NPTN/3/BNGL/CL161//CFFY	3	70	39	5320	61.1	181
191	191M1191	NPTN/3/BNGL/CL161//CFFY	3	69	36	5308	61.7	191
025	191M1025	NPTN/3/BNGL/CL161//CFFY	3	74	36	5300	61.8	025
048	191M1048	CFFY/JPTR	3	73	38	5276	64.0	68.8
076	191M1076	CFFY/TITN	2	77	38	5238	54.7	64.4
184	191M1184	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	2	69	37	5210	55.2	64.2
114	191M1114	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	74	37	5067	59.5	65.9
183	191M1183	SSKI/CL272	4	69	39	5009	37.2	68.4
125	191M1125	NPTN/3/BNGL/CL161//CFFY	4	72	39	4956	60.6	67.4
052	191M1052	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	73	37	4879	58.3	66.0
043	191M1043	NPTN/3/BNGL/CL161//CFFY	4	69	34	4864	59.5	66.6
170	191M1170	NPTN/3/BNGL/CL161//CFFY	3	69	38	4849	56.8	65.0
077	191M1077	NPTN/3/BNGL/CL161//CFFY	3	72	36	4842	61.3	67.5
070	191M1070	NPTN/3/BNGL/CL161//CFFY	4	74	36	4833	58.0	66.4
187	191M1187	NPTN/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS/6/BNGL//…	3	70	38	4833	61.1	67.4
090	191M1090	NPTN/3/BNGL/CL161//CFFY	3	72	37	4745	60.6	67.3
129	191M1129	NPTN/3/BNGL/CL161//CFFY	4	67	40	4699	61.1	67.0
009	191M1009	NPTN/3/BNGL/CL161//CFFY	3	78	39	4671	64.0	69.6
064	191M1064	NPTN/3/BNGL/CL161//CFFY	3	76	40	4642		
177	191M1177	NPTN/3/BNGL/CL161//CFFY	3	74	38	4604	56.6	66.4
079	191M1079	NPTN/3/BNGL/CL161//CFFY	4	73	32	4541	61.4	67.8

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
100	191M1100	NPTN/3/BNGL/CL161//CFFY	3	73	38	4483	60.2	66.9
088	191M1088	NPTN/3/BNGL/CL161//CFFY	3	71	39	4458	56.9	65.3
146	191M1146	NPTN/3/BNGL/CL161//CFFY	3	68	39	4229	56.5	64.7
116	191M1116	NPTN/3/BNGL/CL161//CFFY	3	75	36	4199	58.0	65.5
033	191M1033	NPTN/3/BNGL/CL161//CFFY	3	72	36	4123	57.6	66.6
027	191M1027	NPTN/3/BNGL/CL161//CFFY	4	73	36	4063	62.4	68.3
057	191M1057	NPTN/3/BNGL/CL161//CFFY	3	69	37	3758	53.8	62.6

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

COOPERATIVE UNIFORM REGIONAL RICE NURSERY

The Uniform Regional Rice Nursery (URN) is a multi-state yield nursery conducted by public rice breeders at research locations in Arkansas, Louisiana, Mississippi, Texas, California, and Missouri to evaluate experimental lines and commercial varieties. Entries are exposed to different environments over a wide, diverse growing region and allow researchers to evaluate their adaptation in a single row.

The 2019 URN test included 240 experimental lines and varieties planted in six states. The randomized complete block design was applied, with three replications for groups 1-4 and two replications for groups 5-8. Seeding rates were 90 lb for varieties.

The 2019 URN results from the HRCRRS will be reported. All plots were drill seeded on March 14. The test was harvested on July 30. Tests were conducted using standard agronomic practices (except that no fungicides were applied). Tables 1-8 show grain and milling yield and agronomic performance (seedling vigor, days to 50% heading, and plant height) of entries in the 2019 URN at the HRCRRS.

Table 1. Grain and milling yields and agronomic performance of entries in the 2019 Uniform Regional Nursery, Group 1, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
002	1702183	TRNS//CCDR/JEFF/5/9502008/DREW//CLR20/4/CPRS/KBNT//9502008A	4	81	42	11048	64.3	70.3
013	1801101	CL172/RU1102034	5	84	43	10963	65.1	71.2
006	1602097	CL131/TRNS	5	82	42	10793	62.3	69.3
018	CL153	CL153	4	83	41	10579	66.7	71.7
020	CL111	CL111	3	80	40	10480	65.1	72.1
011	1704077	Texmont/TeQing(BF7-46)/Tranesse	7	79	44	10474	61.8	69.1
014	1902014	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/5/9502008/DREW//CLR20/3/CPRS/KBNT//…	4	86	40	10249	66.5	71.7
017	1601010	91642//KATY/NWBT/5/RU9201176/4/KATY/NWBT/3/LBNT/STBN//NWBT/6/CYBT/7/FRNS	4	77	42	9906	62.6	71.0
005	1701084	RU0801076/5/KATY/NWBT//L201/7402003/3/WLLS/4/L201/7402003//KATY/NWBT/3/LGRU	3	88	42	9658	63.6	70.1
009	1701087	19991516/19951166/7/LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/WLLS/6/RU9201179	4	83	44	9354	62.1	70.8
015	1804179	RSMT/KATY//Bowman	6	83	43	9336	61.0	70.8
010	1702140	CHNR/MRMT	3	83	40	9290	63.0	70.3
001	1701081	IRGA409/RXMT/5/NWBT/3/LBNT/9902//LBLE/4/MILL/6/LBNT/9902/3/DAWN/9695//STBN/4/…	4	86	43	8986	63.7	71.5
003	1804067	RSMT/KATY//Bowman	5	83	40	8625	62.0	69.1
016	0803153	CPRS/CCDR	7	79	40	8510	63.4	70.3
004	1803156	CCDR/MILL	7	81	42	8497	64.3	71.0
019	9903092	PRESIDIO	3	83	42	8465	64.0	71.0
012	1003098	CPRS/NWBT//KATY/3/CCDR	8	80	40	7490	65.8	71.7
008	1803140	4579	7	85	49	6867	60.7	67.6
007	1804187	DXBL//NWBT/KATY/3/Bowman	7	82	42	6368	56.1	68.8

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 2. Grain and milling yields and agronomic performance of entries in the 2019 Uniform Regional Nursery, Group 2, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
034	1902034	9502008/DREW//CLR20/3/CPRS/KBNT//9502008/6/KATY/CPRS//NWBT/KATY/3/ 9502008/4/CLR9/5/…	4	84	40	10985	64.1	70.5
026	1902026	WLLS/CFX18//DREW/CFX18/3/CHNR//CCDR/JEFF	3	85	38	10861	63.8	70.8
027	1804155	Trenasse/Bowman	6	78	40	10543	64.8	70.6
029	1701121	EARL/9902028//JPTR	5	84	41	10510	66.8	71.1
033	1901033	RICO/BNGL//RU0602162/RU0502031	4	82	35	10338	65.7	71.3
021	1801133	CL172/4/9502008-A//AR1188/CCDR/3/CFX-26/9702128	4	83	41	10247	65.0	71.1
030	1602195	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008A	3	85	42	9992	65.6	71.3
024	1303153	IR64/IR 1321-12	7	81	46	9867	64.2	69.6
025	1801169	ROYJ/RU1501024	4	85	42	9664	64.4	70.5
037	1902037	CL162/3/TRNS//CCDR/JEFF	3	82	38	9662	63.2	71.0
039	CLL15	16AR1111	3	83	39	9564	63.4	70.8
022	1702165	CAFFEY/CL261	4	84	42	9426	66.7	71.1
032	1303138	IR64/IR 1321-12	6	81	44	9183	64.4	69.5
040	DMND	DIAMOND	3	85	43	9124	61.3	70.0
035	1804214	REX/Templeton	5	87	40	9078	63.4	70.5
023	1804224	REX/Templeton	3	87	41	9067	63.8	69.9
028	1603138	WAB 450-11-1-1-P31-HB (NERICA 5)/RSMT	7	83	41	7791	66.2	71.6
036	1403141	AC110DH2/AC108DH2//CHEN	6	85	41	7696	62.3	69.8
038	WLLS	WELLS	3	87	43	7274	61.0	70.9
031	1804204	Bowman/L201//TBNT/BLMT/3/RXMT/IR36	6	84	40	6503	61.4	68.9

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 3. Grain and milling yields and agronomic performance of entries in the 2019 Uniform Regional Nursery, Group 3, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
041	1901041	CLXAR19 (248WE16i-5/TGRT/7/248DREW16C-1-3/6/LGRU//KATY/STBN /5/NWBT/KATY//…	3	88	43	9602	59.9	69.5
042	1802162	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	5	84	38	9409	64.1	71.6
043	1804183	DXBL//NWBT/KATY/3/Bowman	5	84	39	7985	63.5	71.1
044	1403089	CPRS/9901081	7	83	40	6362	64.8	72.0
045	1801237	JPTR/EARL	4	84	36	8938	67.9	71.3
046	1802166	CHNR/3/NWBT/KATY//9902207X2/4/CTHL	5	84	40	9166	66.4	72.4
047	1804234	REX/Templeton	5	86	40	8144	65.0	71.0
048	1603144	WAB 450-11-1-1-P31-HB (NERICA 5)/RSMT	6	82	42	7449	65.3	71.8
049	1701007	FRNS//WLLS/CL161/3/248DREW/CL161	4	87	45	8913	62.3	71.3
050	1802174	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NPTN	5	85	38	9146	65.7	70.1
051	1804195	Bowman/L201//TBNT/BLMT/3/RXMT/IR36	6	85	40	7757	61.5	68.8
052	1303181	043752/0047277/CHEN	6	83	40	7075	61.8	70.2
053	1901053	CFFY/RU1202168	4	88	41	9488	64.3	70.8
054	1802054	CCDR/JEFF//CFX-26/9702128/3/CL151	4	86	42	9164	64.6	70.3
055	1804191	Bowman/L201//TBNT/BLMT/3/RXMT/IR36	5	86	37	7372	63.6	70.2
056	1603178	SABR/CCDR//PRESIDIO	5	87	41	6218	56.3	66.9
057	1804171	RSMT/KATY//Bowman	6	82	38	7878	58.8	70.6
058	CHNR	CHENIERE	3	84	38	9211	66.9	73.4
059	CCDR	COCODRIE	4	84	40	9099	65.3	72.3
060	CL272	CL272	4	84	37	9418	64.1	70.7

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 4. Grain and milling yields and agronomic performance of entries in the 2019 Uniform Regional Nursery, Group 4, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
080	TITN	TITAN	3	83	41	10735	66.0	70.8
062	1602071	CLH161 (HYBRID)	7	82	51	10117	62.2	69.4
069	1801145	ROYJ/CL142-AR	3	87	48	10022	60.4	67.7
070	1802098	CHNR/3/NWBT/KATY//9902207X2/4/BASF 2-21	4	81	40	9813	58.0	68.7
076	1703129	IR64/IR 1321-12	6	80	44	9621	64.0	68.7
061	1801221	CTHL/CL172	4	86	40	9414	64.9	70.7
078	JPTR	JUPITER	4	86	39	9330	64.3	68.2
066	1802094	PVL108	3	84	46	9310	65.6	71.8
067	1804063	RSMT/KATY//Bowman	5	84	38	9276	60.2	69.3
065	1901065	FRNS/6/LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/DREW/7/19991516/ 19981467/8/LGRU//KATY/…	3	88	45	8796	62.6	70.7
071	1804071	JODON/3/KATY//GFMT/PCOS/Templeton	3	87	42	8706	62.8	69.1
079	ROYJ	ROY J	3	89	44	8502	60.2	68.3
063	1804163	CPRS//NWBT/KATY/3/Bowman	5	85	40	8289	61.4	68.5
068	1603086	CL161/CPRS	6	86	42	8022	63.4	69.6
074	1802110	CPRS/BASF 1-14	5	86	43	7920	61.0	68.0
073	1801093	LMNT//82CAY21/CICA8/3/DLMT/4/BASMATI(120)/BOND//BSMT122/7// RNS3/5/IR36M4/4/L201/3/…	3	86	42	7920	60.6	68.8
075	1804135	Taggart/CL111	6	86	41	7553	60.5	68.6
064	1603113	043752/0047277/CHEN	6	82	40	7183	62.3	69.6
072	1403153	L202/LQ39a//SABR	7	83	39	6727	62.0	68.9
077	1803196	CCDR/L202//TRENASSE	6	83	41	6173	58.1	65.9

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 5. Grain and milling yields and agronomic performance of entries in the 2019 Uniform Regional Nursery, Group 5, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
097	1801097	RU1102034/RU1302045	4	85	41	10889	61.8	69.6
113	1801238	EARL/9902028//RU1202068	4	84	38	10638	64.5	70.7
095	1804123	Rex/CL151	4	87	44	10467	60.2	67.7
119	CLM04	16AR1030	3	85	44	10303	64.7	69.4
110	1902110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS/KBNT//…	3	85	40	10028	64.7	70.8
089	1901089	WLLS/CL161//TGRT/3/DREW/CL161//CL142-AR	2	85	46	10019	59.6	70.6
114	1902114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//9502008/4/LGRU/CLR11/4/9602065/3/CFX29/…	4	82	40	9671	64.8	71.7
093	1901093	TGRT/3/FRNS/CL161//TEMPLETON	3	89	44	9633	62.0	69.7
106	1902106	KBNT/CL111	3	88	41	9575	64.5	70.7
101	1901101	ROYJ/RU1501024	5	83	42	9485	64.0	68.5
091	1504197	RSMT/3/MARS/NWRX//TBNT/4/CL151	6	83	40	9444	61.6	69.5
102	1802050	CCDR/JEFF//CFX-26/9702128/3/CL151	4	86	38	9296	61.6	69.8
107	1804107	GFMT/KDM105//CL151/JSMN85	4	88	39	9177	57.6	67.8
082	1802102	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	5	80	39	9017	57.2	67.4
115	1804139	CL161/Priscilla//CL151/JSMN85	6	84	44	9012	61.2	70.2
087	1804147	Rex/CL151	3	87	41	8641	60.8	68.7
081	1901081	FRNS//WLLS/CL161/7/FRNS/6/LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/DREW	4	88	45	8614	60.6	67.8
090	1902090	CTHL/BASF2-22	7	83	37	8603	57.4	67.9
120	CL163	CL163	5	88	43	8453	60.3	67.9
109	1801109	JZMN/PI560239//JES	6	82	43	8439	56.5	67.1
111	1804087	Rex/CL151	5	85	43	8433	60.2	69.9
085	1901085	LGRU//KATY/STBN/5/LGRU//LMNT/RA73/3/LGRU/4/LGRU/6/NWBT/KATY//RA73/LMNT/3/…	3	88	47	8302	59.5	67.4
099	1604197	CL151//COLUMBIA2/BENGAL	5	86	43	8206	57.0	67.2
117	1905117	A:NEPTUNE/3/BNGL/CL161//CAFFEY	3	87	43	7988	61.4	69.1
118	1905118	A:NEPTUNE/3/BNGL/CL161//CAFFEY	4	86	42	7934	57.8	67.6
094	1902094	9302065/BASF1-6	7	78	44	7855	59.6	68.9

Continued.

Table 5. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
116	1703138	CL161/CPRS	8	84	39	7799	61.4	70.0
086	1902086	DREW/BASF1-4	5	87	41	7775	54.7	65.7
092	1703163	Hayakogane/BALDO	7	83	41	7140	61.5	69.6
098	1902098	CTHL/BASF2-18	4	87	43	6991	57.6	69.0
088	1703147	CPRS/NWBT//KATY/3/CCDR	7	82	42	6577	61.6	70.0
083	1804131	Rex/CL151	5	86	39	6557	55.9	65.9
096	1603166	CPRS/3/CPRS/NWBT/KATY	6	87	39	6344	61.9	69.7
105	1801105	JZMN/RU0701124//PI632283	3	90	41	6320	61.8	68.9
104	1903104	IR64/IR 1321-12	7	93	51	6195	59.8	66.5
103	1804083	CL151/JSMN85//CL151	8	80	44	6094	57.4	67.2
100	1903100	IR64/IR 1321-12	7	93	50	5890	57.0	65.0
084	1903084	IR64/IR 1321-12	5	95	51	4611	52.5	61.2
112	1903112	Carolina Gold/Presidio	3	89	51	4508	57.7	68.9
108	1903108	M202*5/Katy	3	77	36	3376	58.3	66.3

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 6. Grain and milling yields and agronomic performance of entries in the 2019 Uniform Regional Nursery, Group 6, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
146	1902146	TRNS//TRNS/CL131	4	80	42	10516	64.0	69.9
142	1902142	9502008/DREW//CLR20/4/9502008//AR1188/CCDR/3/CPRS/KBNT//9502008A	4	85	38	10379	64.3	70.4
133	1901133	TITN/RU1202168	5	86	44	10283	65.7	70.0
121	1901121	RU1102131/CL172	4	86	43	10057	64.3	70.6
158	1805158	Mo0204044/Kataki	3	83	42	10026	62.8	68.3
126	1902126	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	3	87	42	10022	62.1	70.3
130	1902130	CHNR/3/CCDR//CFX29/CCDR	5	83	41	9801	64.0	71.3
122	1902122	CHNR/6/CPRS/KBNT//9502008/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	4	84	39	9678	65.2	71.4
150	1802150	LGRU/CLR11/4/9302065/3/CFX29/AR1142/LA2031/4/CFX18//CCDR/9770532DH2/3/CPRS…	3	84	41	9629	64.7	70.7
129	1901129	RU1102131/14CSIT203	4	85	41	9616	64.4	71.3
138	1902138	CCDR//CFX29/CCDR/3/CCDR	3	84	41	9605	63.3	70.5
154	1902154	TRNS//TRNS/CL131	5	85	41	9345	65.0	71.8
127	1904127	RSMT//9403113/3/KCAL/LEAH//LEAH/4///Temp	3	85	42	9182	63.1	70.4
140	1903140	Jangseongbyeo/IR 1321-12	5	83	44	9145	64.6	69.8
134	1902134	CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	3	85	42	9137	63.6	70.8
125	1901125	JPTR/3/EARL//BNGL/SHORTRICO	6	84	39	9036	64.8	69.5
145	1901145	VSNTLM//L201/9NRZ/3/KATY/4/VSNTLM//L201/9NRZ/3/TBNT/LBLE//L201/9NRZ/5/LGRU2/6/…	3	88	46	8832	62.5	70.9
123	1904123	Lemont/Jasmine	5	85	40	8596	61.6	68.9
135	1904135	Lemont/Jasmine 85-220//Francis	5	86	39	8454	64.2	70.9
147	1904147	Rexmont/7///FRNS/6/LBNT/9902/3/Dawn/9695	4	85	43	8411	60.4	70.1
160	Thad	Thad	3	87	40	8357	63.5	70.5
137	1901137	CL271/JPTR	4	88	38	8172	63.6	69.9
131	1904131	Rexmont/7///FRNS/6/LBNT/9902/3/Dawn/9695	5	88	43	8151	62.6	68.9
149	1901149	VSNTLM//L201/9NRZ/3/KATY/4/VSNTLM//L201/9NRZ/3/TBNT/LBLE//L201/9NRZ/5/LGRU2/6/…	4	90	45	8121	60.7	70.3

Continued.

Table 6. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
139	1904139	Lemont/Jasmine 85-220//Francis	4	88	43	8109	60.4	68.4
155	1904155	Cheniere/Bowman	3	88	43	8004	58.9	69.3
159	703144	CPRS/CCDR (ANTONIO)	5	81	40	7938	65.5	72.0
141	1901141	TMPT//CYBT/TMPT	3	91	47	7867	62.0	70.0
144	1903144	CPRS/SABR//Francis	4	86	37	7813	63.6	69.3
153	1901153	TMPT/8/RU9201176/3/KATY/NWBT//L201/7402003/4/WLLS/7/RNS3/5/ IR36M4/4/L201/3/…	3	89	43	7658	63.5	70.7
132	1703132	CPRS/3/CPRS/NWBT/KATY	6	84	41	7645	65.5	71.0
157	1905157	A:NEPTUNE/3/BNGL/CL161//CAFFEY	4	84	38	7519	62.2	69.3
128	1703181	AC110DH2/AC108DH2//CYBT	6	82	44	7393	65.4	71.2
124	1703178	Hayakogane/BALDO	6	85	42	7382	63.4	71.0
143	1904143	Rex/Cheniere	5	87	40	7101	60.2	70.0
136	1603187	CPRS/3/CPRS/NWBT/KATY	5	85	36	6627	61.8	70.0
148	1803148	CPRS/3/CPRS/NWBT/KATY	6	83	40	6489	62.7	70.1
151	1904151	Rex/Cheniere	3	86	39	5500	54.2	68.1
152	1903152	FRAN/WELLS//BANKS	5	98	48	5345	57.5	67.9
156	1903156	CPRS/SABR//Gulfmont	4	83	43	4842	57.9	67.8

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 7. Grain and milling yields and agronomic performance of entries in the 2019 Uniform Regional Nursery, Group 7, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
161	1801161	LGRU//KATY/STBN/5/LGRU//LMNT/RA73/3/LGRU/4/LGRU/6/NWBT/KATY//RA73/LMNT/3/…	3	88	41	8834	61.3	69.9
162	1902162	DREW//CHNR/LMNT/5/9502008/DREW//CLR20/4/CPRS/KBNT//9502008A	3	86	40	10075	64.8	72.2
163	1904163	Bowman//Bowman/Te Quing	4	87	39	8889	59.1	70.2
164	1803164	CPRS/3/CPRS/NWBT/KATY	7	85	38	6446	60.5	70.2
165	1901165	RU1001067/RU0602171	6	85	40	9067	63.0	69.4
166	1902166	WLLS/CFX18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/LGRU/CLR11/4/9302065/3/…	3	83	41	9792	62.8	71.1
167	1904167	Bowman/Roy J	4	87	38	8337	58.4	69.4
168	1803168	CPRS/NWBT//KATY/3/CCDR	8	84	40	5787	62.7	70.7
169	1901169	EARL/9902028//RU1202068	6	84	39	9163	62.9	69.8
170	1902170	1002146*4//JZMN/08CLR004	4	82	39	9440	67.6	72.4
171	1904171	Bowman//Bowman/Te Quing	5	83	40	9021	63.1	71.6
172	1703172	AC110DH2/AC108DH2//CHEN	5	85	42	8384	65.3	71.6
173	1901173	RU1102034/RU1501024*2	3	85	42	9654	64.5	71.8
174	1902174	NPTN//BNGL/CL161/3/NPTN	5	85	39	10228	65.3	70.5
175	1904175	Bowman/Roy J	3	92	42	7452	58.5	69.4
176	1803176	CPRS/CCDR//WELLS	7	87	40	6575	63.9	70.6
177	1901177	LMNT//82CAY21/CICA8/3/DLMT/4/BASMATI(120)/BOND//BSMT122/7//RNS3/5/IR36M4/4/…	3	87	41	8300	61.5	69.9
178	1902178	NPTN//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/…	4	84	45	7687	59.9	68.9
179	1904179	Cheniere/Bowman	4	87	44	7501	59.8	69.9
180	1903180	CPRS/SABR//MADISON	4	97	51	5046	50.2	66.3
181	1901181	BRAZ/TBNT/3/1649864/NV66//NTAI/4/BNGL/5/RU9201176/4/LBNT/STBN//NWBT/3/MILL/6/…	4	86	42	7678	59.0	69.1
182	1902182	BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	4	85	42	8545	59.0	69.3
183	1804115	Rex/CL181-AR	4	90	42	7508	60.4	68.9
184	1803184	CPRS/SABR//MADISON	4	94	40	7783	63.3	69.9
185	1901185	RU1001067/TITN	4	85	39	9012	65.0	70.4

Continued.

Table 7. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
186	1902186	TGRT/3/TRNS//CCDR/JEFF	4	84	40	9540	64.6	71.7
187	1904187	Taggart/CL111	6	82	40	7826	61.5	70.2
188	1803188	Jangseongbyeo/IR 1321-12	5	84	48	7317	62.4	69.3
189	1901189	STG11P-04-196/PI632283	3	90	41	5904	63.4	70.0
190	1902190	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	3	84	40	9202	65.8	72.3
191	1904191	Rex/CL151	7	83	41	7186	61.4	70.0
192	1903192	CL161/CPRS	7	90	42	7010	63.4	70.6
193	1901193	BRAZ/TBNT/3/1649864/NV66//NTAI/4/BNGL/5/RU9201176/4/LBNT/ STBN//NWBT/3/MILL/6/…	4	90	43	7893	59.7	68.6
194	1902194	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	4	85	41	8414	63.5	71.7
195	1904195	Rex/CL181-AR	4	88	39	7990	62.3	69.9
196	1903196	LD 183-3/Jasmine 85	8	83	48	4993	63.9	66.9
197	1905197	(9502008-A/DREW//CLR-120/4/CPRS/KBNT//9502008-A/5/CL111/ CHENIERE)	3	81	39	8698	64.2	70.8
198	1905198	CATAHOULA/TRNS	3	85	42	8848	62.7	71.3
199	CLJ01	CLJ01	2	85	40	8883	65.7	71.7
200	PVL01	PVL01	3	90	40	7802	56.3	69.6

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

Table 8. Grain and milling yields and agronomic performance of entries in the 2019 Uniform Regional Nursery, Group 8, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
211	1801211	9865216DH2/EARL//JPTR	5	82	44	10504	62.7	70.8
218	1905218	B: NEPTUNE/3/BNGL/CL161//CAFFEY	5	84	44	10281	64.8	71.8
234	MM17	MM17	4	84	38	10060	65.3	71.4
204	1904204	CL151/JSMN85//CL161	3	86	42	9868	64.7	71.6
207	1902207	CTHL/4/CPRS/KBNT//9502008/3/CCDR	3	85	42	9805	65.4	72.7
216	1901216	ROYJ/WLLS	3	89	45	9716	63.8	72.3
227	1902227	NPTN/JPTR	5	83	40	9662	67.2	71.6
217	1902217	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	3	82	38	9658	63.6	72.3
209	1904209	CL111//CL151/JSMN85	6	81	47	9583	66.8	72.2
202	1902202	CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	4	84	40	9567	64.3	71.9
226	1901226	RPG/WLLS/2/ROYJ/3/FRAN /ROYJ	4	86	44	9359	60.7	71.8
219	1904219	CL131//CL162-616	5	87	43	9253	64.0	71.3
233	1905233	Mo04062311	4	83	48	9224	62.5	70.2
232	1902232	LAH169 (HYBRID)	7	80	48	9211	60.1	70.5
237	1905237	NEPTUNE/4/BNGL//MERC/RICO/3/MERC/RICO//BNGL /5/BNGL//MERC/RICO/3/ MERC/RICO//…	3	88	38	9174	66.1	70.1
212	1902212	TRNS//CCDR/JEFF/3/AR1188/CCDR//9502008/LGRU	3	80	39	8968	64.3	71.5
214	1904214	Taggart/CL111	4	89	43	8959	64.9	72.6
223	1805223	Mo0215035 / CIRAD141Q244-3	4	82	44	8901	60.5	71.0
208	1805208	Mo0239718/CL161	3	84	47	8802	63.1	71.3
222	1902222	MRMT/JPTR	5	86	43	8772	63.5	70.5
213	1905213	B: NEPTUNE/3/BNGL/CL161//CAFFEY	3	85	39	8736	65.9	72.3
236	1905236	CPRS/KBNT//WELLS-1CFX-118/5/TACAURI/3/CPRS//82CAY21/TBNT/4/…/6/ 9502008-A/DREW//…	3	88	50	8626	59.7	69.4
240	Rex	Rex	3	88	46	8490	63.3	70.5
203	1905203	A: CL271/3/NEPTUNE//BNGL/CL161	4	86	43	8436	63.8	70.4
224	1904224	Lemont/CL111	3	90	42	8040	63.1	71.1
206	1901206	JZMN/STG05F5-08-104//DLL2	3	87	39	7995	62.8	70.4
228	1905228	Mo0215035/MM14-1	5	82	44	8363	64.5	71.0

Continued.

Table 8. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
238	1905238	Mo0204044 / Cypress	4	84	41	8157	63.4	71.6
210	1903210	RU0302088/CHEN	5	87	45	7829	65.7	72.1
229	1904229	Rex/CL181-AR	7	86	51	7738	60.0	68.9
231	1901231	JZMN/RU0701124//TGRT	4	88	46	7662	65.5	70.9
239	ARoma17	JZMN/PI597046	3	89	44	7561	64.6	71.0
201	1801201	LGRU//KATY/STBN/5/LGRU//LMNT/RA73/3/LGRU/4/LGRU/6/NWBT/ KATY//RA73/LMNT/3/…	3	94	48	7121	59.3	69.9
225	1903225	RU0302085/4593	4	88	42	7013	64.9	72.7
230	1803230	FRAN/WELLS//BANKS	5	89	49	6172	61.7	70.2
215	1803215	CPRS/SABR//Gulfmont	3	85	47	5578	64.0	71.1
221	1901221	RICO/BNGL//RU1202068	5	85	42	5531	51.8	66.7
205	1903205	CPRS/SABR//MADISON	5	93	43	5457	59.7	69.5
235	1903235	Hayakogane/BALDO	8	84	43	4180	60.2	70.4
220	1903220	CPRS/SABR//MADISON	5	93	49	3960	49.5	66.9

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

PROVISIA EXPERIMENTAL LINES

Two yield trials were conducted to evaluate new Provisia experimental lines. The trials included the PV and PVS, which were planted in the same field.

These yield trials consist primarily of promising breeding nursery material that is ready to be tested in replicated yield trials. The material in these trials was screened for agronomic and grain characteristics in nurseries prior to this phase of testing. The experimental lines were evaluated for seedling vigor, maturity, plant height, lodging resistance, grain yield of main crop, and disease resistance.

Trials were conducted using standard agronomic practices (except that no fungicides were applied) at the H. Rouse Caffey Rice Research Station (HRCRRS). Provisia herbicide was applied at 31 oz (2x rate) on May 2. A randomized complete block design was applied to arrange test entries. The plot size was 4.66 x 16 ft. Seeding rate was 90 lb/A. Trials were drill seeded on March 14 and harvested on July 30. Data is presented in Table 1.

Table 1. Grain and milling yields and agronomic performance of entries in the 2019 Provisia Yield trial, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
036	193L1036	TRNS//CHNR/BASF1-2	4	77	43	9804	62.6	68.2
144	193L1144	BLDO//CHNR/BASF1-2/	4	82	42	9687		
125	193L1125	CTHL//CPRS/BASF1-13	3	78	42	9641	55.3	69.9
157	193L1157	MRMTBCR048-7/TRNS	4	74	37	9547	63.2	70.7
200	PVL108	PVL108	3	83	42	9404	66.0	72.0
135	193L1135	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	5	82	40	9112	63.3	70.1
140	193L1140	CTHL//CPRS/BASF1-13	4	80	40	9100	53.2	69.0
182	193L1182	PVL01/CTHL	4	84	40	9095	63.1	70.9
132	193L1132	MRMTBCR048-7/TRNS	4	75	39	9084	64.1	70.3
174	193L1174	TRNS//CHNR/BASF1-2	5	80	42	9084	54.5	69.0
099	193L1099	TRNS//CHNR/BASF1-2	5	77	38	9052	61.9	68.9
047	193L1047	CTHL//CPRS/BASF1-13	3	82	44	9025	62.6	70.5
084	193L1084	PVL01/CTHL	4	86	43	8926	61.1	71.0
081	193L1081	CTHL//CPRS/BASF1-13	5	80	40	8879	63.0	70.2
028	193L1028	9302065/MRMTBCR048(5)	4	80	48	8843		
005	193L1005	CTHL//CPRS/BASF1-13	5	79	41	8815	64.9	70.7
091	193L1091	MRMTBCR048/CHNR	5	79	41	8813	60.5	70.3
010	193L1010	CTHL/MRMTBCR048(5)	3	75	38	8787	52.5	71.8
153	193L1153	PVL24B/MRMT	4	86	43	8783	63.7	71.1
097	193L1097	MBLE//CHNR/BASF1-2	4	74	40	8781	57.7	70.8
031	193L1031	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	4	76	42	8777	58.8	69.4
130	193L1130	LKST/PVL01	4	85	43	8775	57.1	68.2
165	193L1165	9302065/MRMTBCR048-6	4	82	41	8756	59.4	69.6
064	193L1064	PVL01/CTHL	3	85	41	8752	58.1	69.6
192	193L1192	MBLE//CHNR/BASF1-2	2	74	43	8743	58.3	69.0
070	193L1070	CPRS/PVL24B	4	79	38	8734	60.0	68.5

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
023	193L1023	CTHL//CPRS/BASF1-13	4	81	42	8710	62.9	70.5
189	193L1189	CTHL//CPRS/BASF1-13	4	78	43	8703	63.3	71.8
171	193L1171	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	4	76	42	8669	57.2	69.6
093	193L1093	PVL01/CTHL	3	84	39	8662	61.0	69.8
086	193L1086	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	3	80	39	8653	58.7	68.4
107	193L1107	CTHL//CPRS/BASF1-13	3	81	37	8622	54.0	70.0
082	193L1082	CCDR/MRMTBCR048(5)	3	82	41	8614	62.7	70.4
167	193L1167	TRNS//TRNS/BASF1-10	4	78	44	8612	56.2	67.8
172	193L1172	MBLE//CHNR/BASF1-2	4	76	36	8604	62.1	70.0
120	193L1120	TCRI/CPRSBCR045-5	4	82	38	8595		
030	193L1030	CPRS/PVL24B	3	83	39	8563	61.8	69.8
042	193L1042	CTHL//PSDO/BASF1-12	3	82	36	8540		
094	193L1094	MRMTBCR048-7/TRNS	5	82	41	8533		
170	193L1170	CTHL//CPRS/BASF1-13	4	79	43	8516	63.5	69.6
121	193L1121	MBLE//CHNR/BASF1-2	3	78	39	8512	61.1	69.6
079	193L1079	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	4	77	40	8501	59.0	68.9
052	193L1052	MRMT/CPRSBCR045-5	4	85	39	8496	64.3	72.3
077	193L1077	PVL24B/MRMT	4	87	42	8489	59.5	68.8
048	193L1048	PVL01/CTHL	3	87	41	8447	65.6	71.3
026	193L1026	CTHL//CPRS/BASF1-13	4	78	45	8433	61.1	69.2
004	193L1004	CPRS/PVL24B	5	84	40	8396	60.1	69.7
178	193L1178	PVL01/CTHL	3	88	40	8392	60.6	69.2
141	193L1141	PVL01/CTHL	3	86	40	8382	64.2	70.8
029	193L1029	PVL01/CTHL	4	86	40	8377	61.6	70.2
108	193L1108	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	3	73	41	8359	57.3	68.4
162	193L1162	CPRSBCR045-5F2/MBLE	3	75	41	8354		

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
072	193L1072	CTHL//CPRS/BASF1-13	3	81	40	8353		
053	193L1053	PVL24B/MRMT	4	85	39	8352	63.2	70.7
103	193L1103	CTHL//CPRS/BASF1-13	3	78	36	8349	58.0	70.1
017	193L1017	CTHL//CPRS/BASF1-13	5	78	38	8343	56.3	69.6
133	193L1133	CHNR/BASF1-6//TRNS	4	80	43	8318	65.2	69.9
055	193L1055	PVL01/CTHL	3	86	41	8313	65.1	71.0
025	193L1025	CPRS/PVL24B	3	84	44	8308		
124	193L1124	CTHL//PSDO/BASF1-12	3	82	36	8307		
063	193L1063	MBLE//CHNR/BASF1-2	3	76	42	8302	57.8	69.4
183	193L1183	PVL01/CTHL	4	88	40	8291	63.3	70.0
119	193L1119	MRMT/CPRSBCR045-5	4	77	40	8288		
129	193L1129	TRNS//CHNR/BASF1-2	5	84	42	8251	61.1	68.1
024	193L1024	CTHL//CPRS/BASF1-13	3	81	40	8238		
145	193L1145	PVL01/CTHL	3	84	40	8234	61.6	71.2
001	193L1001	PVL01/CTHL	4	85	41	8233	59.7	69.6
112	193L1112	PVL01/CTHL	3	86	39	8223	58.6	68.7
065	193L1065	MRMTBCR048-7GLABNICE	4	77	46	8218		
074	193L1074	CTHL/MRMTBCR048(5)	3	80	40	8190		
150	193L1150	CPRS/PVL24B	3	82	41	8182	60.5	68.8
021	193L1021	PVL01/CTHL	4	87	42	8175		
089	193L1089	PVL01/CTHL	6	85	41	8169	57.6	68.9
168	193L1168	CTHL//CPRS/BASF1-13	3	77	41	8167	63.1	69.4
184	193L1184	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	4	78	40	8157	60.9	69.2
143	193L1143	CTHL//CPRS/BASF1-13	4	80	44	8151	59.8	69.2
147	193L1147	CTHL//CPRS/BASF1-13	4	80	37	8141	64.0	70.7
088	193L1088	MRMTBCR048-7/CHNR	3	86	41	8126	58.6	68.0

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
080	193L1080	9302065/MRMTBCR048(5)	5	79	41	8121		
067	193L1067	CPRS/PVL24B	3	84	42	8096	65.3	71.4
181	193L1181	MBLE//CHNR/BASF1-2	5	79	36	8092	61.4	69.6
058	193L1058	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	3	79	42	8087	60.6	70.6
175	193L1175	PVL01/CTHL	3	84	42	8070	60.7	69.3
046	193L1046	CTHL/MRMTBCR048(5)	4	77	44	8054		
056	193L1056	CTHL//CPRS/BASF1-13	6	81	42	8048		
033	193L1033	CTHL//TRNS/BASF1-10	6	84	41	8046		
069	193L1069	PVL01/CTHL	4	87	41	8035	62.6	69.7
185	193L1185	PVL01/CTHL	4	85	42	8030	65.9	70.8
164	193L1164	MBLE//CHNR/BASF1-2	4	81	38	8015	62.1	69.1
180	193L1180	PVL01/CTHL	4	85	44	7991	56.5	68.2
166	193L1166	PSDO//MRMTBCR048-7/PSDO	4	83	43	7981		
043	193L1043	PVL01/CTHL	4	88	40	7969		
039	193L1039	PVL01/CTHL	4	87	40	7961	57.6	69.3
177	193L1177	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	5	77	39	7938		
198	193L1198	9302065/MRMTBCR048-6	5	78	44	7927		
117	193L1117	TRNS//TRNS/BASF1-10	8	80	44	7925		
155	193L1155	PVL01/CTHL	4	87	41	7924		
142	193L1142	PVL01/CTHL	4	86	41	7919		
169	193L1169	PVL01/CTHL	3	84	42	7886		
083	193L1083	TCRI/MRMTBCR048-7	3	84	39	7873		
020	193L1020	PVL01/CTHL	4	88	41	7870	58.1	69.6
152	193L1152	PVL01/CTHL	4	88	44	7866	60.1	70.5
173	193L1173	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	4	76	40	7848		
114	193L1114	CTHL//CPRS/BASF1-13	3	78	37	7834		

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
159	193L1159	PVL01/CTHL	5	88	36	7816	59.6	69.9
193	193L1193	CTHL//CPRS/BASF1-13	3	79	42	7809		
096	193L1096	CTHL/3/CTHL//TRNS/BASF1-10	5	79	40	7808		
090	193L1090	PVL01/CTHL	4	89	41	7796		
002	193L1002	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	4	78	40	7795		
054	193L1054	PVL01/CTHL	4	84	39	7736		
013	193L1013	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	4	77	40	7716		
126	193L1126	PVL01/CTHL	3	86	42	7709		
151	193L1151	CTHL/MRMTBCR048(5)	4	78	42	7703		
038	193L1038	PVL01/CTHL	3	85	43	7701		
191	193L1191	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	4	78	42	7685		
019	193L1019	MRMTBCR048(5)/MBLE	4	80	39	7682		
016	193L1016	PVL01/CTHL	5	86	40	7668		
113	193L1113	MRMTBCR048/CHNR	6	84	39	7662		
128	193L1128	PVL01/CTHL	3	88	41	7646		
160	193L1160	PVL01/CTHL	3	87	42	7634		
149	193L1149	PVL01/CTHL	3	84	40	7583		
032	193L1032	MBLE//CHNR/BASF1-2	4	85	37	7576		
154	193L1154	MRMTBCR048-6F2/LKST	3	85	40	7570		
134	193L1134	PSDO//PSDO/MRMTBCR048(5)	5	88	43	7556		
176	193L1176	CTHL//CPRS/BASF1-13	3	82	48	7555	59.3	67.9
027	193L1027	PVL01/CTHL	4	89	39	7541		
009	193L1009	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	6	76	40	7539		
050	193L1050	9302065/MRMTBCR048-6	3	79	43	7525		
100	193L1100	CTHL//CPRS/BASF1-13	5	80	43	7513	63.2	71.4
061	193L1061	PVL24B/MRMT	3	86	44	7500		

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
045	193L1045	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	4	79	43	7493		
110	193L1110	9302065/CPRSBCR045-5	4	85	41	7488		
102	193L1102	MRMTBCR048-7/CHNR	4	87	43	7482		
073	193L1073	MRMTBCR048(5)/MBLE	3	82	39	7476		
196	193L1196	9302065/CPRSBCR045-5	3	83	37	7474		
035	193L1035	MBLE//CHNR/BASF1-2	4	85	36	7470		
078	193L1078	CPRS/PVL24B	3	83	44	7459		
015	193L1015	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	6	79	42	7455		
104	193L1104	MRMTBCR048-7/CHNR	4	82	40	7445		
007	193L1007	PSDO//PSDO/MRMTBCR048(5)	4	89	44	7444		
008	193L1008	PVL01/CTHL	3	87	38	7425		
044	193L1044	CPRS/PVL24B	3	80	37	7403		
003	193L1003	PSDO/MRMTBCR048(5)	4	81	41	7400		
123	193L1123	CPRS/PVL24B	5	83	41	7398		
049	193L1049	9302065/CPRSBCR045-5	3	85	39	7379		
011	193L1011	CPRS/PVL24B	4	84	39	7361		
161	193L1161	PVL01/CTHL	4	85	41	7357		
136	193L1136	CPRS/PVL24B	4	84	42	7356		
059	193L1059	PVL01/CTHL	4	87	42	7345		
190	193L1190	TCRI/MRMTBCR048-7	3	80	36	7318		
037	193L1037	CTHL/MRMTBCR048(5)	5	78	34	7281		
146	193L1146	9302065/CPRSBCR045-5	3	84	38	7264		
098	193L1098	PVL01/CTHL	4	91	40	7206		
195	193L1195	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	5	83	43	7184		
199	PVL01	PVL01	3	91	41	7182	54.2	68.1
115	193L1115	PVL01/CTHL	3	88	42	7162		

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
111	193L1111	PVL24B/MRMT	4	91	42	7158		
060	193L1060	MRMTBCR048-7/TRNS	4	73	38	7121		
018	193L1018	CPRS/BASF1-14	4	81	38	7108		
022	193L1022	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21/5/CHNR/BASF1-2	3	78	42	7102		
122	193L1122	PVL01/CTHL	3	90	40	7099		
012	193L1012	PVL01/CTHL	4	89	44	7054		
139	193L1139	PVL01/CTHL	4	90	42	7051		
105	193L1105	CCDR//CPRS/BASF1-13	3	85	41	7045		
127	193L1127	CPRS/PVL24B	4	83	38	7029		
138	193L1138	PVL01/CHNR	5	88	39	6970		
106	193L1106	PVL01/CTHL	4	88	39	6963		
197	193L1197	PVL01/CTHL	3	90	39	6928		
095	193L1095	PVL01/CTHL	4	82	41	6925		
087	193L1087	PVL01/CTHL	5	88	43	6891		
118	193L1118	CPRS/PVL24B	4	84	42	6875		
040	193L1040	PSDO//MRMTBCR048-7/PSDO	4	83	40	6817		
186	193L1186	PVL01/CTHL	3	88	42	6778		
131	193L1131	MRMT/MRMTBCR048(5)	5	83	37	6776		
188	193L1188	CTHL//PSDO/BASF1-12	3	86	42	6750		
076	193L1076	PVL01/CTHL	4	86	40	6714		
148	193L1148	PVL01/CTHL	3	86	38	6707		
041	193L1041	CTHL/3/CTHL//TRNS/BASF1-10	5	85	40	6705		
158	193L1158	PSDO/MRMTBCR048(5)	4	85	35	6703		
051	193L1051	MBLE//CHNR/BASF1-2	4	78	40	6686		
034	193L1034	CPRS/PVL24B	4	84	40	6680		
092	193L1092	PVL01/CTHL	3	88	39	6669		

Continued.

Table 1. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
062	193L1062	TRNS//CHNR/BASF1-2	5	84	36	6652		
179	193L1179	PVL01/CTHL	3	86	41	6642		
163	193L1163	PSDO//PSDO/MRMTBCR048(5)	5	90	41	6594		
006	193L1006	PVL01/CTHL	3	92	40	6545		
109	193L1109	PVL01/CTHL	4	86	41	6456		
068	193L1068	PVL01/CTHL	4	89	39	6383		
137	193L1137	CTHL//PSDO/BASF1-12	3	86	43	6365		
156	193L1156	CTHL//PSDO/BASF1-12	3	86	46	6346		
071	193L1071	MRMT/CPRSBCR045-5	3	82	41	6312		
085	193L1085	PSDO/MRMTBCR048(5)	5	83	38	6231		
101	193L1101	PSDO//PSDO/MRMTBCR048(5)	5	86	40	6175		
194	193L1194	PVL01/CTHL	5	89	43	6166		
014	193L1014	MBLE//CHNR/BASF1-2	5	78	36	6164		
057	193L1057	PVL01/CTHL	4	86	39	6146		
187	193L1187	MBLE//CHNR/BASF1-2	4	78	39	5950		
116	193L1116	PVL24B/MRMT	4	93	41	5679		
066	193L1066	PSDO//PSDO/MRMTBCR048(5)	6	88	38	5530		
075	193L1075	CPRSBCR045-5F2/MBLE	5	81	35	5396		

[1] Subjective rating 0 to 9, where 0 = excellent, 9 = poor.

DATE OF PLANTING STUDIES

The purpose of these trials is to determine the grain yield, milling quality, and other agronomic characteristics of major rice varieties, experimental lines, and hybrids planted at various times. The choice of planting date can significantly impact growth, development, and yield. The information generated from these trials is important for understanding the impact on the key economic and production characteristics associated with rice production.

Experiment: Date of Planting

Location: H. Rouse Caffey Rice Research Station, Crowley, Louisiana

Planting Method: Drill seeded

Plot size: 4.66 x 16 ft

Planting Dates: March 14, March 27, April 11, May 1, May 13, May 27, and June 9

Entries: CL111, CL151, CL153, Cheniere, PVL01, PVL108, LA2097, LA2195, LA2140, CLL15, LAH169, RY7301, and Titan

Experimental Design: Replicated complete block design with three replications

Results: Results can be found in Tables 1-6, which are arranged across planting dates.

Table 1. Grain yields[†] of 13 rice varieties and experimental lines planted over seven planting dates, 2019, H. Rouse Caffey Rice Research Station, Crowley, LA.

	PLANTING DATES							
ENTRY	MARCH 14	MARCH 27	APRIL 11	MAY 1	MAY 13	MAY 27	JUNE 9	MEAN
RT7301	8366	7467	9398	7803	9128	7332	5649	7877
CL151	6374	7442	7424	6211	6173	5430	4735	6255
1602097	5807	6254	6971	6236	7066	5496	5549	6197
PVL108	5460	7936	6780	5465	5827	5254	4343	5866
1602195	5810	7521	7282	5795	5557	4343	3891	5743
CL111	5987	6416	7466	5847	5948	4033	3670	5624
AR1111	5588	6671	7529	6276	4986	4283	3910	5606
1702140	5939	7237	6644	5490	5464	3909	3702	5483
1602082	4252	6818	7767	5738	5314	4044	4109	5435
TITAN	5801	7226	6493	5836	5620	3149	3080	5315
CL153	4077	7152	7828	5699	5481	3497	3209	5278
CHNR	4967	5975	6697	5380	4722	2734	2598	4725
PVL01	4380	5623	4979	4989	4097	3451	2301	
MEAN	5601	6903	7174	5905	5799	4381	3903	

[†] Yield is in pounds of rough rice per acre at 12% moisture.

Table 2. Seedling vigor[†] of 13 rice varieties and experimental lines planted over seven planting dates, 2019, H. Rouse Caffey Rice Research Station, Crowley, LA.

	PLANTIN G DATES							
ENTRY	MARCH 14	MARCH 27	APRIL 11	MAY 1	MAY 13	MAY 27	JUNE 9	MEAN
CL111	5	4	3	2	3	2	3	3
CL151	5	4	2	2	3	2	3	3
CL153	6	5	3	3	3	4	3	4
CHNR	6	4	3	3	3	3	3	3
PVL01	6	4	3	3	3	3	3	3
PVL108	6	4	2	3	3	3	3	4
1602097	6	5	2	2	2	2	3	3
1602195	5	3	2	2	2	2	3	3
1702140	6	4	3	4	3	3	3	4
AR1111	5	3	2	2	2	2	3	3
1602082	8	7	6	6	6	6	6	7
RT7301	5	6	3	3	3	2	2	3
TITAN	5	4	3	3	3	3	3	4
MEAN	6	4	3	3	3	3	3	

[†] Subjective rating of 1 to 9, where 1 is the highest seedling vigor and 9 is the lowest seedling vigor.

Table 3. Days to 50% heading of 13 rice varieties and experimental lines planted over seven planting dates, 2019, H. Rouse Caffey Rice Research Station, Crowley, LA.

	PLANTIN G DATES							
ENTRY	MARCH 14	MARCH 27	APRIL 11	MAY 1	MAY 13	MAY 27	JUNE 9	MEAN
CL111	82	76	71	69	69	69	59	71
CL151	83	78	73	72	71	72	66	74
CL153	84	79	74	74	72	73	65	74
CHNR	85	79	75	73	71	74	67	75
PVL01	92	84	81	81	79	78	78	82
PVL108	82	78	74	70	74	72	64	74
1602097	82	77	74	72	70	72	69	74
1602195	85	78	75	71	71	73	66	74
1702140	83	78	73	70	71	73	63	73
AR1111	84	79	74	71	71	72	65	74
1602082	77	70	70	64	68	69	65	69
RT7301	85	75	73	70	70	70	60	72
TITAN	81	76	70	69	70	71	70	4
MEAN	83	77	74	71	71	72	66	

Table 4. Plant height† of 13 rice varieties and experimental lines planted over five planting dates, 2019, H. Rouse Caffey Rice Research Station, Crowley, LA.

	PLANTING DATES					
ENTRY	MARCH 14	MARCH 27	APRIL 11	MAY 1	MAY 13	MEAN
CL111	36	36	40	37	36	37
CL151	34	36	39	38	36	37
CL153	33	36	39	36	36	36
CHNR	33	34	38	36	33	35
PVL01	34	34	38	36	36	36
PVL108	36	35	43	38	39	38
1602097	36	34	39	37	37	37
1602195	36	35	39	38	36	37
1702140	35	34	38	37	35	36
AR1111	34	35	37	35	34	35
1602082	36	40	43	39	39	39
RT7301	38	37	42	41	40	40
TITAN	34	34	37	36	33	4
MEAN	35	35	39	37	36	

† Plant height in inches from the soil surface to the tip of the main panicle.

Table 5. Whole milling percentage† of 13 rice varieties and experimental lines planted over seven planting dates, 2019, H. Rouse Caffey Rice Research Station, Crowley, LA.

	PLANTING DATES							
ENTRY	MARCH 14	MARCH 27	APRIL 11	MAY 1	MAY 13	MAY 27	JUNE 9	MEAN
CL111	63.8	63.7	65.9	64.9	58.7	51.6	56.4	60.7
CL151	63.0	63.4	61.7	60.9	49.1	53.5	58.9	58.7
CL153	60.6	62.1	65.3	59.5	56.0	52.5	61.4	59.6
CHNR	65.0	62.6	63.1	61.0	60.6	54.9	59.9	61.0
PVL01	48.6	50.9	49.1	42.1	32.1	51.2	55.7	47.1
PVL108	62.6	63.1	65.4	62.9	61.2	52.5	53.7	60.2
1602097	63.5	62.9	62.0	62.3	59.5	52.0	58.5	60.1
1602195	59.3	62.3	62.2	59.8	55.3	54.2	61.7	59.2
1702140	61.2	61.2	61.9	58.5	57.0	52.3	55.0	58.2
AR1111	60.7	63.0	62.8	62.1	50.6	48.5	58.8	58.1
1602082	57.2	56.0	58.4	56.4	52.0	56.1	57.4	56.2
RT7301	58.6	58.2	61.5	50.9	49.2	52.3	59.2	55.7
TITAN	65.6	62.3	64.0	65.0	61.1	47.9	61.2	61.0
MEAN	60.7	60.9	61.8	59.0	54.0	52.3	58.3	

† The percentage of unbroken grains after the removal of the hulls and broken grains.

Table 6. Total milling percentage† of 13 rice varieties and experimental lines planted over seven planting dates, 2019, H. Rouse Caffey Rice Research Station, Crowley, ,LA.

	PLANTING DATES							
ENTRY	MARCH 14	MARCH 27	APRIL 11	MAY 1	MAY 13	MAY 27	JUNE 9	MEAN
CL111	71.8	71.6	72.0	71.3	69.5	66.9	67.9	70.2
CL151	69.9	69.1	68.7	69.2	69.0	67.9	70.1	69.1
CL153	68.1	69.5	70.4	67.3	68.9	66.1	69.4	68.5
CHNR	72.3	71.2	71.3	69.6	70.2	67.7	68.6	70.1
PVL01	67.4	68.9	65.9	63.5	67.2	64.1	66.1	66.2
PVL108	69.2	69.6	71.4	69.6	67.7	68.4	69.3	69.3
1602097	68.7	68.5	68.5	68.6	68.0	66.4	69.7	68.4
1602195	69.4	69.4	68.3	66.7	67.4	66.7	69.9	68.3
1702140	69.5	68.7	71.1	65.0	68.1	66.7	69.3	68.3
AR1111	68.8	69.5	69.0	67.4	64.0	64.2	67.7	67.2
1602082	68.7	68.7	68.5	67.3	67.6	68.0	68.1	68.1
RT7301	69.9	70.8	70.1	68.8	71.0	69.4	70.0	70.0
TITAN	68.5	68.6	70.1	68.5	67.6	65.9	68.0	68.2
MEAN	69.4	69.5	69.7	67.9	68.2	66.8	68.8	

† The cumulative percentage of broken and unbroken grains after the removal of the hulls.

HIGH-THROUGHPUT DNA MARKER LAB FOR APPLIED BREEDING

A.N. Famoso, B. Angira, J.D. Dartez, and R.E. Zaunbrecher

A single nucleotide polymorphism (SNP) marker-assisted lab was established in February 2016 through the support of the Louisiana Rice Research Board and the LSU AgCenter at the H. Rouse Caffey Rice Research Station (HRCRRS) as part of the Variety Development Program. The lab facilitates the integration of molecular breeding as a core element to an applied breeding program and offers tangible benefits to our variety development efforts in terms of speed, accuracy, throughput, and uniformity. The lab is fulfilling the objective of research to develop, optimize, and implement a comprehensive molecular breeding strategy as an integrated component of rice variety development efforts. The SNP lab also facilitates the necessary scale and inexpensive modern breeding approaches that are incorporated into the variety development efforts.

The molecular breeding lab has SNP markers associated with major rice traits, including blast resistance genes (PITA2, PIZ, Pi2, Pi9, Pik, and Pib), Cercospora resistance, aroma (BADH2), amylose, gel temperature, pubescence, grain size (GS3 and GL7), and plant height (*sd1*). In addition to these markers, the lab also has SNP markers for Clearfield and Provisia herbicide resistance genes. These markers were deployed at different stages of the breeding program to improve the accuracy and speed of the program in 2019. To enable gene discovery and validation, a breeding germplasm panel of 400 lines, developed in 2016, was updated with modern, relevant, and diverse germplasm. This updated panel was phenotyped for heading date and purified by using markers and selecting a single source panicle for planting in 2020. The same selected panicle was used for genotyping.

A recombinant inbred line (RIL) population, developed by crossing a long-grain parent, Trenasse, and a medium-grain parent, Jupiter, was phenotyped and genotyped, and a linkage map was developed. The map covered 1,547 centimorgan (cM) of the rice genome and had an average distance of 11 cM between two markers. Quantitative trait loci (QTL) analysis for grain length identified two major QTLs - *qGL3.1* and *qGL7.1*. Quantitative trait loci *qGL3.1* was identified on Chromosome 3, and *qGL7.1* was mapped on Chromosome 7. The analysis of genes under these QTLs revealed that the QTL *qGL3.1* harbors the grain length gene *GS3*, and QTL *qGL7.1* had a novel gene for grain length that had never been reported. High-throughput markers for both of these genes were discovered, validated, and regularly used in the breeding program.

Marker-assisted selection (MAS) was performed on a total of 105 rice breeding populations that included 36,384 individual plants (Table 1). DNA was extracted from these plants, and the appropriate trait SNP markers were run to select the desired 100 or 50 plants from each population. The selected plants were then transplanted into a greenhouse. The harvested panicles will be grown as panicle rows in the field in 2020. The MAS approach was integrated with the extensive and successful core breeding program, and it improved the speed, accuracy, and uniformity of the Variety Development Program.

A set of markers was developed to identify the segregation and purity of the yield plots from all of the different breeding tests in order to improve the efficiency and accuracy of the program. From the test plots, 7,047 leaf samples were collected (Table 2). All of the developed trait markers were then run on these leaf samples. All entries included in yield plot tests were genotyped and analyzed, except for the RiceTec hybrid entries. The data was analyzed to check the purity of the tests and necessary actions were engaged. In addition to yield plot testing, F_1 populations were also tested to identify true crosses in 2019. Each F_1 population had eight plants with 275 total F_1 populations. All 2,200 plants were sampled and sets of markers were run to identify true breeding crosses.

In previous years, a set of genome-wide (GW) markers were identified, which along with the trait markers, has the ability to purify Louisiana rice varieties. This set has been successful in purifying foundation seed headrows of important Louisiana varieties in the Foundation Seed Program of the LSU AgCenter. In 2019, headrows of 1602195, 1602197, and 1702140 were purified using the defined molecular SNP marker set in the Foundation Seed Program. 1602197 is a potential Clearfield release, and 1702140 is a conventional release candidate. Based on the marker data, the Clearfield line was pure as expected and performed as expected at the HRCRRS in 2019. However, the marker profile of 1702140 was as expected when markers were run on the panicle flag leaf but when the headrows from the selected panicles were planted at the HRCRRS, some off types were observed in the field. The marker analysis revealed that an outcross event occurred in the Puerto Rico winter nursery (2018-2019). Markers were used to purify this line, and the selected pure panicles were grown in the 2019-2020 Puerto Rico winter nursery.

Furthermore, efforts are in the pipeline to identify more GW markers, which would be utilized in trait mapping, germplasm characterization, and germplasm purity screening.

Table 1. Breeding populations utilized for marker-assisted selection for target traits.

Population ID	Leaf Source	Round	No. of Plants	Selected Plants	Target Traits*
18T042	Seedlings	Round1	384	100	Clearfield, Plant height, Pita
18T049	Seedlings	Round1	384	100	Pita
18T121	Seedlings	Round1	384	100	Clearfield, Pita
18T124	Seedlings	Round1	384	100	Clearfield, Pita
18T129	Seedlings	Round1	384	100	Pita
18T132	Seedlings	Round1	384	100	Plant height, Pita
18T137	Seedlings	Round1	384	100	Pita
18T139	Seedlings	Round1	384	100	Clearfield, Plant height, Pita
18T144	Seedlings	Round1	384	100	Pita
18T165	Seedlings	Round1	1536	100	Amylose, Aroma, Gel temp
18T186	Seedlings	Round1	384	100	Clearfield
18T194	Seedlings	Round1	384	100	Piz
18T196	Seedlings	Round1	384	100	Clearfield
18T227	Seedlings	Round1	192	100	Clearfield, Pita
18T233	Seedlings	Round1	192	100	Clearfield, Pita
18T244	Seedlings	Round1	384	100	Provisia, Pubescence
18T251	Seedlings	Round1	384	100	Provisia, Glabrous, Piz
18T256	Seedlings	Round1	768	100	Provisia, Glabrous, Pita, plant height (sd1 gene)
18T259	Seedlings	Round1	384	100	Provisia, Glabrous, Piz
18T260	Seedlings	Round1	384	100	Provisia, Pubescence
18T269	Seedlings	Round1	768	100	Provisia, Glabrous, Pita, Piz
18T272	Seedlings	Round1	768	100	Provisia, Glabrous, Pita
CL161x08B	Seedlings	Round1	1536	150	Clearfield, Grain length, Plant height, Amylose, Gel temp, Pib, Glabrous
18T237A	Seedlings	Round1	768	150	Gel temp, Aroma, Amylose
18T238	Seedlings	Round1	768	150	Gel temp, Aroma, Amylose
18T237A	Panicle	Round1	288	120	Gel temp, Aroma, Amylose
18T238	Panicle	Round1	288	100	Gel temp, Aroma, Amylose
19T-084	Seedlings	Round2	384	100	Clearfield, Pita
19T-095	Seedlings	Round2	192	100	Clearfield, Pita, Plant height
19T-102	Seedlings	Round2	384	100	Clearfield
19T-107	Seedlings	Round2	384	100	Clearfield, Pita
19T-121	Seedlings	Round2	384	100	Clearfield
19T-128	Seedlings	Round2	192	50	Clearfield, Pita, Plant height
19T-130	Seedlings	Round2	192	100	Clearfield, Pita, Plant height
19T-131	Seedlings	Round2	192	100	Clearfield, Pita, Plant height
19T-150	Seedlings	Round2	192	100	Plant height, Clearfield, Amylose

Continued.

Table 1. Continued.

Population ID	Leaf Source	Round	No. of Plants	Selected Plants	Target Traits*
19T-154	Seedlings	Round2	384	50	Clearfield, Amylose
19T-156	Seedlings	Round2	384	100	Clearfield, Amylose
19T-167	Seedlings	Round2	384	100	Amylose, Gel temp, Glabrous, Pib
19T-168	Seedlings	Round2	384	100	Amylose, Gel temp, Glabrous, Pib
19T-169	Seedlings	Round2	384	100	Amylose, Gel temp, Glabrous, Pib
19T-171	Seedlings	Round2	384	100	Amylose, Gel temp, Glabrous
19T-185	Seedlings	Round2	384	100	Clearfield, Piz
19T-186	Seedlings	Round2	384	100	Clearfield, Piz
19T-191	Seedlings	Round2	576	100	Provisia, Pita
19T-192	Seedlings	Round2	576	100	Provisia, Pita
19T-193	Seedlings	Round2	576	100	Provisia, Pita
19T-194	Seedlings	Round2	576	100	Provisia
19T-195	Seedlings	Round2	192	100	Plant height
19T-199	Seedlings	Round2	384	100	Pita
19T-200	Seedlings	Round2	384	100	Plant height, Pita
19T-225	Seedlings	Round2	384	100	Amylose, Pita
19T-227	Seedlings	Round2	384	100	Amylose, Pita
19T-233	Seedlings	Round2	768	100	Amylose, Gel temp, Glabrous, Pib
19T-242	Seedlings	Round2	1152	100	Pib, Glabrous, Amylose, Gel temp
19T-246	Seedlings	Round2	192	100	Piz, Plant height
19T-248	Seedlings	Round2	192	100	Piz, Plant height
19T-249	Seedlings	Round2	192	100	Piz, Plant height
19T-257	Seedlings	Round2	192	100	Provisia, Pita
19T-258	Seedlings	Round2	192	100	Provisia, Pita, Amylose
19T-259	Seedlings	Round2	192	100	Plant height, Provisia, Pita
19T-261	Seedlings	Round2	192	100	Provisia, Pita, Amylose
19T-264	Seedlings	Round2	192	100	Provisia, Pita, Amylose
19T-271	Seedlings	Round2	384	100	Provisia, Pita
19T-273	Seedlings	Round2	384	100	Plant height, Provisia, Pita
19T-278	Seedlings	Round2	384	100	Provisia, Pita, Amylose
17T080	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17TA080	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17TA081	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T082	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T084	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T086	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T087	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T088	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose

Continued.

Table 1. Continued.

Population ID	Leaf Source	Round	No. of Plants	Selected Plants	Target Traits*
17T091	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T092	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T093	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T096	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T098	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T102	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T103	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T105	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17TA148	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17TA149	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17TA152	Seedlings	Round2	96	~25	Aroma, Clearfield, Gel temp, Amylose
17T032	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17T033	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17T038	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17T039	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17T040	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17T041	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17T042	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17TA017	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17TA026	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17TA027	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17TA050	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17TA067	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17TA142	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17TA143	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17TA200	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17TA043	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17TA070	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
17TA201	Seedlings	Round2	96	~25	GL7.1, GS3, Amylose, Gel temp
CL161x08B-CL	Seedlings	Round2	2304	100	Clearfield, Grain length, Plant height, Amylose, Gel temp, Pib, Glabrous
CL161x08B-Conv	Seedlings	Round2	2304	100	Clearfield, Grain length, Plant height, Amylose, Gel temp, Pib, Glabrous
Total			**36,384**	**7,695**	

* Pita, Piz, and Pib are rice blast resistance genes, while GS3 and GL7.1 are grain length genes.

Table 2. Yield plots of breeding tests were screened with molecular markers to validate the desired traits of the test entries.

Test*	Entries	Samples/Entries	Total Samples Collected
CA	80	8	640
URRN	240	4	960
RYT	150	8	1,200
PY-Long	220	2	440
PVPY	200	2	400
PVPR	111	2	222
CLPY-Long	750	2	1,500
CLPY-Med	200	2	400
PY-Med	200	2	400
Kaima	15	2	30
CLPR	196	2	392
PYPR	150	2	300
Diversity	50	2	100
Hybrid	15	2	30
Nutrien	11	3	33
Total	**2,588**		**7,047**

* CA = Commercial Advance test, URRN = Uniform Regional Rice Nursery, RYT = Regional Yield test, PY-Long = Preliminary Yield Long-grain test, PVPY = Provisia Preliminary Yield test, PVPR = Provisia Preliminary Yield test (Puerto Rico), CLPY-Long = Clearfield Preliminary Yield Long-grain test, CLPY-Med = Clearfield Preliminary Yield Medium-grain test, PY-Med = Conventional Preliminary Yield Medium-grain test, CLPR = Clearfield Puerto Rico test, PYPR = Conventional Preliminary Yield test (Puerto Rico).

DEVELOPMENT OF HYBRID RICE AND SHEATH BLIGHT-RESISTANT GERMPLASM FOR LOUISIANA

J.H. Oard, W. Li, A.N. Famoso, S.D. Linscombe, D.E. Groth, J.L. Thornton, and T.L. Roy

Introduction

Hybrid rice, produced from the first generation (F_1) of seeds between a cross of two genetically dissimilar pure line (inbred) parents, represents a relatively new option for Louisiana farmers. Commercial hybrids typically yield 10-20% more than the best inbreds grown under similar conditions believed to be the result of hybrid vigor or heterosis from crossing the two parents. Research goals of the Hybrid Rice program at the H. Rouse Caffey Rice Research Station (HRCRRS) include: (1) Develop elite cross combinations (hybrid varieties) through extensive test-crossing and yield trials, (2) Create and/or identify male-sterile (cytoplasmic A or environmental sensitive S) lines and restorer (R) lines adapted to Louisiana and southern U.S. environmental conditions, (3) Develop effective and economical hybrid seed production technology for Louisiana by modifying or optimizing available technologies, and (4) Develop sheath blight-resistant and low-chalk germplasm by traditional crossing and selection in conjunction with DNA marker technology.

LAH169 and CLH161 are long-grain hybrids that showed good yield potential and high milling yields across multiple locations in 2015-2018. This trend continued in 2019 across two yield trials at the HRCRRS. High main crop grain yield at 9,211 lb/A was observed in the 2019 URN trial in cooperation with Dr. Famoso, while the hybrid produced nearly identical yields at 9,491 lb/A in the Commercial Advanced (CA) test. Good milling yields of 63% head/70% total were consistent with previous trials. Early maturing at 78 days to heading, no lodging, and moderate to high levels of disease resistance were also observed. LAH169 produced a 23% grain yield advantage vs. the mean performance of 10 elite varieties in the 2019 Hybrid Yield Test at the HRCRRS. In a second yield test, LAH169 showed 20-23% higher grain yield at the HRCRRS than CL153 and CL111. The hybrid CLH161 also produced high yields at 9,749 lb/A in the 2019 CA test and 10,116 lb/A in the 2019 URN trial at the HRCRRS. High milling yields (65/71), no lodging, and high levels of disease resistance were recorded at the HRCRRS for this hybrid. In a second yield test at the HRCRRS, CLH161 exhibited 24% higher yield than CL153.

Five new early to mid-maturing, long-grain experimental hybrids produced high yields in the 2019 Observational Yield Trials at the HRCRRS. Grain production of two experimentals in the first Observational Trial was similar to or greater than yields of four commercial hybrids. Mean yield advantage of the experimentals was 44% higher versus CL111 and CL153. Similarly, yields of three additional experimental hybrids in the second Observational Trial were equal to or greater than two commercial hybrids. Mean yield advantage of the top candidate hybrids was 38% versus the Clearfield variety CL153. Height, maturity, and lodging of the experimentals were similar to those of the commercial hybrids.

Additional hybrid research efforts involved the development of approximately 30 new male-sterile lines with improved plant type and varying heading dates to maximize seed production for different parental combinations. The new male-sterile lines are also expected to produce hybrids with reduced chalk and good milling and cooking characteristics. Hybrid seed production methods were improved in terms of seeding rates and treatments, planting dates, gibberellic acid (GA3) plant growth regulator application, and different planting configurations.

Sheath blight disease caused by the fungus *Rhizoctonia solani* is a major constraint for high grain and milling yields. Our goal is to develop sheath blight-resistant germplasm by traditional crossing and selection in conjunction with DNA marker technology. In cooperation with Dr. Famoso, elite line 18SB-265 showed good levels of resistance to sheath blight and a yield advantage of 7-29% compared to CL111, CL153, and Roy J in the 2019 Diversity Trial at the HRCRRS. 18SB-265 also showed good resistance with a rating of 4 in a second trial at the HRCRRS compared to susceptible ratings (6-7) for five Clearfield and conventional varieties (CL111, CL151, CL153, Catahoula, and Cocodrie). The two elite lines and three additional sheath blight selections will be evaluated in the 2020 Multi-location Yield Trials in cooperation with Dr. Famoso.

Five new early to mid-maturing, long-grain Clearfield and Provisia hybrids produced high yields in the 2019 Observational Yield Trials at the HRCRRS. Grain production of the experimentals was similar to or greater than yields of three commercial hybrids. Mean yield advantage of the four Clearfield experimentals was 34% higher versus CL111. Sheath blight disease caused by the fungus *Rhizoctonia solani* is a major constraint for high grain and milling yields. Our

goal is to develop sheath blight-resistant germplasm by traditional crossing and selection in conjunction with DNA marker technology. A total of 162 crosses for sheath blight resistance were made in 2019. In addition, 615 F_1 plants, 42 backcross populations, and 17 space-planted F_2 populations were evaluated. A total of 630 early and advanced lines were tested in inoculated field plots at the HRCRRS. DNA technology was used to identify and advance two elite lines with moderate to high levels of resistance to sheath blight.

Yield Trials

Yield performance of LAH169 has been good in previous multiple locations from 2015-2018. This trend continued in 2019 across yield trials at the HRCRRS. In cooperation with Dr. Famoso, high main crop grain yield at 9,492 lb/A was observed for LAH169 in the 2019 CA test at Crowley (Table 1). The Clearfield hybrid CLH161 produced a nearly identical yield at 9,749 lb/A in the same CA test. As found in previous trials, both hybrids produced high whole-grain milling yields, while no lodging was observed for any hybrid or variety in this test.

Table 1. 2019 Commercial Advanced Yield Trial. Mean height, days to 50% heading, main crop grain yield, % head/total, grain dimensions, and lodging for LAH169, CLH161, two Clearfield, and two conventional varieties, H. Rouse Caffey Rice Research Station, Crowley, LA.

Hybrid/ Variety	Height (in)	Days to 50% Heading	Yield Main Crop (lb/A)	% Head/Total	Milled Grain Length (mm)	Milled Grain Width (mm)	Lodge (0-4)	Notes
CLH161	49	81	9,749	65/71	6.94	2.34	0	CL Hybrid
LAH169	43	78	9,492	63/70	6.88	2.30	0	Conv Hybrid
CL153	41	84	10,143	67/72	6.92	2.26	0	CL Variety
CL111	38	80	9,705	65/71	7.06	2.24	0	CL Variety
Diamond	42	83	8,049	61/70	6.81	2.31	0	Conv Variety
Cheniere	38	84	7,647	62/70	6.73	2.39	0	Conv Variety

Table 2 shows mean grain yield, height, days to 50% heading, grain dimensions, and lodging for LAH169 and CLH161 in the 2019 URN trial at Crowley. The two hybrids produced grain yields of 9,211-10,117 lb/A that were similar to those in the 2019 CA trial. The trend of early maturity at 80-82 days, high milling yields, and no lodging was consistent with the CA results.

Table 2. 2019 Louisiana URN Yield Trial. Mean height, days to 50% heading, main crop grain yield, % head/total, grain dimensions, and lodging for LAH169, CLH161, two Clearfield, and two conventional varieties, H. Rouse Caffey Rice Research Station, Crowley, LA.

Hybrid/ Variety	Height (in)	Days to 50% Heading	Yield Main Crop (lb/A)	% Head/Total	Milled Grain Length (mm)	Milled Grain Width (mm)	Lodge (0-4)	Notes
CLH161	51	82	10,117	62/69	6.96	2.38	0	CL Hybrid
LAH169	48	80	9,211	60/70	6.91	2.33	0	Conv Hybrid
CL153	41	83	10,579	67/72	6.92	2.26	0	CL Variety
CL111	40	80	10,480	65/72	7.21	2.31	0	CL Variety
Diamond	43	85	9,124	61/70	6.81	2.31	0	Conv Variety
Cheniere	38	84	9,211	67/73	6.88	2.34	0	Conv Variety

Table 3 shows height, days to 50% heading, main crop yield, milling yields, and lodging scores for three Louisiana hybrids and four varieties evaluated at the HRCRRS in 2019. Consistent with the two previous trials, LAH169 and CLH161 produced good grain yields from 9,590-9,993 lb/A. For this test, the average yield of the three hybrids at 9,302 lb/A was 25% higher than the mean (6,985 lb/A) of the four inbreds. Whole-grain milling yields of the hybrids and the varieties were identical at 58. Mean whole-milling yield of the hybrids at 67 was essentially identical to the varieties at 66. Both LAH169 and CLH161 did show moderate lodging in this test with a score of 2.0 while the varieties ranged from 0.0 for CL111 to 3.0 for CL153 (due to disease pressure).

Table 3. 2019 Hybrid Yield Trial. Mean height, days to 50% heading, main crop yield, % head/total, and lodging score, H. Rouse Caffey Rice Research Station, Crowley, LA.

Hybrid/Variety	Height (in)	Days to 50% Heading	Yield Main Crop (lb/A)	% Head/Total	Lodge (0-4)
CLH161	47	88	9,993	58/67	2.0
LAH169	43	85	9,590	60/69	2.0
CLH280	47	87	8,324	57/66	0.5
CL153	40	88	7,633	57/66	3.0
CL111	40	79	7,326	60/68	0.0
Mermentau	39	96	5,996	55/63	0.0
PVL02	46	87	5,715	62/67	0.5

The Hybrid Breeding Project utilizes both the 2-line and the 3-line breeding methods. Professor Li led the effort in 2019 to develop elite 3-line hybrids for Louisiana. Table 4 shows mean height, days to 50% heading, main crop grain yield, % head/total, and lodging for six Louisiana hybrids, three commercial hybrids, and two Clearfield varieties evaluated at the HRCRRS. Mean yield of the 3-line conventional hybrids (LAH194, LAH192, LAH199, LAH200) at 8,625 lb/A was 9% higher than the average yield of the three commercial hybrids and 18% higher than the mean yield of the two Clearfield varieties. Height on average for the 3-line hybrids was two inches taller than the three commercial hybrids. Milling yields and lodging scores were excellent for all entries in this trial.

Table 4. 2019 Three-Line Hybrid Yield Trial. Mean height, days to 50% heading, main crop grain yield, % head/total, and lodging score, H. Rouse Caffey Rice Research Station, Crowley, LA.

Hybrid/Variety	Height (in)	Days to 50% Heading	Yield Main Crop (lb/A)	% Head/Total	Lodge (0-4)	Notes
LAH194	47	78	9,548	66/71	0	Conv Hybrid
CLH161	48	80	9,526	63/71	0	CL Hybrid
LAH192	46	69	9,384	63/71	0	Conv Hybrid
LAH169	46	77	8,830	64/71	0	Conv Hybrid
LAH199	47	85	8,336	62/69	0	Conv Hybrid
CLXL745	46	82	8,309	64/71	0	CL Hybrid
LAH200	47	86	8,161	62/70	0	Conv Hybrid
RT7301	44	83	7,848	61/72	0	Conv Hybrid
XP753	45	83	7,784	63/71	0	Conv Hybrid
CL151	42	83	7,233	67/72	0	CL Variety
CL153	42	86	6,980	64/71	0	CL Variety

Table 5 shows results from the 2019 Diversity Yield Trial that measured height, days to 50% heading, main crop grain yield, % head/total, lodging, amylose content, gelatinization temperature, and presence of the Pita-2, Piz, and Pik blast resistance genes. The purpose of the Diversity Yield Trial is to identify new elite breeding lines from different research programs at the HRCRRS. From a total of 50 entries, the top two lines for grain yield were 18RYT-41 from Dr. Famoso's program and 18SB-1 from Dr. Oard's program. These two lines produced an average 8% yield advantage versus Roy J and 19% compared to CL153. Height of 18SB-1 and 18SB-2 was equal to Roy J at 44 inches and 3-4 inches taller than the other five entries. Maturity of 18SB-1 at 68 days was similar to 18RYT-41, ROY J, 18RYT-110, CL153, and CL151. At 71 days to 50% heading, 18SB-2 matured six days earlier than PVL01. Maturity for all entries were relatively early, most likely due to the late planting date of May 1. Milling yields and lodging scores were generally good for all entries except for PVL01 that produced 53% whole-grain milling. Amylose content and gelatinization temperature were intermediate based on DNA markers for all entries. 18SB-1 carried the Pita-2 and the Pik blast resistance genes as did 18RYT-41 and CL153. 18SB-1 and 18SB-2, tolerant to sheath blight disease (Table 10 below), will be evaluated at multiple Louisiana locations in 2020.

Table 5. 2019 Diversity Yield Trial. Mean height, days to 50% heading, main crop grain yield, % head/total, lodging, amylose content, gelatinization temperature, and Pita-2, Piz, and Pik blast resistance genes, H. Rouse Caffey Rice Research Station, Crowley, LA.

Variety/Line	Height (in)	Days to 50% Heading	Yield Main Crop (lb/A)	% Head/ Total	Lodge (0-4)	Amylose Content	Gel Temp	Pita-2 Blast Resist Gene	Piz Blast Resist Gene	Pik Blast Resist Gene
18RYT-41	40	68	8,484	63/70	0	Intermed	Intermed	R	S	R
18SB-1	44	68	8,327	62/69	0	Intermed	Intermed	R	S	R
ROY J	44	65	7,752	58/68	0	Intermed	Intermed	S	S	R
18SB-2	44	71	7,461	59/67	0	Intermed	Intermed	S	S	R
18RYT-110	41	66	7,367	62/69	0	Intermed	Intermed	S	S	R
CL153	40	68	6,855	64/70	0	Intermed	Intermed	R	S	R
CL151	41	67	5,930	60/70	0	Intermed	Intermed	S	S	R
PVL01	40	76	4,942	53/67	0	Intermed	Intermed	S	S	R

Observational (Testcross) Trials

The objective of the Observational Trials is to identify new hybrid combinations with high grain yield, excellent milling yields, acceptable height and maturity, minimal lodging, and other agronomic characteristics. Planting date for the two Observational Trials was March 20, 2019, at the HRCRRS. Five experimental long-grain Clearfield and Provisia hybrids were identified with high yield potential, early to intermediate maturity, and comparable plant height vs. five commercial hybrids (Tables 6 and 7). Three experimental Clearfield hybrids in Trial 1 produced an average 25% yield advantage vs. five commercial hybrids and 54% higher yield than three Louisiana varieties (Table 6). As shown in Table 7, two Provisia candidate hybrids in Trial 2 produced yields similar to the two commercial hybrids and 21% higher yield than four Louisiana varieties. Average heading date for the three Clearfield hybrids at 84 days was one day later than the average maturity of the remaining eight entries in the test. Maturity of the Provisia hybrid 19TC-5 in Trial 2 was similar to other entries except for 19TC-4 that was 9 days later. Head/Total milling yields of the five experimental hybrids across both trials were comparable to the check varieties and hybrids. Percent chalk of the experimentals was low except for 19TC-1 at 14% while no lodging was observed for any entry.

Table 6. 2019 Observational (Testcross) Trial 1. Height, days to 50% heading, main crop grain yield, % head/total, % chalk, and lodging of three candidate Clearfield hybrids and eight checks (five hybrids and three varieties), H. Rouse Caffey Rice Research Station, Crowley, LA.

Hybrid/Variety	Height (in)	Days to 50% Heading	Yield Main Crop (lb/A)	% Head/Total	% Chalk	Lodge (0-4)	Notes
19TC-1	35	87	10,182	63/72	14	0	CL Hybrid
19TC-2	40	82	9,668	61/69	3	0	CL Hybrid
19TC-3	34	83	9,412	61/71	10	0	CL Hybrid
RT7311CL	41	84	7,791	40/70	9	0	CL Hybrid
XP753	41	81	7,554	57/71	12	0	Conv Hybrid
Gemini214CL	44	85	7,398	54/68	10	0	CL Hybrid
CLXL745	39	82	7,070	63/71	4	0	CL Hybrid
CLXL729	41	82	6,782	59/69	9	0	CL Hybrid
CL153	36	82	4,635	57/70	10	0	CL Variety
PVL02	42	84	4,558	61/70	4	0	PV Variety
CL111	36	80	4,266	59/70	11	0	CL Variety

Table 7. 2019 Observational (Testcross) Trial 2. Height, days to 50% heading, main crop grain yield, % head/total, % chalk, and lodging of two candidate Provisia hybrids and six checks (two hybrids and four varieties), H. Rouse Caffey Rice Research Station, Crowley, LA.

Hybrid/Variety	Height (in)	Days to 50% Heading	Yield Main Crop (lb/A)	% Head/Total	% Chalk	Lodge (0-4)	Notes
19TC-4	40	92	10,843	61/69	3	0	PV Hybrid
XP753	42	84	10,841	51/69	7	0	Conv Hybrid
19TC-5	42	83	10,748	61/69	6	0	PV Hybrid
CLXL745	44	83	8,454	64/71	6	0	CL Hybrid
PVL01	38	90	8,923	54/69	9	0	PV Variety
PVL02	42	82	8,745	65/72	3	0	PV Variety
CL153	37	81	8,575	58/70	9	0	CL Variety
CL111	35	79	5,970	59/70	6	0	CL Variety

As mentioned above, the LSU AgCenter Hybrid Breeding program utilizes the 3-line breeding method for development of elite hybrids for the Louisiana rice industry. Table 8 shows that the conventional long-grain hybrid 19TC409 produced a high yield with excellent milling in the 2019 3-Line Observational Trial at the HRCRRS. The maturity at 85 days and height of 43 inches are typical values for hybrids grown in Louisiana. 19TC409 produced a yield advantage of 12-51% vs. the remaining hybrids and varietal entries in this test.

Table 8. 2019 Conventional 3-Line Observational Trial. Days to 50% heading, height, main crop grain yield, and % head/total, H. Rouse Caffey Rice Research Station, Crowley, LA.

Hybrid/Variety	Days to 50% Heading	Height (in)	Yield Main Crop (lb/A)	% Head/Total
19TC409	85	43	10,949	66/71
CLXL745	82	41	9,627	62/71
19TC416	85	44	8,603	62/70
XP753	87	43	8,539	62/71
19TC433	86	42	7,836	62/70
19TC474	85	42	7,676	61/70
19TC164	85	45	7,473	62/70
CL153	78	36	5,135	63/70

Table 9 shows mean disease ratings of LAH169, CLH161, and seven varieties from the 2019 URN for sheath blight, bacterial panicle blight, rotten neck blast, and false smut. Consistent with previous tests, LAH169 showed a moderate level of resistance to sheath blight and good resistance against bacterial panicle blight, rotten neck blast, and false smut. CLH161 exhibited moderate susceptibility to sheath blight and high resistance levels against bacterial panicle blight, rotten neck blast, and false smut. As expected, the checks performed on the Cocodrie, Cheniere, CL111, and CL153 showed moderate to high levels of susceptibility to sheath blight and moderate to good resistance against the other three diseases.

Table 9. Mean disease ratings of LAH169, CLH161, and seven varieties from 2019 URN for sheath blight, bacterial panicle blight, rotten neck blast, and false smut, H. Rouse Caffey Rice Research Station, Crowley, LA.

	Sheath Blight	Bacterial Panicle Blight	Rotten Neck Blast	False Smut
Hybrid/Variety		0 – 9 Disease Rating*		
LAH169	4.5	2.5	1.5	1.5
CLH161	5.5	1.9	0.0	0.0
Roy J	4.0	3.2	1.5	4.8
PVL01	6.5	4.5	3.5	4.5
Cocodrie	7.0	4.0	3.0	1.0
Cheniere	6.3	4.5	3.3	4.0
Diamond	4.8	4.0	4.5	5.2
CL111	6.3	5.3	0.0	1.5
CL153	5.5	4.8	0.8	0.5

*Disease ratings where 0 = most resistant, 9 = most susceptible.

DNA Marker Technology for Development of Low-Chalk Rice Germplasm

Chalky grain in milled rice impacts the viability of the U.S. rice industry. The goal of this project is to first discover and then validate DNA markers for chalk in U.S. elite breeding lines and populations. Three major experiments were conducted over 7 years with multiple populations and lines. Experiment 1 consisted of 20 selected low and high chalk recombinant inbred lines (RILs) from the RiceCAP SB5 Population that were evaluated in three LA and AR environments in 2013 and 2014. Some 200 single nucleotide polymorphism (SNP) markers distributed over the genome were genotyped in the selected RILs. Fifty-five SNPs were identified as candidates that were associated with chalk in this material. Experiment 2 consisted of 89 diverse japonica and indica lines from two mapping populations (KBNT1a x Zhe733; RiceCAP SB5) that were evaluated in LA and AR in 2016 and 2018. The lines from Experiment 2 were genotyped with the 55 selected SNP markers from Experiment 1. Experiment 3 consisted of 384 diverse japonica and indica lines from the LSU AgCenter Native Trait Panel that were evaluated in one LA environment in 2019.

From these experiments, it was found that: (1) University and USDA seed stocks are useful for chalk genetic studies and germplasm improvement, (2) SNP haplotypes for low chalk are conditional on the source of germplasm, (3) Common genomic regions for low chalk were identified in different parents and progeny, (4) SNP alleles from a single source or population can assist in development of elite low-chalk lines, (5) Crossing lines from different subpopulations will create challenges to identify correct SNP markers for chalk, and (6) Genomic selection using genome-wide and selected SNP markers across diverse germplasm will be the best approach to develop new low-chalk commercial varieties and hybrids in an applied breeding program.

Development of Sheath Blight-Resistant Lines

Rice sheath blight disease is a major constraint to high grain yields and good milling quality with no commercial varieties showing high levels of resistance. The objective of our research is to identify sheath blight-resistant rice with desirable height and maturity from multiple sources grown in inoculated field trials at the HRCRRS. A total of 2,000 early generation and advanced lines were planted in April 2019 and inoculated with the sheath blight fungus, *Rhizoctonia solani*. A corresponding row for each line was planted with no inoculation. Two long-grain selected lines, 18SB1 and 18SB2, were identified across 2018 and 2019 trials with moderately resistant sheath blight ratings of 4.0 vs. 7.0 for susceptible CL153 and 9.0 for very susceptible CL111 (Table 10). When comparing inoculated or non-inoculated rows, both 18SB1 and 18SB2 produced similar or higher grain yield than CL111 and CL153 which is consistent with the 2019 Diversity Yield Trial (see Table 5). The two sheath blight lines were 4 to 6 days later and 0 to 7 inches taller than the inoculated CL111 and CL153. Average milling yield of the two selected lines at 54/67 was lower vs. the two varieties at 60/68. Additional trials in 2020 will evaluate the selected lines and checks under inoculated and disease-free conditions.

Table 10. 2018-2019 Sheath Blight Evaluation Trials. Mean height, days to 50% heading, sheath blight rating, main crop grain yields (inoculated, non-inoculated), and % head/total, H. Rouse Caffey Rice Research Station, Crowley, LA.

Line/Variety	Days to 50% Heading	Height (in)	Sheath blight rating (0-9)	Yield Main Crop (lb/A)	% Head/Total
18SB1[a]	89	41	2.0	7488	54/68
18SB1[b]	89	41	4.0	6325	52/65
18SB2[a]	91	42	1.8	7408	56/67
18SB2[b]	91	42	4.0	6703	56/67
CL153[a]	85	40	3.2	6214	60/68
CL153[b]	85	34	7.0	5198	60/68
CL111[a]	84	41	0.0	7633	60/69
CL111[b]	84	33	9.0	3603	60/69

[a] Non-inoculated control (Note: sheath blight detected in control plots).
[b] Line inoculated with *Rhizoctonia solani*.

DNA Marker Technology for Development of Sheath Blight-Resistant Germplasm

In conjunction with inoculated field trials at the HRCRRS, the objective of this research is to leverage DNA marker technology for development of elite sheath blight-resistant Louisiana germplasm. The first phase consisted of selecting and designing 135 candidate SNP markers from genomic sequences generated during the USDA RiceCAP Project. The selected SNPs were used in phase 2 to genotype the top 10 resistant and 10 susceptible RILs from the SB2 RiceCAP mapping population. Thirty candidate SNP markers for sheath blight were found on chromosomes 2, 4, 6, 8, 9, and 12. The 30 SNPs were then evaluated in phase 3 using 25 known resistant and susceptible lines. In phase 4, progeny from three distinct populations were scored for sheath blight and genotyped with the 30 selected SNPs. From this research it was found that (1) distinct SNP profiles for sheath blight resistance were conditional on the source of resistance, (2) common regions of the genome were associated with resistance across different parents and progeny, (3) SNP markers selected from a single source or population can be used to develop elite sheath blight-resistant lines, (4) the use of selected SNPs from a single source or population will be challenging when evaluating material derived from different sub populations with different SNP profiles, and (5) genomic selection will be the best approach to incorporate sheath blight resistance from multiple sources into commercial varieties.

MARKER-ASSISTED BREEDING AND GENETIC IMPROVEMENT OF SOUTHERN U.S. RICE

H.S. Utomo, A.N. Famoso, D.E. Groth, G. Zaunbrecher, and H. Dugas

1. Preliminary Yield (PY) Trials.

The Marker-Assisted Breeding Project continues to develop improved breeding lines using a combined method of conventional breeding and molecular marker selections. Yield potential is one of the major breeding goals. In the last season, advanced lines from marker-assisted breeding were evaluated in the Preliminary Yield (PY) trials in replicated plots at the H. Rouse Caffey Rice Research Station, Crowley, LA (HRCRRS). The main evaluation criteria were yield potential, vigor, plant height, heading date, and other agronomic traits. In addition, marker-based selection for disease resistance traits and grain quality components were also conducted (Table 1).

Table 1. Performance of advanced marker-assisted breeding lines in the 2019 Preliminary Yield trials at the H. Rouse Caffey Rice Research Station, Crowley, LA.

Entry	Line ID	VIG*	HDT†	HTE†	Yield†	DNA Maker Analysis for Amylose Cont.	DNA Maker Analysis for Amylose ALK
19HUP 001	16MB013	4.6	92.3	100.0	9,090.6	High Amylose	High/Intermediate GT
19HUP 002	16MB045	4.3	89.6	96.6	7,813.3	High Amylose	High/Intermediate GT
19HUP 003	16MB047	5.0	86.3	99.2	8,190.1	High Amylose	High/Intermediate GT
19HUP 004	16MB048	4.5	90.0	88.4	8,396.6	High Amylose	High/Intermediate GT
19HUP 005	16MB079	4.3	84.6	83.5	8,460.2	High Amylose	High/Intermediate GT
19HUP 006	16MB097	4.3	85.3	92.2	9,041.8	High Amylose	High/Intermediate GT
19HUP 007	16MB103	4.7	74.9	100.9	8,089.2	High Amylose	High/Intermediate GT
19HUP 008	16MB104	4.7	79.0	97.2	8,525.5	High Amylose	High/Intermediate GT
19HUP 009	16MB134	4.6	78.3	83.1	7,907.9	High Amylose	High/Intermediate GT
19HUP 010	16MB151	4.0	93.9	93.8	9,873.2	High Amylose	High/Intermediate GT
19HUP 011	16MB163	5.0	86.3	89.3	8,579.2	High Amylose	High/Intermediate GT
19HUP 012	16MB172	4.5	90.4	98.2	9,347.5	High Amylose	High/Intermediate GT
19HUP 013	16MB185	3.8	86.0	95.2	9,760.4	High Amylose	High/Intermediate GT
19HUP 014	16MB193	4.6	88.0	86.5	8,259.6	High Amylose	High/Intermediate GT
19HUP 015	16MB251	4.1	92.9	96.3	8,522.4	High Amylose	High/Intermediate GT
19HUV 016	16MB297	4.3	89.2	91.7	7,672.3	High Amylose	High/Intermediate GT
19HUP 017	16MB323	5/0	83.3	101.8	7,828.2	High Amylose	High/Intermediate GT
19HUP 018	16MB366	4.3	85.9	100.7	8,926.6	High Amylose	High/Intermediate GT
19HUP 019	16MB392	4.2	89.0	100.4	8,783.2	High Amylose	High/Intermediate GT
19HUP 020	15MB098	4.1	90.6	87.9	8,099.7	High Amylose	High/Intermediate GT
19HUP 021	15MB099	4.9	85.2	92.3	8,781.3	High Amylose	High/Intermediate GT
19HUP 022	14MB134	4.4	84.2	100.5	8,712.5	High Amylose	High/Intermediate GT
19HUP 023	14MB181	4.5	81.9	98.2	8,911.4	High Amylose	High/Intermediate GT
19HUP 024	14MB295	4.1	91.0	98.0	8,990.2	High Amylose	High/Intermediate GT

* Subjective rating for seedling vigor was 1 to 5, where 1 = poor and 5 = excellent.
† HDT (Heading date, 50% heading); HTE (Height, cm); Yield (lb/A).

2. Headrow Evaluations.

Each year, more than 7,000 headrows are evaluated to select and advance promising lines. In the last growing season, promising lines with high yielding potential, excellent growth characteristics, and good disease resistance were selected. Beside conventional method, marker-assisted breeding was used to introgress important genes, such as drought-tolerant, cold-tolerant (at seedling stage), salt-tolerant, aroma (Jasmine), grain weight, and panicle blight-resistant genes from outside the U.S. gene pool, into adapted Louisiana cultivars and breeding lines. The resulting progeny lines were advanced through the breeding process. Table 2 reports the performance of some selected lines.

Table 2. Agronomic performance of new selected lines from marker-assisted breeding in the 2019 field trials, H. Rouse Caffey Rice Research Station, Crowley, LA.

No.	Plant ID	Blast Genes	Grain Type*	Vigor†	Plant Height (cm)	Heading Date	Row Yield (g)	Amylose Content	Gel Temp
1	17F014	Pi-ta^2, Pi-b	L	5.0	92.0	89.4	874	Int Am	Int Gel
2	17F023	Pi-ta^2, Pi-b	L	4.5	86.8	89.1	772	Int Am	Int Gel
3	17F032	Pi-ta^2, Pi-b	L	3.9	94.1	99.3	762	Int Am	Int Gel
4	17F045	Pi-ta^2, Pi-b	L	4.1	86.3	97.0	968	Int Am	Int Gel
5	17F047	Pi-ta^2, Pi-b	L	4.5	98.7	87.4	986	Int Am	Int Gel
6	17F096	Pi-ta^2, Pi-b	L	4.4	84.3	86.2	866	Int Am	Int Gel
7	17F098	Pi-ta^2, Pi-b	L	4.2	105.5	89.5	875	Int Am	Int Gel
8	17F102	Pi-ta^2, Pi-b	L	4.3	83.7	94.2	864	Int Am	Int Gel
9	17F107	Pi-ta^2, Pi-b	L	4.1	98.2	95.3	847	Int Am	Int Gel
10	17F113	Pi-ta^2, Pi-b	L	5.0	94.7	92.5	917	Int Am	Int Gel
11	17F121	Pi-ta^2, Pi-b	L	3.6	99.2	89.2	926	Int Am	Int Gel
12	17F122	Pi-ta^2, Pi-b	L	4.2	86.6	85.8	937	Int Am	Int Gel
13	17F133	Pi-ta^2, Pi-b	L	4.4	98.3	87.3	903	Int Am	Int Gel
14	17F145	Pi-ta^2, Pi-b	L	5.0	95.6	92.4	796	Int Am	Int Gel
15	17F149	Pi-ta^2, Pi-b	L	4.3	74.4	89.5	744	Int Am	Int Gel
16	17F065	Pi-ta^2, Pi-b	L	4.0	88.4	94.2	855	Int Am	Int Gel
17	17F076	Pi-ta^2, Pi-b	L	5.0	83.6	82.7	849	Int Am	Int Gel
18	17F132	Pi-ta^2, Pi-b	L	5.0	96.2	85.8	726	Int Am	Int Gel
19	17F134	Pi-ta^2, Pi-b	L	4.2	93.8	73.5	737	Int Am	Int Gel
20	17F157	Pi-ta^2, Pi-b	L	4.2	99.6	95.6	732	Int Am	Int Gel
21	17F159	Pi-ta^2, Pi-b	L	5.0	84.1	88.7	778	Int Am	Int Gel
22	17F169	Pi-ta^2, Pi-b	L	4.1	81.6	98.6	787	Int Am	Int Gel
23	17F186	Pi-ta^2, Pi-b	L	3.9	92.3	78.4	937	Int Am	Int Gel
24	17F187	Pi-ta^2, Pi-b	L	4.3	84.5	87.6	746	Int Am	Int Gel
25	17F191	Pi-ta^2, Pi-b	L	4.2	82.6	86.4	734	Int Am	Int Gel
26	17F198	Pi-ta^2, Pi-b	L	4.6	84.4	96.5	948	Int Am	Int Gel
27	17F204	Pi-ta^2, Pi-b	L	4.1	99.8	91.6	925	Int Am	Int Gel
28	16F103	Pi-ta^2, Pi-b	L	4.3	85.1	84.5	837	Int Am	Int Gel
29	16F109	Pi-ta^2, Pi-b	L	4.2	97.4	89.9	796	Int Am	Int Gel
30	16R116	Pi-ta^2, Pi-b	L	4.1	95.3	94.5	692	Int Am	Int Gel
31	16F123	Pi-ta^2, Pi-b	L	3.9	81.7	91.4	785	Int Am	Int Gel
32	16F132	Pi-ta^2, Pi-b	L	5.0	93.8	85.5	886	Int Am	Int Gel
33	16F140	Pi-ta^2, Pi-b	L	4.3	92.2	74.3	687	Int Am	Int Gel
34	16F144	Pi-ta^2, Pi-b	L	5.0	93.3	89.4	667	Int Am	Int Gel
35	16F169	Pi-ta^2, Pi-b	L	4.3	93.4	93.5	773	Int Am	Int Gel
36	16F173	Pi-ta^2, Pi-b	L	4.5	95.8	94.4	855	Int Am	Int Gel
37	16F178	Pi-ta^2, Pi-b	L	3.9	84.5	82.5	738	Int Am	Int Gel
38	16F187	Pi-ta^2, Pi-b	L	4.3	98.2	91.4	947	Int Am	Int Gel
39	16F199	Pi-ta^2, Pi-b	L	4.6	79.2	89.2	759	Int Am	Int Gel
40	16F150	Pi-ta^2, Pi-b	L	5.0	76.6	94.5	777	Int Am	Int Gel
41	16F154	Pi-ta^2, Pi-b	L	3.9	89.4	83.3	759	Int Am	Int Gel
42	16F178	Pi-ta^2, Pi-b	L	4.6	95.5	85.5	819	Int Am	Int Gel
43	16F198	Pi-ta^2, Pi-b	L	4.1	97.6	98.9	847	Int Am	Int Gel
44	16F203	Pi-ta^2, Pi-b	L	4.3	88.7	88.0	825	Int Am	Int Gel
45	15F256	Pi-ta^2, Pi-b	L	4.2	72.2	85.1	647	Int Am	Int Gel
46	15F278	Pi-ta^2, Pi-b	L	5.0	94.3	87.5	847	Int Am	Int Gel
47	15F379	Pi-ta^2, Pi-b	L	4.4	95.2	89.3	893	Int Am	Int Gel

Continued.

Table 2. Continued.

No.	Plant ID	Blast Genes	Grain Type*	Vigor†	Plant Height (cm)	Heading Date	Row Yield (g)	Amylose Content	Gel Temp
48	15F601	Pi-ta^2, Pi-b	L	4.4	83.3	95.4	677	Int Am	Int Gel
49	15F759	Pi-ta^2, Pi-b	L	4.7	92.2	94.8	765	Int Am	Int Gel
50	15F788	Pi-ta^2, Pi-b	L	4.5	84.9	79.0	846	Int Am	Int Gel

* L = Long grain.

† Subjective rating 1 to 5, where 1 = poor, 5 = excellent.

3. Performance of Select Advanced Lines in the Diversity PY Tests.

Thirteen advanced lines with different enhanced genetic traits that include disease resistance, chalk, protein content, and yield were placed in the Diversity PY test in a collaboration with the Breeding Project. The trials were carried out on the South Farm of the HRCRRS. In addition to agronomic traits, the lines were evaluated using DNA markers for a number of important traits (Tables 3A-D).

Table 3A. Performance of advanced lines and their cultivar checks in the Diversity PY trials at the H. Rouse Caffey Rice Research Station South Farm near Crowley, LA.*

No.	Plant ID	Grain Type†	Stand	Vigor‡	Plant Height (cm)	Days to Heading	Yield (lb/A)	Total§	Whole§
1	2018 ML-9	L	90	2.5	108.0	69.0	4,950.6	68.17	58.66
2	2018 ML-16	L	85	2.5	100.5	70.5	7,232.7	71.27	64.59
3	2018 ML-21	L	85	3.0	107.0	68.5	7,371.2	71.52	65.86
4	2018 PY-103	L	80	2.5	105.5	69.5	7,794.5	70.97	65.08
5	2018 PY-88	L	82.5	2.0	105.0	65.0	7,282.9	69.70	62.71
6	2018 PY-84	L	77.5	3.5	110.0	70.0	8,001.1	69.07	61.60
7	12000153	L	80	2.5	104.5	66.0	7,322.7	71.21	64.01
8	12000187	L	80	2.5	101.5	66.5	6,104.9	69.31	62.68
9	Roy J	L	75	3.0	112.5	65.5	7,752.0	68.44	57.96
10	PVL01	L	80	2.0	103.0	76.5	4,941.6	67.44	52.96
11	CL153	L	80	3.0	101.5	68.5	6,855.4	70.26	63.81
12	CL151	L	85	3.0	102.0	67.5	5,928.8	70.19	60.52
13	JPTR	M	77.5	3.5	98.3	70.5	9,030.2	70.12	67.87

* Mean Value based on 3 replications.

† L = Long grain and M = Medium grain.

‡ Subjective rating 1 to 5, where 1 = poor, 5 = excellent.

§ Total (total milling), Whole (whole milling).

Table 3B. Performance of advanced lines and their cultivar checks in the Diversity PY trials at the H. Rouse Caffey Rice Research Station South Farm near Crowley, LA.*

No.	Plant ID	Chalk	Chalk Imp	Grain Length	Grain Width	L/W Ratio	Whiteness	Lodging	Sheath Blight†§
1	2018 ML-9	14.8	18.32	6.65	2.35	2.83	35.6	7.5	4.8
2	2018 ML-16	7.0	10.63	6.74	2.29	2.94	34.2	0	4.6
3	2018 ML-21	6.6	14.55	6.73	2.23	3.02	36.2	10	4.9
4	2018 PY-103	8.3	11.18	6.71	2.28	2.94	35.5	12.5	6
5	2018 PY-88	12	14.65	6.86	2.25	3.05	35.6	0	5.3
6	2018 PY-84	6.6	11.45	6.5	2.23	2.91	35.8	0	3.3
7	12000153	11.9	14.56	6.86	2.27	3.02	36.5	12.5	5.3
8	12000187	9.4	12.97	6.88	2.27	3.03	34.6	12.5	5.3
9	Roy J	10.1	15	7.08	2.23	3.17	40.8	0	4.9
10	PVL01	6.9	9.09	7.26	2.18	3.33	36.7	0	4.6
11	CL153	4.1	8.83	6.86	2.25	3.05	40.3	5	7.3
12	CL151	14.2	15.54	6.62	2.39	2.77	34.6	50	6.3
13	JPTR	9.4	12.86	5.76	2.71	2.13	36.2	0	4.3

* Mean Value based on 3 replications.

† Sheath blight rating (1=highly resistance, 10=highly susceptible)

Table 3C. Disease resistance and analysis of DNA makers of advanced lines and their cultivar checks in the Diversity PY trials at the H. Rouse Caffey Rice Research Station South Farm near Crowley, LA.*

No.	Plant ID	BPB†	ALK	WaxyExon1	WaxyExon6	WaxyExon10	Waxy Hap	Pita-2	Piz
1	2018 ML-9	4.0	IGT(2)	Std(2)	Std(2)	Std(2)	Amy2(2)	Sus(2)	Sus(2)
2	2018 ML-16	4.0	IGT(2)	Std(2)	IntH(2)	Std(2)	Amy3(2)	Sus(2)	Sus(2)
3	2018 ML-21	3.0	IGT(2)	Std(2)	Std(2)	Std(2)	Amy2(2)	Res(2)	Sus(2)
4	2018 PY-103	4.0	IGT(1-1)	Low(1-1)	Std(1-1)	Std(2)	Amy2(1)	Res(1-1)	Sus(2)
5	2018 PY-88	4.7	IGT(2)	Std(2)	Std(2)	Std(2)	Amy2(2)	Sus(2)	Sus(2)
6	2018 PY-84	5.7	IGT(2)	Std(2)	Std(2)	Std(2)	Amy2(2)	Sus(2)	Sus(2)
7	12000153	4.3	IGT(2)	Std(2)	IntH(2)	Std(2)	Amy3(2)	Sus(2)	Sus(2)
8	12000187	3.0	IGT(2)	Std(2)	IntH(2)	Std(2)	Amy3(2)	Sus(2)	Sus(2)
9	Roy J	4.3	IGT(2)	Std(2)	Std(2)	Std(2)	Amy2(2)	Sus(2)	Sus(2)
10	PVL01	2.3	IGT(1)	Std(1)	IntH(1)	Std(1)	Amy3(1)	Sus(1)	Sus(1)
11	CL153	4.3	IGT(1)	Std(1)	Std(1)	Std(1)	Amy2(1)	Res(1)	Sus(1)
12	CL151	5.3	IGT(1)	Std(1)	Std(1)	Std(1)	Amy2(1)	Sus(1)	Sus(1)
13	JPTR	4.0	LGT(1)	Low(1)	IntH(1)	Std(1)	Amy1(1)	Sus(1)	Sus(1)

* Analysis of DNA markers was performed by the Breeding Project.

† BPB Rating (1=highly resistance, 10=highly susceptible)

Table 3D. Analysis of DNA markers of advanced lines and their cultivar checks in the Diversity PY trials at the H. Rouse Caffey Rice Research Station South Farm near Crowley, LA.*

No.	Plant ID	Pib	Pik	Pikm	Pik Hap	Pi9	Pubescence	GS3	SD1
1	2018 ML-9	Sus(2)	T(2)	C(2)	PikM(2)	Sus(2)	Glb(2)	Lng(2)	SH(2)
2	2018 ML-16	Sus(2)	T(2)	G(2)	PikS(2)	Sus(2)	Glb(2)	Lng(2)	SH(2)
3	2018 ML-21	Sus(2)	T(2)	C(2)	PikM(2)	Sus(2)	Glb(2)	Lng(2)	SH(2)
4	2018 PY-103	Sus(2)	T(2)	C(1-1)	PikM(1)	Sus(2)	Glb(2)	Lng(1-1)	SH(2)
5	2018 PY-88	Sus(2)	T(2)	C(2)	PikM(2)	Sus(2)	Glb(2)	Lng(2)	SH(2)
6	2018 PY-84	Sus(2)	T(2)	C(1)	PikM(1)	Sus(2)	Glb(2)	Lng(2)	TL(2)
7	12000153	Sus(2)	T(2)	C(2)	PikM(2)	Sus(2)	Glb(2)	Lng(2)	SH(2)
8	12000187	Sus(2)	T(2)	C(2)	PikM(2)	Sus(2)	Glb(2)	Lng(2)	SH(2)
9	Roy J	Sus(2)	T(2)	C(1-1)	PikM(1-1)	Sus(2)	Glb(2)	Lng(2)	TL(1)
10	PVL01	Sus(1)	T(1)	C(1)	PikM(1)	Sus(1)	Glb(1)	Lng(1)	SH(1)
11	CL153	Sus(1)	T(1)	C(1)	PikM(1)	Sus(1)	Glb(1)	Lng(1)	SH(1)
12	CL151	Sus(1)	T(1)	C(1)	PikM(1)	Sus(1)	Glb(1)	Lng(1)	SH(1)
13	JPTR	Sus(1)	T(1)	G(1)	PikS(1)	Sus(1)	Glb(1)	Med(1)	TL(1)

*Analysis of DNA makers was performed by the Breeding Project.

4. Improving Grain Quality.

As the export rice market becomes more competitive, it demands increasingly higher grain quality. Consistency and homogeneity of grain size and appearance are important breeding goals of the Marker-Assisted Breeding Project of the HRCRRS in developing improved lines. Equally important is reducing the percentage of grain chalk among progeny lines. Selected lines (Table 4) were studied, and the improved lines will be advanced in the next growing season.

Table 4. Agronomic performance of lines selected for yield, grain homogeneity, and percent chalk at the H. Rouse Caffey Rice Research Station, Crowley, LA, in 2019.

Lines	Grain Type*	Row Yield (g)	Grain Homogeneity†	% Chalk	Amylose Content	Gel Temp	Blast
17R-041	L	878	8.1	9.8	High	Intermediate	Pita, Pib
17R-043	L	767	9.6	12.2	High	Intermediate	Pib
17R-045	L	852	8.3	4.4	High	Intermediate	Pib
17R-051	L	745	8.7	4.6	High	Intermediate	Pita, Pib
17R-064	L	875	9.8	8.7	High	Intermediate	Pib
17R-076	L	958	9.5	9.1	High	Intermediate	Pita, Pib
17R-104	L	844	8.6	3.6	High	Intermediate	Pita, Pib
17R-108	L	712	8.4	3.9	High	Intermediate	Pita, Pi-z
17R-116	L	645	9.6	6.6	High	Intermediate	Pita, Pib
17R-123	L	553	8.1	8.6	High	Intermediate	Pita, Pib
17R-127	L	887	9.0	9.9	High	Intermediate	Pita, Pi-z
17R-176	L	755	9.4	5.6	Intermediate	Low	Pib, Piz
17R-183	L	788	9.3	7.2	High	Intermediate	Pita, Pib
17R-204	L	865	9.4	1.4	High	Intermediate	Pita, Pib
17R-208	L	857	8.5	1.8	High	Intermediate	Pita
17R-272	L	743	8.2	2.5	High	Intermediate	Pita
17R-302	L	591	8.7	1.3	High	Intermediate	Pita, Pib
17R-306	L	636	8.4	7.4	High	Intermediate	Pita, Pib
17R-315	L	557	9.7	10.2	High	Intermediate	Pita, Pib
17R-323	L	666	9.1	8.7	High	Intermediate	Pib, Piz
17R-351	L	485	8.2	8.5	High	Intermediate	Pita, Pib
17R-373	L	824	9.4	10.2	High	Intermediate	Pib, Piz
17R-404	L	843	8.2	7.4	High	Intermediate	Pita
17R-605	L	889	8.5	6.1	High	Intermediate	Pita, Pib
17R-613	L	754	8.9	11.4	High	Intermediate	Pita, Pi-z
17R-637	L	746	9.6	6.5	High	Intermediate	Pib, Piz
17R-649	L	883	9.6	2.9	High	Intermediate	Pita, Pib
17R-654	L	851	9.2	8.5	High	Intermediate	Pib, Piz
17R-703	L	745	8.4	3.3	High	Intermediate	Pita, Pib
17R-737	L	766	8.4	4.5	High	Intermediate	Pita
17R-741	L	568	9.2	3.7	High	Intermediate	Pita
16R-755	L	677	9.5	9.6	High	Intermediate	Pib, Piz
16R-758	L	753	9.5	1.6	High	Intermediate	Pita, Pib
16R-801	L	797	8.3	1.3	High	Intermediate	Pib, Piz
16R-804	L	666	8.9	1.8	Intermediate	Low	Pita, Pib
16R-817	L	752	8.9	1.6	High	Intermediate	Pita
16R-823	L	653	8.6	12.5	High	Intermediate	Pita
17R-703	L	745	8.4	3.3	High	Intermediate	Pita, Pib
16R-839	L	855	9.7	7.3	High	Intermediate	Pib, Piz
16R-841	L	751	9.3	8.7	High	Intermediate	Pita, Pib
16R-853	L	765	8.4	10.5	High	Intermediate	Pita
16R-864	L	643	8.7	10.3	High	Intermediate	Pita
16R-866	L	626	8.7	1.8	High	Intermediate	Pita, Pib
16R-884	L	667	7.4	4.4	High	Intermediate	Pita
16R-886	L	748	8.9	4.5	Intermediate	Low	Pita, Pib

§ L = Long grain.

† Subjective rating 0 to 10, where 0 = poor, 10 = excellent.

5. Improving Glycemic Index, Bran Oil, and Baking Quality of Rice.

To capture new market potentials, it is crucially important that traits associated with health be included in the breeding programs during cultivar development. Rice is an excellent food product that can be enhanced to be more suitable to these new emerging markets. The health benefit components of rice, such as the glycemic index (GI) and antioxidant γ-oryzanol in its bran oil, and its baking quality can readily be enhanced to meet the industry standard as alternative products that have broad appeal and real functions in the new markets. In the plant breeding world, yield is the number one trait. In pursuit of higher yield, modern breeding often pays little attention to these specific traits. As a result, these properties that were originally possessed by landraces and ancestors of modern rice are not retained in modern cultivars. The Marker-Assisted Breeding lab at the HRCRRS is working on enhancing these neglected but increasingly important traits. With the advancement of technology, genomics, and DNA markers, these challenges can now be addressed effectively. A specific goal of this project section is to develop a high yielding rice cultivar with a lower GI, higher content of bran oil, and improved baking quality that meets the industry standards. Conventional breeding methodologies combined with genomics, DNA markers, and other tools are used.

Rice bran oil has a high smoke-point of 254˚C and is perfect for stir frying or deep frying. It can also maintain its nutritive quality even at high temperatures. The demand for rice bran oil has skyrocketed in the last three years, especially for use in frying. Rice bran oil has a long shelf life and economical use and holds up to commercial frying. Its light viscosity allows foods fried with rice bran oil to absorb less oil (20% less). With less oil being absorbed, there is a reduction in calories and an enhancement in flavor and palatability. The oil has a balanced amount of monounsaturated, polyunsaturated, and saturated fats, making it a heart-friendly oil. Selections antioxidant γ-oryzanol of more than 2% within crude oil content can have beneficial value to improve cholesterol levels. Last year, selection for improved bran oil content was done using the Soxhlet method. The oil extraction kinetics was determined and used as a function of temperature (20, 40, and 60^{o}C) and extraction time using the optimum and previously determined solvent-to-rice bran ratio. Oil stability was determined under ambient temperature in the dark for eight months by monitoring its physiochemistry. Oxidative stability of the raw oil was determined in accelerated oxidation conditions similar to the Rancimat test. Several lines were selected.

Foods with a high GI are quickly digested and absorbed, causing a rapid rise in blood sugar. Low GI diets among people with type 2 diabetes improve insulin resistance and lowers glucose, cholesterol, and triglyceride levels. A good portion of rice consumers suffer from type 2 diabetes; therefore, the availability of rice with a lower GI will help. Last year, selection for lower GI was conducted. The GI was estimated using an in vitro starch digestion test following the method of Sopade and Gidley. The amount of digested starch per 100g of dry starch was calculated using a specific equation. To simulate digestograms representing the change in the digested starch content, a modified first order exponential model was used during the in vitro starch digestion for 240 min. The method, however, needs to be improved. Optimization of the method will be done in the next reporting year to allow for faster screening.

RICE NUTRITION ENHANCEMENT PROJECT:
GRAIN NUTRITIONAL QUALITY AND HERBICIDE-RESISTANT RICE DEVELOPMENT

I. Wenefrida and H.S. Utomo

The Rice Nutrition Enhancement Project continues its effort to further improve the nutritional and grain quality of rice. Besides nutritional quality, improving yield is also a breeding focus of this project. Promising high-protein lines are being tested in various stages of yield trials.

RICE GRAIN NUTRITIONAL QUALITY

1. Preliminary Yield (PY) Trials.

The Preliminary Yield (PY) trials were conducted for the most promising advanced high-protein lines developed from this project to evaluate yield potential of high-protein lines along with other important agronomic traits. The tests were carried out in the field at the H. Rouse Caffey Rice Research Station (HRCRRS), near Crowley, LA. The specific phenotypic traits evaluated include grain yield (main crop), plant vigor (VIG), heading date (HDT), and height (HTE). A summary of the mean value performance of the new advanced high-protein rice lines together with three conventional cultivar checks is presented below (Table 1). The protein content of each line tested was measured using the N Combustion Analyzer with the sample digestion temperature of 850 to 1,200°C.

Table 1. Field performance of high-protein rice lines and their cultivar controls in the 2019 Preliminary Yield trial at the H. Rouse Caffey Rice Research Station, near Crowley, LA.

Entry	Pedigree	VIG	HDT	HTE	Yield (lb/A)	Protein Content (%, w/w)
19IDE 001	14P300121	4.4	86.0	38.1	8058.4	10.58
19IDE 002	14P300341	5.0	80.2	37.4	7839.3	11.30
19IDE 003	14P300033	4.2	86.4	38.1	7997.1	11.40
19IDE 004	14P311034	4.3	87.5	40.2	8065.8	10.78
19IDE 005	13P410145	4.0	84.0	38.6	7873.4	11.02
19IDE 006	13P400301	3.4	85.6	39.4	7981.5	11.66
19IDE 007	13P300404	5.0	86.4	36.8	7960.0	11.63
19IDE 008	12P200561	4.2	87.6	40.2	8076.1	10.77
19IDE 009	11P200122	4.0	86.4	37.7	8096.4	10.35
19IDE 010	10P200435	5.0	80.2	38.3	7686.2	11.10
19IDE 011	CPRS	4.2	84.2	40.4	7055.4	7.62
19IDE 012	CCDR	4.4	83.2	39.5	7928.5	7.40
19IDE 013	FRNS	4.0	84.2	37.2	7784.6	7.43

2. Characterization of Grain Quality.

The grain quality characteristics of selected newly developed lines are expected to be better or at least comparable to that of cultivar ‘Frontière’. Frontière is the first commercial high-protein rice. It is currently grown in southern Illinois and Missouri and marketed as ‘Cahokia Rice’. It is also grown in Louisiana as “Prairie Acadian Rice.”

Milling quality, percent chalk, grain appearance, grain shape, and homogeneity of the grain size and dimension are important components of the rice grain and in the cooking quality. Performance of advanced high-protein rice lines for their grain quality as well as their cooking quality is presented in Tables 2 and 3.

Table 2. Grain quality parameters among advanced high-protein rice.

Entry	Pedigree	Whole	Total	Grain Shape Homogeneity	% Chalk	Gel Temp	Amylose Content
19IDV 001	15P100012	62.8	70.0	9.3	10	Intermediate-high	22.40
19IDV 002	15P100033	64.0	72.3	8.7	10	Intermediate	23.09
19IDV 003	14P211067	63.6	69.8	9.1	8	Intermediate-high	21.00
19IDV 004	14P210124	60.8	73.2	8.9	11	Intermediate-high	22.70
19IDV 005	14P300036	67.0	70.9	8.9	12	Intermediate-high	23.11
19IDV 006	14P300076	63.4	72.2	8.5	3	Intermediate-high	24.00
19IDV 007	14P300099	61.1	71.2	8.5	6	Intermediate-high	23.75
19IDV 008	14P500145	61.7	69.3	8.4	11	Intermediate-high	20.00
19IDV 009	14P500122	64.4	70.4	8.7	10	Intermediate-high	21.67
19IDV 010	14P500671	64.9	70.4	9.0	7	Intermediate	22.14
19IDV 011	CPRS	64.0	70.2	8.1	11	Intermediate-high	21.21
19IDV 012	CCDR	60.3	70.0	7.4	10	Intermediate-high	23.65

Table 3. Characteristics of gelling temperature among high-protein rice lines compared with the experimental checks, medium-grain Bengal (BNGL), and long grains Cheniere (CHNR), Hidalgo (HDLG), Cypress (CPRS), and Dixiebelle (DXBL). Seed # (Alkali Ratings)*

Cell	Sample #	Seed # (Alkali Ratings) *						Average	Gel Temp†
		1	**2**	**3**	**4**	**5**	**6**		
A1	BNGL	5	6	6	5	6	6	5.7	Low
A2	CHNR	4	4	2	3	5	2	3.3	Intermediate-high
A3	HDLG	3	2	2	2	2	2	2.2	High
A4	DXBL	4	3	2	3	3	3	3.0	Intermediate-high
A5	CPRS	4	3	3	3	4	3	3.3	Intermediate-high
B1	18-ID-23	4	2	2	4	3	3	3.0	Intermediate-high
B2	18-ID-43	5	4	6	7	6	7	5.8	Low
B3	18-ID-88	5	7	6	7	6	5	6.0	Low
B4	17-IL-HP-01	7	7	5	5	6	6	6.0	Low
B5	17-IL-HP-02	6	5	6	6	5	6	5.6	Low
B6	17-ID-101	4	4	2	2	3	3	3.0	Intermediate-high
B7	17-ID-122	3	5	3	2	3	3	3.2	Intermediate-high

* The degree of spreading was determined by incubating six grains of milled rice in 10 ml of 1.7% KOH for 24 hours at 30 °C using a seven-point score (7=completely spread, and 1=no reaction).

† The gelatinization temperature of starch was estimated based on spreading value and determined as Low (6-7) Intermediate (4-5), Intermediate-high (3), and High (1-2).

3. Performance of High-Protein Rice Lines in Replicated Headrow Trials at the H. Rouse Caffey Rice Research Station, Crowley, LA.

Prior to PY tests, promising high-protein lines were tested in replicated headrow trials to determine their yield potential and other important traits. Data collected from these tests were used to select lines that will be advanced to PY trials in a bigger plot size to determine their yield potential. The data listed below in Table 4 shows the results of the second year of replicated headrow trials of the most promising lines.

Table 4. Performance of 100 high-protein lines in the multi-year replicated headrow trials at the H. Rouse Caffey Rice Research Station, near Crowley, LA.

No.	Genotype	Mass	N-Cont.	Crude Protein Content	No.	Genotype	Mass	N-Cont.	Crude Protein Content
1	15R -3005pan3	0.11	1.97	12.31	**40**	15R -3192pan1	0.11	2.25	14.06
2	15R -3015pan5	0.12	2.08	13.00	**41**	15R -3195pan2	0.15	2.05	12.81
3	15R -3020pan1	0.09	2.17	13.56	**42**	15R -3196pan1	0.11	2.4	15.00
4	15R -3021pan1	0.12	1.76	11.00	**43**	15R -3204pan2	0.09	2.21	13.81
5	15R -3033pan2	0.14	2.42	15.13	**44**	15R -3210pan1	0.13	1.94	12.13
6	15R -3061pan4	0.11	2.27	14.19	**45**	15R -3215pan5	0.13	1.79	11.19
7	15R -3063pan1	0.10	1.86	11.63	**46**	15R -3216pan5	0.12	2.05	12.81
8	15R -3066pan3	0.12	1.62	10.13	**47**	15R -3217pan4	0.13	2.01	12.56
9	15R -3069pan3	0.12	1.87	11.69	**48**	15R -3218pan3	0.11	2.31	14.44
10	15R -3070pan1	0.09	1.62	10.13	**49**	15R -3219pan7	0.13	2.14	13.38
11	15R -3071pan4	0.12	2.3	14.38	**50**	15R -3226pan2	0.09	2.25	14.06
12	15R -3073pan2	0.11	2.19	13.69	**51**	15R -3227pan1	0.11	1.99	12.44
13	15R -3071pan6	0.13	2.41	15.06	**52**	15R -3228pan5	0.10	1.77	11.06
14	15R -3072pan6	0.09	2.44	15.25	**53**	15R -3230pan2	0.13	1.96	12.25
15	15R -3074pan5	0.10	2.17	13.56	**54**	15R -3231pan4	0.09	1.91	11.94
16	15R -3075pan4	0.12	1.99	12.44	**55**	15R -3232pan2	0.12	1.62	10.13
17	15R -3077pan1	0.11	1.8	11.25	**56**	15R -3232pan4	0.09	2.08	13.00
18	15R -3078pan1	0.12	2.35	14.69	**57**	15R -3232pan5	0.10	1.85	11.56
19	15R -3079pan4	0.13	1.8	11.25	**58**	15R -3232pan66	0.09	1.56	9.75
20	15R -3081pan2	0.12	1.78	11.13	**59**	15R -3242pan10	0.12	1.57	9.81
21	15R -3082pan3	0.09	1.84	11.50	**60**	15R -3243pan1	0.13	1.49	9.31
22	15R -3083pan8	0.11	2.22	13.88	**61**	15R -3243pan4	0.11	2.49	15.56
23	15R -3084pan3	0.11	2.34	14.63	**62**	15R -3248pan1	0.12	2.17	13.56
24	15R -3086pan5	0.12	1.77	11.06	**63**	15R -3276pan5	0.13	1.49	9.31
25	15R -3087pan4	0.09	1.92	12.00	**64**	15R -3286pan6	0.12	1.37	8.56
26	15R -3090pan1	0.13	2.32	14.50	**65**	15R -3296pan7	0.13	2.21	13.81
27	15R -3093pan2	0.13	1.97	12.31	**66**	15R -3298pan1	0.11	1.98	12.38
28	15R -3111pan1	0.09	2.36	14.75	**67**	15R -3298pan2	0.12	2.01	12.56
29	15R -3134pan2	0.13	2.33	14.56	**68**	15R -3298pan7	0.10	2.03	12.69
30	15R -3152pan7	0.11	1.66	10.38	**69**	15R -3334pan1	0.13	2.11	13.19
31	15R -3158-PAN4	0.13	1.89	11.81	**70**	15R -3373pan6	0.12	2.4	15.00
32	15R -3161pan4	0.11	1.99	12.44	**71**	15R -3388pan5	0.09	1.98	12.38
33	15R -3170pan4	0.09	1.98	12.38	**72**	15R -3398pan1	0.10	1.71	10.69
34	15R -3175pan3	0.13	2.1	13.13	**73**	15R -3407pan4	0.11	1.72	10.75
35	15R -3177pan4	0.12	1.88	11.75	**74**	15R -3404pan2	0.13	1.81	11.31
36	15R -3177pan4	0.10	1.92	12.00	**75**	15R -3434pan2	0.09	1.79	11.19
37	15R -3180pan5	0.12	1.89	11.81	**76**	15R -3442pan6	0.11	2.44	15.25
38	15R -3182pan6	0.10	1.69	10.56	**77**	15R -3506pan3	0.12	1.89	11.81
39	15R -3184pan7	0.10	2.09	13.06	**78**	15R -3514pan2	0.09	1.93	12.06

Continued.

Table 4. Continued.

No.	Genotype	Mass	N-Cont.	Crude Protein Content	No.	Genotype	Mass	N-Cont.	Crude Protein Content
79	15R -3536pan4	0.11	2.08	13.00	**90**	15R -3588pan5	0.11	1.67	10.44
80	15R -3548pan1	0.09	2.08	13.00	**91**	15R -3589pan3	0.14	1.44	9.00
81	15R -3551pan3	0.09	1.99	12.44	**92**	15R -3602pan1	0.12	1.37	8.56
82	15R -3554pan6	0.13	2.19	13.69	**93**	15R -3608PAN2	0.12	1.28	8.00
83	15R -3558pan6	0.12	2.4	15.00	**94**	15R -3612PAN2	0.12	1.89	11.81
84	15R -3566pan5	0.11	2.42	15.13	**95**	15R -3614PAN2	0.10	1.74	10.88
85	15R -3568pan7	0.13	2.09	13.06	**96**	15R -3617pan4	0.09	2.35	14.69
86	15R -3572pan3	0.12	2.15	13.44	**97**	15R -3623pan6	0.13	2.3	14.38
87	15R -3573pan4	0.12	2.04	12.75	**98**	15R -3634pan3	0.13	1.98	12.38
88	15R -3574pan3	0.12	2.37	14.81	**99**	15R -3846pan5	0.12	2.4	15.00
89	15R -3576pan3	0.09	2.3	14.38	**100**	15R -3871pan3	0.10	2.1	13.13

4. Newer High-Protein Rice Lines.

Every year, newer versions of high-protein rice lines are developed through a series of mutational experiments. In the 2019 planting season, field tests were carried out for the 120 promising lines previously selected from 1,400 newly developed high-protein lines (Table 5). In addition to high protein content, selections were emphasized on grain quality aspects also. The ten most promising lines that have stable protein content will be advanced to the replicated headrow and PY trials in the next growing season.

Table 5. Grain crude protein content (GCPC) of newly developed rice lines. The GCPC was determined using the N Combustion Analyzer through high temperature digestion of samples at 850 to 1,200 °C.

No.	Genotype	Mass	N-Cont.	Crude Protein Content	No.	Genotype	Mass	N-Cont.	Crude Protein Content
1	16R -0009pan1	0.12	1.90	11.88	**19**	16R -0154pan11	0.10	1.97	12.31
2	16R -0010pan6	0.11	1.93	12.06	**20**	16R -0198pan9	0.11	2.03	12.69
3	16R -0035pan3	0.10	1.88	11.75	**21**	16R -0199pan5	0.10	2.24	14.00
4	16R -0039pan7	0.12	1.76	11.00	**22**	16R -0201pan1	0.10	1.95	12.19
5	16R -0040pan2	0.19	1.76	11.00	**23**	16R -0224pan4	0.12	1.99	12.44
6	16R -0047pan6	0.10	2.40	15.00	**24**	16R -0334pan1	0.11	1.67	10.44
7	16R -0057pan3	0.10	1.99	12.44	**25**	16R -0335pan8	0.11	2.90	18.13
8	16R -0075pan5	0.09	1.65	10.31	**26**	16R -0367pan5	0.10	1.76	11.00
9	16R -0080pan1	0.10	1.97	12.31	**27**	16R -0376pan2	0.11	1.93	12.06
10	16R -0088pan2	0.11	1.66	10.38	**27**	16R -0389pan1	0.12	1.97	12.31
11	16R -0089pan2	0.10	1.88	11.75	**29**	16R -0401pan2	0.12	1.76	11.00
12	16R -0098pan3	0.11	1.84	11.50	**30**	16R -0413pan5	0.09	1.88	11.75
13	16R -0101pan3	0.10	1.79	11.19	**31**	16R -0455pan5	0.11	1.76	11.00
14	16R -0113pan3	0.11	1.83	11.44	**32**	16R -0456pan7	0.10	1.76	11.00
15	16R -0145pan2	0.10	2.03	12.69	**33**	16R -0476pan3	0.10	1.82	11.38
16	16R -0147pan4	0.09	1.65	10.31	**34**	16R -0473pan8	0.09	1.99	12.44
17	16R -0151pan7	0.12	2.06	12.88	**35**	16R -0479pan3	0.12	1.75	10.94
18	16R -0153pan1	0.11	1.85	11.56	**36**	16R -0488pan1	0.11	2.12	13.25

Continued.

Table 5. Continued.

No.	Genotype	Mass	N-Cont.	Crude Protein Content	No.	Genotype	Mass	N-Cont.	Crude Protein Content
37	16R -0498pan1	0.10	1.97	12.31	**79**	16R -1487pan2	0.10	1.98	12.38
38	16R -0501pan2	0.11	1.59	9.94	**80**	16R -1498pan2	0.12	1.98	12.38
39	16R -0505pan6	0.10	1.88	11.75	**81**	16R -1499pan2	0.13	1.87	11.69
40	16R -0576pan6	0.10	1.76	11.00	**82**	16R -1500pan1	0.12	2.01	12.56
41	16R -0588pan7	0.11	1.72	10.75	**83**	16R -1501pan1	0.11	1.77	11.06
42	16R -0598pan1	0.10	1.82	11.38	**84**	16R -1523pan11	0.09	1.99	12.44
43	16R -0599pan5	0.12	1.92	12.00	**85**	16R -1534pan1	0.11	1.88	11.75
44	16R -0602pan4	0.11	1.67	10.44	**86**	16R -1612pan1	0.13	1.98	12.38
45	16R -0643pan1	0.10	1.90	11.88	**87**	16R -1670pan4	0.11	1.89	11.81
46	16R -0679pan2	0.10	1.64	10.25	**88**	16R -1689pan4	0.09	1.83	11.44
47	16R -0717pan2	0.12	1.91	11.94	**89**	16R -1697pan6	0.11	1.99	12.44
48	16R -0754pan3	0.10	2.03	12.69	**90**	16R -1629pan6	0.10	1.98	12.38
49	16R -0767pan3	0.12	2.10	13.13	**91**	16R -1675pan2	0.12	2.06	12.88
50	16R -0781pan5	0.10	1.88	11.75	**92**	16R -1689pan2	0.11	1.77	11.06
51	16R -0788pan2	0.11	1.76	11.00	**93**	16R -1681pan5	0.11	1.97	12.31
52	16R -0807pan9	0.10	2.44	15.25	**94**	16R -2277pan2	0.09	2.03	12.69
53	16R -0809pan4	0.12	1.77	11.06	**95**	16R -2285pan2	0.11	2.20	13.75
54	16R -0812pan7	0.12	1.65	10.31	**96**	16R -3401pan4	0.11	1.89	11.81
55	16R -0833pan2	0.10	1.73	10.81	**97**	16R -3568pan2	0.12	1.92	12.00
56	16R -0834pan4	0.13	2.05	12.81	**98**	16R -3581pan4	0.12	1.78	11.13
57	16R -0836pan3	0.11	2.31	14.44	**99**	16R -3593pan4	0.12	1.78	11.13
58	16R -0844pan2	0.10	1.78	11.13	**100**	16R -3594pan1	0.10	1.93	12.06
59	16R -0849pan3	0.10	2.06	12.88	**101**	16R -4399pan1	0.11	1.82	11.38
60	16R -0850pan1	0.12	1.89	11.81	**102**	16R -4081pan1	0.10	1.90	11.88
61	16R -0813pan7	0.12	2.11	13.19	**103**	16R -4175pan5	0.12	2.02	12.63
62	16R -0834pan1	0.09	1.75	10.94	**104**	16R -4179pan3	0.10	2.89	18.06
63	16R -0855pan2	0.10	2.06	12.88	**105**	16R -4209pan3	0.10	1.78	11.13
64	16R -0976pan7	0.13	1.90	11.88	**106**	16R -4213pan1	0.12	2.03	12.69
65	16R -0977pan4	0.11	1.97	12.31	**107**	16R -4456pan3	0.12	1.87	11.69
66	16R -0988pan2	0.09	2.03	12.69	**108**	16R -5103pan1	0.10	1.97	12.31
67	16R -0994pan3	0.11	2.20	13.75	**109**	16R -5109pan4	0.10	1.88	11.75
68	16R -0999pan1	0.11	2.11	13.19	**110**	16R -5201pan3	0.10	1.65	10.31
69	16R -1072pan1	0.09	1.80	11.25	**111**	16R -5205pan3	0.12	1.98	12.38
70	16R -1099pan2	0.11	1.97	12.31	**112**	16R -5214pan1	0.12	1.93	12.06
71	16R -1134pan4	0.12	2.09	13.06	**113**	16R -5218pan1	0.10	2.11	13.19
72	16R -1255pan4	0.11	2.20	13.75	**114**	16R -5200pan1	0.12	1.75	10.94
73	16R -1356pan2	0.09	2.00	12.50	**115**	16R -5902pan1	0.10	1.97	12.31
74	16R -1363pan7	0.12	1.99	12.44	**116**	16R -5903pan6	0.12	1.99	12.44
75	16R -1401pan1	0.13	2.20	13.75	**117**	16R -6065pan4	0.09	1.88	11.75
76	16R -1422pan4	0.11	1.92	12.00	**118**	16R -6168pan4	0.11	1.76	11.00
77	16R -1439pan1	1.11	2.21	13.81	**119**	16R -6169pan2	0.12	1.76	11.00
78	16R -1460pan5	0.10	1.98	12.38	**120**	16R -6178pan3	0.12	1.83	11.44

HERBICIDE-RESISTANT RICE DEVELOPMENT

Research efforts also involve the development of rice lines resistant to two herbicides, glyphosate and S-metolachlor. Glyphosate [N-(phosphonomethyl) glycine)] is an organophosphorus compound that has a broad-spectrum systemic activity capable of eradicating many weeds, including annual broadleaf weeds and grasses that compete with crops. S-metolachlor is an organic compound, a derivative of aniline, and is a member of the chloroacetanilide family of herbicides. It is a different class of herbicide when it is compared to the Imidazolinones (ALS inhibitor), Acetyl-CoA carboxylase inhibitor (Provisia), or glyphosate (Roundup). It controls most annual grasses and small-seeded broadleaf weeds. It has a flexible application timing with early preplant, pre-emergence, and post-applied options.

1. Glyphosate (Roundup) Herbicide-Resistant Rice.

During last year's planting season, an elevated screening level of 1X the rate of Roundup was applied to the seedlings during the 3- to 5-leaf stage with the planting rate of 200 lb/A. The seed was from surviving plants sprayed with the 0.75Xrate. More than a dozen plants were recovered from the treatment, and moved to the greenhouse and grown to maturity. Their seeds were collected for various tests.

In addition to field screening, lab screening methodologies were developed that will allow for resistance characteristics to be studied more precisely. Standard Petri dish tests have been established to study the genetics and screening of herbicide resistance. Both the progenies of the 1X surviving parental line and the original populations are currently being screened through this standard Petri dish method.

2. Dual Magnum (S-metolachlor) Herbicide-Resistant Rice.

In the last growing season, the M_3 rice mutant population with recommended 1X spray rate was screened. The M_3 rice mutant population was previously screened with 0.75X of the recommended spray rate. Planting rate of 200 lb/A was used in the field screening. A small number of plants was recovered from the treatment, and they were moved to the greenhouse and grown to maturity. Their seed was collected for various tests.

Similar to studies conducted in Roundup, lab screening methodologies to study resistance characteristics more precisely were developed. Both the progenies of the 1X surviving lines and the original populations are currently being evaluated.

RICE AGRONOMY

D.L. Harrell, M. Kongchum, J.P. Leonards, J.S. Fluitt, and J.R. Hartman

INTRODUCTION

The following report documents research conducted in rice plant nutrition, cultural management, and rice rotational crops. Rice plant nutrition studies were conducted at the LSU AgCenter H. Rouse Caffey Rice Research Station (HRCRRS) and at multiple off-station locations in an effort to generate agronomic production information representative of all Louisiana rice production areas. Rice nutrition and cultural management studies were conducted in Acadia at the HRCRRS, St. Landry, Tensas, Richland and Calcasieu parishes.

We would like to express our sincere appreciation to the following off-station cooperators for their assistance in conducting this research. Our efforts would not be successful without their support:

Charlie Fontenot – St. Landry Parish
Northeast Research Station – Tensas Parish
Woodsland Plantation and Ashley Dixon – Richland Parish
Johnny Hensgens – Calcasieu Parish

Throughout this section, multiple abbreviations are used to represent common units of measure and agricultural chemicals; these abbreviations are explained below in Tables 1 and 2, respectively.

Table 1. Common abbreviations used in agronomic research at the H. Rouse Caffey Rice Research Station (HRCRRS).

Abbreviation	Explanation
A	Acre
ANOVA	Analysis of variance
bu/A	Bushels per acre
Ca	Calcium
COC	Crop oil concentrate
DAT	Days after treatment
DPF	Days preflood
DPP	Days prior to planting
Fe	Iron
ft	Feet
ft^2	Square feet
gal/A	Gallons product per acre
Head Rice	Percent unbroken kernels left after milling
in	Inches
lb	Pounds
lb/A	Pounds product per acre
lb ai/A	Pounds active ingredient per acre
Ldg-Rate	Lodging rate in percent
Ldg-Type	Lodging type on a scale from 0 to 5; where 0 = no lodging, 1 = slightly lodged (approximately 1 - 23° angle) and 5 = lodged to ground (90° angle)
K	Potassium
Main	First rice crop; crop growth stage prior to first harvest
Mg	Magnesium
Mn	Manganese
Mo	Molybdenum
N	Nitrogen
Na	Sodium
NA	Information not available/applicable
NUE	Nitrogen use efficiency
oz/A	Ounces product per acre
P	Phosphorus
PD	Panicle differentiation
PI	Panicle initiation
pl/m^2	Plant densities measured 14 days after seeding emergence by counting the main-stem numbers in a randomly selected area of 1 m^2 in each plot
Postharvest	Application applied immediately following main crop harvest
ppm	Parts per million
PRE	Application prior to crop emergence
Preflood	Preflood application applied 1 to 2 days prior to permanent flood establishment
Preplant	Preplanting application prior to flooding and seeding
pt/A	Pints product per acre
Ratoon	Second rice crop; crop growth after harvest of first (main) crop
HRCRRS	H. Rouse Caffey Rice Research Station, Crowley, LA
RGY	Relative grain yield
S	Sulfur
SB Severity	Sheath blight infestation on a scale from 1 to 9; where 1 = no sheath blight and 9 = severe sheath blight infestation
Total Mill	Percent of rice kernels left after milling
Zn	Zinc
10% Heading(HD)	Crop growth stage where 10% of plants within a plot have visible panicles
50% Heading(HD)	Number of days from effective seeding date to 50% panicle exertion

Table 2. Common crop protection chemicals and formulations used in agronomic research at the H. Rouse Caffey Rice Research Station (HRCRRS).

Trade Name	Common Name	Formulation	Company
Herbicides			
Aim	carfentrazone	EC2	FMC Corp.
Arrosolo	propanil + molinate	3 lb + 3 lb	RiceCo, LLC
Basagran	bentazon	4 lb	BASF
Clincher	cyhalofop	2.38 lb	Corteva AgroSciences, LLC
Command	clomazone	3ME	FMC Corp.
Duet	propanil + bensulfuron	4 lb + 0.48 oz	RiceCo LLC
Grandstand R	triclopyr	3 lb	Corteva AgroSciences, LLC
Grasp	Penoxsulam	SC2	Corteva AgroSciences,
Gambit	Halosulfuron-methyl + prosulfuron	50% + 29%	LLC Gowan
Honcho Plus	glyphosate	4 lb	Monsanto
Liberty	glufosinate ammonium	18.19%	Bayer CropSciences
Londax	bensulfuron	60% DF	DuPont
Newpath	imazethapyr	2 lb	BASF
Permit	halosulfuron	75% WSG	Monsanto
Prowl	pendimethalin	EL 3.3	BASF
Regiment	bispyribac-sodium	80% DF	Valent USA
RiceBeaux	propanil + thiobencarb	3 lb + 3 lb	RiceCo, LLC
Ricestar HT	fenoxaprop-P-ethyl	0.58 lb	Bayer Crop Sciences
Roundup Weatherman	glyphosate	4 lb	Monsanto
Sharpen	saflufenacil	2.85 lb	BASF
Stam M4	propanil	4 lb	Corteva AgroSciences, LLC
Weedar 64	2,4-D	3.8 lb	Aventis
Insecticides			
Dermacor X-100	rynaxypyr		DuPont
Karate Z	cyhalothrin	2.08 lb	Syngenta
Mustang Maxx	zeta-cypermethrin	0.8 lb	FMC Corp.
Methyl Parathion	methyl Parathion	4 lb	Cheminova
Fungicides			
Amistartop	Azoxystrobin + difenoconazole	1.67 lb + 1.05 lb	Corteva AgroSciences,
Diathane DF	mancozeb	75% DF	LLC
Stratego	propiconazole + trifloxystrobin	1.04 lb + 1.04 lb	Bayer Crop Science, LLC
Quadris	azoxystrobin	2.08 lb	Syngenta
Quilt	azoxystrobin + propiconazole	1.04 lb + 0.62 lb	Syngenta

RICE FERTILITY AND CULTURAL PRACTICE RESEARCH

D.L. Harrell, M. Kongchum, J.P. Leonards, J.S. Fluitt, and J.R. Hartman

INTRODUCTION

The following research focuses on rice production. Research topics include variety by nitrogen response, hybrid by nitrogen response, fertilizer application timing, fertilizer application rate, fertilizer source, water management, and ratoon rice research.

Agronomic Response of Drill-Seeded CLJ01 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-01

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date**..... : Nov. 11

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 1. Agronomic response of drill-seeded CLJ01 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/12/2019		8/12/2019		11/11/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb ai/A)	Growth Stage												
1	UREA	0	4-5 leaf	106.0	f	90.0	f	30.3	h	4381	E	3430	a	7812	d
2	UREA	30	4-5 leaf	107.0	ef	91.0	ef	35.5	g	6618	D	4015	a	10633	c
3	UREA	60	4-5 leaf	108.3	de	92.3	de	37.5	ef	7307	Cd	4066	a	11373	bc
4	UREA	90	4-5 leaf	109.0	cd	93.0	cd	37.8	def	8286	Ab	4096	a	12383	a
5	UREA	120	4-5 leaf	112.0	ab	96.0	ab	41.0	a	8428	Ab	4384	a	12812	a
6	UREA	150	4-5 leaf	111.5	ab	95.5	ab	40.8	ab	8844	A	3966	a	12810	a
7	UREA	180	4-5 leaf	112.3	a	96.3	a	39.3	bcd	8687	A	4038	a	12726	a
8	UREA	210	4-5 leaf	112.0	ab	96.0	ab	40.0	abc	8724	A	3702	a	12425	a
9	UREA	45	4-5 leaf	107.0	ef	91.0	ef	36.3	fg	7364	Cd	4153	a	11518	b
	UREA	45	PD												
10	UREA	75	4-5 leaf	109.3	cd	93.3	cd	38.8	cde	7832	Bc	4333	a	12165	ab
	UREA	45	PD												
11	UREA	105	4-5 leaf	110.5	bc	94.5	bc	39.0	cde	8344	Ab	4206	a	12550	a
	UREA	45	PD												
12	UREA	135	4-5 leaf	111.3	ab	95.3	ab	39.3	bcd	8685	A	4139	a	12825	a
	UREA	45	PD												
LSD P=.05				1.63		1.63		1.64		762.5		547.9		810.1	
Standard Deviation				1.13		1.13		1.14		530.0		380.8		563.1	
CV				1.03		1.21		3.0		6.8		9.42		4.76	
Treatment F				15.365		15.365		26.571		23.245		1.882		26.252	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0791		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded PVL02 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-02

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date**..... : Nov. 11

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 2. Agronomic response of drill-seeded PVL02 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle									
Rating Date								8/12/2019		8/12/2019				8/12/2019		11/11/2019		
Rating Type				50% HD		50% HD		Height		Lodge				Yield		Yield		Total Yield	
Rating Unit				days		days		in		% plot		rate		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb/A)	Growth Stage																
1	UREA	0	4-5 leaf	103.5	c	87.5	c	30.3	g	0.0	b	0.0	b	4655	c	4545	a	9200	b
2	UREA	30	4-5 leaf	104.8	c	88.8	c	36.3	f	0.0	b	0.0	b	7261	b	4437	a	11698	a
3	UREA	60	4-5 leaf	107.8	b	91.8	b	38.8	e	0.0	b	0.0	b	7821	ab	4438	a	12259	a
4	UREA	90	4-5 leaf	107.8	b	91.8	b	40.0	de	0.0	b	0.0	b	8367	ab	4197	ab	12564	a
5	UREA	120	4-5 leaf	109.0	ab	93.0	ab	42.3	bc	0.0	b	0.0	b	8149	ab	4410	a	12559	a
6	UREA	150	4-5 leaf	108.8	ab	92.8	ab	42.8	abc	0.0	b	0.0	b	8359	ab	4201	ab	12560	a
7	UREA	180	4-5 leaf	108.5	ab	92.5	ab	44.0	ab	22.5	b	0.8	b	8275	ab	3691	c	11966	a
8	UREA	210	4-5 leaf	109.5	a	93.5	a	44.5	a	50.0	a	2.8	a	7823	ab	3863	bc	11686	a
9	UREA	45	4-5 leaf	108.0	ab	92.0	ab	39.0	e	0.0	b	0.0	b	7282	b	4172	abc	11454	a
	UREA	45	PD																
10	UREA	75	4-5 leaf	108.0	ab	92.0	ab	39.3	e	0.0	b	0.0	b	8130	ab	4291	ab	12421	a
	UREA	45	PD																
11	UREA	105	4-5 leaf	108.5	ab	92.5	ab	42.8	abc	0.0	b	0.0	b	8553	a	4237	ab	12791	a
	UREA	45	PD																
12	UREA	135	4-5 leaf	109.3	ab	93.3	ab	41.5	cd	0.0	b	0.0	b	7734	ab	4334	ab	12068	a
	UREA	45	PD																
LSD P=.05				1.59		1.59		2.13		23.52		0.98		1141.7		481.7		1356.9	
Standard Deviation				1.10		1.10		1.48		16.35		0.68		793.6		334.9		943.2	
CV				1.02		1.2		3.69		270.58		234.34		10.31		7.91		7.9	
Treatment F				10.804		10.804		28.329		3.495		5.530		6.927		2.152		4.128	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0026		0.0001		0.0001		0.0440		0.0007	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLL15 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-03

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date**..... : Nov. 11

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 3. Agronomic response of drill-seeded CLL15 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/12/2019		8/12/2019		11/11/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	98.5	e	82.5	e	28.3	f	4708	E	3868	a	8576	d
2	UREA	30	4-5 leaf	100.0	d	84.0	d	32.0	e	6455	D	4056	a	10511	c
3	UREA	60	4-5 leaf	100.8	cd	84.8	cd	33.5	de	6958	Cd	4411	a	11368	bc
4	UREA	90	4-5 leaf	102.0	abc	86.0	abc	35.3	c	7762	Abc	4533	a	12295	ab
5	UREA	120	4-5 leaf	102.5	ab	86.5	ab	37.3	ab	7714	Abc	4365	a	12078	ab
6	UREA	150	4-5 leaf	102.5	ab	86.5	ab	37.8	a	7872	Abc	4519	a	12392	a
7	UREA	180	4-5 leaf	102.8	a	86.8	a	37.5	ab	8168	A	4385	a	12553	a
8	UREA	210	4-5 leaf	102.8	a	86.8	a	38.0	a	8314	A	4156	a	12470	a
9	UREA	45	4-5 leaf	101.3	bcd	85.3	bcd	33.0	e	7522	Abc	4154	a	11676	ab
	UREA	45	PD												
10	UREA	75	4-5 leaf	101.5	abc	85.5	abc	34.8	cd	7102	Bcd	4714	a	11815	ab
	UREA	45	PD												
11	UREA	105	4-5 leaf	102.3	ab	86.3	ab	35.3	c	7995	Ab	4305	a	12300	ab
	UREA	45	PD												
12	UREA	135	4-5 leaf	102.8	a	86.8	a	36.0	bc	7789	Abc	4370	a	12158	ab
	UREA	45	PD												
LSD P=.05				1.42		1.42		1.75		967.1		480.9		935.7	
Standard Deviation				0.99		0.99		1.22		672.2		334.3		650.4	
CV				0.97		1.15		3.49		9.13		7.74		5.57	
Treatment F				7.140		7.140		22.077		8.696		1.907		12.170	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0749		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLM04 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-04

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 0.53
- **pH** ..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date** ..... : April 3
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date** ..... : Nov. 11

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides** ..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides** ..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 4. Agronomic response of drill-seeded CLM04 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle											
Rating Date								8/12/2019		8/12/2019				8/12/2019		11/11/2019			
Rating Type				50% HD		50% HD		Height		Lodge				Yield		Yield		Total Yield	
Rating Unit				days		days		in		% plot		Rate		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage																
1	UREA	0	4-5 leaf	107.8	f	91.8	f	32.5	f	0.0	c	0.0	C	6171	d	4238	a	10409	d
2	UREA	30	4-5 leaf	108.0	ef	92.0	ef	36.3	e	0.0	c	0.0	C	8164	c	4109	a	12273	abc
3	UREA	60	4-5 leaf	108.8	e	92.8	e	39.5	d	0.0	c	0.0	C	8864	bc	4370	a	13234	ab
4	UREA	90	4-5 leaf	109.8	d	93.8	d	40.5	cd	0.0	c	0.0	C	9491	ab	3939	ab	13431	a
5	UREA	120	4-5 leaf	111.0	bc	95.0	bc	42.8	ab	7.5	c	1.0	Bc	9899	a	2896	c	12795	ab
6	UREA	150	4-5 leaf	111.8	ab	95.8	ab	42.0	abc	25.0	abc	1.0	Bc	10109	a	2599	cd	12708	ab
7	UREA	180	4-5 leaf	111.5	ab	95.5	ab	43.3	a	50.0	ab	2.3	Ab	9381	ab	1733	de	11114	cd
8	UREA	210	4-5 leaf	112.0	a	96.0	a	43.8	a	60.0	a	3.0	A	9779	ab	1141	e	10920	d
9	UREA	45	4-5 leaf	108.5	ef	92.5	ef	37.5	e	0.0	c	0.0	C	8125	c	3996	ab	12121	bc
	UREA	45	PD																
10	UREA	75	4-5 leaf	108.3	ef	92.3	ef	40.0	d	0.0	c	0.0	C	8841	bc	3989	ab	12830	ab
	UREA	45	PD																
11	UREA	105	4-5 leaf	110.5	cd	94.5	cd	41.3	bcd	0.0	c	0.0	C	10196	a	3157	bc	13354	a
	UREA	45	PD																
12	UREA	135	4-5 leaf	111.5	ab	95.5	ab	42.5	ab	22.5	bc	0.8	C	9889	a	2691	c	12579	ab
	UREA	45	PD																
LSD P=.05				0.90		0.90		1.79		35.51		1.32		997.7		875.1		1197.7	
Standard Deviation				0.62		0.62		1.24		24.68		0.92		693.5		608.3		832.5	
CV				0.57		0.66		3.1		179.53		137.34		7.64		18.79		6.76	
Treatment F				26.854		26.854		28.414		2.995		4.898		11.106		11.953		5.743	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0072		0.0002		0.0001		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLL2195 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-05

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date**..... : Nov. 11

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 5. Agronomic response of drill-seeded CLL2195 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/12/2019		8/11/2019		11/11/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	102.3	g	86.3	g	32.5	e	5014	F	3926	e	8940	e
2	UREA	30	4-5 leaf	104.0	f	88.0	f	36.0	d	7165	E	4003	de	11168	d
3	UREA	60	4-5 leaf	107.0	de	91.0	de	37.3	cd	7585	De	4427	abc	12012	c
4	UREA	90	4-5 leaf	109.3	abc	93.3	abc	38.8	abc	8393	abc	4633	ab	13026	ab
5	UREA	120	4-5 leaf	108.5	cd	92.5	cd	39.0	abc	8462	Ab	4485	abc	12947	ab
6	UREA	150	4-5 leaf	109.8	abc	93.8	abc	38.8	abc	8434	Ab	4576	abc	13010	ab
7	UREA	180	4-5 leaf	110.3	ab	94.3	ab	39.3	ab	8244	a-d	4488	abc	12732	abc
8	UREA	210	4-5 leaf	110.8	a	94.8	a	40.3	a	8931	A	4287	cd	13218	a
9	UREA	45	4-5 leaf	106.5	e	90.5	e	38.3	bc	7713	cde	4391	bc	12103	c
	UREA	45	PD												
10	UREA	75	4-5 leaf	107.0	de	91.0	de	37.8	bcd	7905	bcd	4546	abc	12451	bc
	UREA	45	PD												
11	UREA	105	4-5 leaf	109.0	bc	93.0	bc	39.5	ab	8232	a-d	4688	a	12919	ab
	UREA	45	PD												
12	UREA	135	4-5 leaf	109.5	abc	93.5	abc	39.3	ab	8069	bcd	4505	abc	12574	abc
	UREA	45	PD												
LSD P=.05				1.71		1.71		1.83		716.0		289.4		743.0	
Standard Deviation				1.19		1.19		1.27		497.7		201.2		516.5	
CV				1.1		1.29		3.35		6.34		4.56		4.21	
Treatment F				18.996		18.996		10.633		16.339		5.471		21.309	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLL2097 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-45

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 0.53
- **pH** ..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date** ..... : April 3
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date** ..... : Nov. 11

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides** ..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides** ..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 6. Agronomic response of drill-seeded CLL2097 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/12/2019		8/12/2019		11/12/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	104.5	f	88.5	f	29.8	e	6016	c	4439	a	10455	c
2	UREA	30	4-5 leaf	106.0	e	90.0	e	35.5	d	8551	b	4184	abc	12734	ab
3	UREA	60	4-5 leaf	107.5	d	91.5	d	37.0	cd	8613	b	4317	ab	12929	ab
4	UREA	90	4-5 leaf	108.3	cd	92.3	cd	38.8	abc	9761	a	4063	a-d	13824	a
5	UREA	120	4-5 leaf	108.8	c	92.8	c	39.5	abc	9369	ab	3758	cd	13127	ab
6	UREA	150	4-5 leaf	110.3	a	94.3	a	39.8	ab	9203	ab	3841	cd	13044	ab
7	UREA	180	4-5 leaf	110.0	ab	94.0	ab	39.3	abc	9517	ab	3691	de	13208	ab
8	UREA	210	4-5 leaf	110.8	a	94.8	a	37.5	bcd	9126	ab	3281	e	12408	b
9	UREA	45	4-5 leaf	107.5	d	91.5	d	37.3	bcd	8909	ab	4024	a-d	12933	ab
	UREA	45	PD												
10	UREA	75	4-5 leaf	108.0	cd	92.0	cd	38.5	abc	9507	ab	3930	bcd	13437	ab
	UREA	45	PD												
11	UREA	105	4-5 leaf	109.0	bc	93.0	bc	40.3	a	9576	ab	3705	de	13281	ab
	UREA	45	PD												
12	UREA	135	4-5 leaf	109.0	bc	93.0	bc	39.5	abc	9113	ab	3704	de	12817	ab
	UREA	45	PD												
LSD P=.05				1.04		1.04		2.55		1098.3		453.4		1233.4	
Standard Deviation				0.72		0.72		1.78		763.4		315.2		857.3	
CV				0.67		0.78		4.71		8.54		8.06		6.67	
Treatment F				24.333		24.333		10.388		6.775		4.070		3.799	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0008		0.0014	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded 2140 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-46

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 0.53
- **pH** ..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date** ..... : April 3
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date** ..... : Nov. 11

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides** ..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides** ..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 7. Agronomic response of drill-seeded 2140 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/12/2019		8/12/2019		11/11/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	99.3	e	83.3	e	31.5	d	5290	f	3132	a	8422	f
2	UREA	30	4-5 leaf	101.5	d	85.5	d	36.0	c	7369	e	2981	a	10349	e
3	UREA	60	4-5 leaf	102.8	cd	86.8	cd	37.8	abc	8124	cde	3233	a	11357	bcd
4	UREA	90	4-5 leaf	106.0	a	90.0	a	38.0	abc	8589	bc	3389	a	11978	b
5	UREA	120	4-5 leaf	106.5	a	90.5	a	38.8	ab	8663	bc	3252	a	11914	bc
6	UREA	150	4-5 leaf	107.0	a	91.0	a	39.5	a	8507	bcd	3390	a	11898	bc
7	UREA	180	4-5 leaf	107.3	a	91.3	a	39.8	a	9142	ab	2915	a	12057	ab
8	UREA	210	4-5 leaf	107.0	a	91.0	a	39.0	ab	9570	a	3364	a	12934	a
9	UREA	45	4-5 leaf	103.3	bc	87.3	bc	37.3	bc	7965	cde	3064	a	11028	cde
	UREA	45	PD												
10	UREA	75	4-5 leaf	104.5	b	88.5	b	38.0	abc	7724	de	3193	a	10917	de
	UREA	45	PD												
11	UREA	105	4-5 leaf	106.8	a	90.8	a	38.8	ab	8755	abc	3269	a	12023	ab
	UREA	45	PD												
12	UREA	135	4-5 leaf	106.5	a	90.5	a	39.5	a	8322	bcd	3197	a	11519	bcd
	UREA	45	PD												
LSD P=.05				1.29		1.29		2.16		857.7		340.1		933.5	
Standard Deviation				0.90		0.90		1.50		596.2		236.4		648.9	
CV				0.85		1.01		3.97		7.3		7.39		5.71	
Treatment F				33.962		33.962		9.081		13.276		1.691		12.405	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.1192		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RU1504197 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-06

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 0.53
- **pH** ..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date** ..... : April 3
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date** ..... : Nov. 12

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides** ..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides** ..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 8. Agronomic response of drill-seeded RU1504197 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/12/2019		8/12/2019		11/12/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	108.0	e	92.0	e	29.8	c	5063	f	2696	a	7759	e
2	UREA	30	4-5 leaf	108.3	de	92.3	de	34.3	b	7315	e	2798	a	10112	d
3	UREA	60	4-5 leaf	109.3	cd	93.3	cd	36.3	b	7908	cde	3130	a	11037	a-d
4	UREA	90	4-5 leaf	110.3	bc	94.3	bc	38.8	a	8680	abc	3087	a	11768	abc
5	UREA	120	4-5 leaf	111.3	ab	95.3	ab	39.5	a	8122	b-e	3000	a	11122	a-d
6	UREA	150	4-5 leaf	112.3	a	96.3	a	40.5	a	8958	ab	2988	a	11946	a
7	UREA	180	4-5 leaf	112.0	a	96.0	a	40.5	a	8988	ab	2781	a	11769	abc
8	UREA	210	4-5 leaf	112.0	a	96.0	a	39.8	a	9216	a	2701	a	11917	ab
9	UREA	45	4-5 leaf	109.3	cd	93.3	cd	36.3	b	7899	cde	2903	a	10802	bcd
	UREA	45	PD												
10	UREA	75	4-5 leaf	110.3	bc	94.3	bc	39.0	a	7556	de	3084	a	10640	cd
	UREA	45	PD												
11	UREA	105	4-5 leaf	110.5	b	94.5	b	38.5	a	8636	abc	3080	a	11717	abc
	UREA	45	PD												
12	UREA	135	4-5 leaf	111.8	a	95.8	a	39.3	a	8333	a-d	2877	a	11210	a-d
	UREA	45	PD												
LSD P=.05				1.25		1.25		2.14		967.7		407.5		1135.1	
Standard Deviation				0.87		0.87		1.49		672.7		283.2		789.0	
CV				0.79		0.92		3.95		8.35		9.68		7.18	
Treatment F				11.678		11.678		17.751		10.961		1.222		8.730	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.3116		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded Titan to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-07

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date**..... : Nov. 12

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 9. Agronomic response of drill-seeded Titan to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/12/2019		8/12/2019		11/12/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	101.0	g	85.0	g	30.8	f	5717	e	3534	cd	9251	e
2	UREA	30	4-5 leaf	102.0	g	86.0	g	34.8	e	7807	d	3849	abc	11656	d
3	UREA	60	4-5 leaf	103.8	f	87.8	f	36.8	d	8472	cd	4193	a	12665	bcd
4	UREA	90	4-5 leaf	105.8	de	89.8	de	37.8	bcd	8969	bcd	3994	ab	12963	bcd
5	UREA	120	4-5 leaf	106.8	bcd	90.8	bcd	39.3	abc	9758	bc	3558	cd	13316	bc
6	UREA	150	4-5 leaf	107.5	abc	91.5	abc	39.5	ab	9642	bc	3249	de	12891	bcd
7	UREA	180	4-5 leaf	108.3	a	92.3	a	39.8	a	9205	bcd	2811	fg	12016	cd
8	UREA	210	4-5 leaf	108.8	a	92.8	a	39.0	abc	12340	a	2656	g	14996	a
9	UREA	96	4-5 leaf	106.3	cde	90.3	cde	38.3	a-d	10082	b	4019	ab	14102	ab
	SBNR-UREA	0	PD												
10	UREA	75	4-5 leaf	105.3	e	89.3	e	37.5	cd	8809	bcd	4077	ab	12886	bcd
	UREA	45	PD												
11	UREA	105	4-5 leaf	108.0	ab	92.0	ab	39.3	abc	9682	bc	3751	bc	13433	abc
	UREA	45	PD												
12	UREA	135	4-5 leaf	108.3	a	92.3	a	39.5	ab	9535	bc	3044	ef	12579	bcd
	UREA	45	PD												
LSD P=.05				1.49		1.49		1.95		1575.3		385.2		1637.1	
Standard Deviation				1.04		1.04		1.36		1095.0		267.8		1137.9	
CV				0.98		1.15		3.6		11.94		7.52		8.94	
Treatment F				24.021		24.021		14.877		7.970		14.856		6.109	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CL153 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-08

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date**..... : Nov. 12

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 10. Agronomic response of drill-seeded CL153 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								8/12/2019		8/12/2019		11/12/2019	
Rating Type				50% HD		50% HD		Height		Yield		Yield	Total Yield
Rating Unit				days		days		in		lb/A		lb/A	lb/A
Crop Stage Majority				Main		Main		Main		Main		Ratoon	MC+RC
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	100.0	d	84.0	d	30.5	f	5389	d	3230 c	8618 d
2	UREA	30	4-5 leaf	101.5	d	85.5	d	35.3	e	7607	c	3539 abc	11146 c
3	UREA	60	4-5 leaf	104.3	c	88.3	c	36.0	de	7953	bc	3796 a	11749 abc
4	UREA	90	4-5 leaf	105.3	bc	89.3	bc	37.3	bcd	7616	c	3764 a	11380 bc
5	UREA	120	4-5 leaf	107.0	a	91.0	a	38.3	abc	8497	abc	3523 abc	12020 abc
6	UREA	150	4-5 leaf	106.8	ab	90.8	ab	38.8	abc	8996	ab	3407 bc	12404 ab
7	UREA	180	4-5 leaf	107.0	a	91.0	a	39.0	ab	8531	abc	3480 abc	12011 abc
8	UREA	210	4-5 leaf	107.5	a	91.5	a	39.5	a	9036	ab	3365 bc	12402 abc
9	UREA	96	4-5 leaf	106.8	ab	90.8	ab	37.0	cde	9049	ab	3750 a	12799 a
	SBNR-UREA	0	PD										
10	UREA	75	4-5 leaf	107.3	a	91.3	a	37.0	cde	7760	c	3793 a	11553 abc
	UREA	45	PD										
11	UREA	105	4-5 leaf	106.3	ab	90.3	ab	38.3	abc	9186	a	3605 ab	12790 a
	UREA	45	PD										
12	UREA	135	4-5 leaf	107.5	a	91.5	a	37.8	a-d	8547	abc	3572 ab	12119 abc
	UREA	45	PD										
LSD P=.05				1.63		1.63		1.97		1160.5		329.1	1257.8
Standard Deviation				1.13		1.13		1.37		806.7		228.8	874.3
CV				1.07		1.26		3.69		9.86		6.41	7.44
Treatment F				19.004		19.004		12.312		6.812		2.552	6.498
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0185	0.0001

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CL1722 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-09

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date**..... : Nov. 12

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 11. Agronomic response of drill-seeded CL172 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/13/2019		11/12/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	97.8	e	81.8	e	29.3	f	4429	d	3811	de	8240	e
2	UREA	30	4-5 leaf	98.8	de	82.8	de	33.0	e	5500	c	3729	e	9229	d
3	UREA	60	4-5 leaf	99.0	cde	83.0	cde	34.5	de	6116	bc	4093	abc	10210	c
4	UREA	90	4-5 leaf	100.8	abc	84.8	abc	36.0	cd	6815	ab	4045	abc	10861	abc
5	UREA	120	4-5 leaf	101.0	ab	85.0	ab	37.8	abc	6823	ab	4015	bcd	10837	abc
6	UREA	150	4-5 leaf	101.5	ab	85.5	ab	37.3	bc	6942	ab	4150	ab	11092	abc
7	UREA	180	4-5 leaf	101.3	ab	85.3	ab	38.8	ab	7350	a	3885	cde	11235	ab
8	UREA	210	4-5 leaf	102.0	a	86.0	a	39.3	a	7373	a	4261	a	11634	a
9	UREA	96	4-5 leaf	100.0	bcd	84.0	bcd	36.5	c	6567	ab	4077	abc	10644	bc
	SBNR-UREA	0	PD												
10	UREA	75	4-5 leaf	100.8	abc	84.8	abc	37.3	bc	6301	bc	4157	ab	10458	bc
	UREA	45	PD												
11	UREA	105	4-5 leaf	100.8	abc	84.8	abc	37.3	bc	7218	a	4082	abc	11300	ab
	UREA	45	PD												
12	UREA	135	4-5 leaf	101.0	ab	85.0	ab	39.3	a	6746	ab	4145	ab	10891	abc
	UREA	45	PD												
LSD P=.05				1.94		1.94		1.83		849.6		223.8		905.8	
Standard Deviation				1.35		1.35		1.27		590.5		155.5		629.6	
CV				1.34		1.6		3.5		9.06		3.85		5.97	
Treatment F				3.483		3.483		20.673		8.277		3.989		9.184	
Treatment Prob(F)				0.0026		0.0026		0.0001		0.0001		0.0010		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7321FP to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-10

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method**..... : Drill seeded
- **Planting date** ..... : March 22
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 7
- **Harvest date** ..... : August 13
- **Ratoon Harvest date**..... : Nov. 12

Seed treatment/cwt ..... : Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, August 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 12. Agronomic response of drill-seeded RT7321FP to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/13/2019		11/12/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	97.5	d	81.5	d	37.5	c	6819	e	2955	a	9775	e
2	UREA	60	4-5 leaf	101.0	c	85.0	c	45.5	b	10483	bcd	2294	b	12778	cd
3	UREA	90	4-5 leaf	101.5	bc	85.5	bc	47.0	ab	10022	d	2319	b	12341	d
4	UREA	120	4-5 leaf	102.5	abc	86.5	abc	48.8	a	10311	cd	2292	b	12603	d
5	UREA	150	4-5 leaf	103.5	a	87.5	a	48.0	ab	11282	ab	2318	b	13600	abc
6	UREA	180	4-5 leaf	103.3	a	87.3	a	49.0	a	11848	a	2515	ab	14363	a
7	UREA	75	4-5 leaf	102.8	ab	86.8	ab	46.8	ab	10497	bcd	2735	ab	13232	bcd
	UREA	45	50% HD												
8	UREA	105	4-5 leaf	103.0	ab	87.0	ab	47.3	ab	11012	abc	2977	a	13989	ab
	UREA	45	50% HD												
9	UREA	135	4-5 leaf	103.0	ab	87.0	ab	48.3	ab	11189	abc	3001	a	14189	a
	UREA	45	50% HD												
LSD P=.05				1.68		1.68		2.76		966.0		512.9		949.4	
Standard Deviation				1.15		1.15		1.89		661.9		351.5		650.6	
CV				1.13		1.34		4.07		6.37		13.51		5.01	
Treatment F				10.639		10.639		13.898		19.236		3.244		18.552	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0120		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7521FP to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-11

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 0.53
- **pH** ..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method** ..... : Drill seeded
- **Planting date** ..... : March 22
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inches
- **Emergence date** ..... : April 7
- **Harvest date** ..... : Aug. 13
- **Ratoon Harvest date** ..... : Nov. 12

196

Seed treatment/cwt ..... : Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, August 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides** ..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides** ..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 13. Agronomic response of drill-seeded RT7521FP to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/13/2019		11/12/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	100.0	d	84.0	d	35.8	d	8694	b	3602	a	12296	a
2	UREA	60	4-5 leaf	104.3	c	88.3	c	46.0	c	10464	a	3396	a	13860	a
3	UREA	90	4-5 leaf	104.5	c	88.5	c	49.0	ab	11489	a	3429	a	14918	a
4	UREA	120	4-5 leaf	105.5	bc	89.5	bc	50.3	ab	10327	a	3504	a	13831	a
5	UREA	150	4-5 leaf	107.3	a	91.3	a	51.3	a	10225	ab	3623	a	13849	a
6	UREA	180	4-5 leaf	106.5	ab	90.5	ab	49.8	ab	11666	a	3306	a	14972	a
7	UREA	75	4-5 leaf	104.5	c	88.5	c	48.5	b	11126	a	3624	a	14750	a
	UREA	45	50% HD												
8	UREA	105	4-5 leaf	105.5	bc	89.5	bc	50.5	ab	10341	a	3455	a	13796	a
	UREA	45	50% HD												
9	UREA	135	4-5 leaf	106.8	ab	90.8	ab	48.8	b	10464	a	3499	a	13963	a
	UREA	45	50% HD												
LSD P=.05				1.37		1.37		2.28		1552.7		534.4		1789.4	
Standard Deviation				0.94		0.94		1.56		1063.9		366.2		1226.1	
CV				0.89		1.06		3.28		10.1		10.48		8.74	
Treatment F				20.937		20.937		36.800		2.701		0.358		1.783	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0284		0.9323		0.1303	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7301 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-12

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method**..... : Drill seeded
- **Planting date** ..... : March 18
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 13
- **Ratoon Harvest date**..... : Nov. 12

Seed treatment/cwt ..... : Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, August 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 14. Agronomic response of drill-seeded RT7301 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/13/2019		11/12/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	98.3	c	82.3	c	34.5	c	6092	e	3385	a	9477	d
2	UREA	60	4-5 leaf	98.3	c	82.3	c	40.3	b	9434	d	3297	a	12730	c
3	UREA	90	4-5 leaf	99.5	b	83.5	b	42.3	ab	9774	cd	3088	ab	12863	c
4	UREA	120	4-5 leaf	100.8	a	84.8	a	44.3	a	10315	bcd	2656	bc	12971	bc
5	UREA	150	4-5 leaf	101.8	a	85.8	a	42.8	ab	10788	ab	2363	c	13151	abc
6	UREA	180	4-5 leaf	101.0	a	85.0	a	44.0	a	11393	a	2639	bc	14032	a
7	UREA	75	4-5 leaf	101.3	a	85.3	a	41.3	ab	10518	abc	3083	ab	13601	abc
	UREA	45	50% HD												
8	UREA	105	4-5 leaf	101.3	a	85.3	a	43.3	ab	10626	abc	3236	ab	13861	ab
	UREA	45	50% HD												
9	UREA	135	4-5 leaf	101.5	a	85.5	a	44.3	a	10810	ab	3053	ab	13863	ab
	UREA	45	50% HD												
LSD P=.05				1.21		1.21		3.38		963.1		607.4		976.9	
Standard Deviation				0.83		0.83		2.31		659.9		416.2		669.4	
CV				0.83		0.99		5.53		6.62		13.98		5.17	
Treatment F				10.846		10.846		7.092		22.515		2.769		17.200	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0254		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT3201 to Nitrogen
Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-13

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See data sheet
- **Planting method**..... : Drill seeded
- **Planting date** ..... : March 18
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 13
- **Ratoon Harvest date**..... : Nov. 12

Seed treatment/cwt ..... : Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, August 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 15. Agronomic response of drill-seeded RT3201 to nitrogen fertilizer rate and time of application. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								8/13/2019		8/13/2019		11/12/2019	
Rating Type				50% HD		50% HD		Height		Yield		Yield	Total Yield
Rating Unit				days		days		in		lb/A		lb/A	lb/A
Crop Stage Majority				Main		Main		Main		Main		Ratoon	MC + RC
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	97.0	d	81.0	d	34.8	b	5405	d	3573 d	8978 e
2	UREA	60	4-5 leaf	97.5	cd	81.5	cd	41.3	a	7676	c	4187 c	11862 d
3	UREA	90	4-5 leaf	97.5	cd	81.5	cd	42.0	a	8818	b	4290 bc	13108 c
4	UREA	120	4-5 leaf	98.0	bc	82.0	bc	44.0	a	9107	ab	4623 a	13730 abc
5	UREA	150	4-5 leaf	98.0	bc	82.0	bc	41.5	a	9294	ab	4583 a	13877 ab
6	UREA	180	4-5 leaf	98.8	a	82.8	a	41.5	a	9359	ab	4693 a	14053 ab
7	UREA	75	4-5 leaf	97.3	d	81.3	d	41.0	a	7911	c	4164 c	12075 d
	UREA	45	50% HD										
8	UREA	105	4-5 leaf	98.0	bc	82.0	bc	42.8	a	8777	b	4537 ab	13314 bc
	UREA	45	50% HD										
9	UREA	135	4-5 leaf	98.3	ab	82.3	ab	43.0	a	9520	a	4691 a	14211 a
	UREA	45	50% HD										
LSD P=.05				0.73		0.73		3.44		679.5		256.5	747.3
Standard Deviation				0.50		0.50		2.36		465.6		175.8	512.1
CV				0.51		0.61		5.71		5.52		4.02	4.0
Treatment F				4.738		4.738		5.028		31.174		17.189	41.868
Treatment Prob(F)				0.0014		0.0014		0.0010		0.0001		0.0001	0.0001

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLJ01 to Nitrogen
Fertilizer Rate and Time of Application – Calcasieu Parish

Experiment number ..... : 19-CP-01

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.52
- **pH**..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inch
- **Emergence date**..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date**..... : Nov. 19

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 28
90 lb N/A 46-0-0, Aug. 19

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood**..... : Aug. 20
- **Ratoon Drain**..... : Oct. 19

Pest management ..... :
- **Herbicides**..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides**..... : No blanket applications

Table 16. Agronomic response of drill-seeded CLJ01 to nitrogen fertilizer rate and time of application. Calcasieu Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/16/2019		11/19/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	94.8	g	77.8	g	32.5	f	6223	abc	2180	a	8403	ab
2	UREA	30	4-5 leaf	94.8	g	77.8	g	34.8	e	6384	ab	2192	a	8575	a
3	UREA	60	4-5 leaf	97.3	def	80.3	def	35.8	cde	6322	ab	2117	ab	8439	ab
4	UREA	90	4-5 leaf	98.3	cde	81.3	cde	36.5	bcd	6470	a	1798	bc	8268	abc
5	UREA	120	4-5 leaf	98.5	cd	81.5	cd	35.8	cde	6161	a-d	1906	ab	8068	abc
6	UREA	150	4-5 leaf	101.0	b	84.0	b	36.5	bcd	5693	def	1497	cd	7190	de
7	UREA	180	4-5 leaf	104.0	a	87.0	a	38.0	ab	5347	ef	1334	d	6681	ef
8	UREA	210	4-5 leaf	104.0	a	87.0	a	38.3	a	5204	f	1147	d	6350	f
9	UREA	45	4-5 leaf	96.0	fg	79.0	fg	36.0	cde	6551	a	2085	ab	8636	a
	UREA	45	PD												
10	UREA	75	4-5 leaf	96.8	ef	79.8	ef	35.0	de	6319	ab	2145	ab	8464	ab
	UREA	45	PD												
11	UREA	105	4-5 leaf	98.3	cde	81.3	cde	37.8	ab	5948	bcd	1895	ab	7843	bcd
	UREA	45	PD												
12	UREA	135	4-5 leaf	99.8	bc	82.8	bc	37.0	abc	5781	cde	1784	bc	7565	cd
	UREA	45	PD												
LSD P=.05				1.70		1.70		1.54		516.6		382.1		716.7	
Standard Deviation				1.18		1.18		1.07		359.1		265.6		498.2	
CV				1.2		1.45		2.96		5.95		14.44		6.33	
Treatment F				27.880		27.880		9.013		6.048		6.885		9.556	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded PVL02 to Nitrogen
Fertilizer Rate and Time of Application – Calcasieu Parish

Experiment number ..... : 19-CP-02

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.52
- **pH**..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See data sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inch
- **Emergence date**..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date**..... : Nov. 19

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 28
90 lb N/A 46-0-0, Aug. 19

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood**..... : Aug. 20
- **Ratoon Drain**..... : Oct. 19

Pest management ..... :
- **Herbicides**..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides**..... : No blanket applications

Table 17. Agronomic response of drill-seeded PVL02 to nitrogen fertilizer rate and time of application. Calcasieu Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/16/2019		11/19/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Appl Timing												
1	UREA	0	4-5 leaf	94.0	e	77.0	e	36.8	a	7125	abc	3166	a	10291	ab
2	UREA	30	4-5 leaf	96.3	d	79.3	d	39.0	a	7590	a	2951	ab	10541	a
3	UREA	60	4-5 leaf	97.3	cd	80.3	cd	39.3	a	7669	a	2777	b	10446	ab
4	UREA	90	4-5 leaf	97.5	c	80.5	c	41.0	a	7256	abc	2658	bc	9914	a-d
5	UREA	120	4-5 leaf	98.3	bc	81.3	bc	40.3	a	7049	a-d	2656	bc	9706	bcd
6	UREA	150	4-5 leaf	99.0	ab	82.0	ab	42.0	a	6674	cde	2448	cd	9123	de
7	UREA	180	4-5 leaf	99.5	a	82.5	a	41.0	a	6478	de	2294	de	8772	ef
8	UREA	210	4-5 leaf	99.0	ab	82.0	ab	40.8	a	6168	e	2135	e	8303	f
9	UREA	45	4-5 leaf	97.3	cd	80.3	cd	40.0	a	7319	ab	2819	b	10137	abc
	UREA	45	PD												
10	UREA	75	4-5 leaf	97.5	c	80.5	c	40.3	a	7061	a-d	2680	bc	9741	a-d
	UREA	45	PD												
11	UREA	105	4-5 leaf	99.0	ab	82.0	ab	41.5	a	6944	bcd	2693	bc	9637	bcd
	UREA	45	PD												
12	UREA	135	4-5 leaf	98.8	ab	81.8	ab	41.0	a	6878	bcd	2474	cd	9352	cde
	UREA	45	PD												
LSD P=.05				1.03		1.03		3.81		619.6		296.8		818.9	
Standard Deviation				0.71		0.71		2.65		430.7		206.3		569.3	
CV				0.73		0.88		6.59		6.14		7.8		5.89	
Treatment F				18.464		18.464		1.108		4.057		7.415		5.730	
Treatment Prob(F)				0.0001		0.0001		0.3856		0.0009		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLL15 to Nitrogen
Fertilizer Rate and Time of Application – Calcasieu Parish

Experiment number ..... : 19-CP-03

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.52
- **pH**..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inch
- **Emergence date**..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date**..... : Nov. 19

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 28
90 lb N/A 46-0-0, Aug. 19

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood**..... : Aug. 20
- **Ratoon Drain**..... : Oct. 19

Pest management ..... :
- **Herbicides**..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides**..... : No blanket applications

Table 18. Agronomic response of drill-seeded CLL15 to nitrogen fertilizer rate and time of application. Calcasieu Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/12/2019		8/12/2019		11/11/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	98.5	e	82.5	e	28.3	f	4708	e	3868	a	8576	d
2	UREA	30	4-5 leaf	100.0	d	84.0	d	32.0	e	6455	d	4056	a	10511	c
3	UREA	60	4-5 leaf	100.8	cd	84.8	cd	33.5	de	6958	cd	4411	a	11368	bc
4	UREA	90	4-5 leaf	102.0	abc	86.0	abc	35.3	c	7762	abc	4533	a	12295	ab
5	UREA	120	4-5 leaf	102.5	ab	86.5	ab	37.3	ab	7714	abc	4365	a	12078	ab
6	UREA	150	4-5 leaf	102.5	ab	86.5	ab	37.8	a	7872	abc	4519	a	12392	a
7	UREA	180	4-5 leaf	102.8	a	86.8	a	37.5	ab	8168	a	4385	a	12553	a
8	UREA	210	4-5 leaf	102.8	a	86.8	a	38.0	a	8314	a	4156	a	12470	a
9	UREA	45	4-5 leaf	101.3	bcd	85.3	bcd	33.0	e	7522	abc	4154	a	11676	ab
	UREA	45	PD												
10	UREA	75	4-5 leaf	101.5	abc	85.5	abc	34.8	cd	7102	bcd	4714	a	11815	ab
	UREA	45	PD												
11	UREA	105	4-5 leaf	102.3	ab	86.3	ab	35.3	c	7995	ab	4305	a	12300	ab
	UREA	45	PD												
12	UREA	135	4-5 leaf	102.8	a	86.8	a	36.0	bc	7789	abc	4370	a	12158	ab
	UREA	45	PD												
LSD P=.05				1.42		1.42		1.75		967.1		480.9		935.7	
Standard Deviation				0.99		0.99		1.22		672.2		334.3		650.4	
CV				0.97		1.15		3.49		9.13		7.74		5.57	
Treatment F				7.140		7.140		22.077		8.696		1.907		12.170	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0749		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLM04 to Nitrogen
Fertilizer Rate and Time of Application – Calcasieu Parish

Experiment number ..... : 19-CP-04

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.52
- **pH**..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inch
- **Emergence date**..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date**..... : Nov. 19

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 28
90 lb N/A 46-0-0, Aug. 19

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood**..... : Aug. 20
- **Ratoon Drain**..... : Oct. 19

Pest management ..... :
- **Herbicides**..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides**..... : No blanket applications

Table 19. Agronomic response of drill-seeded CLM04 to nitrogen fertilizer rate and time of application. Calcasieu Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/16/2019		11/19/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	100.8	cde	83.8	cde	37.0	e	7707	ab	3798	a	11506	ab
2	UREA	30	4-5 leaf	100.0	e	83.0	e	38.5	de	8155	a	3581	ab	11735	a
3	UREA	60	4-5 leaf	100.5	de	83.5	de	39.5	cd	7606	ab	3705	ab	11311	abc
4	UREA	90	4-5 leaf	102.0	bcd	85.0	bcd	41.3	abc	7697	ab	2956	de	10653	abc
5	UREA	120	4-5 leaf	102.3	bc	85.3	bc	40.3	bcd	7668	ab	3298	bcd	10966	abc
6	UREA	150	4-5 leaf	105.0	a	88.0	a	40.8	abc	6184	cd	2891	de	9075	d
7	UREA	180	4-5 leaf	105.8	a	88.8	a	42.3	ab	6030	cd	2448	f	8479	d
8	UREA	210	4-5 leaf	105.0	a	88.0	a	42.0	ab	5881	d	2618	ef	8499	d
9	UREA	45	4-5 leaf	100.3	e	83.3	e	38.3	de	7557	ab	3636	ab	11193	abc
	UREA	45	PD												
10	UREA	75	4-5 leaf	101.5	b-e	84.5	b-e	39.8	cd	7733	ab	3572	ab	11305	abc
	UREA	45	PD												
11	UREA	105	4-5 leaf	102.5	b	85.5	b	41.5	abc	6970	bc	3403	abc	10373	bc
	UREA	45	PD												
12	UREA	135	4-5 leaf	104.3	a	87.3	a	42.5	a	7163	b	3082	cd	10246	c
	UREA	45	PD												
LSD P=.05				1.50		1.50		2.19		975.3		416.7		1145.0	
Standard Deviation				1.04		1.04		1.52		677.9		289.6		795.9	
CV				1.02		1.22		3.77		9.42		8.91		7.62	
Treatment F				15.260		15.260		5.249		5.068		9.454		8.455	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RU1504197 to Nitrogen
Fertilizer Rate and Time of Application – Calcasieu Parish

Experiment number ..... : 19-CP-06

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.52
- **pH**..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inch
- **Emergence date**..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date**..... : Nov. 19

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 28
90 lb N/A 46-0-0, Aug. 19

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood**..... : Aug. 20
- **Ratoon Drain**..... : Oct. 19

Pest management ..... :
- **Herbicides**..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides**..... : No blanket applications

Table 20. Agronomic response of drill-seeded RU1504197 to nitrogen fertilizer rate and time of application. Calcasieu Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/16/2019		11/19/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	96.8	j	79.8	j	34.5	c	6565	cd	1975	a	8541	b
2	UREA	30	4-5 leaf	97.0	ij	80.0	ij	37.0	b	7361	a	2087	a	9448	a
3	UREA	60	4-5 leaf	98.5	gh	81.5	gh	39.5	a	7322	ab	1834	a	9155	ab
4	UREA	90	4-5 leaf	100.0	ef	83.0	ef	39.3	a	7027	abc	1743	a	8770	ab
5	UREA	120	4-5 leaf	100.8	cde	83.8	cde	38.8	ab	6021	de	1346	b	7366	de
6	UREA	150	4-5 leaf	101.5	bcd	84.5	bcd	38.8	ab	5920	de	1239	b	7159	de
7	UREA	180	4-5 leaf	102.5	ab	85.5	ab	39.5	a	5993	de	1342	b	7335	de
8	UREA	210	4-5 leaf	103.3	a	86.3	a	39.3	a	5418	e	1196	b	6614	e
9	UREA	45	4-5 leaf	98.0	hi	81.0	hi	37.0	b	7022	abc	2017	a	9038	ab
	UREA	45	PD												
10	UREA	75	4-5 leaf	99.3	fg	82.3	fg	39.3	a	6873	abc	2043	a	8916	ab
	UREA	45	PD												
11	UREA	105	4-5 leaf	100.5	de	83.5	de	39.5	a	6623	bcd	1768	a	8392	bc
	UREA	45	PD												
12	UREA	135	4-5 leaf	101.8	bc	84.8	bc	39.8	a	6372	cd	1332	b	7703	cd
	UREA	45	PD												
LSD P=.05				1.21		1.21		1.86		735.9		353.1		832.2	
Standard Deviation				0.84		0.84		1.29		511.5		245.4		578.5	
CV				0.84		1.01		3.36		7.82		14.78		7.05	
Treatment F				25.518		25.518		5.828		5.719		7.875		10.273	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7321FP to Nitrogen
Fertilizer Rate and Time of Application – Calcasieu Parish

Experiment number ..... : 19-CP-10

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.52
- **pH**..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inch
- **Emergence date**..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date**..... : Nov. 19

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 28
90 lb N/A 46-0-0, Aug. 19

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood**..... : Aug. 20
- **Ratoon Drain**..... : Oct. 19

Pest management ..... :
- **Herbicides**..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides**..... : No blanket applications

Table 21. Agronomic response of drill-seeded RT7321FP to nitrogen fertilizer rate and time of application. Calcasieu Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/16/2019		11/19/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	90.0	g	73.0	g	44.5	b	8550	b	4368	abc	12918	c
2	UREA	60	4-5 leaf	94.0	f	77.0	f	48.5	a	10606	a	4807	a	15412	a
3	UREA	90	4-5 leaf	95.3	e	78.3	e	50.0	a	10056	a	4573	ab	14629	ab
4	UREA	120	4-5 leaf	97.0	cd	80.0	cd	49.3	a	10764	a	4468	ab	15232	a
5	UREA	150	4-5 leaf	98.0	ab	81.0	ab	49.0	a	10105	a	3941	cd	14047	b
6	UREA	180	4-5 leaf	98.8	a	81.8	a	49.3	a	10806	a	3853	d	14658	ab
7	UREA	75	4-5 leaf	94.8	ef	77.8	ef	47.8	a	10097	a	4659	ab	14756	ab
	UREA	45	50% HD												
8	UREA	105	4-5 leaf	96.3	d	79.3	d	49.5	a	10761	a	4608	ab	15369	a
	UREA	45	50% HD												
9	UREA	135	4-5 leaf	97.8	bc	80.8	bc	50.0	a	10378	a	4329	bc	14707	ab
	UREA	45	50% HD												
LSD P=.05				0.92		0.92		3.01		866.0		446.3		1055.3	
Standard Deviation				0.63		0.63		2.06		593.4		305.8		723.1	
CV				0.66		0.8		4.24		5.8		6.95		4.94	
Treatment F				72.741		72.741		2.729		5.607		4.415		4.604	
Treatment Prob(F)				0.0001		0.0001		0.0271		0.0005		0.0022		0.0017	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7521FP to Nitrogen
Fertilizer Rate and Time of Application – Calcasieu Parish

Experiment number ..... : 19-CP-11

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.52
- **pH**..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inch
- **Emergence date**..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date**..... : Nov. 19

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 28
90 lb N/A 46-0-0, Aug. 19

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood**..... : Aug. 20
- **Ratoon Drain**..... : Oct. 19

Pest management ..... :
- **Herbicides**..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides**..... : No blanket applications

Table 22. Agronomic response of drill-seeded RT7521FP to nitrogen fertilizer rate and time of application. Calcasieu Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/16/2019		11/19/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	94.8	f	77.8	f	44.0	d	9603	a	3823	a	13426	ab
2	UREA	60	4-5 leaf	96.8	e	79.8	e	47.5	c	9781	a	3543	ab	13324	abc
3	UREA	90	4-5 leaf	98.3	de	81.3	de	49.8	ab	10719	a	3315	abc	14034	a
4	UREA	120	4-5 leaf	99.5	cd	82.5	cd	48.8	bc	9653	a	2793	cd	12446	bcd
5	UREA	150	4-5 leaf	101.3	b	84.3	b	51.3	a	10394	a	2266	de	12660	bc
6	UREA	180	4-5 leaf	103.5	a	86.5	a	49.8	ab	9455	a	2068	e	11523	d
7	UREA	75	4-5 leaf	98.0	de	81.0	de	48.8	bc	10178	a	3586	ab	13764	a
	UREA	45	50% HD												
8	UREA	105	4-5 leaf	99.5	cd	82.5	cd	51.0	a	10117	a	3017	bc	13135	abc
	UREA	45	50% HD												
9	UREA	135	4-5 leaf	100.8	bc	83.8	bc	49.0	bc	9752	a	2679	cde	12431	cd
	UREA	45	50% HD												
LSD P=.05				1.58		1.58		1.97		916.9		671.0		982.5	
Standard Deviation				1.08		1.08		1.35		628.3		459.8		673.2	
CV				1.09		1.31		2.76		6.31		15.28		5.19	
Treatment F				22.881		22.881		10.249		1.758		7.016		5.377	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.1361		0.0001		0.0006	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7301 to Nitrogen
Fertilizer Rate and Time of Application – Calcasieu Parish

Experiment number ..... : 19-CP-12

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter** ..... : 1.52
- **pH** ..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inch
- **Emergence date** ..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date** ..... : Nov. 19

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 28
90 lb N/A 46-0-0, Aug. 19

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood** ..... : Aug. 20
- **Ratoon Drain** ..... : Oct. 19

Pest management ..... :
- **Herbicides** ..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides** ..... : No blanket applications

Table 23. Agronomic response of Drill-Seeded RT7301 to nitrogen fertilizer rate and time of application. Calcasieu Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/16/2019		11/19/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	96.3	c	79.3	c	37.3	b	8038	a	4151	a	12189	a
2	UREA	60	4-5 leaf	98.5	b	81.5	b	41.8	a	9545	a	4258	a	13803	a
3	UREA	90	4-5 leaf	99.3	ab	82.3	ab	42.3	a	9105	a	3989	ab	13094	a
4	UREA	120	4-5 leaf	99.8	a	82.8	a	41.5	a	9434	a	3251	cd	13060	a
5	UREA	150	4-5 leaf	99.5	ab	82.5	ab	42.0	a	9922	a	3331	bcd	13827	a
6	UREA	180	4-5 leaf	99.5	ab	82.5	ab	41.5	a	9870	a	2984	d	13157	a
7	UREA	75	4-5 leaf	99.3	ab	82.3	ab	42.0	a	9590	a	4190	a	13780	a
	UREA	45	50% HD												
8	UREA	105	4-5 leaf	99.5	ab	82.5	ab	43.0	a	9394	a	4335	a	13729	a
	UREA	45	50% HD												
9	UREA	135	4-5 leaf	100.3	a	83.3	a	43.3	a	8991	a	3899	abc	12890	a
	UREA	45	50% HD												
LSD P=.05				1.05		1.05		1.97		1151.5		713.4		1306.7	
Standard Deviation				0.71		0.71		1.35		783.0		488.8		888.6	
CV				0.72		0.87		3.24		8.4		12.79		6.69	
Treatment F				10.650		10.652		6.719		2.125		4.188		1.561	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0796		0.0030		0.1961	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT3201 to Nitrogen
Fertilizer Rate and Time of Application – Calcasieu Parish

Experiment number ..... : 19-CP-13

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.52
- **pH**..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inch
- **Emergence date**..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date**..... : Nov. 19

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 28
90 lb N/A 46-0-0, Aug. 19

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood**..... : Aug. 20
- **Ratoon Drain**..... : Oct. 19

Pest management ..... :
- **Herbicides**..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides**..... : No blanket applications

Table 24. Agronomic response of Drill-Seeded RT3201 to nitrogen fertilizer rate and time of application. Calcasieu Parish.

Crop Name			Rice		Rice		Rice		Rice		Rice		Rice	
Description			Plant-hd		Emer-hd		Tip of Panicle							
Rating Date							8/13/2019		8/16/2019		11/19/2019			
Rating Type			50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit			days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority			Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage											
1	UREA	0	4-5 leaf	93.3	d	76.3	d	40.3	c	7458	a	3856	a	11314	a
2	UREA	60	4-5 leaf	92.8	d	75.8	d	44.8	ab	7991	a	4036	a	12026	a
3	UREA	90	4-5 leaf	93.5	cd	76.5	cd	45.5	a	8348	a	3802	a	12149	a
4	UREA	120	4-5 leaf	94.6	b	77.6	b	42.8	bc	7578	a	3565	a	11143	a
5	UREA	150	4-5 leaf	95.6	a	78.6	a	44.8	ab	8102	a	3851	a	11953	a
6	UREA	180	4-5 leaf	95.9	a	78.9	a	43.8	ab	8212	a	3665	a	11877	a
7	UREA	75	4-5 leaf	93.5	cd	76.5	cd	43.8	ab	7975	a	3705	a	11680	a
	UREA	45	50% HD												
8	UREA	105	4-5 leaf	94.3	bc	77.3	bc	45.8	a	8260	a	3900	a	12160	a
	UREA	45	50% HD												
9	UREA	135	4-5 leaf	95.8	a	78.8	a	44.5	ab	8276	a	3848	a	12124	a
	UREA	45	50% HD												
LSD P=.05				0.91		0.91		2.62		755.3		477.4		1047.1	
Standard Deviation				0.62		0.62		1.80		517.5		327.1		717.5	
CV				0.66		0.8		4.09		6.45		8.6		6.07	
Treatment F				14.858		14.861		3.468		1.472		0.729		1.082	
Treatment Prob(F)				0.0001		0.0001		0.0085		0.2192		0.6653		0.4081	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLJ01 to Nitrogen
Fertilizer Rate and Time of Application – Richland Parish

Experiment number ..... : 19-RP-01

Site and design ..... :
- **Location/Cooperator** ..... : Richland Parish / Ashley Dixon
- **Tillage type** ..... : Spring stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Hebert silty clay
- **% organic matter**..... : 1.08
- **pH**..... : 5.61
- **Extractable nutrients** ppm ..... : Ca-2,339; Cu-2.5; Mg-608; P-15; K-145; Na-102; S-21; Zn-1.0

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / April 30
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 3

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 4
- **Drain** ..... : Aug. 20

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  3 qt/A Stam, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 25. Agronomic response of Drill-Seeded CLJ01to nitrogen fertilizer rate and time of application. Richland Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/3/2019		9/3/2019			
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	85.3	f	79.3	f	29.5	d	15.5	g	3640	f
2	UREA	30	4-5 leaf	85.5	f	79.5	f	31.3	cd	15.7	fg	4228	ef
3	UREA	60	4-5 leaf	87.0	e	81.0	e	32.8	bc	16.2	ef	4934	de
4	UREA	90	4-5 leaf	88.0	d	82.0	d	33.8	abc	16.9	d	5233	bcd
5	UREA	120	4-5 leaf	91.8	b	85.8	b	33.8	abc	17.9	c	5908	ab
6	UREA	150	4-5 leaf	89.0	c	83.0	c	35.3	ab	17.9	bc	5808	abc
7	UREA	180	4-5 leaf	91.5	b	85.5	b	36.8	a	18.5	b	6100	a
8	UREA	210	4-5 leaf	92.8	a	86.8	a	36.0	a	19.3	a	6132	a
9	UREA	45	4-5 leaf	92.0	b	86.0	b	36.0	a	16.3	ef	4897	de
	UREA	45	PD										
10	UREA	75	4-5 leaf	88.0	d	82.0	d	33.8	abc	16.7	de	5107	cd
	UREA	45	PD										
11	UREA	105	4-5 leaf	88.8	c	82.8	c	34.5	ab	17.3	cd	5979	a
	UREA	45	PD										
12	UREA	135	4-5 leaf	93.0	a	87.0	a	35.3	ab	17.8	c	5848	ab
	UREA	45	PD										
LSD P=.05				0.64		0.64		3.17		0.62		736.3	
Standard Deviation				0.45		0.45		2.20		0.43		511.8	
CV				0.5		0.54		6.46		2.5		9.62	
Treatment F				152.316		152.316		3.642		28.798		9.663	
Treatment Prob(F)				0.0001		0.0001		0.0019		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLL15 to Nitrogen
Fertilizer Rate and Time of Application – Richland Parish

Experiment number ..... : 19-RP-03

Site and design ..... :
- **Location/Cooperator** ..... : Richland Parish / Ashley Dixon
- **Tillage type** ..... : Spring stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Hebert silty clay
- **% organic matter**..... : 1.08
- **pH**..... : 5.61
- **Extractable nutrients** ppm ..... : Ca-2,339; Cu-2.5; Mg-608; P-15; K-145; Na-102; S-21; Zn-1.0

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / April 30
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 3

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 4
- **Drain** ..... : Aug. 20

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  3 qt/A Stam, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 26. Agronomic response of drill-seeded CLL15 to nitrogen fertilizer rate and time of application. Richland Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/3/2019		9/3/2019			
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	83.8	e	77.8	e	31.3	e	16.5	d	5715	e
2	UREA	30	4-5 leaf	84.0	e	78.0	e	31.8	e	16.9	cd	6355	de
3	UREA	60	4-5 leaf	85.5	d	79.5	d	34.0	d	16.8	cd	7029	bcd
4	UREA	90	4-5 leaf	87.3	c	81.3	c	35.0	cd	17.8	b	7580	abc
5	UREA	120	4-5 leaf	87.5	c	81.5	c	36.0	bc	18.6	a	7866	ab
6	UREA	150	4-5 leaf	90.0	b	84.0	b	37.8	a	18.8	a	7394	bc
7	UREA	180	4-5 leaf	91.0	b	85.0	b	37.3	ab	18.7	a	7365	bc
8	UREA	210	4-5 leaf	92.8	a	86.8	a	36.3	abc	19.2	a	7676	abc
9	UREA	45	4-5 leaf	85.3	d	79.3	d	33.5	d	17.3	bc	7476	abc
	UREA	45	PD										
10	UREA	75	4-5 leaf	86.8	c	80.8	c	34.8	cd	17.4	bc	6962	cd
	UREA	45	PD										
11	UREA	105	4-5 leaf	87.3	c	81.3	c	36.0	bc	18.5	a	8335	a
	UREA	45	PD										
12	UREA	135	4-5 leaf	91.0	b	85.0	b	36.8	ab	18.7	a	7481	abc
	UREA	45	PD										
LSD P=.05				1.01		1.01		1.71		0.67		878.5	
Standard Deviation				0.70		0.70		1.19		0.47		610.7	
CV				0.8		0.86		3.4		2.61		8.4	
Treatment F				69.804		69.804		12.127		15.541		5.138	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLM04 to Nitrogen
Fertilizer Rate and Time of Application – Richland Parish

Experiment number ..... : 19-RP-04

Site and design ..... :
- **Location/Cooperator** ..... : Richland Parish / Ashley Dixon
- **Tillage type** ..... : Spring stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Hebert silty clay
- **% organic matter**..... : 1.08
- **pH**..... : 5.61
- **Extractable nutrients** ppm ..... : Ca-2,339; Cu-2.5; Mg-608; P-15; K-145; Na-102; S-21; Zn-1.0

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / April 30
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 3

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 4
- **Drain** ..... : Aug. 20

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  3 qt/A Stam, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 27. Agronomic response of drill-seeded CLM04 to nitrogen fertilizer rate and time of application. Richland Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/3/2019		9/3/2019			
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	91.0	g	85.0	g	34.0	f	20.5	e	6907	d
2	UREA	30	4-5 leaf	91.0	g	85.0	g	37.0	e	20.5	e	7861	c
3	UREA	60	4-5 leaf	90.0	h	84.0	h	37.5	de	20.5	e	8035	bc
4	UREA	90	4-5 leaf	92.5	ef	86.5	ef	39.0	bcd	21.4	cde	8590	abc
5	UREA	120	4-5 leaf	92.8	ef	86.8	ef	40.0	abc	21.9	cd	8588	abc
6	UREA	150	4-5 leaf	92.3	f	86.3	f	39.8	abc	22.2	bc	8653	abc
7	UREA	180	4-5 leaf	94.0	bc	88.0	bc	40.3	abc	23.2	ab	8711	ab
8	UREA	210	4-5 leaf	95.0	a	89.0	a	41.5	a	23.5	a	8922	a
9	UREA	45	4-5 leaf	94.5	ab	88.5	ab	38.8	cde	21.8	cd	8286	abc
	UREA	45	PD										
10	UREA	75	4-5 leaf	93.5	cd	87.5	cd	38.5	cde	21.0	de	8202	abc
	UREA	45	PD										
11	UREA	105	4-5 leaf	93.0	de	87.0	de	40.8	ab	22.4	bc	8661	abc
	UREA	45	PD										
12	UREA	135	4-5 leaf	94.0	bc	88.0	bc	40.8	ab	22.2	bc	8254	abc
	UREA	45	PD										
LSD P=.05				0.68		0.68		1.87		1.04		804.7	
Standard Deviation				0.47		0.47		1.30		0.72		559.4	
CV				0.51		0.55		3.33		3.32		6.73	
Treatment F				41.831		41.831		10.171		8.132		3.708	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0017	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded 2195 to Nitrogen
Fertilizer Rate and Time of Application – Richland Parish

Experiment number ..... : 19-RP-05

Site and design ..... :
- **Location/Cooperator** ..... : Richland Parish / Ashley Dixon
- **Tillage type** ..... : Spring stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Hebert silty clay
- **% organic matter**..... : 1.08
- **pH**..... : 5.61
- **Extractable nutrients** ppm ..... : Ca-2,339; Cu-2.5; Mg-608; P-15; K-145; Na-102; S-21; Zn-1.0

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / April 30
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 3

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 4
- **Drain** ..... : Aug. 20

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  3 qt/A Stam, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 28. Agronomic response of drill-seeded 2195 to nitrogen fertilizer rate and time of application. Richland Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/3/2019		9/3/2019			
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	90.0	e	84.0	e	32.0	e	15.9	d	5416	c
2	UREA	30	4-5 leaf	89.0	e	83.0	e	34.5	d	16.7	cd	7255	b
3	UREA	60	4-5 leaf	89.0	e	83.0	e	37.5	bc	16.5	cd	7126	b
4	UREA	90	4-5 leaf	90.0	e	84.0	e	36.5	cd	17.1	c	7862	ab
5	UREA	120	4-5 leaf	92.0	d	86.0	d	38.8	ab	18.7	b	7734	ab
6	UREA	150	4-5 leaf	93.0	cd	87.0	cd	40.3	a	18.5	b	7846	ab
7	UREA	180	4-5 leaf	97.0	a	91.0	a	40.0	a	18.6	b	7366	b
8	UREA	210	4-5 leaf	95.3	b	89.3	b	39.3	ab	19.8	a	7716	ab
9	UREA	45	4-5 leaf	94.3	bc	88.3	bc	36.5	cd	17.0	c	8050	ab
	UREA	45	PD										
10	UREA	75	4-5 leaf	90.3	e	84.3	e	38.5	abc	17.0	c	7666	ab
	UREA	45	PD										
11	UREA	105	4-5 leaf	92.0	d	86.0	d	39.8	a	18.3	b	8520	a
	UREA	45	PD										
12	UREA	135	4-5 leaf	94.5	bc	88.5	bc	39.8	a	18.5	b	7798	ab
	UREA	45	PD										
LSD P=.05				1.66		1.66		2.17		0.84		1104.9	
Standard Deviation				1.15		1.15		1.51		0.58		768.1	
CV				1.25		1.34		3.99		3.29		10.2	
Treatment F				20.858		20.858		11.186		16.025		3.921	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0011	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RU1504197 to Nitrogen
Fertilizer Rate and Time of Application – Richland Parish

Experiment number ..... : 19-RP-06

Site and design ..... :
- **Location/Cooperator** ..... : Richland Parish / Ashley Dixon
- **Tillage type** ..... : Spring stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Hebert silty clay
- **% organic matter**..... : 1.08
- **pH**..... : 5.61
- **Extractable nutrients** ppm ..... : Ca-2,339; Cu-2.5; Mg-608; P-15; K-145; Na-102; S-21; Zn-1.0

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / April 30
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 3

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 4
- **Drain** ..... : Aug. 20

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  3 qt/A Stam, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 29. Agronomic response of Drill-Seeded RU1504197 to nitrogen fertilizer rate and time of application. Richland Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/3/2019		9/3/2019			
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	91.0	de	85.0	de	30.5	f	17.0	e	7191	a
2	UREA	30	4-5 leaf	89.0	g	83.0	g	33.3	e	16.8	e	8523	a
3	UREA	60	4-5 leaf	89.8	fg	83.8	fg	35.3	cd	17.0	e	7984	a
4	UREA	90	4-5 leaf	90.3	ef	84.3	ef	36.5	a-d	18.2	bc	8873	a
5	UREA	120	4-5 leaf	92.0	cd	86.0	cd	36.5	a-d	18.3	bc	8661	a
6	UREA	150	4-5 leaf	92.3	c	86.3	c	36.8	abc	18.9	ab	8528	a
7	UREA	180	4-5 leaf	94.8	b	88.8	b	37.5	a	18.9	ab	8429	a
8	UREA	210	4-5 leaf	94.0	b	88.0	b	37.8	a	19.9	a	8074	a
9	UREA	45	4-5 leaf	96.0	a	90.0	a	35.0	d	17.4	cde	7773	a
	UREA	45	PD										
10	UREA	75	4-5 leaf	90.0	efg	84.0	efg	35.8	bcd	17.1	de	8440	a
	UREA	45	PD										
11	UREA	105	4-5 leaf	89.0	g	83.0	g	37.3	ab	18.1	bcd	8451	a
	UREA	45	PD										
12	UREA	135	4-5 leaf	92.8	c	86.8	c	37.3	ab	18.4	bc	8348	a
	UREA	45	PD										
LSD P=.05				1.12		1.12		1.61		1.08		933.5	
Standard Deviation				0.78		0.78		1.12		0.75		648.9	
CV				0.85		0.91		3.14		4.17		7.84	
Treatment F				35.023		35.023		13.961		6.492		1.962	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0666	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7321FP to Nitrogen
Fertilizer Rate and Time of Application – Richland Parish

Experiment number ..... : 19-RP-10

Site and design ..... :
- **Location/Cooperator** ..... : Richland Parish / Ashley Dixon
- **Tillage type** ..... : Spring stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Hebert silty clay
- **% organic matter** ..... : 1.08
- **pH** ..... : 5.61
- **Extractable nutrients** ppm ..... : Ca-2,339; Cu-2.5; Mg-608; P-15; K-145; Na-102; S-21; Zn-1.0

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / April 30
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / NA
- **Emergence date** ..... : May 6
- **Harvest date** ..... : Sept. 3

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 4
- **Drain** ..... : Aug. 20

Pest management ..... :
- **Herbicides** ..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  3 qt/A Stam, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides** ..... : None

Comments: 50% HD treatments were not applied.

Table 30. Agronomic response of Drill-Seeded RT7321FP to nitrogen fertilizer rate and time of application. Richland Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/3/2019		9/3/2019			
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	83.8	d	77.8	d	40.3	c	13.8	d	7480	b
2	UREA	60	4-5 leaf	84.3	d	78.3	d	42.3	bc	14.6	abc	9843	a
3	UREA	90	4-5 leaf	84.8	cd	78.8	cd	45.5	a	14.4	a-d	9225	a
4	UREA	120	4-5 leaf	85.0	bcd	79.0	bcd	44.0	ab	14.3	bcd	9413	a
5	UREA	150	4-5 leaf	87.5	a	81.5	a	44.8	a	14.8	ab	10665	a
6	UREA	180	4-5 leaf	87.3	a	81.3	a	43.5	ab	15.2	a	10190	a
7	UREA	75	4-5 leaf	83.5	d	77.5	d	44.5	ab	13.8	cd	9179	a
	UREA	0	50% HD										
8	UREA	105	4-5 leaf	86.8	ab	80.8	ab	44.8	a	14.2	bcd	9705	a
	UREA	0	50% HD										
9	UREA	135	4-5 leaf	86.5	abc	80.5	abc	44.0	ab	14.8	ab	10388	a
	UREA	0	50% HD										
LSD P=.05				1.83		1.83		2.37		0.79		1491.8	
Standard Deviation				1.25		1.25		1.62		0.54		1022.2	
CV				1.46		1.57		3.71		3.75		10.69	
Treatment F				6.089		6.089		3.854		2.857		3.356	
Treatment Prob(F)				0.0003		0.0003		0.0048		0.0220		0.0101	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7521FP to Nitrogen
Fertilizer Rate and Time of Application – Richland Parish

Experiment number ..... : 19-RP-11

Site and design ..... :
- **Location/Cooperator** ..... : Richland Parish / Ashley Dixon
- **Tillage type** ..... : Spring stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Hebert silty clay
- **% organic matter** ..... : 1.08
- **pH** ..... : 5.61
- **Extractable nutrients** ppm ..... : Ca-2,339; Cu-2.5; Mg-608; P-15; K-145; Na-102; S-21; Zn-1.0

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / April 30
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / NA
- **Emergence date** ..... : May 6
- **Harvest date** ..... : Sept. 3

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 4
- **Drain** ..... : Aug. 20

Pest management ..... :
- **Herbicides** ..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  3 qt/A Stam, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides** ..... : None

Comments: 50% HD treatments were not applied.

Table 31. Agronomic response of Drill-Seeded RT7521FP to nitrogen fertilizer rate and time of application. Richland Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/3/2019		9/3/2019			
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	87.5	a	81.5	a	41.8	a	15.5	a	8745	c
2	UREA	60	4-5 leaf	88.3	a	82.3	a	45.5	a	14.8	a	9918	abc
3	UREA	90	4-5 leaf	88.3	a	82.3	a	45.0	a	15.9	a	10192	ab
4	UREA	120	4-5 leaf	84.8	a	78.8	a	42.0	a	16.7	a	10147	ab
5	UREA	150	4-5 leaf	87.8	a	81.8	a	45.0	a	16.6	a	9119	bc
6	UREA	180	4-5 leaf	89.3	a	83.3	a	44.0	a	17.0	a	10137	ab
7	UREA	75	4-5 leaf	88.8	a	82.8	a	41.5	a	16.9	a	10277	ab
	UREA	0	50% HD										
8	UREA	105	4-5 leaf	88.5	a	82.5	a	44.3	a	16.1	a	10617	a
	UREA	0	50% HD										
9	UREA	135	4-5 leaf	87.5	a	81.5	a	44.8	a	16.1	a	10879	a
	UREA	0	50% HD										
LSD P=.05				3.77		3.77		4.77		1.69		1192.7	
Standard Deviation				2.58		2.58		3.27		1.16		817.3	
CV				2.94		3.16		7.47		7.17		8.17	
Treatment F				1.001		1.001		0.919		1.468		2.742	
Treatment Prob(F)				0.4604		0.4604		0.5179		0.2206		0.0265	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLJ01 to Nitrogen
Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number ..... : 19-SLP-01

Site and design ..... :
- **Location/Cooperator** ..... : St. Landry Parish / Charlie Fontenot
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Dundee silty clay loam
- **% organic matter**..... : 1.58
- **pH**..... : 7.34
- **Extractable nutrients** ppm ..... : Ca-3,859; Cu-3.0; Mg-658; P-71; K-204; Na-52; S-5.0; Zn-1.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 26
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 1 inch
- **Emergence date**..... : April 11
- **Harvest date** ..... : Aug. 22

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Underground irrigation
- **Flush** ..... : March 26
- **Flood** ..... : May 17
- **Drain** ..... : July 26

Pest management ..... :
- **Herbicides**..... : 22 oz/A Roundup + 10 oz/A Command + 2 oz/A Sharpen, March 25
  32 oz/A Facet + 0.6 oz/A Regiment + 0.33 oz/A Permit, May 16
  18 oz/A Rebel EX + 1% COC, June 13
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 32. Agronomic response of Drill-Seeded CLJ01 to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle									
Rating Date								8/21/2019		8/21/2019				8/22/2019			
Rating Type				50% HD		50% HD		Height		Lodge				Moist		Yield	
Rating Unit				days		days		in		% plot		rate		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage														
1	UREA	0	4-5 leaf	96.0	h	80.0	h	32.5	f	0.0	d	0.0	c	11.6	a	4776	e
2	UREA	30	4-5 leaf	96.0	h	80.0	h	34.0	ef	0.0	d	0.0	c	11.4	ab	5176	de
3	UREA	60	4-5 leaf	99.0	e	83.0	e	35.5	de	7.5	cd	0.5	bc	11.3	a-d	5786	cd
4	UREA	90	4-5 leaf	100.8	d	84.8	d	36.5	bcd	0.0	d	0.0	c	11.3	abc	6146	bc
5	UREA	120	4-5 leaf	99.0	e	83.0	e	37.5	a-d	5.0	cd	0.5	bc	11.4	ab	6577	ab
6	UREA	150	4-5 leaf	102.0	c	86.0	c	39.3	a	22.5	bcd	1.5	ab	11.0	d	6177	bc
7	UREA	180	4-5 leaf	101.0	d	85.0	d	37.3	a-d	25.0	bc	1.3	b	11.1	bcd	6646	ab
8	UREA	210	4-5 leaf	105.3	b	89.3	b	38.8	ab	62.5	a	2.5	a	11.3	a-d	7098	a
9	UREA	45	4-5 leaf	97.0	g	81.0	g	37.0	a-d	0.0	d	0.0	c	11.4	ab	6360	bc
	UREA	45	PD														
10	UREA	75	4-5 leaf	98.0	f	82.0	f	36.0	cde	0.0	d	0.0	c	11.3	a-d	5797	c
	UREA	45	PD														
11	UREA	105	4-5 leaf	99.0	e	83.0	e	37.8	a-d	15.0	bcd	0.5	bc	11.1	cd	6530	ab
	UREA	45	PD														
12	UREA	135	4-5 leaf	106.0	a	90.0	a	38.3	abc	37.5	b	1.5	ab	11.1	bcd	6735	ab
	UREA	45	PD														
LSD P=.05				0.29		0.29		2.35		23.97		1.06		0.31		617.3	
Standard Deviation				0.20		0.20		1.63		16.66		0.74		0.21		429.1	
CV				0.2		0.24		4.45		114.23		107.49		1.89		6.98	
Treatment F				1053.4		1053.4		5.756		5.500		4.921		2.386		9.784	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0002		0.0264		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded PVL02 to Nitrogen
Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number ..... : 19-SLP-02

Site and design ..... :
- **Location/Cooperator** ..... : St. Landry Parish / Charlie Fontenot
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Dundee silty clay loam
- **% organic matter**..... : 1.58
- **pH**..... : 7.34
- **Extractable nutrients** ppm ..... : Ca-3,859; Cu-3.0; Mg-658; P-71; K-204; Na-52; S-5.0; Zn-1.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 26
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 1 inch
- **Emergence date**..... : April 11
- **Harvest date** ..... : Aug. 22

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Underground irrigation
- **Flush** ..... : March 26
- **Flood** ..... : May 17
- **Drain** ..... : July 26

Pest management ..... :
- **Herbicides**..... : 22 oz/A Roundup + 10 oz/A Command + 2 oz/A Sharpen, March 25
  32 oz/A Facet + 0.6 oz/A Regiment + 0.33 oz/A Permit, May 16
  18 oz/A Rebel EX + 1% COC, June 13
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 33. Agronomic response of Drill-Seeded PVL02 to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle									
Rating Date								8/21/2019		8/21/2019				8/22/2019			
Rating Type				50% HD		50% HD		Height		Lodge				Moist		Yield	
Rating Unit				days		days		in		% plot		rate		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage														
1	UREA	0	4-5 leaf	99.8	h	83.8	h	35.3	d	0.0	c	0.0	c	12.8	ab	5338	e
2	UREA	30	4-5 leaf	100.8	g	84.8	g	36.8	cd	0.0	c	0.0	c	12.9	a	6291	d
3	UREA	60	4-5 leaf	101.8	ef	85.8	ef	37.5	bcd	0.0	c	0.0	c	12.6	abc	6787	cd
4	UREA	90	4-5 leaf	102.5	de	86.5	de	35.8	d	0.0	c	0.0	c	12.3	a-d	7156	abc
5	UREA	120	4-5 leaf	103.5	c	87.5	c	41.0	a	22.5	bc	1.3	bc	12.5	abc	7428	abc
6	UREA	150	4-5 leaf	105.5	b	89.5	b	40.0	ab	47.5	ab	2.3	ab	12.3	bcd	7504	ab
7	UREA	180	4-5 leaf	106.5	a	90.5	a	38.8	abc	57.5	a	2.8	a	12.7	abc	7682	a
8	UREA	210	4-5 leaf	106.5	a	90.5	a	40.5	a	60.0	a	2.0	ab	12.3	bcd	6982	bc
9	UREA	45	4-5 leaf	100.8	g	84.8	g	40.5	a	0.0	c	0.0	c	12.4	a-d	7333	abc
	UREA	45	PD														
10	UREA	75	4-5 leaf	101.3	fg	85.3	fg	39.5	ab	0.0	c	0.0	c	12.4	abc	7091	abc
	UREA	45	PD														
11	UREA	105	4-5 leaf	103.5	c	87.5	c	40.3	a	37.5	ab	1.3	bc	12.2	cd	7089	abc
	UREA	45	PD														
12	UREA	135	4-5 leaf	103.0	cd	87.0	cd	41.0	a	52.5	ab	2.0	ab	11.8	d	7251	abc
	UREA	45	PD														
LSD P=.05				0.89		0.89		2.64		31.78		1.26		0.56		665.5	
Standard Deviation				0.62		0.62		1.84		22.09		0.88		0.39		462.6	
CV				0.6		0.71		4.72		95.52		91.58		3.16		6.61	
Treatment F				53.69		53.69		5.085		5.525		6.010		2.215		7.525	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001		0.0384		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLL15 to Nitrogen
Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number ..... : 19-SLP-03

Site and design ..... :
- **Location/Cooperator** ..... : St. Landry Parish / Charlie Fontenot
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Dundee silty clay loam
- **% organic matter** ..... : 1.58
- **pH** ..... : 7.34
- **Extractable nutrients** ppm ..... : Ca-3,859; Cu-3.0; Mg-658; P-71; K-204; Na-52; S-5.0; Zn-1.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 26
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 1 inch
- **Emergence date** ..... : April 11
- **Harvest date** ..... : Aug. 22

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Underground irrigation
- **Flush** ..... : March 26
- **Flood** ..... : May 17
- **Drain** ..... : July 26

Pest management ..... :
- **Herbicides** ..... : 22 oz/A Roundup + 10 oz/A Command + 2 oz/A Sharpen, March 25
  32 oz/A Facet + 0.6 oz/A Regiment + 0.33 oz/A Permit, May 16
  18 oz/A Rebel EX + 1% COC, June 13
- **Insecticides** ..... : None
- **Fungicides** ..... : None

Table 34. Agronomic response of Drill-Seeded CLL15 to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle									
Rating Date								8/21/2019		8/21/2019				8/22/2019			
Rating Type				50% HD		50% HD		Height		Lodge				Moist		Yield	
Rating Unit				days		days		in		% plot		rate		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage														
1	UREA	0	4-5 leaf	98.0	f	79.0	f	32.0	f	0.0	d	0.0	d	12.5	a	5488	e
2	UREA	30	4-5 leaf	98.0	f	79.0	f	32.8	ef	0.0	d	0.0	d	12.4	a	6581	cd
3	UREA	60	4-5 leaf	99.0	de	80.0	de	35.8	cd	0.0	d	0.0	d	12.3	a	6788	bcd
4	UREA	90	4-5 leaf	99.0	de	80.0	de	35.5	cd	17.5	cd	1.3	c	12.2	a	6312	d
5	UREA	120	4-5 leaf	100.0	c	81.0	c	35.5	cd	37.5	bc	1.5	bc	12.1	a	7112	abc
6	UREA	150	4-5 leaf	101.0	b	82.0	b	36.8	bc	40.0	bc	2.5	ab	11.8	a	7400	ab
7	UREA	180	4-5 leaf	101.0	b	82.0	b	38.3	ab	52.5	ab	3.0	a	12.2	a	7768	a
8	UREA	210	4-5 leaf	102.0	a	83.0	a	38.8	a	70.0	a	3.0	a	12.1	a	6980	bcd
9	UREA	45	4-5 leaf	99.5	cd	80.5	cd	34.5	de	7.5	d	0.5	cd	12.3	a	6991	bcd
	UREA	45	PD														
10	UREA	75	4-5 leaf	98.8	e	79.8	e	36.3	cd	20.0	cd	1.3	c	12.3	a	7115	abc
	UREA	45	PD														
11	UREA	105	4-5 leaf	99.0	de	80.0	de	37.0	abc	52.5	ab	2.5	ab	11.8	a	6774	bcd
	UREA	45	PD														
12	UREA	135	4-5 leaf	102.0	a	83.0	a	38.3	ab	50.0	ab	2.5	ab	12.1	a	7439	ab
	UREA	45	PD														
LSD P=.05				0.73		0.73		1.83		26.99		1.16		0.48		755.2	
Standard Deviation				0.51		0.51		1.27		18.76		0.80		0.33		524.9	
CV				0.51		0.63		3.53		64.8		53.6		2.73		7.61	
Treatment F				31.240		31.240		10.974		6.835		8.648		1.461		5.107	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001		0.1935		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLM04 to Nitrogen
Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number ..... : 19-SLP-04

Site and design ..... :
- **Location/Cooperator** ..... : St. Landry Parish / Charlie Fontenot
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Dundee silty clay loam
- **% organic matter** ..... : 1.58
- **pH** ..... : 7.34
- **Extractable nutrients** ppm ..... : Ca-3,859; Cu-3.0; Mg-658; P-71; K-204; Na-52; S-5.0; Zn-1.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 26
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 1 inch
- **Emergence date** ..... : April 11
- **Harvest date** ..... : Aug. 22

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Underground irrigation
- **Flush** ..... : March 26
- **Flood** ..... : May 17
- **Drain** ..... : July 26

Pest management ..... :
- **Herbicides** ..... : 22 oz/A Roundup + 10 oz/A Command + 2 oz/A Sharpen, March 25
  32 oz/A Facet + 0.6 oz/A Regiment + 0.33 oz/A Permit, May 16
  18 oz/A Rebel EX + 1% COC, June 13
- **Insecticides** ..... : None
- **Fungicides** ..... : None

Table 35. Agronomic response of Drill-Seeded CLM04 to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle											
Rating Date								8/21/2019		8/21/2019		8/21/2019				8/22/2019			
Rating Type				50% HD		50% HD		Height		Hog damage		Lodge				Moist		Yield	
Rating Unit				days		days		in		% plot		% plot		rate		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage																
1	UREA	0	4-5 leaf	103.5	def	87.5	def	35.0	e	5.0	a	0.0	b	0.0	d	16.2	a	5439	d
2	UREA	30	4-5 leaf	101.8	g	85.8	g	38.8	cd	20.0	a	0.0	b	0.0	d	15.7	a	7000	c
3	UREA	60	4-5 leaf	103.5	def	87.5	def	39.8	a-d	7.5	a	0.0	b	0.0	d	15.9	a	7251	bc
4	UREA	90	4-5 leaf	103.5	def	87.5	def	39.0	bcd	0.0	a	7.5	b	0.5	cd	15.8	a	8063	ab
5	UREA	120	4-5 leaf	103.3	ef	87.3	ef	40.5	abc	25.0	a	42.5	ab	1.5	a-d	16.4	a	7820	abc
6	UREA	150	4-5 leaf	105.8	b	89.8	b	41.3	ab	22.5	a	45.0	ab	1.5	a-d	16.3	a	7822	abc
7	UREA	180	4-5 leaf	105.3	bc	89.3	bc	42.0	a	27.5	a	67.5	a	2.3	ab	16.4	a	7384	bc
8	UREA	210	4-5 leaf	104.5	cd	88.5	cd	41.0	abc	39.8	a	45.0	ab	2.0	abc	16.5	a	6959	c
9	UREA	45	4-5 leaf	104.0	de	88.0	de	38.0	d	12.5	a	0.0	b	0.0	d	15.8	a	7841	abc
	UREA	45	PD																
10	UREA	75	4-5 leaf	102.8	fg	86.8	fg	39.0	bcd	40.0	a	42.5	ab	1.0	bcd	15.9	a	8505	a
	UREA	45	PD																
11	UREA	105	4-5 leaf	105.3	bc	89.3	bc	40.8	abc	37.5	a	42.5	ab	1.8	abc	16.4	a	7341	bc
	UREA	45	PD																
12	UREA	135	4-5 leaf	107.0	a	91.0	a	41.3	ab	22.5	a	65.0	a	2.8	a	16.2	a	7290	bc
	UREA	45	PD																
LSD P=.05				1.21		1.21		2.46		42.70		47.36		1.73		0.90		984.9	
Standard Deviation				0.84		0.84		1.71		29.68		32.92		1.20		0.63		684.6	
CV				0.81		0.95		4.3		137.13		110.51		108.68		3.89		9.26	
Treatment F				11.850		11.850		5.039		0.823		2.568		2.729		0.777		5.002	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.6181		0.0178		0.0127		0.6602		0.0002	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RU1504197 to Nitrogen
Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number ..... : 19-SLP-06

Site and design ..... :
- **Location/Cooperator** ..... : St. Landry Parish / Charlie Fontenot
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Dundee silty clay loam
- **% organic matter**..... : 1.58
- **pH**..... : 7.34
- **Extractable nutrients** ppm ..... : Ca-3,859; Cu-3.0; Mg-658; P-71; K-204; Na-52; S-5.0; Zn-1.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 26
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 1 inch
- **Emergence date**..... : April 11
- **Harvest date** ..... : Aug. 22

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Underground irrigation
- **Flush** ..... : March 26
- **Flood** ..... : May 17
- **Drain** ..... : July 26

Pest management ..... :
- **Herbicides**..... : 22 oz/A Roundup + 10 oz/A Command + 2 oz/A Sharpen, March 25
  32 oz/A Facet + 0.6 oz/A Regiment + 0.33 oz/A Permit, May 16
  18 oz/A Rebel EX + 1% COC, June 13
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 36. Agronomic response of Drill-Seeded RU1504197 to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								8/21/2019		8/22/2019			
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	100.5	cd	84.5	cd	32.5	e	12.5	a	5195	c
2	UREA	30	4-5 leaf	99.8	d	83.8	d	33.8	de	13.2	a	6970	ab
3	UREA	60	4-5 leaf	101.0	c	85.0	c	35.8	bc	12.6	a	6502	b
4	UREA	90	4-5 leaf	102.5	b	86.5	b	35.3	cd	12.6	a	7080	ab
5	UREA	120	4-5 leaf	100.8	cd	84.8	cd	37.8	a	12.3	a	7518	a
6	UREA	150	4-5 leaf	103.5	b	87.5	b	37.3	ab	12.4	a	7430	a
7	UREA	180	4-5 leaf	102.5	b	86.5	b	35.8	bc	12.0	a	7374	a
8	UREA	210	4-5 leaf	105.0	a	89.0	a	37.8	a	12.1	a	7630	a
9	UREA	45	4-5 leaf	103.0	b	87.0	b	35.8	bc	12.8	a	7134	ab
	UREA	45	PD										
10	UREA	75	4-5 leaf	102.8	b	86.8	b	35.3	cd	12.6	a	7765	a
	UREA	45	PD										
11	UREA	105	4-5 leaf	103.3	b	87.3	b	37.3	ab	12.5	a	7754	a
	UREA	45	PD										
12	UREA	135	4-5 leaf	103.5	b	87.5	b	36.5	abc	12.0	a	7592	a
	UREA	45	PD										
LSD P=.05				1.24		1.24		1.94		0.83		868.4	
Standard Deviation				0.86		0.86		1.35		0.58		603.6	
CV				0.84		0.99		3.75		4.62		8.43	
Treatment F				12.658		12.658		5.611		1.408		5.698	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.2157		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7321FP to Nitrogen Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number ..... : 19-SLP-10

Site and design ..... :
- **Location/Cooperator** ..... : St. Landry Parish / Charlie Fontenot
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Dundee silty clay loam
- **% organic matter**..... : 1.58
- **pH**..... : 7.34
- **Extractable nutrients** ppm ..... : Ca-3,859; Cu-3.0; Mg-658; P-71; K-204; Na-52; S-5.0; Zn-1.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 26
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 1 inch
- **Emergence date**..... : April 11
- **Harvest date** ..... : Aug. 22

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : No blanket applications

Water management ..... : Underground irrigation
- **Flush** ..... : March 26
- **Flood** ..... : May 17
- **Drain** ..... : July 26

Pest management ..... :
- **Herbicides**..... : 22 oz/A Roundup + 10 oz/A Command + 2 oz/A Sharpen, March 25
  32 oz/A Facet + 0.6 oz/A Regiment + 0.33 oz/A Permit, May 16
  18 oz/A Rebel EX + 1% COC, June 13
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 37. Agronomic response of Drill-Seeded RT7321FP to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle									
Rating Date								8/21/2019		8/21/2019				8/22/2019			
Rating Type				50% HD		50% HD		Height		Lodge				Moist		Yield	
Rating Unit				days		days		in		% plot		rate		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage														
1	UREA	0	4-5 leaf	101.3	c	85.3	c	43.8	bcd	20.0	d	0.5	a	11.1	a	6667	c
2	UREA	60	4-5 leaf	101.8	bc	85.8	bc	43.5	cd	27.5	cd	1.8	a	11.6	a	7839	bc
3	UREA	90	4-5 leaf	101.8	bc	85.8	bc	43.5	cd	60.0	a-d	1.8	a	11.8	a	9149	a
4	UREA	120	4-5 leaf	103.0	a	87.0	a	46.0	a-d	79.8	ab	2.8	a	11.0	a	8342	ab
5	UREA	150	4-5 leaf	102.3	ab	86.3	ab	47.0	a	94.5	a	3.0	a	11.4	a	9439	a
6	UREA	180	4-5 leaf	102.8	a	86.8	a	47.3	a	94.5	a	3.0	a	11.5	a	8428	ab
7	UREA	75	4-5 leaf	99.8	d	83.8	d	43.0	d	45.0	bcd	2.0	a	11.4	a	8488	ab
	UREA	45	50% HD														
8	UREA	105	4-5 leaf	101.3	c	85.3	c	46.5	abc	39.8	bcd	1.3	a	11.3	a	8385	ab
	UREA	45	50% HD														
9	UREA	135	4-5 leaf	102.3	ab	86.3	ab	46.8	ab	69.5	abc	2.3	a	11.2	a	9073	a
	UREA	45	50% HD														
LSD P=.05				0.90		0.90		3.24		48.21		1.60		1.18		1222.9	
Standard Deviation				0.62		0.62		2.22		33.04		1.10		0.81		838.0	
CV				0.61		0.72		4.91		56.04		54.11		7.12		9.95	
Treatment F				9.951		9.951		2.519		2.814		2.308		0.401		3.858	
Treatment Prob(F)				0.0001		0.0001		0.0382		0.0236		0.0541		0.9088		0.0048	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7521 to Nitrogen
Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number ..... : 19-SLP-11

Site and design ..... :
- **Location/Cooperator** ..... : St. Landry Parish / Charlie Fontenot
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Dundee silty clay loam
- **% organic matter**..... : 1.58
- **pH**..... : 7.34
- **Extractable nutrients** ppm ..... : Ca-3,859; Cu-3.0; Mg-658; P-71; K-204; Na-52; S-5.0; Zn-1.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 26
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 1 inch
- **Emergence date**..... : April 11
- **Harvest date** ..... : Aug. 22

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : No blanket applications

Water management ..... : Underground irrigation
- **Flush** ..... : March 26
- **Flood** ..... : May 17
- **Drain** ..... : July 26

Pest management ..... :
- **Herbicides**..... : 22 oz/A Roundup + 10 oz/A Command + 2 oz/A Sharpen, March 25
  32 oz/A Facet + 0.6 oz/A Regiment + 0.33 oz/A Permit, May 16
  18 oz/A Rebel EX + 1% COC, June 13
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 38. Agronomic response of Drill-Seeded RT7521 FP to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle									
Rating Date								8/21/2019		8/21/2019				8/22/2019			
Rating Type				50% HD		50% HD		Height		Lodge				Moist		Yield	
Rating Unit				days		days		in		% plot		rate		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage														
1	UREA	0	4-5 leaf	101.8	d	85.8	d	41.5	a	0.0	d	0.0	d	11.2	a	7641	e
2	UREA	60	4-5 leaf	103.3	cd	87.3	cd	45.0	a	10.0	cd	1.0	cd	10.9	a	8404	de
3	UREA	90	4-5 leaf	103.8	c	87.8	c	45.0	a	32.5	bc	1.5	bc	10.5	a	8807	bcd
4	UREA	120	4-5 leaf	102.0	d	86.0	d	45.8	a	22.5	cd	1.3	cd	10.8	a	9049	a-d
5	UREA	150	4-5 leaf	104.0	c	88.0	c	46.5	a	70.0	a	3.0	a	10.6	a	9402	abc
6	UREA	180	4-5 leaf	105.8	ab	89.8	ab	45.5	a	75.0	a	2.8	ab	10.6	a	9505	abc
7	UREA	75	4-5 leaf	104.3	bc	88.3	bc	45.0	a	25.0	cd	1.0	cd	10.8	a	8549	cde
	UREA	45	50% HD														
8	UREA	105	4-5 leaf	106.3	a	90.3	a	45.5	a	27.5	cd	1.3	cd	11.0	a	9566	ab
	UREA	45	50% HD														
9	UREA	135	4-5 leaf	106.0	a	90.0	a	45.8	a	60.0	ab	2.3	abc	10.6	a	9927	a
	UREA	45	50% HD														
LSD P=.05				1.51		1.51		2.78		28.46		1.32		0.67		987.9	
Standard Deviation				1.03		1.03		1.91		19.50		0.91		0.46		676.9	
CV				0.99		1.17		4.23		54.42		58.36		4.25		7.54	
Treatment F				10.197		10.197		2.216		7.379		4.382		0.961		4.408	
Treatment Prob(F)				0.0001		0.0001		0.0630		0.0001		0.0023		0.4883		0.0022	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7301 to Nitrogen
Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number ..... : 19-SLP-12

Site and design ..... :
- **Location/Cooperator** ..... : St. Landry Parish / Charlie Fontenot
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Dundee silty clay loam
- **% organic matter**..... : 1.58
- **pH**..... : 7.34
- **Extractable nutrients** ppm ..... : Ca-3,859; Cu-3.0; Mg-658; P-71; K-204; Na-52; S-5.0; Zn-1.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 26
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 1 inch
- **Emergence date**..... : April 11
- **Harvest date** ..... : Aug. 22

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : No blanket applications

Water management ..... : Underground irrigation
- **Flush** ..... : March 26
- **Flood** ..... : May 17
- **Drain** ..... : July 26

Pest management ..... :
- **Herbicides**..... : 22 oz/A Roundup + 10 oz/A Command + 2 oz/A Sharpen, March 25
  32 oz/A Facet + 0.6 oz/A Regiment + 0.33 oz/A Permit, May 16
  18 oz/A Rebel EX + 1% COC, June 13
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 39. Agronomic response of Drill-Seeded RT7301 to nitrogen fertilizer rate and time of application. St. Landry Parish.

CROP NAME				RICE		RICE		RICE		RICE		RICE		RICE		RICE	
DESCRIPTION				Plant-hd		Emer-hd		Tip of Panicle									
RATING DATE								8/21/2019		8/21/2019				8/22/2019			
RATING TYPE				50% HD		50% HD		Height		Lodge				Moist		Yield	
RATING UNIT				days		days		in		% plot		rate		%		lb/A	
TRT NO.	Treatment Name	Rate (lb N/A)	Growth Stage														
1	UREA	0	4-5 leaf	101.3	d	85.3	d	37.3	b	0.0	d	0.0	d	11.7	a	5556	e
2	UREA	60	4-5 leaf	102.3	bc	86.3	bc	40.8	a	0.0	d	0.0	d	11.3	a	7568	d
3	UREA	90	4-5 leaf	102.8	b	86.8	b	41.8	a	22.5	bcd	0.8	cd	11.4	a	7954	cd
4	UREA	120	4-5 leaf	105.3	a	89.3	a	41.5	a	42.5	bcd	1.5	abc	11.6	a	8137	bcd
5	UREA	150	4-5 leaf	104.5	a	88.5	a	42.5	a	55.0	ab	2.3	ab	12.7	a	9395	a
6	UREA	180	4-5 leaf	105.3	a	89.3	a	40.0	a	87.5	a	2.8	a	11.6	a	8881	ab
7	UREA	75	4-5 leaf	101.5	cd	85.5	cd	41.3	a	0.0	d	0.0	d	12.2	a	7873	cd
	UREA	45	50% HD														
8	UREA	105	4-5 leaf	102.0	bcd	86.0	bcd	40.3	a	5.0	cd	0.5	cd	11.5	a	8211	bcd
	UREA	45	50% HD														
9	UREA	135	4-5 leaf	105.0	a	89.0	a	41.0	a	45.0	abc	1.0	bcd	12.0	a	8590	abc
	UREA	45	50% HD														
LSD P=.05				0.84		0.84		2.64		42.97		1.40		0.94		903.8	
STANDARD DEVIATION				0.57		0.57		1.81		29.44		(.96		0.64		619.3	
CV				0.55		0.66		4.44		102.91		98.35		5.46		7.72	
TREATMENT F				34.183		34.183		2.753		4.428		4.473		1.889		12.131	
TREATMENT PROB(F)				0.0001		0.0001		0.0261		0.0021		0.0020		0.1091		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT3201 to Nitrogen
Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number ..... : 19-SLP-13

Site and design ..... :
- **Location/Cooperator** ..... : St. Landry Parish / Charlie Fontenot
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Dundee silty clay loam
- **% organic matter**..... : 1.58
- **pH**..... : 7.34
- **Extractable nutrients** ppm ..... : Ca-3,859; Cu-3.0; Mg-658; P-71; K-204; Na-52; S-5.0; Zn-1.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 26
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 1 inch
- **Emergence date**..... : April 11
- **Harvest date** ..... : Aug. 22

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : No blanket applications

Water management ..... : Underground irrigation
- **Flush** ..... : March 26
- **Flood** ..... : May 17
- **Drain** ..... : July 26

Pest management ..... :
- **Herbicides**..... : 22 oz/A Roundup + 10 oz/A Command + 2 oz/A Sharpen, March 25
  32 oz/A Facet + 0.6 oz/A Regiment + 0.33 oz/A Permit, May 16
  18 oz/A Rebel EX + 1% COC, June 13
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 40. Agronomic response of Drill-Seeded RT3201 to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								8/21/2019		8/22/2019			
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt	Treatment	Rate	Growth										
No.	Name	(lb N/A)	Stage										
1	UREA	0	4-5 leaf	93.0	ef	77.0	ef	40.0	a	13.2	a	5031	d
2	UREA	60	4-5 leaf	93.5	de	77.5	de	41.5	a	12.6	a	6850	c
3	UREA	90	4-5 leaf	95.5	bc	79.5	bc	40.3	a	12.2	a	7563	abc
4	UREA	120	4-5 leaf	94.0	d	78.0	d	43.8	a	12.3	a	7449	bc
5	UREA	150	4-5 leaf	96.0	b	80.0	b	43.8	a	12.4	a	8031	ab
6	UREA	180	4-5 leaf	97.0	a	81.0	a	45.5	a	12.4	a	8297	a
7	UREA	75	4-5 leaf	92.8	f	76.8	f	43.5	a	12.5	a	7743	ab
	UREA	45	50% HD										
8	UREA	105	4-5 leaf	95.0	c	79.0	c	43.8	a	12.8	a	7964	ab
	UREA	45	50% HD										
9	UREA	135	4-5 leaf	95.8	b	79.8	b	43.0	a	12.4	a	8050	ab
	UREA	45	50% HD										
LSD P=.05				0.62		0.62		4.41		1.39		834.9	
Standard Deviation				0.42		0.42		3.02		0.95		572.1	
CV				0.45		0.54		7.06		7.61		7.69	
Treatment F				48.896		48.896		1.457		0.432		12.199	
Treatment Prob(F)				0.0001		0.0001		0.2245		0.8903		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLJ01 to Nitrogen
Fertilizer Rate and Time of Application – Tensas Parish

Experiment number ..... : 19-SJ-01

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 41. Agronomic response of Drill-Seeded CLJ01 to nitrogen fertilizer rate and time of application. Tensas Parish.

Crop Name				**Rice**		**Rice**		**Rice**		**Rice**		**Rice**	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/4/2019		9/4/2019		9/4/2019	
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	95.0	a	90.0	a	27.3	e	18.7	a	2072	f
2	UREA	30	4-5 leaf	93.5	c	88.5	c	28.8	de	16.4	d	3090	e
3	UREA	60	4-5 leaf	92.0	e	87.0	e	29.8	cde	16.4	d	4090	d
4	UREA	90	4-5 leaf	93.0	d	88.0	d	30.3	b-e	16.5	d	4541	cd
5	UREA	120	4-5 leaf	91.0	f	86.0	f	32.8	abc	16.9	bcd	4953	bc
6	UREA	150	4-5 leaf	91.0	f	86.0	f	32.3	abc	17.4	bc	5407	ab
7	UREA	180	4-5 leaf	92.8	d	87.8	d	32.0	abc	16.5	cd	4983	bc
8	UREA	210	4-5 leaf	94.0	b	89.0	b	34.0	a	17.7	b	5918	a
9	UREA	45	4-5 leaf	90.0	g	85.0	g	31.0	a-d	16.3	d	3983	d
	UREA	45	PD										
10	UREA	75	4-5 leaf	91.0	f	86.0	f	32.0	abc	16.5	cd	4877	bc
	UREA	45	PD										
11	UREA	105	4-5 leaf	91.3	f	86.3	f	31.5	a-d	16.8	bcd	5418	ab
	UREA	45	PD										
12	UREA	135	4-5 leaf	92.0	e	87.0	e	33.3	ab	16.9	bcd	5849	a
	UREA	45	PD										
LSD P=.05				0.48		0.48		3.03		0.91		740.7	
Standard Deviation				0.34		0.34		2.11		0.63		514.9	
CV				0.37		0.39		6.76		3.75		11.2	
Treatment F				76.333		76.333		3.396		5.163		19.587	
Treatment Prob(F)				0.0001		0.0001		0.0032		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded PVL02 to Nitrogen
Fertilizer Rate and Time of Application – Tensas Parish

Experiment number ..... : 19-SJ-02

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 42. Agronomic response of Drill-Seeded PVL02 to nitrogen fertilizer rate and time of application. Tensas Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/4/2019		9/4/2019			
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	92.0	e	87.0	e	29.8	b	17.0	a	2242	f
2	UREA	30	4-5 leaf	90.5	f	85.5	f	30.0	b	15.8	cd	3233	e
3	UREA	60	4-5 leaf	90.5	f	85.5	f	34.3	a	15.6	d	4073	d
4	UREA	90	4-5 leaf	92.3	e	87.3	e	35.3	a	15.6	d	5167	c
5	UREA	120	4-5 leaf	94.0	c	89.0	c	38.0	a	15.9	cd	5924	b
6	UREA	150	4-5 leaf	93.3	d	88.3	d	36.5	a	16.3	bc	6224	ab
7	UREA	180	4-5 leaf	93.3	d	88.3	d	34.8	a	16.7	ab	6157	b
8	UREA	210	4-5 leaf	93.8	cd	88.8	cd	36.3	a	16.8	ab	6748	a
9	UREA	45	4-5 leaf	94.0	c	89.0	c	36.0	a	15.5	d	4198	d
	UREA	45	PD										
10	UREA	75	4-5 leaf	94.0	c	89.0	c	35.3	a	15.6	d	5104	c
	UREA	45	PD										
11	UREA	105	4-5 leaf	95.0	b	90.0	b	36.5	a	16.3	bc	5888	b
	UREA	45	PD										
12	UREA	135	4-5 leaf	96.0	a	91.0	a	37.3	a	16.1	cd	6443	ab
	UREA	45	PD										
LSD P=.05				0.73		0.73		4.15		0.59		558.7	
Standard Deviation				0.51		0.51		2.88		0.41		388.4	
CV				0.55		0.58		8.25		2.56		7.59	
Treatment F				42.262		42.262		3.254		6.420		52.366	
Treatment Prob(F)				0.0001		0.0001		0.0042		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLL15 to Nitrogen
Fertilizer Rate and Time of Application – Tensas Parish

Experiment number ..... : 19-SJ-03

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 43. Agronomic response of Drill-Seeded CLL15 to nitrogen fertilizer rate and time of application. Tensas Parish.

Crop Name				**Rice**		**Rice**		**Rice**		**Rice**		**Rice**	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/4/2019		9/4/2019		9/4/2019	
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt	Treatment	Rate	Growth										
No.	Name	(lb N/A)	Stage										
1	UREA	0	4-5 leaf	93.0	a	88.0	a	27.0	d	15.4	cd	2195	f
2	UREA	30	4-5 leaf	91.0	c	86.0	c	28.3	cd	14.3	e	2882	f
3	UREA	60	4-5 leaf	90.0	d	85.0	d	30.0	bc	14.2	e	4018	e
4	UREA	90	4-5 leaf	91.0	c	86.0	c	32.3	ab	15.3	cd	5151	bcd
5	UREA	120	4-5 leaf	90.0	d	85.0	d	33.0	a	16.0	bc	5807	abc
6	UREA	150	4-5 leaf	90.8	c	85.8	c	33.3	a	15.9	bc	6139	ab
7	UREA	180	4-5 leaf	89.0	f	84.0	f	33.5	a	16.3	ab	6371	a
8	UREA	210	4-5 leaf	90.0	d	85.0	d	33.5	a	16.9	a	6674	a
9	UREA	45	4-5 leaf	89.5	e	84.5	e	31.3	ab	14.1	e	4181	de
	UREA	45	PD										
10	UREA	75	4-5 leaf	91.0	c	86.0	c	32.3	ab	14.8	de	4825	cde
	UREA	45	PD										
11	UREA	105	4-5 leaf	91.0	c	86.0	c	32.3	ab	15.6	bc	5972	ab
	UREA	45	PD										
12	UREA	135	4-5 leaf	92.0	b	87.0	b	33.5	a	15.9	bc	6454	a
	UREA	45	PD										
LSD P=.05				0.31		0.31		2.84		0.80		1017.3	
Standard Deviation				0.21		0.21		1.97		0.56		707.1	
CV				0.24		0.25		6.23		3.61		13.99	
Treatment F				103.685		103.685		4.843		10.073		17.232	
Treatment Prob(F)				0.0001		0.0001		0.0002		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded CLM04 to Nitrogen
Fertilizer Rate and Time of Application – Tensas Parish

Experiment number ..... : 19-SJ-04

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 44. Agronomic response of Drill-Seeded CLM04 to nitrogen fertilizer rate and time of application. Tensas Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/4/2019		9/4/2019		9/4/2019	
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	97.0	a	92.0	a	29.0	f	23.5	ab	2839	f
2	UREA	30	4-5 leaf	95.0	c	90.0	c	31.5	f	21.2	ef	3777	f
3	UREA	60	4-5 leaf	94.0	d	89.0	d	34.3	e	20.9	f	5313	e
4	UREA	90	4-5 leaf	95.0	c	90.0	c	36.5	cde	22.6	cd	7166	bc
5	UREA	120	4-5 leaf	94.3	d	89.3	d	37.3	bcd	21.9	de	7309	b
6	UREA	150	4-5 leaf	96.0	b	91.0	b	39.5	ab	23.5	ab	7626	ab
7	UREA	180	4-5 leaf	94.0	d	89.0	d	38.5	abc	23.2	bc	7909	ab
8	UREA	210	4-5 leaf	95.0	c	90.0	c	40.0	a	23.9	a	8427	a
9	UREA	45	4-5 leaf	95.0	c	90.0	c	34.8	de	21.4	ef	5694	de
	UREA	45	PD										
10	UREA	75	4-5 leaf	94.0	d	89.0	d	36.3	cde	21.6	e	6347	cd
	UREA	45	PD										
11	UREA	105	4-5 leaf	94.3	d	89.3	d	38.0	abc	23.0	bc	7910	ab
	UREA	45	PD										
12	UREA	135	4-5 leaf	94.0	d	89.0	d	37.3	bcd	23.3	ab	7494	ab
	UREA	45	PD										
LSD P=.05				0.30		0.30		2.70		0.71		961.8	
Standard Deviation				0.21		0.21		1.88		0.50		668.6	
CV				0.22		0.23		5.2		2.21		10.31	
Treatment F				81.353		81.353		11.956		17.831		27.606	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded 2195 to Nitrogen
Fertilizer Rate and Time of Application – Tensas Parish

Experiment number ..... : 19-SJ-05

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 45. Agronomic response of Drill-Seeded 2195 to nitrogen fertilizer rate and time of application. Tensas Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/4/2019		9/4/2019		9/4/2019	
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	90.0	c	85.0	c	30.5	d	15.5	def	4552	f
2	UREA	30	4-5 leaf	90.0	c	85.0	c	33.5	c	15.0	f	5403	f
3	UREA	60	4-5 leaf	91.0	b	86.0	b	33.5	c	15.2	f	6589	e
4	UREA	90	4-5 leaf	91.0	b	86.0	b	33.3	cd	16.0	cde	7925	bcd
5	UREA	120	4-5 leaf	90.0	c	85.0	c	37.3	a	16.0	cde	7773	bcd
6	UREA	150	4-5 leaf	90.0	c	85.0	c	35.8	abc	16.1	cd	8195	bc
7	UREA	180	4-5 leaf	92.0	a	87.0	a	37.3	a	16.8	ab	8515	ab
8	UREA	210	4-5 leaf	92.0	a	87.0	a	37.0	a	17.3	a	9358	a
9	UREA	45	4-5 leaf	90.0	c	85.0	c	33.8	bc	15.6	def	7331	cde
	UREA	45	PD										
10	UREA	75	4-5 leaf	90.8	b	85.8	b	35.0	abc	15.4	ef	7179	de
	UREA	45	PD										
11	UREA	105	4-5 leaf	91.8	a	86.8	a	36.8	a	16.3	bc	8330	b
	UREA	45	PD										
12	UREA	135	4-5 leaf	91.0	b	86.0	b	36.5	ab	16.6	bc	7771	bcd
	UREA	45	PD										
LSD P=.05				0.30		0.30		2.76		0.64		955.0	
Standard Deviation				0.21		0.21		1.92		0.45		663.8	
CV				0.23		0.24		5.48		2.8		8.96	
Treatment F				60.176		60.176		4.883		9.078		16.452	
Treatment Prob(F)				0.0001		0.0001		0.0002		0.0001		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RU1504197 to Nitrogen
Fertilizer Rate and Time of Application – Tensas Parish

Experiment number ..... : 19-SJ-06

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
Planting method/date ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Table 46. Agronomic response of Drill-Seeded RU1504197 to nitrogen fertilizer rate and time of application. Tensas Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/4/2019		9/4/2019		9/4/2019	
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	94.0	d	89.0	d	30.5	d	20.8	c-f	5110	d
2	UREA	30	4-5 leaf	94.0	d	89.0	d	33.8	c	19.5	f	6397	cd
3	UREA	60	4-5 leaf	95.0	c	90.0	c	33.8	c	19.9	ef	6672	bc
4	UREA	90	4-5 leaf	95.0	c	90.0	c	34.3	c	21.2	b-e	8509	a
5	UREA	120	4-5 leaf	96.0	b	91.0	b	35.8	abc	20.2	def	7750	ab
6	UREA	150	4-5 leaf	96.5	ab	91.5	ab	34.5	bc	21.3	a-d	8722	a
7	UREA	180	4-5 leaf	97.0	a	92.0	a	37.8	a	22.6	a	8401	a
8	UREA	210	4-5 leaf	94.0	d	89.0	d	37.5	ab	22.6	ab	8877	a
9	UREA	45	4-5 leaf	93.0	e	88.0	e	34.5	bc	20.8	c-f	8009	ab
	UREA	45	PD										
10	UREA	75	4-5 leaf	95.0	c	90.0	c	34.3	c	19.7	f	8282	a
	UREA	45	PD										
11	UREA	105	4-5 leaf	95.0	c	90.0	c	36.3	abc	21.8	abc	9025	a
	UREA	45	PD										
12	UREA	135	4-5 leaf	94.0	d	89.0	d	36.5	abc	21.1	cde	8298	a
	UREA	45	PD										
LSD P=.05				0.85		0.85		3.06		1.44		1342.4	
Standard Deviation				0.59		0.59		2.12		1.00		933.1	
CV				0.62		0.66		6.08		4.77		11.91	
Treatment F				15.604		15.604		3.478		4.331		6.413	
Treatment Prob(F)				0.0001		0.0001		0.0027		0.0005		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7321FP to Nitrogen
Fertilizer Rate and Time of Application – Tensas Parish

Experiment number ..... : 19-SJ-10

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Comments: 50% HD treatments were not applied.

Table 47. Agronomic response of Drill-Seeded RT7321FP to nitrogen fertilizer rate and time of application. Tensas Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/4/2019		9/4/2019		9/4/2019	
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	89.8	a	84.8	a	34.0	b	14.6	a	5251	e
2	UREA	60	4-5 leaf	90.0	a	85.0	a	39.8	a	14.5	a	8006	d
3	UREA	90	4-5 leaf	89.8	a	84.8	a	41.5	a	13.5	a	8237	cd
4	UREA	120	4-5 leaf	89.8	a	84.8	a	42.5	a	13.8	a	8742	bcd
5	UREA	150	4-5 leaf	90.0	a	85.0	a	42.3	a	14.7	a	9251	abc
6	UREA	180	4-5 leaf	89.8	a	84.8	a	43.3	a	14.8	a	10170	a
7	UREA	75	4-5 leaf	89.8	a	84.8	a	41.0	a	14.5	a	8316	cd
	UREA	45	50% HD										
8	UREA	105	4-5 leaf	89.8	a	84.8	a	41.5	a	14.0	a	8697	cd
	UREA	45	50% HD										
9	UREA	135	4-5 leaf	89.5	a	84.5	a	42.3	a	14.6	a	9783	ab
	UREA	45	50% HD										
LSD P=.05				1.15		1.15		4.26		1.00		1046.0	
Standard Deviation				0.79		0.79		2.92		0.69		716.7	
CV				0.88		0.93		7.14		4.8		8.44	
Treatment F				0.146		0.146		3.603		1.739		15.572	
Treatment Prob(F)				0.9958		0.9958		0.0070		0.1404		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Agronomic Response of Drill-Seeded RT7321FP to Nitrogen
Fertilizer Rate and Time of Application – Tensas Parish

Experiment number ..... : 19-SJ-11

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : No blanket applications

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Comments: 50% HD treatments were not applied.

Table 48. Agronomic response of Drill-Seeded RT7321FP to nitrogen fertilizer rate and time of application. Tensas Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								9/4/2019		9/4/2019		9/4/2019	
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	88.5	a	83.5	a	33.5	e	14.8	a	6028	c
2	UREA	60	4-5 leaf	88.8	a	83.8	a	35.3	de	13.5	a	7477	b
3	UREA	90	4-5 leaf	88.3	a	83.3	a	37.0	cd	14.2	a	8939	a
4	UREA	120	4-5 leaf	88.8	a	83.8	a	40.5	ab	14.5	a	8763	a
5	UREA	150	4-5 leaf	89.0	a	84.0	a	42.0	a	14.7	a	9209	a
6	UREA	180	4-5 leaf	89.0	a	84.0	a	41.0	ab	14.8	a	8793	a
7	UREA	75	4-5 leaf	88.8	a	83.8	a	39.8	abc	14.7	a	8467	ab
	UREA	45	50% HD										
8	UREA	105	4-5 leaf	88.5	a	83.5	a	38.8	bc	14.8	a	9091	a
	UREA	45	50% HD										
9	UREA	135	4-5 leaf	88.5	a	83.5	a	40.8	ab	14.4	a	9075	a
	UREA	45	50% HD										
LSD P=.05				0.94		0.94		3.04		0.98		1177.5	
Standard Deviation				0.65		0.65		2.08		0.67		806.8	
CV				0.73		0.77		5.38		4.61		9.57	
Treatment F				0.600		0.600		7.663		1.632		6.635	
Treatment Prob(F)				0.7685		0.7685		0.0001		0.1680		0.0001	

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Seeding Rate and Plant Population in a Stale Seedbed for PVL02 – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-14

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : See Treatment name / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 13
- **Ratoon Harvest date**..... : Nov. 12

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
150 lb N/A 46-0-0, May 22
90 lb N/A 46-0-0, August 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 49. Evaluation of seeding rate and plant population in a stale seedbed for PVL02. H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Rice Density		Plant-hd		Emer-hd		Tip of panicle							
Rating Date		4/17/2019						8/13/2019		8/13/2019		11/12/2019			
Rating Type		Stand Count		50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit		#/sq ft.		days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name														
1	5 seed/ft2 (11.6 lb/A)	2.3	f	116.0	a	100.0	a	46.5	a	7837	d	2209	e	10046	c
2	7.5 seed/ft2 (17.4 lb/A)	3.9	ef	114.8	b	98.8	b	46.8	a	8416	c	2795	d	11212	b
3	10 seed/ft2 (22.3 lb/A)	5.3	ef	114.0	bc	98.0	bc	46.3	a	8541	abc	2902	cd	11444	b
4	15 seed/ft2 (34.9 lb/A)	6.0	de	112.5	d	96.5	d	45.8	a	8477	bc	3011	cd	11488	b
5	20 seed/ft2 (46.6 lb/A)	8.6	cd	113.0	cd	97.0	cd	46.0	a	8882	abc	3212	bc	12094	a
6	25 seed/ft2 (58.2 lb/A)	9.8	bc	112.0	de	96.0	de	45.5	a	8778	abc	3438	ab	12216	a
7	30 seed/ft2 (69.9 lb/A)	12.8	ab	112.0	de	96.0	de	46.3	a	8999	a	3523	ab	12522	a
8	35 seed/ft2 (81.5 lb/A)	15.2	a	111.3	e	95.3	e	43.8	a	8942	ab	3550	a	12492	a
9	40 seed/ft2 (93.1 lb/A)	14.6	a	111.3	e	95.3	e	44.8	a	8967	a	3560	a	12527	a
LSD P=.05		3.20		1.11		1.11		2.45		486.2		331.9		532.3	
Standard Deviation		2.19		0.76		0.76		1.68		333.1		227.4		364.7	
CV		25.14		0.67		0.78		3.67		3.85		7.26		3.1	
Treatment F		18.588		18.590		18.590		1.277		5.115		15.885		20.416	
Treatment Prob(F)		0.0001		0.0001		0.0001		0.3013		0.0009		0.0001		0.0001	

Continued.

Table 49. Continued.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice	
Description						Yield Components							
Rating Type		WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed		Milling	
Rating Unit		grams		number		grams		grams		number		head	total
Sample Size, Unit		1 m		1 m		1 m		1 m		1 m			
Collection Basis, Unit		2 rows		2 rows		2 rows		2 rows		2 rows			
Crop Stage Majority		Main		Main		Main		Main		Main		Main	Main
Trt No.	Treatment Name												
1	5 seed/ft2 (11.6 lb/A)	284.0	a	70	a	86.4	a	18.25	a	1066	a	66.75 a	74.50 a
2	7.5 seed/ft2 (17.4 lb/A)	324.1	a	72	a	106.7	a	17.70	a	816	a	66.75 a	74.00 a
3	10 seed/ft2 (22.3 lb/A)	292.1	a	71	a	89.3	a	19.56	a	910	a	66.25 a	74.50 a
4	15 seed/ft2 (34.9 lb/A)	327.9	a	79	a	106.0	a	16.52	a	783	a	66.25 a	73.75 a
5	20 seed/ft2 (46.6 lb/A)	328.7	a	85	a	109.2	a	12.57	a	609	a	68.00 a	74.25 a
6	25 seed/ft2 (58.2 lb/A)	378.0	a	95	a	118.6	a	17.01	a	804	a	67.00 a	73.50 a
7	30 seed/ft2 (69.9 lb/A)	287.7	a	86	a	89.1	a	12.72	a	605	a	65.50 a	74.00 a
8	35 seed/ft2 (81.5 lb/A)	303.6	a	91	a	93.5	a	14.41	a	690	a	68.00 a	74.00 a
9	40 seed/ft2 (93.1 lb/A)	332.9	a	95	a	113.5	a	16.28	a	787	a	68.00 a	74.00 a
LSD P=.05		89.51		21.4		32.44		6.453		320.0		2.553	0.816
Standard Deviation		61.33		14.7		22.23		4.422		219.3		1.749	0.559
CV		19.31		17.76		21.93		27.44		27.92		2.61	0.75
Treatment F		0.933		1.939		1.150		1.202		1.754		1.057	1.356
Treatment Prob(F)		0.5077		0.1003		0.3676		0.3393		0.1370		0.4236	0.2652

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Seeding Rate and Plant Population in a Stale Seedbed for CLJ01 – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-15

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : See Treatment name / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 13
- **Ratoon Harvest date**..... : Nov. 12

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
150 lb N/A 46-0-0, May 22
90 lb N/A 46-0-0, August 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 50. Evaluation of seeding rate and plant population in a stale seedbed for CLJ01. H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Rice Densit		Plant-hd		Emer-hd		Tip of panicle							
Rating Date		4/17/2019						8/13/2019		8/13/2019		11/12/2019			
Rating Type		Stand Coun		50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit		#/sq ft.		days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name														
1	5 seed/ft2 (11.6 lb/A)	4.0	d	114.5	a	98.5	a	41.8	a	7938	c	2522	d	10460	d
2	7.5 seed/ft2 (17.4 lb/A)	4.1	d	113.8	ab	97.8	ab	41.8	a	8665	b	2789	cd	11454	c
3	10 seed/ft2 (22.3 lb/A)	6.8	cd	113.3	bc	97.3	bc	40.8	a	8747	b	2836	bcd	11582	bc
4	15 seed/ft2 (34.9 lb/A)	10.0	c	112.8	bc	96.8	bc	40.8	a	8674	b	3135	abc	11809	abc
5	20 seed/ft2 (46.6 lb/A)	14.3	b	113.3	bc	97.3	bc	41.5	a	9015	ab	3103	abc	12118	ab
6	25 seed/ft2 (58.2 lb/A)	13.7	b	112.5	c	96.5	c	42.3	a	8733	b	3369	a	12103	ab
7	30 seed/ft2 (69.9 lb/A)	15.3	b	112.5	c	96.5	c	40.5	a	8889	ab	3328	a	12217	a
8	35 seed/ft2 (81.5 lb/A)	21.1	a	113.0	bc	97.0	bc	41.0	a	9212	a	3199	abc	12410	a
9	40 seed/ft2 (93.1 lb/A)	21.5	a	112.3	c	96.3	c	39.3	a	9015	ab	3263	ab	12278	a
LSD P=.05		3.35		1.08		1.08		1.88		424.4		461.7		603.1	
Standard Deviation		2.30		0.74		0.74		1.29		290.8		316.4		413.3	
CV		18.64		0.65		0.76		3.14		3.32		10.34		3.49	
Treatment F		33.208		3.661		3.661		1.907		6.171		3.241		8.564	
Treatment Prob(F)		0.0001		0.0064		0.0064		0.1059		0.0002		0.0121		0.0001	

Continued.

Table 50. Continued.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description						Yield Components									
Rating Type		WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed		Milling			
Rating Unit		grams		number		grams		grams		number		head		total	
Sample Size, Unit		1 m		1 m		1 m		1 m		1 m					
Collection Basis, Unit		2 rows		2 rows		2 rows		2 rows		2 rows					
Crop Stage Majority		Main		Main		Main		Main		Main		Main		Main	
Trt No.	Treatment Name														
1	5 seed/ft2 (11.6 lb/A)	392.8	a	98	a	148.9	a	18.31	a	801	a	67.00	a	72.75	a
2	7.5 seed/ft2 (17.4 lb/A)	337.3	a	84	a	125.7	a	16.56	a	732	a	68.50	a	72.75	a
3	10 seed/ft2 (22.3 lb/A)	336.9	a	87	a	123.2	a	15.86	a	714	a	68.75	a	72.50	a
4	15 seed/ft2 (34.9 lb/A)	359.5	a	107	a	127.3	a	14.58	a	656	a	67.00	a	72.25	a
5	20 seed/ft2 (46.6 lb/A)	368.3	a	108	a	133.9	a	16.06	a	712	a	68.25	a	72.75	a
6	25 seed/ft2 (58.2 lb/A)	347.8	a	108	a	126.0	a	15.41	a	680	a	68.25	a	72.75	a
7	30 seed/ft2 (69.9 lb/A)	306.5	a	95	a	109.3	a	13.07	a	580	a	68.75	a	72.50	a
8	35 seed/ft2 (81.5 lb/A)	301.5	a	107	a	109.3	a	12.54	a	576	a	68.00	a	72.75	a
9	40 seed/ft2 (93.1 lb/A)	331.4	a	114	a	111.7	a	15.19	a	689	a	68.50	a	73.00	a
LSD P=.05		68.30		23.3		26.56		5.467		232.5		1.476		0.891	
Standard Deviation		46.80		16.0		18.20		3.746		159.3		1.012		0.610	
CV		13.67		15.85		14.68		24.51		23.36		1.49		0.84	
Treatment F		1.522		1.764		1.989		0.880		0.807		1.778		0.503	
Treatment Prob(F)		0.2019		0.1345		0.0923		0.5466		0.6029		0.1314		0.8419	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Seeding Rate and Plant Population in a Stale Seedbed for Titan – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-16

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : See Treatment name / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 13
- **Ratoon Harvest date**..... : Nov. 12

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
150 lb N/A 46-0-0, May 22
90 lb N/A 46-0-0, August 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 51. Evaluation of seeding rate and plant population in a stale seedbed for Titan. H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Rice Density		Plant-hd		Emer-hd		Tip of panicle							
Rating Date		4/17/2019						8/13/2019		8/13/2019		11/12/2019			
Rating Type		Stand Count		50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit		#/sq ft.		days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name														
1	5 seed/ft2 (11.6 lb/A)	3.6	e	106.0	ab	90.0	ab	40.3	a	9474	d	2004	c	11478	e
2	7.5 seed/ft2 (17.4 lb/A)	4.1	e	106.8	a	90.8	a	41.0	a	10138	c	2182	c	12319	d
3	10 seed/ft2 (22.3 lb/A)	7.5	de	107.3	a	91.3	a	39.8	a	10180	bc	2613	bc	12794	cd
4	15 seed/ft2 (34.9 lb/A)	11.7	cd	107.0	a	91.0	a	41.0	a	10375	abc	2978	ab	13353	bc
5	20 seed/ft2 (46.6 lb/A)	14.7	bc	105.5	abc	89.5	abc	40.5	a	10797	a	2954	ab	13752	ab
6	25 seed/ft2 (58.2 lb/A)	12.8	cd	103.5	c	87.5	c	40.8	a	10733	ab	3021	ab	13754	ab
7	30 seed/ft2 (69.9 lb/A)	16.9	abc	105.5	abc	89.5	abc	40.5	a	10855	a	3283	a	14138	a
8	35 seed/ft2 (81.5 lb/A)	21.0	a	104.0	bc	88.0	bc	39.3	a	10779	a	3130	ab	13909	ab
9	40 seed/ft2 (93.1 lb/A)	19.3	ab	103.5	c	87.5	c	39.3	a	10717	abc	3364	a	14080	a
LSD P=.05		5.35		2.39		2.39		2.09		593.4		648.9		714.5	
Standard Deviation		3.67		1.64		1.64		1.43		406.6		444.6		489.6	
CV		29.59		1.55		1.83		3.55		3.89		15.67		3.68	
Treatment F		11.837		3.233		3.233		0.918		5.058		4.562		13.835	
Treatment Prob(F)		0.0001		0.0122		0.0122		0.5186		0.0009		0.0018		0.0001	

Continued.

Table 51. Continued.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description						Yield Components									
Rating Type		WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed		Milling			
Rating Unit		grams		number		grams		grams		number		head		total	
Sample Size, Unit		1 m		1 m		1 m		1 m		1 m					
Collection Basis, Unit		2 rows		2 rows		2 rows		2 rows		2 rows					
Crop Stage Majority		Main		Main		Main		Main		Main		Main		Main	
Trt No.	Treatment Name														
1	5 seed/ft2 (11.6 lb/A)	376.9	a	64	d	164.2	a	37.85	a	1382	a	67.00	a	71.25	a
2	7.5 seed/ft2 (17.4 lb/A)	394.9	a	70	cd	168.0	a	35.31	ab	1333	a	68.25	a	71.25	a
3	10 seed/ft2 (22.3 lb/A)	416.9	a	79	bcd	178.7	a	32.82	abc	1251	ab	67.25	a	71.25	a
4	15 seed/ft2 (34.9 lb/A)	342.8	a	70	cd	139.6	a	29.78	abc	1162	abc	67.25	a	71.50	a
5	20 seed/ft2 (46.6 lb/A)	392.5	a	90	ab	161.6	a	25.11	c	985	bc	67.00	a	71.50	a
6	25 seed/ft2 (58.2 lb/A)	348.1	a	84	abc	141.9	a	31.02	abc	1161	abc	67.00	a	71.50	a
7	30 seed/ft2 (69.9 lb/A)	361.4	a	91	ab	154.5	a	24.68	c	938	c	67.50	a	71.50	a
8	35 seed/ft2 (81.5 lb/A)	358.1	a	90	ab	141.2	a	26.00	c	998	bc	67.75	a	71.25	a
9	40 seed/ft2 (93.1 lb/A)	375.9	a	99	a	145.4	a	28.14	bc	1037	bc	67.46	a	71.54	a
LSD P=.05		77.32		18.8		36.48		8.688		289.7		1.356		0.617	
Standard Deviation		52.98		12.9		24.99		5.953		198.5		0.927		0.422	
CV		14.16		15.76		16.12		19.79		17.44		1.38		0.59	
Treatment F		0.835		3.313		1.240		2.405		2.594		0.804		0.421	
Treatment Prob(F)		0.5810		0.0108		0.3193		0.0461		0.0338		0.6057		0.8967	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Seeding Rate and Plant Population in a Stale Seedbed for CLL15 – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-17

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 0.53
- **pH** ..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : See Treatment name / 0.5 inches
- **Emergence date** ..... : April 3
- **Harvest date** ..... : Aug. 13
- **Ratoon Harvest date** ..... : Nov. 12

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
150 lb N/A 46-0-0, May 22
90 lb N/A 46-0-0, August 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides** ..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides** ..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 52. Evaluation of seeding rate and plant population in a stale seedbed for CLL15. H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Rice Density		Plant-hd		Emer-hd		Tip of panicle							
Rating Date		4/17/2019						8/13/2019		8/13/2019		11/12/2019			
Rating Type		Stand Count		50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit		#/sq ft.		days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name														
1	5 seed/ft2 (11.6 lb/A)	3.5	d	108.3	a	92.3	a	40.8	ab	7292	a	2968	c	10261	b
2	7.5 seed/ft2 (17.4 lb/A)	5.1	d	107.8	a	91.8	a	42.0	a	8422	a	3363	abc	11785	a
3	10 seed/ft2 (22.3 lb/A)	6.5	cd	107.3	ab	91.3	ab	38.5	c	8408	a	3237	bc	11644	a
4	15 seed/ft2 (34.9 lb/A)	9.2	c	107.3	ab	91.3	ab	40.3	b	8616	a	3547	ab	12163	a
5	20 seed/ft2 (46.6 lb/A)	13.1	b	105.5	c	89.5	c	38.3	c	8329	a	3731	a	12060	a
6	25 seed/ft2 (58.2 lb/A)	13.4	b	106.0	bc	90.0	bc	38.5	c	8486	a	3735	a	12221	a
7	30 seed/ft2 (69.9 lb/A)	14.9	b	105.5	c	89.5	c	38.3	c	8257	a	3533	ab	11790	a
8	35 seed/ft2 (81.5 lb/A)	19.4	a	105.8	c	89.8	c	38.3	c	8321	a	3551	ab	11872	a
9	40 seed/ft2 (93.1 lb/A)	20.1	a	105.3	c	89.3	c	37.5	c	8090	a	3683	ab	11773	a
LSD P=.05		3.10		1.26		1.26		1.59		1099.1		455.9		939.4	
Standard Deviation		2.12		0.86		0.86		1.09		753.1		312.4		643.7	
CV		18.18		0.81		0.96		2.78		9.13		8.97		5.49	
Treatment F		32.165		6.771		6.771		7.547		1.056		2.644		3.296	
Treatment Prob(F)		0.0001		0.0001		0.0001		0.0001		0.4246		0.0311		0.0111	

Continued.

Table 52. Continued.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice	
Description					Yield Components						Milling		
Rating Type		WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed			
Rating Unit		grams		number		grams		grams		number		head	total
Sample Size, Unit		1 m		1 m		1 m		1 m		1 m			
Collection Basis, Unit		2 rows		2 rows		2 rows		2 rows		2 rows			
Crop Stage Majority		Main		Main		Main		Main		Main		Main	Main
Trt No.	Treatment Name												
1	5 seed/ft2 (11.6 lb/A)	395.8	a	90	bcd	139.5	a	18.03	a	850	a	55.75 a	70.50 a
2	7.5 seed/ft2 (17.4 lb/A)	306.1	a	73	d	96.6	a	14.50	a	703	a	57.00 a	70.25 a
3	10 seed/ft2 (22.3 lb/A)	319.7	a	83	cd	111.0	a	20.01	a	944	a	56.75 a	70.50 a
4	15 seed/ft2 (34.9 lb/A)	310.1	a	83	cd	105.3	a	16.63	a	781	a	54.75 a	70.00 a
5	20 seed/ft2 (46.6 lb/A)	294.9	a	90	bcd	93.2	a	13.38	a	630	a	55.75 a	70.25 a
6	25 seed/ft2 (58.2 lb/A)	351.2	a	116	ab	124.1	a	12.61	a	587	a	58.75 a	70.25 a
7	30 seed/ft2 (69.9 lb/A)	306.2	a	102	a-d	93.8	a	12.42	a	595	a	54.00 a	70.00 a
8	35 seed/ft2 (81.5 lb/A)	328.0	a	113	abc	111.9	a	13.57	a	642	a	58.00 a	70.25 a
9	40 seed/ft2 (93.1 lb/A)	368.8	a	128	a	100.8	a	11.28	a	545	a	57.75 a	69.50 a
LSD P=.05		77.15		30.1		33.09		6.083		265.8		4.418	1.616
Standard Deviation		52.87		20.6		22.67		4.168		182.1		3.027	1.108
CV		15.96		21.19		20.9		28.33		26.12		5.36	1.58
Treatment F		1.634		3.141		1.832		1.936		2.179		1.071	0.306
Treatment Prob(F)		0.1673		0.0141		0.1201		0.1007		0.0670		0.4152	0.9565

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Seeding Rate and Plant Population in a Stale Seedbed for RU1504197 – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-18

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : See Treatment name / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 13
- **Ratoon Harvest date**..... : Nov. 12

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
150 lb N/A 46-0-0, May 22
90 lb N/A 46-0-0, August 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 53. Evaluation of seeding rate and plant population in a stale seedbed for RU1504197. H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Rice Density		Plant-hd		Emer-hd		Tip of panicle							
Rating Date		4/17/2019						8/13/2019		8/13/2019		11/12/2019			
Rating Type		Stand Count		50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit		#/sq ft.		days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name														
1	5 seed/ft2 (11.6 lb/A)	1.2	e	112.8	ab	96.8	ab	39.5	a	6444	d	1556	d	8000	e
2	7.5 seed/ft2 (17.4 lb/A)	1.5	de	113.3	a	97.3	a	40.0	a	6976	cd	1947	cd	8923	de
3	10 seed/ft2 (22.3 lb/A)	2.6	cd	112.8	ab	96.8	ab	40.8	a	7865	bc	2173	bc	10038	cd
4	15 seed/ft2 (34.9 lb/A)	3.4	c	112.5	ab	96.5	ab	41.0	a	8250	ab	2446	ab	10695	bc
5	20 seed/ft2 (46.6 lb/A)	5.8	b	111.5	bc	95.5	bc	41.8	a	9276	a	2615	a	11891	a
6	25 seed/ft2 (58.2 lb/A)	4.8	b	112.0	abc	96.0	abc	41.0	a	8890	ab	2742	a	11632	ab
7	30 seed/ft2 (69.9 lb/A)	5.6	b	111.5	bc	95.5	bc	40.5	a	8511	ab	2823	a	11334	ab
8	35 seed/ft2 (81.5 lb/A)	7.5	a	110.8	c	94.8	c	39.8	a	8976	ab	2726	a	11702	ab
9	40 seed/ft2 (93.1 lb/A)	8.9	a	112.0	abc	96.0	abc	41.0	a	9096	a	2824	a	11920	a
LSD P=.05		1.43		1.27		1.27		2.03		1200.1		408.5		1128.1	
Standard Deviation		0.98		0.87		0.87		1.39		822.3		279.9		773.0	
CV		21.32		0.78		0.91		3.43		9.96		11.53		7.24	
Treatment F		29.398		3.220		3.220		1.062		5.774		10.156		13.444	
Treatment Prob(F)		0.0001		0.0125		0.0125		0.4207		0.0004		0.0001		0.0001	

Continued.

Table 53. Continued.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description						Yield Components									
Rating Type		WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed		Milling			
Rating Unit		grams		number		grams		grams		number		head		total	
Sample Size, Unit		1 m		1 m		1 m		1 m		1 m					
Collection Basis, Unit		2 rows		2 rows		2 rows		2 rows		2 rows					
Crop Stage Majority		Main		Main		Main		Main		Main		Main		Main	
Trt No.	Treatment Name														
1	5 seed/ft2 (11.6 lb/A)	338.6	a	72	a	119.1	a	19.29	a	907	a	56.25	a	69.75	a
2	7.5 seed/ft2 (17.4 lb/A)	312.0	a	63	a	106.1	a	21.88	a	1019	a	55.75	a	69.25	a
3	10 seed/ft2 (22.3 lb/A)	321.7	a	70	a	115.2	a	18.16	a	826	a	58.50	a	70.50	a
4	15 seed/ft2 (34.9 lb/A)	297.6	a	65	a	100.5	a	19.84	a	894	a	60.00	a	70.25	a
5	20 seed/ft2 (46.6 lb/A)	337.8	a	81	a	127.7	a	18.80	a	841	a	61.25	a	69.75	a
6	25 seed/ft2 (58.2 lb/A)	334.3	a	87	a	125.5	a	15.18	a	686	a	59.00	a	70.00	a
7	30 seed/ft2 (69.9 lb/A)	311.8	a	72	a	106.5	a	20.55	a	921	a	58.25	a	69.25	a
8	35 seed/ft2 (81.5 lb/A)	268.3	a	66	a	100.0	a	17.94	a	800	a	60.00	a	70.25	a
9	40 seed/ft2 (93.1 lb/A)	298.8	a	73	a	103.8	a	18.80	a	852	a	61.00	a	71.00	a
LSD P=.05		116.24		27.3		46.70		7.444		315.6		4.651		1.374	
Standard Deviation		79.65		18.7		32.00		5.101		216.2		3.187		0.942	
CV		25.41		25.96		28.67		26.94		25.13		5.41		1.35	
Treatment F		0.334		0.684		0.437		0.537		0.724		1.471		1.480	
Treatment Prob(F)		0.9442		0.7017		0.8867		0.8167		0.6690		0.2194		0.2161	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Seeding Rate and Plant Population in a Stale Seedbed for CLM04 – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-18

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.53
- **pH**..... : 7.48
- **Extractable nutrients** ppm ..... : Ca-1,623; Cu-0.25; Mg-296; P-7.1; K-67; Na-61; S-6.5; Zn-4.8

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : See Treatment name / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : Aug. 13
- **Ratoon Harvest date**..... : Nov. 12

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
150 lb N/A 46-0-0, May 22
90 lb N/A 46-0-0, August 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 23
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 54. Evaluation of seeding rate and plant population in a stale seedbed for CLM04. H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Rice Density		Plant-hd		Emer-hd		Tip of panicle											
Rating Date		4/17/2019						8/13/2019		8/13/2019		8/13/2019		8/13/2019		11/12/2019			
Rating Type		Stand Count		50% HD		50% HD		Height		Lodge				Yield		Yield		Total Yield	
Rating Unit		#/sq ft.		days		days		in		% plot		rate		lb/A		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name																		
1	5 seed/ft2 (11.6 lb/A)	2.7	f	113.3	a	97.3	a	44.3	a	0.0	a	0.0	a	9272	d	1792	a	11064	b
2	7.5 seed/ft2 (17.4 lb/A)	3.7	ef	113.0	a	97.0	a	43.5	a	0.0	a	0.0	a	9885	cd	2209	a	12094	a
3	10 seed/ft2 (22.3 lb/A)	5.0	de	112.8	a	96.8	a	43.3	a	0.0	a	0.0	a	9998	bc	2300	a	12298	a
4	15 seed/ft2 (34.9 lb/A)	6.4	d	112.3	a	96.3	a	44.8	a	5.0	a	1.3	a	10687	a	2084	a	12772	a
5	20 seed/ft2 (46.6 lb/A)	9.0	c	112.5	a	96.5	a	43.0	a	5.0	a	0.8	a	10500	abc	2261	a	12761	a
6	25 seed/ft2 (58.2 lb/A)	12.2	b	112.5	a	96.5	a	43.0	a	2.5	a	0.5	a	10254	abc	2184	a	12438	a
7	30 seed/ft2 (69.9 lb/A)	14.0	ab	112.3	a	96.3	a	44.5	a	5.0	a	1.3	a	10428	abc	2227	a	12655	a
8	35 seed/ft2 (81.5 lb/A)	14.1	a	112.5	a	96.5	a	42.5	a	2.5	a	0.8	a	10629	ab	1855	a	12484	a
9	40 seed/ft2 (93.1 lb/A)	15.8	a	113.0	a	97.0	a	40.5	a	5.0	a	1.3	a	10089	abc	2585	a	12674	a
LSD P=.05		1.89		0.79		0.79		2.97		7.33		1.65		647.1		577.6		830.0	
Standard Deviation		1.30		0.54		0.54		2.04		5.02		1.13		443.4		395.8		568.7	
CV		14.09		0.48		0.56		4.71		180.83		176.93		4.35		18.27		4.6	
Treatment F		58.380		1.688		1.688		1.583		0.853		0.935		4.020		1.441		3.545	
Treatment Prob(F)		0.0001		0.1531		0.1531		0.1823		0.5672		0.5067		0.0038		0.2307		0.0076	

Continued.

Table 54. Continued.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice	
Description					Yield Components								
Rating Type		WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed		Milling	
Rating Unit		grams		number		grams		grams		number		head	total
Sample Size, Unit		1 m		1 m		1 m		1 m		1 m			
Collection Basis, Unit		2 rows		2 rows		2 rows		2 rows		2 rows			
Crop Stage Majority		Main		Main		Main		Main		Main		Main	Main
Trt No.	Treatment Name												
1	5 seed/ft2 (11.6 lb/A)	455.5	a	89	a	179.8	a	23.09	a	934	a	67.75 a	70.75 a
2	7.5 seed/ft2 (17.4 lb/A)	412.8	a	80	a	159.6	a	21.37	a	859	a	67.00 a	70.50 a
3	10 seed/ft2 (22.3 lb/A)	374.7	a	74	a	135.1	a	20.97	a	819	a	67.75 a	71.00 a
4	15 seed/ft2 (34.9 lb/A)	377.5	a	83	a	145.3	a	20.15	a	836	a	67.00 a	70.75 a
5	20 seed/ft2 (46.6 lb/A)	361.4	a	80	a	141.4	a	20.35	a	835	a	67.75 a	71.00 a
6	25 seed/ft2 (58.2 lb/A)	420.6	a	97	a	152.1	a	17.39	a	692	a	68.75 a	71.25 a
7	30 seed/ft2 (69.9 lb/A)	335.3	a	77	a	118.5	a	20.62	a	829	a	67.25 a	70.50 a
8	35 seed/ft2 (81.5 lb/A)	378.1	a	101	a	135.9	a	14.38	a	562	a	67.00 a	70.75 a
9	40 seed/ft2 (93.1 lb/A)	344.8	a	97	a	117.1	a	16.73	a	673	a	67.50 a	70.75 a
LSD P=.05		96.63		20.8		40.54		6.405		269.0		2.116	1.046
Standard Deviation		66.21		14.3		27.78		4.389		184.3		1.450	0.717
CV		17.22		16.52		19.46		22.57		23.57		2.15	1.01
Treatment F		1.353		1.910		2.008		1.538		1.571		0.608	0.459
Treatment Prob(F)		0.2665		0.1052		0.0893		0.1963		0.1860		0.7622	0.8722

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Seeding Rate and Plant Population in a Stale Seedbed for PVL02 – Tensas Parish

Experiment number ..... : 19-SJ-14

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : See data sheet / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 150 lb N/A 46-0-0, June 4

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Comments: Yield components were not taken because of roundup drift and excessive grass.

Table 55. Evaluation of seeding rate and plant population in a stale seedbed for PVL02. Tensas Parish.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Rice Density		Plant-hd		Emer-hd		Tip of Panicle					
Rating Date		6/4/2019						9/4/2019		9/4/2019		9/4/2019	
Rating Type		Stand Count		50% HD		50% HD		Height		Moist		Yield	
Rating Unit		#/sq ft		days		days		in		%		lb/A	
Trt No.	Treatment Name												
1	5 seed/ft2 (11.6 lb/A)	8.1	a	93.0	a	88.0	a	43.0	a	17.5	a	6872	c
2	7.5 seed/ft2 (17.4 lb/A)	6.7	a	92.0	b	87.0	b	41.5	a	16.8	ab	8024	a
3	10 seed/ft2 (22.3 lb/A)	8.6	a	91.5	bc	86.5	bc	41.5	a	16.8	ab	7189	bc
4	15 seed/ft2 (34.9 lb/A)	11.7	a	91.0	c	86.0	c	41.3	a	16.2	bc	7888	ab
5	20 seed/ft2 (46.6 lb/A)	11.5	a	89.5	d	84.5	d	41.0	a	15.6	cd	7284	abc
6	25 seed/ft2 (58.2 lb/A)	11.6	a	89.0	d	84.0	d	40.3	a	15.6	cd	7703	ab
7	30 seed/ft2 (69.9 lb/A)	11.5	a	88.0	e	83.0	e	42.5	a	15.3	d	7357	abc
8	35 seed/ft2 (81.5 lb/A)	14.4	a	88.8	de	83.8	de	41.0	a	15.4	d	8019	a
9	40 seed/ft2 (93.1 lb/A)	14.6	a	89.3	d	84.3	d	41.3	a	15.4	d	7810	ab
LSD P=.05		6.39		0.92		0.92		3.12		0.79		776.1	
Standard Deviation		4.38		0.63		0.63		2.13		0.54		531.8	
CV		39.92		0.7		0.74		5.15		3.36		7.02	
Treatment F		1.552		29.281		29.281		0.596		8.278		2.376	
Treatment Prob(F)		0.1921		0.0001		0.0001		0.7718		0.0001		0.0483	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Seeding Rate and Plant Population in a Stale Seedbed for CLJ01 – Tensas Parish

Experiment number ..... : 19-SJ-15

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : See data sheet / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 150 lb N/A 46-0-0, June 4

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Comments: Yield components were not taken because of roundup drift and excessive grass.

Table 56. Evaluation of seeding rate and plant population in a stale seedbed for CLJ01. Tensas Parish.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Rice Density		Plant-hd		Emer-hd		Tip of Panicle					
Rating Date		6/4/2019						9/4/2019		9/4/2019		9/4/2019	
Rating Type		Stand Count		50% HD		50% HD		Height		Moist		Yield	
Rating Unit		#/sq ft		days		days		in		%		lb/A	
Trt No.	Treatment Name												
1	5 seed/ft2 (11.6 lb/A)	7.8	bcd	93.0	a	88.0	a	37.8	a	20.1	a	6767	c
2	7.5 seed/ft2 (17.4 lb/A)	5.6	d	92.0	b	87.0	b	38.5	a	19.5	ab	7128	bc
3	10 seed/ft2 (22.3 lb/A)	6.5	cd	91.0	cd	86.0	cd	39.3	a	18.4	bc	8308	a
4	15 seed/ft2 (34.9 lb/A)	9.5	abc	91.8	bc	86.8	bc	39.5	a	18.5	abc	7803	ab
5	20 seed/ft2 (46.6 lb/A)	8.4	bcd	90.3	de	85.3	de	38.8	a	16.9	c	7641	abc
6	25 seed/ft2 (58.2 lb/A)	9.3	abc	89.5	ef	84.5	ef	37.8	a	17.2	c	8249	a
7	30 seed/ft2 (69.9 lb/A)	8.1	bcd	89.3	f	84.3	f	36.8	a	17.1	c	8275	a
8	35 seed/ft2 (81.5 lb/A)	10.7	ab	89.8	ef	84.8	ef	37.0	a	17.1	c	7795	ab
9	40 seed/ft2 (93.1 lb/A)	12.3	a	89.5	ef	84.5	ef	37.8	a	17.1	c	7908	ab
LSD P=.05		3.63		0.81		0.81		2.15		1.63		921.2	
Standard Deviation		2.49		0.56		0.56		1.48		1.11		631.2	
CV		28.6		0.61		0.65		3.87		6.21		8.13	
Treatment F		2.678		22.970		22.970		1.667		4.501		2.796	
Treatment Prob(F)		0.0294		0.0001		0.0001		0.1583		0.0019		0.0243	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Seeding Rate and Plant Population in a Stale Seedbed for CLL15 – Tensas Parish

Experiment number ..... : 19-SJ-17

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : See data sheet / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 150 lb N/A 46-0-0, June 4

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Comments: Yield components were not taken because of roundup drift and excessive grass.

Table 57. Evaluation of seeding rate and plant population in a stale seedbed for CLL15. Tensas Parish.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Rice Density		Plant-hd		Emer-hd		Tip of Panicle					
Rating Date		6/4/2019						9/4/2019		9/4/2019		9/4/2019	
Rating Type		Stand Count		50% HD		50% HD		Height		Moist		Yield	
Rating Unit		#/sq ft		days		days		in		%		lb/A	
Trt No.	Treatment Name												
1	5 seed/ft2 (11.6 lb/A)	6.9	a	91.8	a	86.8	a	39.8	a	18.7	a	8134	c
2	7.5 seed/ft2 (17.4 lb/A)	5.6	a	89.8	c	84.8	c	39.5	a	17.6	a	8346	bc
3	10 seed/ft2 (22.3 lb/A)	8.2	a	91.5	ab	86.5	ab	30.3	a	18.9	a	8117	c
4	15 seed/ft2 (34.9 lb/A)	8.5	a	89.5	c	84.5	c	39.3	a	18.0	a	9003	abc
5	20 seed/ft2 (46.6 lb/A)	9.3	a	89.3	c	84.3	c	39.5	a	17.4	a	8731	abc
6	25 seed/ft2 (58.2 lb/A)	9.2	a	89.5	c	84.5	c	38.8	a	17.3	a	8468	abc
7	30 seed/ft2 (69.9 lb/A)	10.1	a	89.5	c	84.5	c	39.0	a	17.8	a	9312	ab
8	35 seed/ft2 (81.5 lb/A)	12.0	a	90.8	b	85.8	b	39.8	a	18.1	a	9349	a
9	40 seed/ft2 (93.1 lb/A)	9.9	a	89.3	c	84.3	c	38.8	a	17.6	a	9339	a
LSD P=.05		4.25		0.89		0.89		8.99		1.41		974.2	
Standard Deviation		2.91		0.61		0.61		6.16		0.96		667.5	
CV		32.97		0.68		0.72		16.09		5.37		7.62	
Treatment F		1.658		10.333		10.333		0.972		1.312		2.366	
Treatment Prob(F)		0.1609		0.0001		0.0001		0.4807		0.2848		0.0491	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Seeding Rate and Plant Population in a Stale Seedbed for RU1504197 – Tensas Parish

Experiment number ..... : 19-SJ-18

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter**..... : 1.86
- **pH**..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : See data sheet / NA
- **Emergence date**..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 150 lb N/A 46-0-0, June 4

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides**..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides**..... : None

Comments: Yield components were not taken because of roundup drift and excessive grass.

Table 58. Evaluation of seeding rate and plant population in a stale seedbed for RU1504197 - Tensas Parish.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Rice Density		Plant-hd		Emer-hd		Tip of Panicle					
Rating Date		6/4/2019						9/4/2019		9/4/2019		9/4/2019	
Rating Type		Stand Count		50% HD		50% HD		Height		Moist		Yield	
Rating Unit		#/sq ft		days		days		in		%		lb/A	
Trt No.	Treatment Name												
1	5 seed/ft2 (11.6 lb/A)	2.7	e	96.5	a	91.5	a	38.0	a	24.4	ab	7108	bc
2	7.5 seed/ft2 (17.4 lb/A)	3.5	de	96.8	a	91.8	a	39.5	a	25.3	a	6898	c
3	10 seed/ft2 (22.3 lb/A)	4.8	cde	97.0	a	92.0	a	38.3	a	23.4	bcd	8288	a
4	15 seed/ft2 (34.9 lb/A)	6.0	a-d	95.0	bc	90.0	bc	40.3	a	24.2	abc	8204	ab
5	20 seed/ft2 (46.6 lb/A)	6.1	a-d	95.0	bc	90.0	bc	37.3	a	23.8	a-d	8151	ab
6	25 seed/ft2 (58.2 lb/A)	5.3	b-e	94.3	d	89.3	d	38.5	a	22.8	bcd	8440	a
7	30 seed/ft2 (69.9 lb/A)	8.3	a	95.5	b	90.5	b	38.8	a	23.2	bcd	8732	a
8	35 seed/ft2 (81.5 lb/A)	7.5	abc	94.3	d	89.3	d	36.8	a	22.3	d	8551	a
9	40 seed/ft2 (93.1 lb/A)	7.8	ab	94.5	cd	89.5	cd	39.0	a	22.5	cd	8429	a
LSD P=.05		2.93		0.71		0.71		2.18		1.73		1122.0	
Standard Deviation		2.01		0.48		0.48		1.50		1.18		768.8	
CV		34.9		0.51		0.53		3.89		5.03		9.5	
Treatment F		3.672		20.050		20.050		2.081		2.764		2.795	
Treatment Prob(F)		0.0063		0.0001		0.0001		0.0790		0.0256		0.0244	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Seeding Rate and Plant Population in a Stale Seedbed for CLM04 – Tensas Parish

Experiment number ..... : 19-SJ-19

Site and design ..... :
- **Location/Cooperator** ..... : Tensas Parish / Warren Ratcliff
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Commerce silt loam / Sharkey clay
- **% organic matter** ..... : 1.86
- **pH** ..... : 5.95
- **Extractable nutrients** ppm ..... : Ca-4,304; Cu-5.9; Mg-877; P-87; K-290; Na-59; S-9.4; Zn-3.3

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / May 1
- **Seeding rate/depth** ..... : See data sheet / NA
- **Emergence date** ..... : May 6
- **Harvest date** ..... : Sept. 4

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 150 lb N/A 46-0-0, June 4

Water management ..... : Surface water irrigation
- **Flush** ..... : Data not available
- **Flood** ..... : June 5
- **Drain** ..... : Aug. 22

Pest management ..... :
- **Herbicides** ..... : 2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + 0.2 oz/A Gambit, May 28
  4 qt/A Stam + 0.75 oz/A Permit, June 4
  18 oz/A Rebel EX + 1% COC, June 18
- **Insecticides** ..... : None
- **Fungicides** ..... : None

Comments: Yield components were not taken because of roundup drift and excessive grass.

Table 59. Evaluation of seeding rate and plant population in a stale seedbed for CLM04. Tensas Parish.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Rice Density		Plant-hd		Emer-hd		Tip of Panicle					
Rating Date		6/4/2019						9/4/2019		9/4/2019		9/4/2019	
Rating Type		Stand Count		50% HD		50% HD		Height		Moist		Yield	
Rating Unit		#/sq ft		days		days		in		%		lb/A	
Trt No.	Treatment Name												
1	5 seed/ft2 (11.6 lb/A)	4.7	c	93.5	d	88.5	d	39.3	a	23.3	a	7213	abc
2	7.5 seed/ft2 (17.4 lb/A)	5.3	c	93.8	cd	88.8	cd	39.5	a	22.3	a	6851	bc
3	10 seed/ft2 (22.3 lb/A)	6.9	bc	93.8	cd	88.8	cd	41.0	a	22.3	a	6612	c
4	15 seed/ft2 (34.9 lb/A)	8.3	bc	94.0	bcd	89.0	bcd	40.8	a	22.8	a	8085	a
5	20 seed/ft2 (46.6 lb/A)	7.9	bc	94.5	ab	89.5	ab	40.5	a	22.2	a	7795	ab
6	25 seed/ft2 (58.2 lb/A)	9.9	ab	94.3	abc	89.3	abc	39.8	a	21.7	a	7699	abc
7	30 seed/ft2 (69.9 lb/A)	7.7	bc	94.5	ab	89.5	ab	41.3	a	22.4	a	8155	a
8	35 seed/ft2 (81.5 lb/A)	12.2	a	94.3	abc	89.3	abc	40.5	a	22.9	a	8109	a
9	40 seed/ft2 (93.1 lb/A)	9.9	ab	94.8	a	89.8	a	40.5	a	22.7	a	8330	a
LSD P=.05		3.74		0.72		0.72		2.58		0.99		1150.4	
Standard Deviation		2.56		0.49		0.49		1.77		0.68		788.2	
CV		31.72		0.52		0.55		4.38		3.03		10.3	
Treatment F		3.363		2.885		2.885		0.600		1.918		2.453	
Treatment Prob(F)		0.0100		0.0211		0.0211		0.7685		0.1039		0.0425	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

CLXL745 Response to Nitrogen Fertilizer Rate Using Furrow Irrigation – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-34A

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.50
- **pH**..... : 7.77
- **Extractable nutrients** ppm ..... : Ca-1,715; Cu-0.51; Mg-380; P-4.1; K-86; Na-64; S-6.7; Zn-3.2

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 19
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 8
- **Ratoon Harvest date**..... : Nov. 14

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : NA
- **Drain** ..... : July 24
- **Ratoon flood** ..... : NA
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 60. CLXL745 response to N fertilizer rate using furrow irrigation. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								8/8/2019		8/8/2019		11/14/2019		
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	UREA	0	4-5 leaf	97.5	b	81.5	b	29.0	b	4145	b	904	bcd	5050	c
2	UREA	90	4-5 leaf	98.5	a	82.5	a	34.8	a	7884	a	561	d	8445	b
3	UREA	120	4-5 leaf	98.5	a	82.5	a	34.5	a	7808	a	780	cd	8587	b
4	UREA	150	4-5 leaf	98.5	a	82.5	a	35.8	a	8294	a	1057	abc	9351	ab
5	UREA	180	4-5 leaf	98.8	a	82.8	a	35.8	a	8461	a	1441	a	9902	a
6	UREA	210	4-5 leaf	99.0	a	83.0	a	35.5	a	8038	a	1228	ab	9266	ab
LSD P=.05				0.71		0.71		3.26		747.5		404.3		1005.4	
Standard Deviation				0.47		0.47		2.16		496.0		268.3		667.1	
CV				0.48		0.57		6.32		6.67		26.96		7.91	
Treatment F				4.747		4.747		5.806		43.307		5.553		27.268	
Treatment Prob(F)				0.0085		0.0085		0.0035		0.0001		0.0043		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

CLXL745 Response to Nitrogen Fertilizer Application Timing
Using Furrow Irrigation – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-34B

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.50
- **pH**..... : 7.77
- **Extractable nutrients** ppm ..... : Ca-1,715; Cu-0.51; Mg-380; P-4.1; K-86; Na-64; S-6.7; Zn-3.2

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 19
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 8
- **Ratoon Harvest date**..... : Nov. 14

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : NA
- **Drain** ..... : July 24
- **Ratoon flood** ..... : NA
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 61. CLXL745 response to N fertilizer application timing using furrow irrigation. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/8/2019		8/8/2019		11/14/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	No N			96.5	b	81.5	b	29.5	b	4246	c	1130	a	5375	b
2	Single N 138/A	138	4-5 Leaf	97.3	ab	82.3	ab	37.0	a	8400	b	833	bc	9232	a
3	2-Split N 69/A	69	4-5 Leaf	97.3	ab	82.3	ab	38.3	a	8660	ab	634	c	9293	a
	2-Split N 69/A	69	4-5 Leaf+21d												
4	3-Split N 46/A	46	4-5 Leaf	98.0	a	83.0	a	37.3	a	8568	ab	702	bc	9270	a
	3-Split N 46/A	46	4-5 Leaf+7d												
	3-Split N 46/A	46	4-5 Leaf+14d												
5	4-Split N 34.5/A	34.5	4-5 Leaf	97.8	a	82.8	a	37.3	a	8796	ab	636	c	9432	a
	4-Split N 34.5/A	34.5	4-5 Leaf+7d												
	4-Split N 34.5/A	34.5	4-5 Leaf+14d												
	4-Split N 34.5/A	34.5	4-5 Leaf+21d												
6	Single N 184/A	184	4-5 Leaf	98.0	a	83.0	a	37.5	a	8533	ab	941	ab	9474	a
7	2-Split N 92/A	92	4-5 Leaf	97.5	a	82.5	a	39.3	a	9471	a	742	bc	10213	a
	2-Split N 92/A	92	4-5 Leaf+21d												
8	3-Split N 61.3/A	61.3	4-5 Leaf	97.8	a	82.8	a	38.5	a	9161	ab	708	bc	9869	a
	3-Split N 61.3/A	61.3	4-5 Leaf+7d												
	3-Split N 61.3/A	61.3	4-5 Leaf+14d												
9	4-Split N 46/A	46	4-5 Leaf	97.5	a	82.5	a	39.3	a	9017	ab	767	bc	9785	a
	4-Split N 46/A	46	4-5 Leaf+7d												
	4-Split N 46/A	46	4-5 Leaf+14d												
	4-Split N 46/A	46	4-5 Leaf+21d												
LSD P=.05				0.81		0.81		3.13		1068.2		274.0		1106.8	
Standard Deviation				0.56		0.56		2.15		732.0		187.8		758.4	
CV				0.57		0.68		5.79		8.8		23.82		8.33	
Treatment F				2.821		2.821		7.645		18.267		2.913		14.350	
Treatment Prob(F)				0.0234		0.0234		0.0001		0.0001		0.0202		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Nitrogen Fertilizer in Furrow Irrigated Rice Production System – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-34C

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type**..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.50
- **pH**..... : 7.77
- **Extractable nutrients** ppm ..... : Ca-1,715; Cu-0.51; Mg-380; P-4.1; K-86; Na-64; S-6.7; Zn-3.2

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 19
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 8
- **Ratoon Harvest date**..... : Nov. 14

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : NA
- **Drain** ..... : July 24
- **Ratoon flood** ..... : NA
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 62. Evaluation of Nitrogen Fertilizer in Furrow Irrigated Rice Production System. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/8/2019		8/8/2019		11/14/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	0 N			97.8	a	81.8	a	29.3	b	3544	d	1184	a	4728	c
2	UREA + NBPT	138	PF	98.5	a	82.5	a	37.5	a	8639	b	614	bc	9253	a
3	UREA + NBPT	69	PF	98.0	a	82.0	a	38.5	a	8676	b	671	bc	9346	a
	UREA + NBPT	69	PF + 3 WKS												
4	UREA + NBPT	103	PF	97.8	a	81.8	a	39.0	a	8713	ab	661	bc	9374	a
	UREA + NBPT	25	PF + 3 WKS												
5	UREA + NBPT	46	PF	97.3	a	81.3	a	36.5	a	9034	ab	728	b	9762	a
	UREA + NBPT	46	PF + 1 WK												
	UREA + NBPT	46	PF + 3 WKS												
6	UREA + NBPT	97	PF	97.8	a	81.8	a	38.0	a	7678	c	687	bc	8340	b
7	SUPER U	138	PF	98.8	a	82.8	a	38.5	a	8844	ab	518	c	9362	a
8	SUPER U	69	PF	98.3	a	82.3	a	38.5	a	8952	ab	717	b	9670	a
	SUPER U	69	PF + 3 WKS												
9	SUPER U	103	PF	98.0	a	82.0	a	38.3	a	8826	ab	559	bc	9385	a
	SUPER U	25	PF + 3 WKS												
10	SUPER U	46	PF	98.3	a	82.3	a	38.0	a	9216	a	632	bc	9848	a
	SUPER U	46	PF + 1 WK												
	SUPER U	46	PF + 3 WKS												
11	SUPER U	97	PF	98.5	a	82.5	a	36.8	a	7809	c	518	c	8335	b
LSD P=.05				0.86		0.86		3.19		519.5		188.5		605.6	
Standard Deviation				0.60		0.60		2.21		358.6		130.6		418.1	
CV				0.61		0.73		5.94		4.39		19.18		4.72	
Treatment F				2.128		2.128		6.125		80.475		7.796		48.605	
Treatment Prob(F)				0.0538		0.0538		0.0001		0.0001		0.0001		0.0001	

Continued.

Table 62. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				50% HD		50% HD							
Part Rated				Abvgrd -						Milling			
Rating Type				biomass-dry		% N		N uptake		Head		Total	
Rating Unit				lb/A				lb/A		%		%	
Crop Stage Majority				Main		Main		Main		Main		Main	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	0 N			2478	b	0.87	d	21	b	60.0	e	72.3	f
2	UREA + NBPT	138	PF	6163	a	1.75	bc	110	a	66.0	abc	73.8	cde
3	UREA + NBPT	69	PF	5038	a	1.93	ab	97	a	66.3	ab	74.0	bcd
	UREA + NBPT	69	PF + 3 WKS										
4	UREA + NBPT	103	PF	5758	a	1.58	c	88	a	65.8	abc	73.8	cde
	UREA + NBPT	25	PF + 3 WKS										
5	UREA + NBPT	46	PF	6402	a	1.80	abc	114	a	67.0	ab	74.0	bcd
	UREA + NBPT	46	PF + 1 WK										
	UREA + NBPT	46	PF + 3 WKS										
6	UREA + NBPT	97	PF	5624	a	1.57	c	91	a	63.3	d	73.1	e
7	SUPER U	138	PF	5195	a	1.89	ab	105	a	65.3	bc	74.3	abc
8	SUPER U	69	PF	5112	a	2.06	a	104	a	67.3	a	74.8	a
	SUPER U	69	PF + 3 WKS										
9	SUPER U	103	PF	6641	a	1.78	bc	118	a	66.3	ab	73.8	cde
	SUPER U	25	PF + 3 WKS										
10	SUPER U	46	PF	5543	a	1.88	ab	104	a	66.8	ab	74.5	ab
	SUPER U	46	PF + 1 WK										
	SUPER U	46	PF + 3 WKS										
11	SUPER U	97	PF	5801	a	1.66	bc	93	a	64.3	cd	73.4	de
LSD P=.05				1831.0		0.2693		35.7		1.85		0.67	
Standard Deviation				1267.9		0.1862		24.7		1.28		0.46	
CV				23.34		10.92		25.94		1.95		0.63	
Treatment F				3.053		11.360		4.499		10.890		8.671	
Treatment Prob(F)				0.0087		0.0001		0.0007		0.0001		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

CL153 Response to Nitrogen Fertilizer Rate Using
Furrow Irrigation – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-34D

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.50
- **pH**..... : 7.77
- **Extractable nutrients** ppm ..... : Ca-1,715; Cu-0.51; Mg-380; P-4.1; K-86; Na-64; S-6.7; Zn-3.2

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 19
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 8
- **Ratoon Harvest date**..... : Nov. 15

Seed treatment/cwt ..... **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : NA
- **Drain** ..... : July 24
- **Ratoon flood** ..... : NA
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 63. CL153 response to N fertilizer rate using furrow irrigation. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								8/8/2019		8/8/2019		11/15/2019	
Rating Type				50% HD		50% HD		Height		Yield		Yield	Total Yield
Rating Unit				days		days		in		lb/A		lb/A	lb/A
Crop Stage Majority				Main		Main		Main		Main		Ratoon	MC+RC
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	UREA	0	4-5 leaf	102.3	b	87.3	b	23.8	c	2822	b	828 a	3649 c
2	UREA	90	4-5 leaf	103.5	a	88.5	a	30.0	b	6504	a	894 a	7398 b
3	UREA	120	4-5 leaf	103.3	a	88.3	a	30.8	ab	6857	a	852 a	7709 ab
4	UREA	150	4-5 leaf	103.3	a	88.3	a	30.0	b	6982	a	963 a	7944 ab
5	UREA	180	4-5 leaf	103.8	a	88.8	a	30.5	ab	6823	a	1079 a	7902 ab
6	UREA	210	4-5 leaf	103.8	a	88.8	a	32.0	a	7124	a	1195 a	8320 a
LSD P=.05				0.87		0.87		1.89		686.2		257.9	725.9
Standard Deviation				0.57		0.57		1.25		455.3		171.1	481.6
CV				0.56		0.65		4.24		7.36		17.67	6.73
Treatment F				3.756		3.756		21.638		53.221		2.807	52.400
Treatment Prob(F)				0.0210		0.0210		0.0001		0.0001		0.0553	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

CL153 Response to Nitrogen Fertilizer Application Timing
Using Furrow Irrigation – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-34E

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.50
- **pH**..... : 7.77
- **Extractable nutrients** ppm ..... : Ca-1,715; Cu-0.51; Mg-380; P-4.1; K-86; Na-64; S-6.7; Zn-3.2

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 19
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 8
- **Ratoon Harvest date**..... : Nov. 15

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : NA
- **Drain** ..... : July 24
- **Ratoon flood** ..... : NA
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 64. CL153 response to N fertilizer application timing using furrow irrigation. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/8/2019		8/8/2019		11/15/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	No N			102.5	a	87.5	a	24.5	e	2584	d	958	abc	3542	d
2	Single N 138/A	138	4-5 Leaf	102.5	a	87.5	a	30.5	ab	6863	abc	1005	a	7868	abc
3	2-Split N 69/A	69	4-5 Leaf	102.3	a	87.3	a	31.0	ab	6635	c	641	de	7277	c
	2-Split N 69/A	69	4-5 Leaf+21d												
4	3-Split N 46/A	46	4-5 Leaf	102.3	a	87.3	a	28.3	d	6783	bc	737	cde	7520	bc
	3-Split N 46/A	46	4-5 Leaf+7d												
	3-Split N 46/A	46	4-5 Leaf+14d												
5	4-Split N 34.5/A	34.5	4-5 Leaf	101.8	a	86.8	a	28.8	cd	7352	abc	582	e	7934	abc
	4-Split N 34.5/A	34.5	4-5 Leaf+7d												
	4-Split N 34.5/A	34.5	4-5 Leaf+14d												
	4-Split N 34.5/A	34.5	4-5 Leaf+21d												
6	Single N 184/A	184	4-5 Leaf	103.0	a	88.0	a	31.5	ab	7299	abc	978	ab	8277	ab
7	2-Split N 92/A	92	4-5 Leaf	102.5	a	87.5	a	30.5	ab	7488	ab	749	b-e	8237	ab
	2-Split N 92/A	92	4-5 Leaf+21d												
8	3-Split N 61.3/A	61.3	4-5 Leaf	102.5	a	87.5	a	30.0	bc	7632	a	797	a-e	8429	a
	3-Split N 61.3/A	61.3	4-5 Leaf+7d												
	3-Split N 61.3/A	61.3	4-5 Leaf+14d												
9	4-Split N 46/A	46	4-5 Leaf	102.5	a	87.5	a	31.8	a	6861	abc	823	a-d	7684	abc
	4-Split N 46/A	46	4-5 Leaf+7d												
	4-Split N 46/A	46	4-5 Leaf+14d												
	4-Split N 46/A	46	4-5 Leaf+21d												
LSD P=.05				0.82		0.82		1.65		815.7		229.1		810.7	
Standard Deviation				0.56		0.56		1.13		559.0		157.0		555.5	
CV				0.55		0.64		3.81		8.46		19.43		7.49	
Treatment F				1.380		1.380		15.882		30.742		3.611		29.204	
Treatment Prob(F)				0.2550		0.2550		0.0001		0.0001		0.0069		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of ProGibb Application Timing on Main and Ratoon Crop Yield with and without Stubble Management – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-21

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.55
- **pH**..... : 7.38
- **Extractable nutrients** ppm ..... : Ca-1,654; Cu-0.54; Mg-278; P-9.6; K-64; Na-39; S-6.1; Zn-4.5

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 7
- **Ratoon Harvest date**..... : Nov. 13

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
120 lb N/A 46-0-0, May 23
90 lb N/A 46-0-0, Aug. 15

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 24
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 65. Evaluation of ProGibb application timing on main and ratoon crop yield with and without stubble management. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/7/2019		8/7/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage												
1	Normal cut (16 inch) Without ProGibb			101.0	a	85.0	a	37.3	a	8615	a	2829	c	11444	b
2	Normal cut (16 inch) ProGibb 4 oz	4	Softdough	101.0	a	85.0	a	37.5	a	8396	a	3123	c	11519	b
3	Normal cut (16 inch) ProGibb 6 oz	6	Softdough	101.0	a	85.0	a	36.5	a	8463	a	3015	c	11478	b
4	Bush hog (8 inch) Without ProGibb			101.0	a	85.0	a	37.3	a	8176	a	3610	b	11786	b
5	Bush hog (8 inch) ProGibb 4 oz	4	Softdough	101.0	a	85.0	a	37.5	a	9240	a	4126	a	13366	a
6	Bush hog (8 inch) ProGibb 6 oz	6	Softdough	101.0	a	85.0	a	37.3	a	9020	a	3956	a	12976	a
LSD P=.05				.		.		1.59		821.3		330.7		869.3	
Standard Deviation				0.00		0.00		1.06		545.0		219.4		576.8	
CV				0.0		0.0		2.84		6.3		6.37		4.77	
Treatment F				0.000		0.000		0.484		2.183		23.615		8.715	
Treatment Prob(F)				1.0000		1.0000		0.7830		0.1108		0.0001		0.0005	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 66. Two-way comparison of evaluation of ProGibb application timing on main and ratoon crop yield with and without stubble management. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/7/2019		8/7/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage												
TABLE OF A (Stubble height) MEANS															
1	Normal cut (16 inch)			101.0	a	85.0	a	37.1	a	8491	a	2989	b	11480	b
2	Bush hog (8 inch)			101.0	a	85.0	a	37.3	a	8812	a	3897	a	12709	a
P				N/A		N/A		0.6		0.17		0.0001		0.0001	
LSD P=.05				N/A		N/A		0.92		474.2		190.9		501.9	
TABLE OF B (Pesticide) MEANS															
1	Without ProGibb			101.0	a	85.0	a	37.3	a	8395	a	3219	b	11615	b
2	ProGibb 4 oz	4	Softdough	101.0	a	85.0	a	37.5	a	8818	a	3625	a	12443	a
3	ProGibb 6 oz	6	Softdough	101.0	a	85.0	a	36.9	a	8742	a	3485	a	12227	ab
P				N/A		N/A		0.5		0.2853		0.0069		0.0307	
LSD P=.05				N/A		N/A		1.13		580.8		233.8		614.7	

Continued.

Table 66. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/7/2019		8/7/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
TABLE OF A (Stubble height) B (Pesticide) MEANS															
1	Normal cut (16 inch)			101.0	a	85.0	a	37.3	a	8615	a	2829	a	11444	b
1	Without ProGibb														
2	Bush hog (8 inch)			101.0	a	85.0	a	37.3	a	8176	a	3610	a	11786	b
1	Without ProGibb														
1	Normal cut (16 inch)			101.0	a	85.0	a	37.5	a	8396	a	3123	a	11519	b
2	ProGibb 4 oz	4	Softdough												
2	Bush hog (8 inch)			101.0	a	85.0	a	37.5	a	9240	a	4126	a	13366	a
2	ProGibb 4 oz	4	Softdough												
1	Normal cut (16 inch)			101.0	a	85.0	a	36.5	a	8463	a	3015	a	11478	b
3	ProGibb 6 oz	6	Softdough												
2	Bush hog (8 inch)			101.0	a	85.0	a	37.3	a	9020	a	3956	a	12976	a
3	ProGibb 6 oz	6	Softdough												
P				N/A		N/A		0.7206		0.0771		0.5914		0.0484	
LSD P=.05				N/A		N/A		1.59		821.3		330.7		869.3	
Standard Deviation				0.00		0.00		1.06		545.0		219.4		576.8	
CV				0.00		0.00		2.84		6.3		6.4		4.8	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of ProGibb Application Timing on Main and Ratoon Crop Yield of CL153 – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-22

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.55
- **pH**..... : 7.38
- **Extractable nutrients** ppm ..... : Ca-1,654; Cu-0.54; Mg-278; P-9.6; K-64; Na-39; S-6.1; Zn-4.5

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 7
- **Ratoon Harvest date**..... : Nov. 13

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
120 lb N/A 46-0-0, May 23
90 lb N/A 46-0-0, Aug. 15

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 24
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 67. Evaluation of ProGibb application timing on main and ratoon crop yield of CL153. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/7/2019		8/7/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage												
1	Without ProGibb			101.0	a	85.0	a	36.5	a	8433	a	3058	a	11490	a
2	ProGibb 4 oz @ Milk	4	Milk	101.0	a	85.0	a	37.5	a	8247	a	3231	a	11478	a
3	ProGibb 4 oz @ soft dough	4	Soft dough	101.0	a	85.0	a	36.0	a	9011	a	3005	a	12016	a
4	ProGibb 4 oz @ drain	4	Drain	101.0	a	85.0	a	36.0	a	8938	a	2892	a	11829	a
5	ProGibb 4 oz @ after harvest	4	2 WAHarvest	101.0	a	85.0	a	37.3	a	8024	a	3140	a	11164	a
6	ProGibb 4 oz @ soft dough	4	Soft dough	101.0	a	85.0	a	36.5	a	8594	a	3280	a	11874	a
	Karate	2	Soft dough												
LSD P=.05				.		.		1.97		911.5		386.1		1041.3	
Standard Deviation				0.00		0.00		1.31		604.8		256.2		690.9	
CV				0.0		0.0		3.57		7.08		8.26		5.93	
Treatment F				0.000		0.000		0.922		1.634		1.287		0.850	
Treatment Prob(F)				1.0000		1.0000		0.4936		0.2112		0.3206		0.5360	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of ProGibb Application Timing on Main and Ratoon Crop Yield of PVL01 – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-23

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.55
- **pH**..... : 7.38
- **Extractable nutrients** ppm ..... : Ca-1,654; Cu-0.54; Mg-278; P-9.6; K-64; Na-39; S-6.1; Zn-4.5

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date**..... : Nov. 13

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
120 lb N/A 46-0-0, May 23
90 lb N/A 46-0-0, Aug. 15

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 24
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 68. Evaluation of ProGibb application timing on main and ratoon crop yield of PVL01. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/12/2019		8/12/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage												
1	Without ProGibb			116.0	a	100.0	a	38.5	a	7128	a	3482	bc	10610	a
2	ProGibb 4 oz @ Milk	4	Milk	116.0	a	100.0	a	37.5	a	7061	a	3636	ab	10697	a
3	ProGibb 4 oz @ soft dough	4	Soft dough	116.0	a	100.0	a	37.8	a	7070	a	3471	bc	10540	a
4	ProGibb 4 oz @ drain	4	Drain	116.0	a	100.0	a	37.8	a	7175	a	3227	c	10403	a
5	ProGibb 4 oz @ after harvest	4	2 WAHarvest	116.0	a	100.0	a	38.3	a	7548	a	3452	bc	11000	a
6	ProGibb 4 oz @ soft dough	4	Soft dough	116.0	a	100.0	a	38.8	a	7258	a	3854	a	11111	a
	Karate	2	Soft dough												
LSD P=.05				.		.		1.53		450.1		336.9		650.0	
Standard Deviation				0.00		0.00		1.02		298.6		223.5		431.3	
CV				0.0		0.0		2.67		4.14		6.35		4.02	
Treatment F				0.000		0.000		0.935		1.489		3.506		1.621	
Treatment Prob(F)				1.0000		1.0000		0.4859		0.2513		0.0268		0.2148	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of ProGibb Application Timing on Main and Ratoon Crop Yield with and without Stubble Management – Calcasieu Parish

Experiment number ..... : 19-CP-21

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.52
- **pH**..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inch
- **Emergence date**..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date**..... : Nov. 19

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 28
120 lb N/A 46-0-0, May 17
90 lb N/A 46-0-0, Aug. 19

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood**..... : Aug. 20
- **Ratoon Drain**..... : Oct. 19

Pest management ..... :
- **Herbicides**..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides**..... : No blanket applications

Table 69. Evaluation of ProGibb application timing on main and ratoon crop yield with and without stubble management - Calcasieu Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/16/2019		11/19/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage												
1	Normal cut (16 inch) Without ProGibb			97.0	a	80.0	a	37.8	a	6513	a	1823	bc	8336	b
2	Normal cut (16 inch) ProGibb 4 oz	4	Softdough	97.0	a	80.0	a	38.8	a	6511	a	1675	cd	8186	bc
3	Normal cut (16 inch) ProGibb 6 oz	6	Softdough	96.5	a	79.5	a	37.3	a	6223	a	1466	d	7690	c
4	Bush hog (8 inch) Without ProGibb			96.8	a	79.8	a	39.0	a	6393	a	2105	a	8498	ab
5	Bush hog (8 inch) ProGibb 4 oz	4	Softdough	97.3	a	80.3	a	35.8	a	6810	a	2150	a	8960	a
6	Bush hog (8 inch) ProGibb 6 oz	6	Softdough	96.8	a	79.8	a	40.0	a	6246	a	1965	ab	8212	bc
LSD P=.05				0.65		0.65		3.84		528.4		267.0		613.9	
Standard Deviation				0.43		0.43		2.55		350.6		177.2		407.3	
CV				0.45		0.54		6.68		5.44		9.5		4.9	
Treatment F				1.478		1.478		1.384		1.519		8.818		4.188	
Treatment Prob(F)				0.2549		0.2549		0.2852		0.2426		0.0005		0.0139	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 70. Two-way comparison of evaluation of ProGibb application timing on main and ratoon crop yield with and without stubble management. Calcasieu Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/16/2019		11/19/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC+RC	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage												
TABLE OF A (Stubble height) MEANS															
1	Normal cut (16 inch)			96.8	a	79.8	a	37.9	a	6416	a	1655	b	8070	b
2	Bush hog (8 inch)			96.9	a	79.9	a	38.3	a	6483	a	2074	a	8557	a
P				0.6429		0.6429		0.7528		0.6448		0.0001		0.0105	
LSD P=.05				0.38		0.38		2.21		305.1		154.2		354.5	
TABLE OF B (Pesticide) MEANS															
1	Without ProGibb			96.9	a	79.9	a	38.4	a	6453	a	1964	a	8417	a
2	ProGibb 4 oz	4	Softdough	97.1	a	80.1	a	37.3	a	6661	a	1912	a	8573	a
3	ProGibb 6 oz	6	Softdough	96.6	a	79.6	a	38.6	a	6235	a	1716	b	7951	b
P				0.1006		0.1006		0.5300		0.0832		0.0319		0.0210	
LSD P=.05				0.46		0.46		2.71		373.7		188.8		434.1	

Continued.

Table 70. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle					
Rating Date								8/13/2019		8/16/2019		11/19/2019	
Rating Type				50% HD		50% HD		Height		Yield		Yield	Total Yield
Rating Unit				days		days		in		lb/A		lb/A	lb/A
Crop Stage Majority				Main		Main		Main		Main		Ratoon	MC+RC
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage										
TABLE OF A (Stubble height) B (Pesticide) MEANS													
1	Normal cut (16 inch)			97.0	a	80.0	a	37.8	a	6513	a	1823	a	8336	a
1	Without ProGibb														
2	Bush hog (8 inch)			96.8	a	79.8	a	39.0	a	6393	a	2105	a	8498	a
1	Without ProGibb														
1	Normal cut (16 inch)			97.0	a	80.0	a	38.8	a	6511	a	1675	a	8186	a
2	ProGibb 4 oz	4	Softdough												
2	Bush hog (8 inch)			97.3	a	80.3	a	35.8	a	6810	a	2150	a	8960	a
2	ProGibb 4 oz	4	Softdough												
1	Normal cut (16 inch)			96.5	a	79.5	a	37.3	a	6223	a	1466	a	7690	a
3	ProGibb 6 oz	6	Softdough												
2	Bush hog (8 inch)			96.8	a	79.8	a	40.0	a	6246	a	1965	a	8212	a
3	ProGibb 6 oz	6	Softdough												
P				0.4291		0.4291		0.0963		0.4945		0.4277		0.3456	
LSD P=.05				0.65		0.65		3.84		528.4		267.0		613.9	
Standard Deviation				0.43		0.43		2.55		350.6		177.2		407.3	
CV				0.45		0.54		6.68		5.4		9.5		4.9	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of ProGibb Application Timing on Main and Ratoon Crop Yield of CL153 – Calcasieu Parish

Experiment number ..... : 19-CP-22

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.52
- **pH**..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inch
- **Emergence date**..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date**..... : Nov. 19

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 28
120 lb N/A 46-0-0, May 17
90 lb N/A 46-0-0, Aug. 19

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood**..... : Aug. 20
- **Ratoon Drain**..... : Oct. 19

Pest management ..... :
- **Herbicides**..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides**..... : No blanket applications

Table 71. Evaluation of ProGibb application timing on main and ratoon crop yield of CL153. Calcasieu Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/13/2019		8/16/2019		11/19/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage												
1	Without ProGibb			97.0	a	80.0	a	38.5	a	6577	a	1731	b	8308	a
2	ProGibb 4 oz @ Milk	4	Milk	96.8	a	79.8	a	39.0	a	6380	a	2079	a	8458	a
3	ProGibb 4 oz @ soft dough	4	Soft dough	97.0	a	80.0	a	38.0	a	6501	a	1668	b	8170	a
4	ProGibb 4 oz @ drain	4	Drain	97.3	a	80.3	a	39.0	a	6564	a	1650	b	8215	a
5	ProGibb 4 oz @ after harvest	4	2 WAHarvest	97.0	a	80.0	a	38.5	a	6675	a	1689	b	8364	a
6	ProGibb 4 oz @ soft dough	4	Soft dough	96.8	a	79.8	a	38.8	a	6482	a	2119	a	8602	a
	Karate	2	Soft dough												
LSD P=.05				0.72		0.72		2.15		675.2		304.6		766.1	
Standard Deviation				0.48		0.48		1.43		448.0		202.1		508.3	
CV				0.5		0.6		3.7		6.86		11.09		6.09	
Treatment F				0.614		0.614		0.282		0.200		4.571		0.396	
Treatment Prob(F)				0.6907		0.6907		0.9160		0.9576		0.0099		0.8442	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Stubble Management and Nitrogen Rate for Ratoon Crop of Long-Grain Rice Varieties CL153, CLXL745, and Mermentau – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-24

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.55
- **pH**..... : 7.38
- **Extractable nutrients** ppm ..... : Ca-1,654; Cu-0.54; Mg-278; P-9.6; K-64; Na-39; S-6.1; Zn-4.5

Crop/Variety ..... : Rice / CL153, CLXL745, Mermentau
- **Planting method/date** ..... : Drill seeded / March 19
- **Seeding rate/depth** ..... : Conv. - 33, Hyb - 10seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 8
- **Ratoon Harvest date**..... : Nov. 13

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor X-100 – 0.137 lb ai/cwt
Hybrids:
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
150 lb N/A 46-0-0, May 23

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 24
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 72. Evaluation of stubble management and nitrogen rate for ratoon crop of long-grain rice varieties CL153, CLXL745, and Mermentau. H. Rouse Caffey Rice Research Station.

Crop Name			Rice		Rice		Rice		Rice		Rice		Rice	
Description			Plant-hd		Emer-hd		Tip of Panicle							
Rating Date							8/7/2019		8/7/2019		11/13/2019			
Rating Type			50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit			days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority			Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)												
1	Normal cut CL153	0	107.0	a	94.0	a	36.8	d-g	8510	gh	1983	mn	10493	j
2	Normal cut CL153	30	107.0	a	94.0	a	37.0	d-g	8534	fgh	2479	klm	11012	hij
3	Normal cut CL153	60	107.0	a	94.0	a	38.0	d	9400	a-g	2801	g-l	12201	a-i
4	Normal cut CL153	90	107.0	a	94.0	a	37.0	d-g	9231	b-h	3011	e-j	12242	a-i
5	Normal cut CL153	120	107.0	a	94.0	a	36.8	d-g	8875	d-h	2931	f-k	11805	b-j
6	Normal cut CL153	150	107.0	a	94.0	a	37.8	de	9733	a-g	3072	d-i	12805	a-f
7	Normal cut CLXL745	0	101.0	c	88.0	c	42.3	abc	9904	a-f	1710	n	11614	c-j
8	Normal cut CLXL745	30	101.0	c	88.0	c	42.0	abc	10133	a-d	2451	klm	12584	a-g
9	Normal cut CLXL745	60	101.0	c	88.0	c	43.3	a	9914	a-e	2617	-l	12531	a-h
10	Normal cut CLXL745	90	101.0	c	88.0	c	42.8	abc	10678	a	2805	g-l	13483	a
11	Normal cut CLXL745	120	101.0	c	88.0	c	42.3	abc	9898	a-f	2899	f-k	12797	a-f
12	Normal cut CLXL745	150	101.0	c	88.0	c	43.0	ab	9811	a-g	3075	d-i	12887	a-e
13	Normal cut Mermentau	0	104.0	b	91.0	b	37.0	d-g	9061	b-h	1884	n	10945	ij
14	Normal cut Mermentau	30	104.0	b	91.0	b	36.0	d-g	8972	d-h	2541	jkl	11513	e-j
15	Normal cut Mermentau	60	104.0	b	91.0	b	36.5	d-g	8512	gh	2681	h-l	11192	g-j
16	Normal cut Mermentau	90	104.0	b	91.0	b	36.8	d-g	9746	a-g	2530	jkl	12277	a-i
17	Normal cut Mermentau	120	104.0	b	91.0	b	36.5	d-g	8904	d-h	2647	h-l	11551	d-j
18	Normal cut Mermentau	150	104.0	b	91.0	b	35.5	fg	8740	e-h	2562	jkl	11302	f-j
19	Bush hog 8" CL153	0	107.0	a	94.0	a	36.0	d-g	9150	b-h	2638	-l	11788	c-j
20	Bush hog 8" CL153	30	107.0	a	94.0	a	37.5	def	9385	a-g	3254	b-g	12639	a-g

Continued.

Table 72. Continued.

Crop Name			Rice		Rice		Rice		Rice		Rice		Rice	
Description			Plant-hd		Emer-hd		Tip of Panicle							
Rating Date							8/7/2019		8/7/2019		11/13/2019			
Rating Type			50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit			days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority			Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)												
21	Bush hog 8" CL153	60	107.0	a	94.0	a	36.8	d-g	9008	c-h	3487	a-e	12495	a-h
22	Bush hog 8" CL153	90	107.0	a	94.0	a	36.5	d-g	10013	a-e	3605	abc	13619	a
23	Bush hog 8" CL153	120	107.0	a	94.0	a	37.0	d-g	9004	c-h	3840	a	12844	a-e
24	Bush hog 8" CL153	150	107.0	a	94.0	a	36.0	d-g	9278	b-g	3540	a-d	12817	a-f
25	Bush hog 8" CLXL745	0	101.0	c	88.0	c	42.8	abc	9808	a-g	1683	n	11491	e-j
26	Bush hog 8" CLXL745	30	101.0	c	88.0	c	40.8	c	10431	ab	2393	lm	12824	a-f
27	Bush hog 8" CLXL745	60	101.0	c	88.0	c	42.5	abc	9790	a-g	2615	i-l	12405	a-i
28	Bush hog 8" CLXL745	90	101.0	c	88.0	c	41.0	bc	9988	a-e	2739	h-l	12727	a-f
29	Bush hog 8" CLXL745	120	101.0	c	88.0	c	41.8	abc	10007	a-e	3111	c-i	13119	abc
30	Bush hog 8" CLXL745	150	101.0	c	88.0	c	41.3	abc	10373	abc	3140	c-h	13513	a
31	Bush hog 8" Mermentau	0	104.0	b	91.0	b	35.8	efg	9067	b-h	2509	kl	11576	d-j
32	Bush hog 8" Mermentau	30	104.0	b	91.0	b	35.3	g	7860	h	3145	c-h	11006	hij
33	Bush hog 8" Mermentau	60	104.0	b	91.0	b	35.0	g	8778	d-h	2943	f-k	11721	c-j
34	Bush hog 8" Mermentau	90	104.0	b	91.0	b	35.5	fg	9524	a-g	3345	a-f	12869	a-e
35	Bush hog 8" Mermentau	120	104.0	b	91.0	b	35.8	efg	9591	a-g	3736	ab	13327	ab
36	Bush hog 8" Mermentau	150	104.0	b	91.0	b	36.8	d-g	9268	b-g	3787	a	13055	a-d
LSD P=.05			N/A		N/A		2.04		1375.8		499.0		1526.7	
Standard Deviation			0.00		0.00		1.46		981.3		355.9		1088.9	
CV			0.0		0.0		3.8		10.42		12.54		8.89	
Treatment F			0.000		0.000		14.883		1.625		9.359		2.280	
Treatment Prob(F)			1.0000		1.0000		0.0001		0.0312		0.0001		0.0007	

N/A = Could not calculate LSD (% mean diff) because error mean square = 0.
Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 73. Two-way comparison for the evaluation of stubble management and N rate for ratoon crop of long-grain rice varieties CL153, CLXL745, and Mermentau. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/7/2019		8/7/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
TABLE OF A (Cultural Practice) MEANS															
1	Normal cut			104.0	a	91.0	a	38.7	a	9364	a	2593	b	11957	b
2	Bush hog 8"			104.0	a	91.0	a	38.0	b	9462	a	3084	a	12546	a
P				1.0000		1.0000		0.0031		0.5491		0.0001		0.0016	
LSD P=.05				N/A		N/A		0.48		324.3		117.6		359.8	
TABLE OF B (Variety) MEANS															
1	CL153			107.0	a	94.0	a	36.9	b	9177	b	3053	a	12230	ab
2	CLXL745			101.0	c	88.0	c	42.1	a	10061	a	2603	c	12664	a
3	Mermentau			104.0	b	91.0	b	36.0	c	9002	b	2859	b	11861	b
P				1.0000		1.0000		0.0001		0.0001		0.0001		0.0021	
LSD P=.05				N/A		N/A		0.59		397.2		144.0		440.7	
TABLE OF C (Fertility) MEANS															
1	UREA	0	Ratoon-PF	104.0	a	91.0	a	38.4	a	9250	a	2068	d	11318	d
2	UREA	30	Ratoon-PF	104.0	a	91.0	a	38.1	a	9219	a	2710	c	11930	cd
3	UREA	60	Ratoon-PF	104.0	a	91.0	a	38.7	a	9234	a	2857	bc	12091	bc
4	UREA	90	Ratoon-PF	104.0	a	91.0	a	38.3	a	9863	a	3006	ab	12869	a
5	UREA	120	Ratoon-PF	104.0	a	91.0	a	38.3	a	9380	a	3194	a	12574	ab
6	UREA	150	Ratoon-PF	104.0	a	91.0	a	38.4	a	9534	a	3196	a	12730	a
P				1.0000		1.0000		0.8329		0.1753		0.0001		0.0001	
LSD P=.05				N/A		N/A		0.83		561.7		203.7		623.3	
TABLE OF A (Cultural Practice) B (Variety) MEANS															
1	Normal cut			107.0	a	94.0	a	37.2	a	9047	a	2713	b	11760	a
1	CL153														
2	Bush hog 8"			107.0	a	94.0	a	36.6	a	9306	a	3394	a	12700	a
1	CL153														
1	Normal cut			101.0	c	88.0	c	42.6	a	10056	a	2593	bc	12649	a
2	CLXL745														
2	Bush hog 8"			101.0	c	88.0	c	41.7	a	10066	a	2614	bc	12680	a
2	CLXL745														
1	Normal cut			104.0	b	91.0	b	36.4	a	8989	a	2474	c	11463	a
3	Mermentau														
2	Bush hog 8"			104.0	b	91.0	b	35.7	a	9015	a	3244	a	12259	a
3	Mermentau														
P				1.0000		1.0000		0.8523		0.7844		0.0001		0.0939	
LSD P=.05				N/A		N/A		0.83		561.7		203.7		623.3	

Continued.

Table 73. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/7/2019		8/7/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
TABLE OF A (Cultural Practice) C (Fertility) MEANS															
1	Normal cut			104.0	a	91.0	a	38.7	a	9158	a	1859	a	11017	a
1	UREA	0	Ratoon-PF												
2	Bush hog 8"			104.0	a	91.0	a	38.2	a	9342	a	2277	a	11618	a
1	UREA	0	Ratoon-PF												
1	Normal cut			104.0	a	91.0	a	38.3	a	9213	a	2490	a	11703	a
2	UREA	30	Ratoon-PF												
2	Bush hog 8"			104.0	a	91.0	a	37.8	a	9226	a	2931	a	12156	a
2	UREA	30	Ratoon-PF												
1	Normal cut			104.0	a	91.0	a	39.3	a	9275	a	2700	a	11975	a
3	UREA	60	Ratoon-PF												
2	Bush hog 8"			104.0	a	91.0	a	38.1	a	9192	a	3015	a	12207	a
3	UREA	60	Ratoon-PF												
1	Normal cut			104.0	a	91.0	a	38.8	a	9885	a	2782	a	12667	a
4	UREA	90	Ratoon-PF												
2	Bush hog 8"			104.0	a	91.0	a	37.7	a	9842	a	3230	a	13072	a
4	UREA	90	Ratoon-PF												
1	Normal cut			104.0	a	91.0	a	38.5	a	9225	a	2825	a	12051	a
5	UREA	120	Ratoon-PF												
2	Bush hog 8"			104.0	a	91.0	a	38.2	a	9534	a	3563	a	13097	a
5	UREA	120	Ratoon-PF												
1	Normal cut			104.0	a	91.0	a	38.8	a	9428	a	2903	a	12331	a
6	UREA	150	Ratoon-PF												
2	Bush hog 8"			104.0	a	91.0	a	38.0	a	9639	a	3489	a	13128	a
6	UREA	150	Ratoon-PF												
P				1.0000		1.0000		0.8721		0.9781		0.3951		0.8217	
LSD P=.05				N/A		N/A		1.18		794.3		288.1		881.4	
TABLE OF B (Variety) C (Fertility) MEANS															
1	CL153			107.0	a	94.0	a	36.4	a	8830	a	2311	a	11140	a
1	UREA	0	Ratoon-PF												
2	CLXL745			101.0	c	88.0	c	42.5	a	9856	a	1697	a	11553	a
1	UREA	0	Ratoon-PF												
3	Mermentau			104.0	b	91.0	b	36.4	a	9064	a	2196	a	11260	a
1	UREA	0	Ratoon-PF												
1	CL153			107.0	a	94.0	a	37.3	a	8959	a	2866	a	11826	a
2	UREA	30	Ratoon-PF												
2	CLXL745			101.0	c	88.0	c	41.4	a	10282	a	2422	a	12704	a
2	UREA	30	Ratoon-PF												
3	Mermentau			104.0	b	91.0	b	35.6	a	8416	a	2843	a	11259	a
2	UREA	30	Ratoon-PF												

Continued.

Table 73. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/7/2019		8/7/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	CL153			107.0	a	94.0	a	37.4	a	9204	a	3144	a	12348	a
3	UREA	60	Ratoon-PF												
2	CLXL745			101.0	c	88.0	c	42.9	a	9852	a	2616	a	12468	a
3	UREA	60	Ratoon-PF												
3	Mermentau			104.0	b	91.0	b	35.8	a	8645	a	2812	a	11457	a
3	UREA	60	Ratoon-PF												
1	CL153			107.0	a	94.0	a	36.8	a	9622	a	3308	a	12930	a
4	UREA	90	Ratoon-PF												
2	CLXL745			101.0	c	88.0	c	41.9	a	10333	a	2772	a	13105	a
4	UREA	90	Ratoon-PF												
3	Mermentau			104.0	b	91.0	b	36.1	a	9635	a	2938	a	12573	a
4	UREA	90	Ratoon-PF												
1	CL153			107.0	a	94.0	a	36.9	a	8939	a	3385	a	12325	a
5	UREA	120	Ratoon-PF												
2	CLXL745			101.0	c	88.0	c	42.0	a	9952	a	3005	a	12958	a
5	UREA	120	Ratoon-PF												
3	Mermentau			104.0	b	91.0	b	36.1	a	9248	a	3191	a	12439	a
5	UREA	120	Ratoon-PF												
1	CL153			107.0	a	94.0	a	36.9	a	9505	a	3306	a	12811	a
6	UREA	150	Ratoon-PF												
2	CLXL745			101.0	c	88.0	c	42.1	a	10092	a	3108	a	13200	a
6	UREA	150	Ratoon-PF												
3	Mermentau			104.0	b	91.0	b	36.1	a	9004	a	3174	a	12178	a
6	UREA	150	Ratoon-PF												
P				1.0000		1.0000		0.7370		0.7955		0.7120		0.8933	
LSD P=.05				N/A		N/A		1.45		972.9		352.8		1079.5	
TABLE OF A (Cultural Practice) B (Variety) C (Fertility) MEANS															
1	Normal cut	0	Ratoon-PF	107.0	a	94.0	a	36.8	a	8510	a	1983	a	10493	a
1	CL153														
2	Bush hog 8"	0	Ratoon-PF	107.0	a	94.0	a	36.0	a	9150	a	2638	a	11788	a
1	CL153														
1	Normal cut	0	Ratoon-PF	101.0	c	88.0	c	42.3	a	9904	a	1710	a	11614	a
2	CLXL745														
2	Bush hog 8"	0	Ratoon-PF	101.0	c	88.0	c	42.8	a	9808	a	1683	a	11491	a
2	CLXL745														
1	Normal cut	0	Ratoon-PF	104.0	b	91.0	b	37.0	a	9061	a	1884	a	10945	a
3	Mermentau														
2	Bush hog 8"	0	Ratoon-PF	104.0	b	91.0	b	35.8	a	9067	a	2509	a	11576	a
3	Mermentau														

Continued.

Table 73. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/7/2019		8/7/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	Normal cut	30	Ratoon-PF	107.0	a	94.0	a	37.0	a	8534	a	2479	a	11012	a
1	CL153														
2	Bush hog 8"	30	Ratoon-PF	107.0	a	94.0	a	37.5	a	9385	a	3254	a	12639	a
1	CL153														
1	Normal cut	30	Ratoon-PF	101.0	c	88.0	c	42.0	a	10133	a	2451	a	12584	a
2	CLXL745														
2	Bush hog 8"	30	Ratoon-PF	101.0	c	88.0	c	40.8	a	10431	a	2393	a	12824	a
2	CLXL745														
1	Normal cut	30	Ratoon-PF	104.0	b	91.0	b	36.0	a	8972	a	2541	a	11513	a
3	Mermentau														
2	Bush hog 8"	30	Ratoon-PF	104.0	b	91.0	b	35.3	a	7860	a	3145	a	11006	a
3	Mermentau														
1	Normal cut	60	Ratoon-PF	107.0	a	94.0	a	38.0	a	9400	a	2801	a	12201	a
1	CL153														
2	Bush hog 8"	60	Ratoon-PF	107.0	a	94.0	a	36.8	a	9008	a	3487	a	12495	a
1	CL153														
1	Normal cut	60	Ratoon-PF	101.0	c	88.0	c	43.3	a	9914	a	2617	a	12531	a
2	CLXL745														
2	Bush hog 8"	60	Ratoon-PF	101.0	c	88.0	c	42.5	a	9790	a	2615	a	12405	a
2	CLXL745														
1	Normal cut	60	Ratoon-PF	104.0	b	91.0	b	36.5	a	8512	a	2681	a	11192	a
3	Mermentau														
2	Bush hog 8"	60	Ratoon-PF	104.0	b	91.0	b	35.0	a	8778	a	2943	a	11721	a
3	Mermentau														
1	Normal cut	90	Ratoon-PF	107.0	a	94.0	a	37.0	a	9231	a	3011	a	12242	a
1	CL153														
2	Bush hog 8"	90	Ratoon-PF	107.0	a	94.0	a	36.5	a	10013	a	3605	a	13619	a
1	CL153														
1	Normal cut	90	Ratoon-PF	101.0	c	88.0	c	42.8	a	10678	a	2805	a	13483	a
2	CLXL745														
2	Bush hog 8"	90	Ratoon-PF	101.0	c	88.0	c	41.0	a	9988	a	2739	a	12727	a
2	CLXL745														
1	Normal cut	90	Ratoon-PF	104.0	b	91.0	b	36.8	a	9746	a	2530	a	12277	a
3	Mermentau														
2	Bush hog 8"	90	Ratoon-PF	104.0	b	91.0	b	35.5	a	9524	a	3345	a	12869	a
3	Mermentau														

Continued.

Table 73. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/7/2019		8/7/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	Normal cut	120	Ratoon-PF	107.0	a	94.0	a	36.8	a	8875	a	2931	a	11805	a
1	CL153														
2	Bush hog 8"	120	Ratoon-PF	107.0	a	94.0	a	37.0	a	9004	a	3840	a	12844	a
1	CL153														
1	Normal cut	120	Ratoon-PF	101.0	c	88.0	c	42.3	a	9898	a	2899	a	12797	a
2	CLXL745														
2	Bush hog 8"	120	Ratoon-PF	101.0	c	88.0	c	41.8	a	10007	a	3111	a	13119	a
2	CLXL745														
1	Normal cut	120	Ratoon-PF	104.0	b	91.0	b	36.5	a	8904	a	2647	a	11551	a
3	Mermentau														
2	Bush hog 8"	120	Ratoon-PF	104.0	b	91.0	b	35.8	a	9591	a	3736	a	13327	a
3	Mermentau														
1	Normal cut	150	Ratoon-PF	107.0	a	94.0	a	37.8	a	9733	a	3072	a	12805	a
1	CL153														
2	Bush hog 8"	150	Ratoon-PF	107.0	a	94.0	a	36.0	a	9278	a	3540	a	12817	a
1	CL153														
1	Normal cut	150	Ratoon-PF	101.0	c	88.0	c	43.0	a	9811	a	3075	a	12887	a
2	CLXL745														
2	Bush hog 8"	150	Ratoon-PF	101.0	c	88.0	c	41.3	a	10373	a	3140	a	13513	a
2	CLXL745														
1	Normal cut	150	Ratoon-PF	104.0	b	91.0	b	35.5	a	8740	a	2562	a	11302	a
3	Mermentau														
2	Bush hog 8"	150	Ratoon-PF	104.0	b	91.0	b	36.8	a	9268	a	3787	a	13055	a
3	Mermentau														
P				1.0000		1.0000		0.4558		0.5300		0.7027		0.4893	
LSD P=.05				N/A		N/A		2.04		1375.8		499.0		1526.7	
Standard Deviation				0.00		0.00		1.46		981.3		355.9		1088.9	
CV				0.00		0.00		3.80		10.4		12.5		8.9	

N/A = Could not calculate LSD (% mean diff) because error mean square = 0.
Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Desiccant (potassium chlorate) Timing, Stubble Management and Milling Quality for CLXL745 and CL111 – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-25

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.55
- **pH**..... : 7.38
- **Extractable nutrients** ppm ..... : Ca-1,654; Cu-0.54; Mg-278; P-9.6; K-64; Na-39; S-6.1; Zn-4.5

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 19
- **Seeding rate/depth** ..... : Conv. - 33, Hyb – 10 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 12
- **Ratoon Harvest date**..... : Nov. 13

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt
Hybrids:
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
120 lb N/A 46-0-0, May 23
90 lb N/A 46-0-0, August 15

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 24
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 74. Evaluation of desiccant timing, stubble management, and milling quality for CLXL745 and CL111. H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd		Tip of Panicle											
Rating Date						8/12/2019		8/12/2019						11/13/2019			
Rating Type		50% HD		50% HD		Height		Yield		Milling (%)				Yield		Total Yield	
Rating Unit		days		days		in		lb/A		Head		Total		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Main						Ratoon		MC + RC	
Trt No.	Treatment Name																
1	CLXL745/Normal cut 14 days pre harvest	96.0	a	80.0	a	41.5	a	9060	cd	51.5	ab	72.9	a	2476	de	11569	cde
2	CLXL745/Bush hog 8" 14 days pre harvest	96.0	a	80.0	a	42.0	a	9209	cd	48.8	bc	73.0	a	2162	ef	11371	cde
3	CLXL745/Normal cut 7 days pre harvest	96.0	a	80.0	a	42.8	a	10080	ab	48.5	bc	73.5	a	1858	fg	11938	bcd
4	CLXL745/Bush hog 8" 7 days pre harvest	96.0	a	80.0	a	40.5	a	9534	bc	45.0	c	73.0	a	1536	g	11070	de
5	CLXL745/Normal cut 1 day pre harvest	96.0	a	80.0	a	41.0	a	10312	a	52.3	ab	73.5	a	2626	cd	12938	a
6	CLXL745/Bush hog 8" 1 day pre harvest	96.0	a	80.0	a	42.0	a	10299	a	51.8	ab	73.5	a	2319	de	12618	ab
7	CL111/Normal cut 14 days pre harvest	92.0	b	76.0	b	33.3	b	7719	f	53.3	a	72.8	a	3079	bc	10798	e
8	CL111/Bush hog 8" 14 days pre harvest	92.0	b	76.0	b	31.8	b	7453	f	51.5	ab	73.5	a	3840	a	11292	cde
9	CL111/Normal cut 7 days pre harvest	92.0	b	76.0	b	32.0	b	8561	de	53.0	a	73.3	a	3288	b	11849	bcd
10	CL111/Bush hog 8" 7 days pre harvest	92.0	b	76.0	b	31.8	b	7916	ef	51.3	ab	73.0	a	4022	a	11938	bcd
11	CL111/Normal cut 1 day pre harvest	92.0	b	76.0	b	32.3	b	7690	f	53.8	a	73.0	a	3747	a	11437	cde
12	CL111/Bush hog 8" 1 day pre harvest	92.0	b	76.0	b	33.0	b	7948	ef	53.5	a	73.0	a	4172	a	12120	abc
LSD P=.05		N/A		N/A		3.07		667.2		3.83		0.86		458.3		973.9	
Standard Deviation		0.00		0.00		2.13		463.2		2.66		0.60		318.6		676.1	
CV		0.0		0.0		5.77		5.25		5.2		0.82		10.88		5.76	
Treatment F		0.000		0.000		21.095		21.558		3.725		0.828		31.293		3.368	
Treatment Prob(F)		1.0000		1.0000		0.0001		0.0001		0.0017		0.6142		0.0001		0.0035	

N/A = Could not calculate LSD (% mean diff) because error mean square = 0.

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 75. Two-way comparison for the desiccant timing, stubble management, and milling quality for CLXL745 and CL111. H. Rouse Caffey Rice Research Station.

Crop Name	Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description	Plant-hd		Emer-hd		Tip of Panicle											
Rating Date					8/12/2019		8/12/2019						11/13/2019			
Rating Type	50% HD		50% HD		Height		Yield		Milling (%)				Yield		Total Yield	
Rating Unit	days		days		in		lb/A		Head		Total		lb/A		lb/A	
Crop Stage Majority	Main		Main		Main		Main		Main		Main		Ratoon		MC + RC	
Trt No. Treatment Name																
TABLE OF A (Variety) MEANS																
1 CLXL745	96.0	a	80.0	a	41.6	a	9749	a	49.6	b	73.2	a	2163	b	11917	a
2 CL111	92.0	b	76.0	b	32.3	b	7881	b	52.7	a	73.1	a	3691	a	11572	a
P	1.000		1.000		0.0001		0.0001		0.0003		0.3715		0.0001		0.0868	
LSD P=.05	N/A		N/A		1.25		272.4		1.56		0.35		187.1		397.6	
TABLE OF B (Timing of Application) MEANS																
1 14 days pre harvest	94.0	a	78.0	a	37.1	a	8360	b	51.3	ab	73.0	a	2889	b	11257	b
2 7 days pre harvest	94.0	a	78.0	a	36.8	a	9023	a	49.4	b	73.2	a	2676	b	11699	b
3 1 day pre harvest	94.0	a	78.0	a	37.1	a	9062	a	52.8	a	73.3	a	3216	a	12278	a
P	1.000		1.000		0.8684		0.0002		0.0044		0.6225		0.0001		0.0001	
LSD P=.05	N/A		N/A		1.54		333.6		1.92		0.43		229.1		486.9	
TABLE OF C (Cultural Practice) MEANS																
1 Normal cut	94.0	a	78.0	a	37.1	a	8904	a	52.0	a	73.2	a	2846	a	11755	a
2 Bush hog 8"	94.0	a	78.0	a	36.8	a	8726	a	50.3	b	73.2	a	3008	a	11735	a
P	1.000		1.000		0.6391		0.0099		0.0291		0.9537		0.0863		0.9188	
LSD P=.05	N/A		N/A		1.25		272.4		1.56		0.35		187.1		397.6	
TABLE OF A (Variety) B (Timing of Application) MEANS																
1 CLXL745	96.0	a	80.0	a	41.8	a	9134	c	50.1	a	73.0	a	2319	c	11470	bc
1 14 days pre harvest																
2 CL111	92.0	b	76.0	b	32.5	a	7586	e	52.4	a	73.1	a	3459	b	11045	c
1 14 days pre harvest																
1 CLXL745	96.0	a	80.0	a	41.6	a	9807	b	46.8	a	73.3	a	1697	d	11504	bc
2 7 days pre harvest																
2 CL111	92.0	b	76.0	b	31.9	a	8239	d	52.1	a	73.1	a	3655	ab	11893	b
2 7 days pre harvest																
1 CLXL745	96.0	a	80.0	a	41.5	a	10305	a	52.0	a	73.5	a	2472	c	12778	a
3 1 day pre harvest																
2 CL111	92.0	b	76.0	b	32.6	a	7819	de	53.6	a	73.0	a	3960	a	11779	b
3 1 day pre harvest																
P	1.000		1.000		0.8451		0.0002		0.118		0.3122		0.0038		0.0229	
LSD P=.05	N/A		N/A		2.17		471.8		2.71		0.61		324.1		688.6	

Continued.

Table 75. Continued.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd		Tip of Panicle											
Rating Date						8/12/2019		8/12/2019						11/13/2019			
Rating Type		50% HD		50% HD		Height		Yield		Milling (%)				Yield		Total Yield	
Rating Unit		days		days		in		lb/A		Head		Total		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name																
TABLE OF A (Variety) C (Cultural Practice) MEANS																	
1	CLXL745	96.0	a	80.0	a	41.8	a	9817	a	50.8	a	73.3	a	2320	c	12148	a
1	Normal cut																
2	CL111	92.0	b	76.0	b	32.5	a	7990	a	53.3	a	73.0	a	3371	b	11361	b
1	Normal cut																
1	CLXL745	96.0	a	80.0	a	41.5	a	9681	a	48.5	a	73.2	a	2006	d	11686	ab
2	Bush hog 8"																
2	CL111	92.0	b	76.0	b	32.2	a	7772	a	52.1	a	73.2	a	4011	a	11783	ab
2	Bush hog 8"																
P		1.000		1.000		0.9465		0.1945		0.5156		0.3715		0.0001		0.0304	
LSD P=.05		N/A		N/A		1.77		385.2		2.21		0.50		264.6		562.3	
TABLE OF B (Timing of Application) C (Cultural Practice) MEANS																	
1	14 days pre harvest	94.0	a	78.0	a	37.4	a	8389	a	52.4	a	72.8	a	2778	a	11183	a
1	Normal cut																
2	7 days pre harvest	94.0	a	78.0	a	37.4	a	9320	a	50.8	a	73.4	a	2573	a	11894	a
1	Normal cut																
3	1 day pre harvest	94.0	a	78.0	a	36.6	a	9001	a	53.0	a	73.3	a	3186	a	12187	a
1	Normal cut																
1	14 days pre harvest	94.0	a	78.0	a	36.9	a	8331	a	50.1	a	73.3	a	3001	a	11332	a
2	Bush hog 8"																
2	7 days pre harvest	94.0	a	78.0	a	36.1	a	8725	a	48.1	a	73.0	a	2779	a	11504	a
2	Bush hog 8"																
3	1 day pre harvest	94.0	a	78.0	a	37.5	a	9123	a	52.6	a	73.3	a	3246	a	12369	a
2	Bush hog 8"																
P		1.000		1.000		0.3718		0.7629		0.4474		0.1986		0.7285		0.4168	
LSD P=.05		N/A		N/A		2.17		471.8		2.71		0.61		324.1		688.6	

Continued.

Table 75. Continued.

Crop Name	Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description	Plant-hd	Emer-hd	Tip of Panicle					
Rating Date			8/12/2019	8/12/2019			11/13/2019	
Rating Type	50% HD	50% HD	Height	Yield	Milling (%)		Yield	Total Yield
Rating Unit	days	days	in	lb/A	Head	Total	lb/A	lb/A
Crop Stage Majority	Main	Main	Main	Main	Main	Main	Ratoon	MC + RC
Trt No. Treatment Name								
TABLE OF A (Variety) B (Timing of Application) C (Cultural Practice) MEANS								
1 CLXL745/Normal cut	96.0 a	80.0 a	41.5 a	9060 a	51.5 a	72.9 a	2476 a	11569 a
1 14 days pre harvest								
2 CL111/Normal cut	92.0 b	76.0 b	33.3 a	7719 a	53.3 a	72.8 a	3079 a	10798 a
1 14 days pre harvest								
1 CLXL745/Normal cut	96.0 a	80.0 a	42.8 a	10080 a	48.5 a	73.5 a	1858 a	11938 a
2 7 days pre harvest								
2 CL111/Normal cut	92.0 b	76.0 b	32.0 a	8561 a	53.0 a	73.3 a	3288 a	11849 a
2 7 days pre harvest								
1 CLXL745/Normal cut	96.0 a	80.0 a	41.0 a	10312 a	52.3 a	73.5 a	2626 a	12938 a
3 1 day pre harvest								
2 CL111/Normal cut	92.0 b	76.0 b	32.3 a	7690 a	53.8 a	73.0 a	3747 a	11437 a
3 1 day pre harvest								
1 CLXL745/Bush hog 8"	96.0 a	80.0 a	42.0 a	9209 a	48.8 a	73.0 a	2162 a	11371 a
1 14 days pre harvest								
2 CL111/Bush hog 8"	92.0 b	76.0 b	31.8 a	7453 a	51.5 a	73.5 a	3840 a	11292 a
1 14 days pre harvest								
1 CLXL745/Bush hog 8"	96.0 a	80.0 a	40.5 a	9534 a	45.0 a	73.0 a	1536 a	11070 a
2 7 days pre harvest								
2 CL111/Bush hog 8"	92.0 b	76.0 b	31.8 a	7916 a	51.3 a	73.0 a	4022 a	11938 a
2 7 days pre harvest								
1 CLXL745/Bush hog 8"	96.0 a	80.0 a	42.0 a	10299 a	51.8 a	73.5 a	2319 a	12618 a
3 1 day pre harvest								
2 CL111/Bush hog 8"	92.0 b	76.0 b	33.0 a	7948 a	53.5 a	73.0 a	4172 a	12120 a
3 1 day pre harvest								
P	1.000	1.0	0.4233	0.0902	0.9238	0.7142	0.6954	0.941
LSD P=.05	N/A	N/A	3.07	667.2	3.83	0.86	458.3	973.9
Standard Deviation	0.00	0.00	2.13	463.2	2.66	0.60	318.6	676.1
CV	0.00	0.00	5.77	5.3	5.20	0.82	10.9	5.8

N/A = Could not calculate LSD (% mean diff) because error mean square = 0.
Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Nitrogen Rate and Stubble Management on Yield of Main and Ratoon Crops for CL153 – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-26

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.55
- **pH**..... : 7.38
- **Extractable nutrients** ppm ..... : Ca-1,654; Cu-0.54; Mg-278; P-9.6; K-64; Na-39; S-6.1; Zn-4.5

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 6
- **Ratoon Harvest date**..... : Nov. 13

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 15

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 24
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 76. Evaluation of N rate and stubble management on yield of main and ratoon crops for CL153. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/6/2019		8/6/2019		11/13/2019			
Rating Type				50% HD		50% HD		Heights		Yield		Yield		Total Yield	
Rating Unit				days		days		in							
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	Normal cut UTC	0	Preflood	104.0	f	91.0	f	29.0	fg	4694	e	3289	cd	7983	i
2	Normal cut UREA 30	30	Preflood	105.3	e	92.3	e	29.8	f	6577	cd	3319	cd	9896	h
3	Normal cut UREA 60	60	Preflood	106.8	c	93.8	c	33.0	e	7514	abc	3163	cde	10677	e-h
4	Normal cut UREA 90	90	Preflood	107.3	bc	94.3	bc	35.3	cd	8027	ab	3385	c	11412	b-f
5	Normal cut UREA 120	120	Preflood	107.8	ab	94.8	ab	35.0	cd	8098	ab	3283	cd	11381	c-f
6	Normal cut UREA 150	150	Preflood	108.0	a	95.0	a	37.3	ab	7859	ab	3221	cd	11081	d-g
7	Normal cut UREA 180	180	Preflood	108.0	a	95.0	a	36.3	bc	7443	bc	2988	de	10431	fgh
8	Normal cut UREA 210	210	Preflood	108.0	a	95.0	a	38.5	a	8456	a	3205	cde	11661	a-e
9	Normal cut UREA 240	240	Preflood	108.0	a	95.0	a	37.3	ab	7945	ab	2827	e	10772	e-h
10	Bush hog UTC	0	Preflood	104.3	f	91.3	f	27.8	g	4349	e	4229	ab	8578	i
11	Bush hog UREA 30	30	Preflood	105.3	e	92.3	e	32.5	e	6192	d	4069	ab	10261	gh
12	Bush hog UREA 60	60	Preflood	106.0	d	93.0	d	34.0	de	7690	ab	4199	ab	11889	a-d
13	Bush hog UREA 90	90	Preflood	107.3	bc	94.3	bc	35.8	bcd	8156	ab	4402	a	12558	a
14	Bush hog UREA 120	120	Preflood	108.0	a	95.0	a	35.3	cd	8333	ab	4300	ab	12633	a
15	Bush hog UREA 150	150	Preflood	107.8	ab	94.8	ab	36.0	bc	8216	ab	4129	ab	12345	abc
16	Bush hog UREA 180	180	Preflood	108.0	a	95.0	a	37.5	ab	7942	ab	4231	ab	12173	abc
17	Bush hog UREA 210	210	Preflood	108.0	a	95.0	a	38.3	a	8275	ab	4195	ab	12470	ab
18	Bush hog UREA 240	240	Preflood	108.0	a	95.0	a	36.8	abc	8139	ab	3962	b	12101	a-d
LSD P=.05				0.63		0.63		1.79		981.9		394.3		1072.7	
Standard Deviation				0.45		0.45		1.26		691.7		277.7		755.6	
CV				0.42		0.48		3.63		9.3		7.53		6.79	
Treatment F				38.934		38.934		25.353		12.326		14.989		12.412	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 77. Two-way comparison for the evaluation of N rate and stubble management on yield of main and ratoon crops for CL153. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/6/2019		8/6/2019		11/13/2019			
Rating Type				50% HD		50% HD		Heights		Yield		Yield		Total Yield	
Rating Unit				days		days		in							
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
TABLE OF A (Stubble management) MEANS															
1	Normal cut			107.0	a	94.0	a	34.6	a	7401	a	3187	b	10588	b
2	Bush hog			106.9	a	93.9	a	34.9	a	7477	a	4191	a	11668	a
P				0.5999		0.5999		0.3546		0.6457		0.0001		0.0001	
LSD P=.05				0.21		0.21		0.60		327.3		131.4		357.6	
TABLE OF B (N rates) MEANS															
1	UTC	0	Preflood	104.1	e	91.1	e	28.4	g	4521	d	3759	a	8280	d
2	UREA 30	30	Preflood	105.3	d	92.3	d	31.1	f	6384	c	3694	a	10078	c
3	UREA 60	60	Preflood	106.4	c	93.4	c	33.5	e	7602	b	3681	a	11283	b
4	UREA 90	90	Preflood	107.3	b	94.3	b	35.5	cd	8092	ab	3894	a	11985	ab
5	UREA 120	120	Preflood	107.9	a	94.9	a	35.1	d	8216	ab	3791	a	12007	ab
6	UREA 150	150	Preflood	107.9	a	94.9	a	36.6	bc	8038	ab	3675	a	11713	ab
7	UREA 180	180	Preflood	108.0	a	95.0	a	36.9	b	7692	ab	3609	a	11302	b
8	UREA 210	210	Preflood	108.0	a	95.0	a	38.4	a	8365	a	3700	a	12065	a
9	UREA 240	240	Preflood	108.0	a	95.0	a	37.0	b	8042	ab	3394	a	11437	ab
P				0.0001		0.0001		0.0001		0.0001		0.0716		0.0001	
LSD P=.05				0.45		0.45		1.27		694.3		278.8		758.5	
TABLE OF A (Stubble management) B (N rates) MEANS															
1	Normal cut			104.0	a	91.0	a	29.0	a	4694	a	3289	a	7983	a
1	UTC	0	Preflood												
2	Bush hog			104.3	a	91.3	a	27.8	a	4349	a	4229	a	8578	a
1	UTC	0	Preflood												
1	Normal cut			105.3	a	92.3	a	29.8	a	6577	a	3319	a	9896	a
2	UREA 30	30	Preflood												
2	Bush hog			105.3	a	92.3	a	32.5	a	6192	a	4069	a	10261	a
2	UREA 30	30	Preflood												
1	Normal cut			106.8	a	93.8	a	33.0	a	7514	a	3163	a	10677	a
3	UREA 60	60	Preflood												
2	Bush hog			106.0	a	93.0	a	34.0	a	7690	a	4199	a	11889	a
3	UREA 60	60	Preflood												

Continued.

Table 77. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/6/2019		8/6/2019		11/13/2019			
Rating Type				50% HD		50% HD		Heights		Yield		Yield		Total Yield	
Rating Unit				days		days		in							
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	Normal cut			107.3	a	94.3	a	35.3	a	8027	a	3385	a	11412	a
4	UREA 90	90	Preflood												
2	Bush hog			107.3	a	94.3	a	35.8	a	8156	a	4402	a	12558	a
4	UREA 90	90	Preflood												
1	Normal cut			107.8	a	94.8	a	35.0	a	8098	a	3283	a	11381	a
5	UREA 120	120	Preflood												
2	Bush hog			108.0	a	95.0	a	35.3	a	8333	a	4300	a	12633	a
5	UREA 120	120	Preflood												
1	Normal cut			108.0	a	95.0	a	37.3	a	7859	a	3221	a	11081	a
6	UREA 150	150	Preflood												
2	Bush hog			107.8	a	94.8	a	36.0	a	8216	a	4129	a	12345	a
6	UREA 150	150	Preflood												
1	Normal cut			108.0	a	95.0	a	36.3	a	7443	a	2988	a	10431	a
7	UREA 180	180	Preflood												
2	Bush hog			108.0	a	95.0	a	37.5	a	7942	a	4231	a	12173	a
7	UREA 180	180	Preflood												
1	Normal cut			108.0	a	95.0	a	38.5	a	8456	a	3205	a	11661	a
8	UREA 210	210	Preflood												
2	Bush hog			108.0	a	95.0	a	38.3	a	8275	a	4195	a	12470	a
8	UREA 210	210	Preflood												
1	Normal cut			108.0	a	95.0	a	37.3	a	7945	a	2827	a	10772	a
9	UREA 240	240	Preflood												
2	Bush hog			108.0	a	95.0	a	36.8	a	8139	a	3962	a	12101	a
9	UREA 240	240	Preflood												
P				0.5191		0.5191		0.0562		0.9155		0.851		0.7608	
LSD P=.05				0.63		0.63		1.79		981.9		394.3		1072.7	
Standard Deviation				0.45		0.45		1.26		691.7		277.7		755.6	
CV				0.42		0.48		3.63		9.3		7.5		6.8	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Nitrogen Source and Timing for Ratoon Nitrogen Fertilization – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-27

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.55
- **pH**..... : 7.38
- **Extractable nutrients** ppm ..... : Ca-1,654; Cu-0.54; Mg-278; P-9.6; K-64; Na-39; S-6.1; Zn-4.5

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 7
- **Ratoon Harvest date**..... : Nov. 13

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 15

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 24
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 78. Evaluation of nitrogen source and timing for ratoon nitrogen fertilization. H. Rouse Caffey Rice Research Station.

Crop Name			Rice		Rice		Rice		Rice		Rice		Rice	
Description			Plant-hd		Emer-hd		Tip of Panicle							
Rating Date							8/7/2019		8/7/2019		11/13/2019			
Rating Type			50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit			days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority			Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)												
1	Urea all at harvest	92	106.0	a	96.0	a	36.0	a	8292	a	2938	bc	11230	a
2	Urea all post ratoon flood	92	106.0	a	96.0	a	36.5	a	8224	a	2905	bc	11129	a
3	Urea 1/2 dry ground before har	46	106.0	a	96.0	a	37.3	a	8898	a	2814	c	11712	a
	Urea 1/2 at 7 d Postflood	46												
4	Urea 1/2 after harvest	46	106.0	a	96.0	a	36.0	a	8203	a	2798	c	11001	a
	Urea 1/2 at 7 d Postflood	46												
5	Agrotain all at harvest	92	106.0	a	96.0	a	36.3	a	7492	a	3309	a	10801	a
6	Agrotain all post ratoon flood	92	106.0	a	96.0	a	36.8	a	8663	a	3032	abc	11695	a
7	Agrotain 1/2 dry ground before	46	106.0	a	96.0	a	36.8	a	8228	a	3215	ab	11443	a
	Agrotain 1/2 at 7 d Postflood	46												
8	Agrotain 1/2 after harvest	46	106.0	a	96.0	a	36.3	a	8011	a	3051	abc	11062	a
	Agrotain 1/2 at 7 d Postflood	46												
LSD P=.05			N/A		N/A		1.62		1071.0		322.8		983.8	
Standard Deviation			0.00		0.00		1.10		728.3		219.5		669.0	
CV			0.0		0.0		3.02		8.83		7.3		5.94	
Treatment F			0.000		0.000		0.616		1.323		2.769		0.973	
Treatment Prob(F)			1.0000		1.0000		0.7365		0.2885		0.0332		0.4760	

N/A = Could not calculate LSD (% mean diff) because error mean square = 0.
Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Nitrogen Rate and Timing on Nitrogen Uptake, Nitrogen Use Efficiency, and Grain Yield – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-31

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.55
- **pH**..... : 7.38
- **Extractable nutrients** ppm ..... : Ca-1,654; Cu-0.54; Mg-278; P-9.6; K-64; Na-39; S-6.1; Zn-4.5

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 6
- **Ratoon Harvest date**..... : Nov. 13

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 15

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 24
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 15
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 79. Evaluation of nitrogen rate and timing on nitrogen uptake, nitrogen use efficiency, and grain yield – H. Rouse Caffey Rice Research Station.

Crop Name			Rice		Rice		Rice	Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description			Plant-hd		Emer-hd		Tip of Panicle	Tissue		Tissue N		N Uptake		NUE							
Rating Date							8/6/2019									9/6/2019		11/13/2019			
Part Rated								Abvgrd		50% HD		50% HD		50% HD							
Rating Type			50% HD		50% HD		Height	biomass-dry								Yield		Yield		Total Yield	
Rating Unit			days		days		in	lb/A		% N		lb/A		%		lb/A		lb/A		lb/A	
Crop Stage Majority			Main		Main		Main	Main		Main		Main		by mean		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage																		
1	UTC 0 N	0		98.8	d	82.8	d	28.5	c	3843	d	0.77	c	30	d	0	c	4144	d	3547	a	7691	e
2	UREA SPF	138	1 DPreF	103.0	a	87.0	a	35.5	a	7235	a	1.57	a	114	a	55	a	7603	a	3827	a	11430	a
3	UREA SPostF	138	1 DPostF	100.3	b	84.3	b	30.8	bc	4557	cd	0.92	b	41	bcd	3	bc	5160	bc	3577	a	8737	bcd
4	UREA 2/3	92	1 DPostF	100.0	bc	84.0	bc	30.8	bc	4945	cd	0.85	bc	42	bc	4	bc	4846	bcd	3627	a	8472	cde
	UREA 1/3	46	3 DpostF																		
5	UREA 2/3	92	1 DpostF	99.5	c	83.5	c	31.0	b	5248	bc	0.88	bc	46	bc	6	bc	4996	bc	3601	a	8597	cd
	UREA 1/3	46	5 DpostF																		
6	UREA 2/3	92	1 DpostF	99.8	bc	83.8	bc	30.8	bc	4928	cd	0.88	bc	43	bc	4	bc	5502	b	3902	a	9404	b
	UREA 1/3	46	10 postF																		
7	UREA 1/2	69	1 DPostF	100.0	bc	84.0	bc	30.8	bc	5603	bc	0.84	bc	47	bc	7	bc	5331	bc	3677	a	9009	bcd
	UREA 1/2	69	3 DpostF																		
8	UREA 1/2	69	1 DpostF	100.0	bc	84.0	bc	30.5	bc	6341	ab	0.84	bc	53	b	11	b	5075	bc	3613	a	8688	bcd
	UREA 1/2	69	5 DpostF																		
9	UREA 1/2	69	1 DpostF	99.8	bc	83.8	bc	31.0	b	5637	bc	0.84	bc	47	bc	7	bc	5468	b	3704	a	9171	bc
	UREA 1/2	69	10 postF																		
10	UREA 1/3	46	1 DPostF	100.0	bc	84.0	bc	30.8	bc	5134	bc	0.84	bc	43	bc	4	bc	5069	bc	3512	a	8581	cd
	UREA 2/3	92	3 DpostF																		
11	UREA 1/3	46	1 DpostF	99.8	bc	83.8	bc	29.3	bc	4612	cd	0.82	bc	38	cd	3	bc	4658	cd	3578	a	8236	de
	UREA 2/3	92	5 DpostF																		
12	UREA 1/3	46	1 DpostF	99.8	bc	83.8	bc	30.0	bc	5001	cd	0.87	bc	44	bc	4	bc	5418	b	3770	a	9189	bc
	UREA 2/3	92	10 postF																		
LSD P=.05				0.70		0.70		2.30		1277.1		0.1124		12.1		8.1		719.4		266.7		784.0	
Standard Deviation				0.48		0.48		1.60		887.7		0.0781		8.4		5.6		500.1		185.4		544.9	
CV				0.48		0.58		5.2		16.89		8.59		17.21		61.85		9.49		5.06		6.1	
Treatment F				17.194		17.194		4.342		3.941		29.556		25.378		27.485		10.977		1.648		11.217	
Treatment Prob(F)				0.0001		0.0001		0.0005		0.0011		0.0001		0.0001		0.0001		0.0001		0.1307		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Soil Amendments (Rice Husk Ash, Silica Slag, and AgLime) on Rice Yield When Applied under Different Water Practices – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-41

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.50
- **pH**..... : 7.77
- **Extractable nutrients** ppm ..... : Ca-1,715; Cu-0.51; Mg-380; P-4.1; K-86; Na-64; S-6.7; Zn-3.2

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 19
- **Seeding rate/depth** ..... : 10 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 8
- **Ratoon Harvest date**..... : Nov. 14

Seed treatment/cwt ..... : **Hybrids:**
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, Aug. 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 28
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 16
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 80. Evaluation of soil amendments (rice husk ash, silica slag, and AgLime) on rice yield when applied under different water practices – H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd										Biomass		Nitrogen			
Rating Date								8/8/2019		8/8/2019		11/14/2019									
Rating Type				50% HD		50% HD		Heights		Yield		Yield		Total Yield		50%HD		50%HD		N Uptake	
Rating Unit				days		days				lb/A		lb/A				lb/A		%		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC +RC		Main		Main		Main	
Trt No.	Treatment Name	Rate (ton/A)	Growth Stage																		
1	Delayed Flood Rice husk ash @1 ton/A	1	Pre-Plant	99.0	ef	84.0	ef	42.5	bc	9448	ab	1513	a	10961	a	7958	a	1.94	bc	154	a
2	Delayed Flood Silica Slag @3 ton/A 60%ECCE	3	Pre-Plant	100.3	bcd	85.3	bcd	45.0	a	9408	ab	1068	ab	10476	a	7533	a	2.03	b	152	a
3	Delayed Flood AgLime @ 2 ton/A 90%ECCE	2	Pre-Plant	100.3	bcd	85.3	bcd	43.0	abc	9639	a	1311	a	10950	a	8289	a	1.91	bc	158	a
4	AWD Rice husk ash @1 ton/A	1	Pre-Plant	98.8	f	83.8	f	41.0	c	9144	abc	608	bcd	9751	b	7311	a	1.82	bc	132	ab
5	AWD Silica Slag @3 ton/A 60%ECCE	3	Pre-Plant	100.5	bc	85.5	bc	42.5	bc	8702	c	440	cd	9142	c	7047	a	1.75	c	124	bc
6	AWD AgLime @ 2 ton/A 90%ECCE	2	Pre-Plant	100.0	cde	85.0	cde	44.0	ab	9063	bc	468	cd	9532	bc	6790	a	1.77	c	120	bcd
7	Semi-aerobic Rice husk ash @1 ton/A	1	Pre-Plant	99.3	def	84.3	def	33.5	ef	6877	d	360	cd	7238	d	4199	b	2.40	a	100	cde
8	Semi-aerobic Silica Slag @3 ton/A 60%ECCE	3	Pre-Plant	101.8	a	86.8	a	36.5	d	6465	d	214	d	6679	d	3340	bc	2.40	a	79	e
9	Semi-aerobic AgLime @ 2 ton/A 90%ECCE	2	Pre-Plant	101.3	ab	86.3	ab	35.0	de	6827	d	254	d	7081	d	4028	b	2.35	a	94	de
10	Delayed Flood No amendment			102.0	a	87.0	a	27.8	g	2865	f	824	bc	3688	f	4269	b	0.82	de	35	f
11	AWD No amendment			101.8	a	86.8	a	32.8	f	3756	e	581	cd	4337	e	4637	b	0.72	e	33	f
12	Semi-aerobic No amendment			100.5	bc	85.5	bc	34.3	ef	3854	e	517	cd	4371	e	2337	c	1.00	d	23	f
LSD P=.05				1.20		1.20		2.15		515.6		463.6		582.1		1595.1		0.2412		26.5	
Standard Deviation				0.84		0.84		1.49		358.4		322.2		404.6		1108.8		0.1677		18.4	
CV				0.83		0.98		3.92		5.0		47.39		5.15		19.64		9.63		18.38	
Treatment F				6.850		6.850		54.951		192.56		6.682		174.105		13.555		49.797		27.734	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 81. Two-way comparison of the Evaluation of soil amendments (rice husk ash, silica slag, and AgLime) on rice yield when applied under different water practices – H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd								Biomass		Nitrogen					
Rating Date								8/8/2019		8/8/2019		11/14/2019									
Rating Type				50% HD		50% HD		Heights		Yield		Yield		Total Yield		50%HD		50%HD		N Uptake	
Rating Unit				days		days				lb/A		lb/A				lb/A		%		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC +RC		Main		Main		Main	
Trt No.	Treatment Name	Rate (ton/A)	Growth Stage																		
TABLE OF A (Water Mgt) MEANS																					
1	Delayed Flood			100.4	a	85.4	a	39.6	a	7840	a	1179	a	9019	a	7012	a	1.67	b	125	a
2	AWD			100.3	a	85.3	a	40.1	a	7666	a	524	b	8191	b	6446	a	1.51	c	102	b
3	Semi-aerobic			100.7	a	85.7	a	34.8	b	6006	b	336	b	6342	c	3476	b	2.04	a	74	c
P				0.3245		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	
LSD P=.05				0.60		0.60		1.07		257.8		231.8		291.1		797.5		0.1206		13.3	
TABLE OF B (Fertility) MEANS																					
1	Rice husk ash @1 ton/A	1	Pre-Plant	99.0	c	84.0	c	39.0	b	8490	a	827	a	9317	a	6489	a	2.05	a	129	a
2	Silica Slag @3 ton/A 60%ECCE	3	Pre-Plant	100.8	ab	85.8	ab	41.3	a	8192	b	574	a	8766	b	5973	a	2.06	a	118	a
3	AgLime @ 2 ton/A 90%ECCE	2	Pre-Plant	100.5	b	85.5	b	40.7	a	8510	a	678	a	9188	a	6369	a	2.01	a	124	a
4	No amendment			101.4	a	86.4	a	31.6	c	3492	c	641	a	4132	c	3748	b	0.85	b	31	b
P				0.0001		0.0001		0.0001		0.0001		0.2828		0.0001		0.0001		0.0001		0.0001	
LSD P=.05				0.69		0.69		1.24		297.7		267.6		336.1		920.9		0.1393		15.3	

Continued.

Table 81. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd								Biomass		Nitrogen			
Rating Date								8/8/2019		8/8/2019		11/14/2019							
Rating Type				50% HD		50% HD		Heights		Yield		Yield		Total Yield		50%HD		50%HD		N Uptake	
Rating Unit				days		days				lb/A		lb/A				lb/A		%		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC +RC		Main		Main		Main	
Trt No.	Treatment Name	Rate (ton/A)	Growth Stage																		
TABLE OF A (Water Mgt) B (Fertility) MEANS																					
1	Delayed Flood			99.0	ef	84.0	ef	42.5	bc	9448	ab	1513	a	10961	a	7958	a	1.94	a	154	a
1	Rice husk ash @1 ton/A	1	Pre-Plant																		
2	AWD			98.8	f	83.8	f	41.0	c	9144	abc	608	a	9751	b	7311	a	1.82	a	132	a
1	Rice husk ash @1 ton/A	1	Pre-Plant																		
3	Semi-aerobic			99.3	def	84.3	def	33.5	ef	6877	d	360	a	7238	d	4199	a	2.40	a	100	a
1	Rice husk ash @1 ton/A	1	Pre-Plant																		
1	Delayed Flood			100.3	bcd	85.3	bcd	45.0	a	9408	ab	1068	a	10476	a	7533	a	2.03	a	152	a
2	Silica Slag @3 ton/A 60%ECCE	3	Pre-Plant																		
2	AWD			100.5	bc	85.5	bc	42.5	bc	8702	c	440	a	9142	c	7047	a	1.75	a	124	a
2	Silica Slag @3 ton/A 60%ECCE	3	Pre-Plant																		
3	Semi-aerobic			101.8	a	86.8	a	36.5	d	6465	d	214	a	6679	d	3340	a	2.40	a	79	a
2	Silica Slag @3 ton/A 60%ECCE	3	Pre-Plant																		
1	Delayed Flood			100.3	bcd	85.3	bcd	43.0	abc	9639	a	1311	a	10950	a	8289	a	1.91	a	158	a
3	AgLime @ 2 ton/A 90%ECCE	2	Pre-Plant																		
2	AWD			100.0	cde	85.0	cde	44.0	ab	9063	bc	468	a	9532	bc	6790	a	1.77	a	120	a
3	AgLime @ 2 ton/A 90%ECCE	2	Pre-Plant																		
3	Semi-aerobic			101.3	ab	86.3	ab	35.0	de	6827	d	254	a	7081	d	4028	a	2.35	a	94	a
3	AgLime @ 2 ton/A 90%ECCE	2	Pre-Plant																		
1	Delayed Flood			102.0	a	87.0	a	27.8	g	2865	f	824	a	3688	f	4269	a	0.82	a	35	a
4	No amendment																				
2	AWD			101.8	a	86.8	a	32.8	f	3756	e	581	a	4337	e	4637	a	0.72	a	33	a
4	No amendment																				
3	Semi-aerobic			100.5	bc	85.5	bc	34.3	ef	3854	e	517	a	4371	e	2337	a	1.00	a	23	a
4	No amendment																				
P				0.0178		0.0001		0.0001		0.0001		0.1958		0.0001		0.353		0.3566		0.0585	
LSD P=.05				1.20		1.20		2.15		515.6		463.6		582.1		1595.1		0.2412		26.5	
Standard Deviation				0.84		0.84		1.49		358.4		322.2		404.6		1108.8		0.1677		18.4	
CV				0.83		0.98		3.92		5.0		47.4		5.2		19.6		9.6279		18.4	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Water Management Practices on Nitrogen Uptake, Nitrogen Use Efficiency, Yield and Yield Components – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-29

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.50
- **pH**..... : 7.77
- **Extractable nutrients** ppm ..... : Ca-1,715; Cu-0.51; Mg-380; P-4.1; K-86; Na-64; S-6.7; Zn-3.2

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 19
- **Seeding rate/depth** ..... : Conv. - 33, Hyb - 10seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : Aug. 8
- **Ratoon Harvest date**..... : November 14

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt
Hybrids:
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
90 lb N/A 46-0-0, August 14

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 28
- **Drain** ..... : July 24
- **Ratoon flood** ..... : Aug. 16
- **Ratoon drain** ..... : Oct. 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 82. Evaluation of water management practices on nitrogen uptake, nitrogen use efficiency, yield and yield components. Agronomic data and yield. H. Rouse Caffey Rice Research Station.

Crop Name			Rice		Rice		Rice		Rice		Rice		Rice	
Description			Plant-hd		Emer-hd		Tip of Panicle							
Rating Date							8/8/2019		8/8/2019		11/13/2019			
Part Rated														
Rating Type			50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit			days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority			Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage											
1	Delayed flood/CL153 0 N/A	0		102.8	a-e	86.8	a-e	28.5	h	4008	i	1234	bcd	5153	jk
2	Delayed flood/CL153 150 lb N/A	150	PF	104.8	ab	88.8	ab	37.5	d	8578	cde	2993	a	11571	abc
3	Delayed flood/CL153 100/50 lb N/A	150	PF/PI	104.8	ab	88.8	ab	36.0	de	8325	cde	3066	a	11391	abc
4	Delayed flood/CL153 80/35/35 lb N/A	150	PF/PI/Boot	104.5	abc	88.5	abc	34.0	ef	8032	e	3005	a	11067	bcd
5	Delayed flood/CLXL745 0 N/A	0		98.8	g	82.8	g	32.5	f	4757	h	888	def	5645	ij
6	Delayed flood/CLXL745 150 lb N/A	150	PF	102.0	cde	86.0	cde	45.8	a	10848	a	1130	cd	11978	a
7	Delayed flood/CLXL745 100/50 lb N/A	150	PF/PI	102.0	cde	86.0	cde	44.5	ab	10554	ab	1195	bcd	11749	ab
8	Delayed flood/CLXL745 80/35/35 lb N/A	150	PF/PI/Boot	103.0	a-e	87.0	a-e	41.0	c	10459	ab	1050	cde	11509	abc
9	AWD/CL153 0 N/A	0		102.5	a-e	86.5	a-e	27.0	h	3896	i	787	d-g	4683	kl
10	AWD/CL153 150 lb N/A	150	PF	105.0	a	89.0	a	37.3	d	8736	c	1433	bc	10169	ef
11	AWD/CL153 100/50 lb N/A	150	PF/PI	105.0	a	89.0	a	36.3	de	8514	cde	1376	bc	9890	f
12	AWD/CL153 80/35/35 lb N/A	150	PF/PI/Boot	105.0	a	89.0	a	35.5	de	8063	de	1607	b	9670	fg

Continued.

Table 82. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/8/2019		8/8/2019		11/13/2019			
Part Rated															
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
13	AWD/CLXL745 0 N/A	0		99.3	fg	83.3	fg	32.0	fg	4834	h	654	efg	5488	j
14	AWD/CLXL745 150 lb N/A	150	PF	101.0	efg	85.0	efg	42.3	bc	10800	a	395	g	11195	bcd
15	AWD/CLXL745 100/50 lb N/A	150	PF/PI	101.8	def	85.8	def	42.8	bc	10354	ab	640	efg	10994	cd
16	AWD/CLXL745 80/35/35 lb N/A	150	PF/PI/Boot	102.3	b-e	86.3	b-e	42.0	bc	10084	b	558	fg	10641	de
17	Aerobic/CL153 0 N/A	0		103.3	a-e	87.3	a-e	22.8	i	2976	j	501	fg	3476	m
18	Aerobic/CL153 150 lb N/A	150	PF	105.0	a	89.0	a	29.3	h	5896	g	398	g	6294	i
19	Aerobic/CL153 100/50 lb N/A	150	PF/PI	104.0	a-d	88.0	a-d	29.3	h	6773	f	438	fg	7211	h
20	Aerobic/CL153 80/35/35 lb N/A	150	PF/PI/Boot	104.5	abc	88.5	abc	29.5	gh	6670	f	556	fg	7226	h
21	Aerobic/CLXL745 0 N/A	0		101.8	def	85.8	def	28.5	h	3872	i	445	fg	4317	l
22	Aerobic/CLXL745 150 lb N/A	150	PF	101.0	efg	85.0	efg	37.5	d	8702	cd	346	g	9048	g
23	Aerobic/CLXL745 100/50 lb N/A	150	PF/PI	102.0	cde	86.0	cde	35.8	de	8677	cde	410	g	9086	g
24	Aerobic/CLXL745 80/35/35 lb N/A	150	PF/PI/Boot	102.0	cde	86.0	cde	35.8	de	8778	c	397	g	9174	g
LSD P=.05				2.67		2.67		2.57		650.9		463.5		712.4	
Standard Deviation				1.89		1.89		1.82		461.2		328.5		504.8	
CV				1.84		2.18		5.19		6.04		30.92		5.81	
Treatment F				3.641		3.641		43.683		115.50		26.452		118.990	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 83. Evaluation of water management practices on nitrogen uptake, nitrogen use efficiency, yield and yield components. Aboveground biomass, nitrogen uptake, nitrogen use efficiency and milling data. H. Rouse Caffey Rice Research Station.

Crop Name			Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description			Tissue		Tissue N		N Uptake		N fert Eff.		N fert Eff.					
Part Rated			50% HD		50% HD		50% HD		50% HD		50% HD					
Rating Type			biomass		Abvgrd		Abvgrd						Milling (%)			
Rating Unit			lb/A		% N		lb/A		%		%		head		total	
Crop Stage Majority			Main		Main		Main		by block		by mean		Main		Main	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage													
1	Delayed flood/CL153 0 N/A	0		2941	fgh	0.73	jk	21	h	0	h	0	g	72.8	cde	57.8	h
2	Delayed flood/CL153 150 lb N/A	150	PF	6339	bc	2.02	cd	127	a	71	a	69	a	73.3	cd	68.5	ab
3	Delayed flood/CL153 100/50 lb N/A	150	PF/PI	6031	bc	1.67	efg	100	c-f	53	c-f	51	b-e	73.3	cd	68.5	ab
4	Delayed flood/CL153 80/35/35 lb N/A	150	PF/PI/Boot	5403	cd	1.59	fgh	86	fg	43	fg	41	ef	73.3	cd	68.5	ab
5	Delayed flood/CLXL745 0 N/A	0		3936	ef	0.66	k	26	h	0	h	0	g	71.9	e	59.0	gh
6	Delayed flood/CLXL745 150 lb N/A	150	PF	6530	bc	1.77	ef	116	abc	60	a-e	61	abc	74.3	ab	64.5	b-f
7	Delayed flood/CLXL745 100/50 lb N/A	150	PF/PI	6980	ab	1.45	h	102	b-f	50	def	52	b-e	73.5	bc	65.3	a-e
8	Delayed flood/CLXL745 80/35/35 lb N/A	150	PF/PI/Boot	6333	bc	1.49	gh	94	d-g	45	fg	47	def	73.0	cd	63.8	c-f
9	AWD/CL153 0 N/A	0		3367	e-h	0.61	k	21	h	0	h	0	g	72.0	e	61.5	e-h
10	AWD/CL153 150 lb N/A	150	PF	6161	bc	1.98	d	121	ab	67	ab	64	ab	73.0	cd	68.5	ab
11	AWD/CL153 100/50 lb N/A	150	PF/PI	6641	abc	1.71	ef	114	a-d	62	a-d	59	a-d	73.5	bc	69.5	a
12	AWD/CL153 80/35/35 lb N/A	150	PF/PI/Boot	5986	bc	1.50	gh	90	efg	46	efg	43	ef	73.0	cd	66.8	a-d

Continued.

Table 83. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Tissue		Tissue N		N Uptake		N fert Eff.		N fert Eff.					
Part Rated				50% HD		50% HD		50% HD		50% HD		50% HD					
Rating Type				biomass		Abvgrd		Abvgrd						Milling (%)			
Rating Unit				lb/A		% N		lb/A		%		%		head		total	
Crop Stage Majority				Main		Main		Main		by block		by mean		Main		Main	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage														
13	AWD/CLXL745 0 N/A	0		4184	def	0.69	jk	29	h	0	h	0	g	72.5	de	59.0	gh
14	AWD/CLXL745 150 lb N/A	150	PF	7073	ab	1.85	de	128	a	66	abc	69	a	74.5	a	67.3	abc
15	AWD/CLXL745 100/50 lb N/A	150	PF/PI	7897	a	1.40	hi	111	a-d	55	b-f	58	a-d	74.3	ab	66.8	a-d
16	AWD/CLXL745 80/35/35 lb N/A	150	PF/PI/Boot	6528	bc	1.23	i	80	g	34	g	37	f	73.3	cd	65.0	b-f
17	Aerobic/CL153 0 N/A	0		2520	gh	0.87	j	21	h	0	h	0	g	72.8	cde	62.8	d-g
18	Aerobic/CL153 150 lb N/A	150	PF	3862	efg	2.47	a	96	c-g	50	def	50	c-f	74.5	a	67.0	a-d
19	Aerobic/CL153 100/50 lb N/A	150	PF/PI	4597	de	2.22	b	101	b-f	53	b-f	54	b-e	74.8	a	69.5	a
20	Aerobic/CL153 80/35/35 lb N/A	150	PF/PI/Boot	3764	efg	2.50	a	94	d-g	49	def	50	c-f	74.3	ab	67.0	a-d
21	Aerobic/CLXL745 0 N/A	0		2201	h	0.81	jk	18	h	0	h	0	g	72.8	cde	60.8	fgh
22	Aerobic/CLXL745 150 lb N/A	150	PF	5342	cd	2.18	bc	115	abc	65	abc	64	ab	74.8	a	68.3	ab
23	Aerobic/CLXL745 100/50 lb N/A	150	PF/PI	4584	de	2.37	ab	108	a-e	60	a-d	59	a-d	74.3	ab	68.3	ab
24	Aerobic/CLXL745 80/35/35 lb N/A	150	PF/PI/Boot	4549	de	2.45	a	108	a-e	60	a-d	59	a-d	74.3	ab	67.0	a-d
LSD P=.05				1363.9		0.200		20.4		14.2		13.7		0.91		4.36	
Standard Deviation				966.9		0.141		14.4		10.1		9.7		0.64		3.09	
CV				18.75		8.89		17.12		24.5		23.65		0.87		4.72	
Treatment F				10.543		77.022		28.232		25.978		27.589		6.922		5.298	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 84. Evaluation of water management practices on nitrogen uptake, nitrogen use efficiency, yield and yield components. Yield components. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description								Yield Components					
Rating Type				WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed	
Rating Unit				grams		number		grams		grams		number	
Crop Stage Majority				Main		Main		Main		Main		Main	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	Delayed flood/CL153 0 N/A	0		107.9	h	44.3	g	38.8	l	13.0	ghi	561.8	gh
2	Delayed flood/CL153 150 lb N/A	150	PF	340.7	c-f	93.3	b-e	146.0	efg	16.3	efg	687.5	d-h
3	Delayed flood/CL153 100/50 lb N/A	150	PF/PI	305.8	fg	95.0	b-e	125.8	e-h	16.0	efg	859.5	b-f
4	Delayed flood/CL153 80/35/35 lb N/A	150	PF/PI/Boot	288.2	fg	90.0	cde	107.1	ghi	16.5	efg	686.8	d-h
5	Delayed flood/CLXL745 0 N/A	0		147.5	h	42.5	g	59.0	jkl	19.2	cde	741.5	c-g
6	Delayed flood/CLXL745 150 lb N/A	150	PF	424.9	a	88.3	de	207.5	a	31.0	a	1410.0	a
7	Delayed flood/CLXL745 100/50 lb N/A	150	PF/PI	405.9	ab	80.5	ef	188.5	a-d	26.7	ab	1034.0	b
8	Delayed flood/CLXL745 80/35/35 lb N/A	150	PF/PI/Boot	434.9	a	82.0	ef	214.4	a	24.7	b	942.8	bcd
9	AWD/CL153 0 N/A	0		132.2	h	50.0	g	49.6	kl	14.0	f-i	617.0	fgh
10	AWD/CL153 150 lb N/A	150	PF	370.7	a-e	112.8	a	133.2	e-h	18.3	def	920.0	b-e
11	AWD/CL153 100/50 lb N/A	150	PF/PI	347.9	b-f	102.8	a-d	150.1	def	16.4	efg	832.8	b-f
12	AWD/CL153 80/35/35 lb N/A	150	PF/PI/Boot	328.0	def	96.0	b-e	130.6	e-h	15.3	e-h	630.8	fgh

Continued.

Table 84. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description								Yield Components					
Rating Type				WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed	
Rating Unit				grams		number		grams		grams		number	
Crop Stage Majority				Main		Main		Main		Main		Main	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
13	AWD/CLXL745 0 N/A	0		156.4	h	41.3	g	85.0	ijk	24.5	b	963.8	bc
14	AWD/CLXL745 150 lb N/A	150	PF	403.4	abc	93.0	b-e	196.1	abc	21.7	bcd	856.8	b-f
15	AWD/CLXL745 100/50 lb N/A	150	PF/PI	415.2	a	87.5	de	199.0	ab	25.6	b	980.0	bc
16	AWD/CLXL745 80/35/35 lb N/A	150	PF/PI/Boot	333.1	def	69.3	f	157.7	c-f	23.5	bc	907.0	b-e
17	Aerobic/CL153 0 N/A	0		95.6	h	44.3	g	33.9	l	10.4	hi	433.8	h
18	Aerobic/CL153 150 lb N/A	150	PF	254.6	g	106.5	ab	92.8	hij	9.7	i	440.5	h
19	Aerobic/CL153 100/50 lb N/A	150	PF/PI	288.4	fg	114.5	a	129.7	e-h	12.0	ghi	525.8	gh
20	Aerobic/CL153 80/35/35 lb N/A	150	PF/PI/Boot	254.8	g	108.3	ab	106.9	ghi	11.4	ghi	516.8	gh
21	Aerobic/CLXL745 0 N/A	0		106.4	h	37.3	g	36.3	l	15.2	e-h	616.0	fgh
22	Aerobic/CLXL745 150 lb N/A	150	PF	307.7	efg	87.5	de	119.9	f-i	16.1	efg	683.0	d-h
23	Aerobic/CLXL745 100/50 lb N/A	150	PF/PI	323.6	def	100.5	a-d	105.2	ghi	15.2	e-h	641.3	fgh
24	Aerobic/CLXL745 80/35/35 lb N/A	150	PF/PI/Boot	381.8	a-d	106.0	abc	163.7	b-e	16.3	efg	676.8	e-h
LSD P=.05				64.80		16.34		40.71		5.12		263.73	
Standard Deviation				45.94		11.58		28.86		3.63		186.96	
CV				15.85		14.09		23.27		20.32		24.7	
Treatment F				22.846		19.020		14.710		9.544		5.722	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 85. Two-way table of the evaluation of water management practices on nitrogen uptake, nitrogen use efficiency, yield and yield components. Agronomic data and yield. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/8/2019		8/8/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
TABLE OF A (Water Management) MEANS															
1	Conventional flood			102.8	a	86.8	a	37.5	a	8195	a	1820	a	10008	a
2	Alternate Wet and Dry			102.7	a	86.7	a	36.9	a	8160	a	931	b	9091	b
3	Aerobic			102.9	a	86.9	a	31.0	b	6543	b	436	c	6979	c
P				0.8982		0.8982		0.0001		0.0001		0.0001		0.0001	
LSD P=.05				0.94		0.94		0.91		230.1		163.9		251.9	
TABLE OF B (Variety) MEANS															
1	CL153			104.3	a	88.3	a	31.9	b	6705	b	1450	a	8150	b
2	CLXL745			101.4	b	85.4	b	38.4	a	8560	a	676	b	9236	a
P				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	
LSD P=.05				0.77		0.77		0.74		187.9		133.8		205.7	
TABLE OF C (Fertilizer) MEANS															
1	0 N/A	0		101.4	b	85.4	b	28.5	c	4057	b	751	b	4794	b
2	150 lb N/A	150	PF	103.1	a	87.1	a	38.3	a	8927	a	1116	a	10043	a
3	100/50 lb N/A	150	PF/PI	103.3	a	87.3	a	37.4	a	8866	a	1188	a	10054	a
4	80/35/35 lb N/A	150	PF/PI/Boot	103.5	a	87.5	a	36.3	b	8681	a	1196	a	9881	a
P				0.0007		0.0007		0.0001		0.0001		0.0001		0.0001	
LSD P=.05				1.09		1.09		1.05		265.7		189.2		290.9	

Continued.

Table 85. Continued.

Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage	Rice Plant-hd 50% HD days Main		Rice Emer-hd 50% HD days Main		Rice Tip of Panicle 8/8/2019 Height in Main		Rice 8/8/2019 Yield lb/A Main		Rice 11/13/2019 Yield lb/A Ratoon		Rice Total Yield lb/A MC + RC	
TABLE OF A (Water Management) B (Variety) MEANS															
1	Conventional flood			104.2	a	88.2	a	34.0	a	7235	a	2574	a	9795	b
1	CL153														
2	Alternate Wet and Dry			104.4	a	88.4	a	34.0	a	7302	a	1301	b	8603	c
1	CL153														
3	Aerobic			104.2	a	88.2	a	27.7	a	5579	a	473	d	6052	e
1	CL153														
1	Conventional flood			101.4	a	85.4	a	40.9	a	9154	a	1066	c	10220	a
2	CLXL745														
2	Alternate Wet and Dry			101.1	a	85.1	a	39.8	a	9018	a	562	d	9580	b
2	CLXL745														
3	Aerobic			101.7	a	85.7	a	34.4	a	7507	a	399	d	7906	d
2	CLXL745														
P				0.6809		0.6809		0.3947		0.5834		0.0001		0.0001	
LSD P=.05				1.34		1.34		1.29		325.5		231.7		356.2	
TABLE OF B (Variety) C (Fertilizer) MEANS															
1	CL153			102.8	a	86.8	a	26.1	a	3626	d	841	b	4437	a
1	0 N/A	0													
2	CLXL745			99.9	a	83.9	a	31.0	a	4488	c	662	b	5150	a
1	0 N/A	0													
1	CL153			104.9	a	88.9	a	34.7	a	7736	b	1608	a	9345	a
2	150 lb N/A	150	PF												
2	CLXL745			101.3	a	85.3	a	41.8	a	10117	a	624	b	10741	a
2	150 lb N/A	150	PF												
1	CL153			104.6	a	88.6	a	33.8	a	7871	b	1627	a	9497	a
3	100/50 lb N/A	150	PF/PI												
2	CLXL745			101.9	a	85.9	a	41.0	a	9861	a	748	b	10610	a
3	100/50 lb N/A	150	PF/PI												
1	CL153			104.7	a	88.7	a	33.0	a	7588	b	1723	a	9321	a
4	80/35/35 lb N/A	150	PF/PI/Boot												
2	CLXL745			102.4	a	86.4	a	39.6	a	9773	a	668	b	10441	a
4	80/35/35 lb N/A	150	PF/PI/Boot												
P				0.6686		0.6686		0.1161		0.0001		0.0001		0.1444	
LSD P=.05				1.54		1.54		1.49		375.8		267.6		411.3	

Continued.

Table 85. Continued.

Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage	Rice Plant-hd 50% HD days Main		Rice Emer-hd 50% HD days Main		Rice Tip of Panicle 8/8/2019 Height in Main		Rice 8/8/2019 Yield lb/A Main		Rice 11/13/2019 Yield lb/A Ratoon		Rice Total Yield lb/A MC + RC	
TABLE OF A (Water Management) C (Fertilizer) MEANS															
1	Conventional flood			100.8	a	84.8	a	30.5	e	4382	d	1061	b	5399	f
1	0 N/A	0													
2	Alternate Wet and Dry			100.9	a	84.9	a	29.5	e	4365	d	721	cd	5085	f
1	0 N/A	0													
3	Aerobic			102.5	a	86.5	a	25.6	f	3424	e	473	de	3897	g
1	0 N/A	0													
1	Conventional flood			103.4	a	87.4	a	41.6	a	9713	a	2062	a	11774	a
2	150 lb N/A	150	PF												
2	Alternate Wet and Dry			103.0	a	87.0	a	39.8	b	9768	a	914	bc	10682	b
2	150 lb N/A	150	PF												
3	Aerobic			103.0	a	87.0	a	33.4	d	7299	c	372	e	7671	e
2	150 lb N/A	150	PF												
1	Conventional flood			103.4	a	87.4	a	40.3	ab	9440	ab	2130	a	11570	a
3	100/50 lb N/A	150	PF/PI												
2	Alternate Wet and Dry			103.4	a	87.4	a	39.5	b	9434	ab	1008	bc	10442	bc
3	100/50 lb N/A	150	PF/PI												
3	Aerobic			103.0	a	87.0	a	32.5	d	7725	c	424	de	8149	de
3	100/50 lb N/A	150	PF/PI												
1	Conventional flood			103.8	a	87.8	a	37.5	c	9245	b	2028	a	11288	a
4	80/35/35 lb N/A	150	PF/PI/Boot												
2	Alternate Wet and Dry			103.6	a	87.6	a	38.8	bc	9073	b	1082	b	10156	c
4	80/35/35 lb N/A	150	PF/PI/Boot												
3	Aerobic			103.3	a	87.3	a	32.6	d	7724	c	476	de	8200	d
4	80/35/35 lb N/A	150	PF/PI/Boot												
P				0.5784		0.5784		0.0182		0.0003		0.0001		0.0001	
LSD P=.05				1.89		1.89		1.82		460.3		327.7		503.8	

Continued.

Table 85. Continued.

Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage	Rice Plant-hd 50% HD days Main		Rice Emer-hd 50% HD days Main		Rice Tip of Panicle 8/8/2019 Height in Main		Rice 8/8/2019 Yield lb/A Main		Rice 11/13/2019 Yield lb/A Ratoon		Rice Total Yield lb/A MC + RC	
TABLE OF A (Water Management) B (Variety) C (Fertilizer) MEANS															
1	Delayed flood/CL153			102.8	a	86.8	a	28.5	a	4008	a	1234	bcd	5153	a
1	0 N/A	0													
2	AWD/CL153			102.5	a	86.5	a	27.0	a	3896	a	787	d-g	4683	a
1	0 N/A	0													
3	Aerobic/CL153			103.3	a	87.3	a	22.8	a	2976	a	501	fg	3476	a
1	0 N/A	0													
1	Delayed flood/CLXL745			98.8	a	82.8	a	32.5	a	4757	a	888	def	5645	a
1	0 N/A	0													
2	AWD/CLXL745			99.3	a	83.3	a	32.0	a	4834	a	654	efg	5488	a
1	0 N/A	0													
3	Aerobic/CLXL745			101.8	a	85.8	a	28.5	a	3872	a	445	fg	4317	a
1	0 N/A	0													
1	Delayed flood/CL153			104.8	a	88.8	a	37.5	a	8578	a	2993	a	11571	a
2	150 lb N/A	150	PF												
2	AWD/CL153			105.0	a	89.0	a	37.3	a	8736	a	1433	bc	10169	a
2	150 lb N/A	150	PF												
3	Aerobic/CL153			105.0	a	89.0	a	29.3	a	5896	a	398	g	6294	a
2	150 lb N/A	150	PF												
1	Delayed flood/CLXL745			102.0	a	86.0	a	45.8	a	10848	a	1130	cd	11978	a
2	150 lb N/A	150	PF												
2	AWD/CLXL745			101.0	a	85.0	a	42.3	a	10800	a	395	g	11195	a
2	150 lb N/A	150	PF												
3	Aerobic/CLXL745			101.0	a	85.0	a	37.5	a	8702	a	346	g	9048	a
2	150 lb N/A	150	PF												

Continued.

Table 85. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle							
Rating Date								8/8/2019		8/8/2019		11/13/2019			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in		lb/A		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	Delayed flood/CL153			104.8	a	88.8	a	36.0	a	8325	a	3066	a	11391	a
3	100/50 N/A	150	PF/PI												
2	AWD/CL153			105.0	a	89.0	a	36.3	a	8514	a	1376	bc	9890	a
3	100/50 N/A	150	PF/PI												
3	Aerobic/CL153			104.0	a	88.0	a	29.3	a	6773	a	438	fg	7211	a
3	100/50 N/A	150	PF/PI												
1	Delayed flood/CLXL745			102.0	a	86.0	a	44.5	a	10554	a	1195	bcd	11749	a
3	100/50 lb N/A	150	PF/PI												
2	AWD/CLXL745			101.8	a	85.8	a	42.8	a	10354	a	640	efg	10994	a
3	100/50 lb N/A	150	PF/PI												
3	Aerobic/CLXL745			102.0	a	86.0	a	35.8	a	8677	a	410	g	9086	a
3	100/50 lb N/A	150	PF/PI												
1	Delayed flood/CL153			104.5	a	88.5	a	34.0	a	8032	a	3005	a	11067	a
4	80/35/35 lb N/A	150	PF/PI/Boot												
2	AWD/CL153			105.0	a	89.0	a	35.5	a	8063	a	1607	b	9670	a
4	80/35/35 lb N/A	150	PF/PI/Boot												
3	Aerobic/CL153			104.5	a	88.5	a	29.5	a	6670	a	556	fg	7226	a
4	80/35/35 lb N/A	150	PF/PI/Boot												
1	Delayed flood/CLXL745			103.0	a	87.0	a	41.0	a	10459	a	1050	cde	11509	a
4	80/35/35 lb N/A	150	PF/PI/Boot												
2	AWD/CLXL745			102.3	a	86.3	a	42.0	a	10084	a	558	fg	10641	a
4	80/35/35 lb N/A	150	PF/PI/Boot												
3	Aerobic/CLXL745			102.0	a	86.0	a	35.8	a	8778	a	397	g	9174	a
4	80/35/35 lb N/A	150	PF/PI/Boot												
P				0.8572		0.8572		0.5418		0.7377		0.0172		0.1726	
LSD P=.05				2.67		2.67		2.57		650.9		463.5		712.4	
Standard Deviation				1.89		1.89		1.82		461.2		328.5		504.8	
CV				1.84		2.18		5.19		6.0		30.9		5.8	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 86. Two-way comparison of the evaluation of water management practices on nitrogen uptake and nitrogen use efficiency. Above ground biomass, nitrogen, nitrogen uptake, and milling data. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Tissue		Tissue N		N Uptake		N fert Eff.		N fert Eff.					
Part Rated				50% HD		50% HD		50% HD		50% HD		50% HD					
Rating Type				biomass		Abvgrd		Abvgrd						Milling (%)			
Rating Unit				lb/A		% N		lb/A		%		%		head		total	
Crop Stage Majority				Main		Main		Main		by block		by mean		Main		Main	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage														
TABLE OF A (Water Management) MEANS																	
1	Conventional flood			5562	a	1.42	b	84	a	40	a	40	a	73.1	b	64.5	a
2	Alternate Wet and Dry			5980	a	1.37	b	87	a	41	a	41	a	73.3	b	65.5	a
3	Aerobic			3927	b	1.98	a	83	a	42	a	42	a	74.0	a	66.3	a
P				0.0001		0.0001		0.5350		0.7396		0.7516		0.0001		0.0635	
LSD P=.05				482.2		0.071		7.2		5.0		4.9		0.32		1.54	
TABLE OF B (Variety) MEANS																	
1	CL153			4801	b	1.65	a	83	a	41	a	40	a	73.4	a	66.3	a
2	CLXL745			5511	a	1.53	b	86	a	41	a	42	a	73.6	a	64.6	b
P				0.0006		0.0001		0.2393		0.9139		0.3446		0.0690		0.0071	
LSD P=.05				393.7		0.058		5.9		4.1		4.0		0.26		1.26	
TABLE OF C (Fertilizer) MEANS																	
1	0 N/A	0		3192	c	0.73	c	23	d	0	d	0	d	72.4	c	60.1	b
2	150 lb N/A	150	PF	5885	ab	2.05	a	117	a	63	a	63	a	74.0	a	67.3	a
3	100/50 lb N/A	150	PF/PI	6122	a	1.80	b	106	b	56	b	56	b	73.9	a	68.0	a
4	80/35/35 lb N/A	150	PF/PI/Boot	5427	b	1.79	b	92	c	46	c	46	c	73.5	b	66.3	a
P				0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	
LSD P=.05				556.8		0.081		8.3		5.8		5.6		0.37		1.78	

Continued.

Table 86. Continued.

Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage	Rice Tissue 50% HD biomass lb/A Main		Rice Tissue N 50% HD Abvgrd % N Main		Rice N Uptake 50% HD Abvgrd lb/A Main		Rice N fert Eff. 50% HD % by block		Rice N fert Eff. 50% HD % by mean		Rice Milling (%) head Main		Rice Milling (%) total Main	
TABLE OF A (Water Management) B (Variety) MEANS																	
1	Conventional flood			5179	a	1.50	a	84	a	42	ab	40	a	73.1	b	65.8	a
1	CL153																
2	Alternate Wet and Dry			5539	a	1.45	a	86	a	44	ab	42	a	72.9	b	66.6	a
1	CL153																
3	Aerobic			3686	a	2.02	a	78	a	38	b	39	a	74.1	a	66.6	a
1	CL153																
1	Conventional flood			5945	a	1.34	a	84	a	39	b	40	a	73.2	b	63.1	a
2	CLXL745																
2	Alternate Wet and Dry			6421	a	1.29	a	87	a	39	b	41	a	73.6	a	64.5	a
2	CLXL745																
3	Aerobic			4169	a	1.95	a	87	a	46	a	46	a	74.0	a	66.1	a
2	CLXL745																
P				0.6988		0.3427		0.388		0.0173		0.193		0.0271		0.3507	
LSD P=.05				682.0		0.100		10.2		7.1		6.9		0.45		2.18	
TABLE OF B (Variety) C (Fertilizer) MEANS																	
1	CL153			2943	a	0.74	a	21	a	0	a	0	a	72.5	c	60.7	a
1	0 N/A	0															
2	CLXL745			3440	a	0.72	a	24	a	0	a	0	a	72.4	c	59.6	a
1	0 N/A	0															
1	CL153			5454	a	2.16	a	115	a	63	a	61	a	73.6	b	68.0	a
2	150 lb N/A	150	PF														
2	CLXL745			6315	a	1.94	a	120	a	64	a	65	a	74.5	a	66.7	a
2	150 lb N/A	150	PF														
1	CL153			5756	a	1.86	a	105	a	56	a	55	a	73.8	b	69.2	a
3	100/50 lb N/A	150	PF/PI														
2	CLXL745			6487	a	1.74	a	107	a	55	a	56	a	74.0	ab	66.8	a
3	100/50 lb N/A	150	PF/PI														
1	CL153			5051	a	1.86	a	90	a	46	a	45	a	73.5	b	67.4	a
4	80/35/35 lb N/A	150	PF/PI/Boot														
2	CLXL745			5803	a	1.72	a	94	a	46	a	47	a	73.5	b	65.3	a
4	80/35/35 lb N/A	150	PF/PI/Boot														
P				0.9294		0.1034		0.9849		0.9868		0.9312		0.0309		0.8553	
LSD P=.05				787.5		0.115		11.8		8.2		7.9		0.52		2.52	

Continued.

Table 86. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Tissue		Tissue N		N Uptake		N fert Eff.		N fert Eff.					
Part Rated				50% HD		50% HD		50% HD		50% HD		50% HD					
Rating Type				biomass		Abvgrd		Abvgrd						Milling (%)			
Rating Unit				lb/A		% N		lb/A		%		%		head		total	
Crop Stage Majority				Main		Main		Main		by block		by mean		Main		Main	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage														
TABLE OF A (Water Management) C (Fertilizer) MEANS																	
1	Conventional flood			3438	a	0.69	g	24	e	0	e	0	f	72.3	a	58.4	a
1	0 N/A	0															
2	Alternate Wet and Dry			3776	a	0.65	g	25	e	0	e	0	f	72.3	a	60.3	a
1	0 N/A	0															
3	Aerobic			2360	a	0.84	f	19	e	0	e	0	f	72.8	a	61.8	a
1	0 N/A	0															
1	Conventional flood			6435	a	1.90	c	121	a	65	a	65	ab	73.8	a	66.5	a
2	150 lb N/A	150	PF														
2	Alternate Wet and Dry			6617	a	1.92	c	125	a	67	a	67	a	73.8	a	67.9	a
2	150 lb N/A	150	PF														
3	Aerobic			4602	a	2.33	b	106	b	57	ab	57	abc	74.6	a	67.6	a
2	150 lb N/A	150	PF														
1	Conventional flood			6505	a	1.56	d	101	bc	52	bc	52	cd	73.4	a	66.9	a
3	100/50 lb N/A	150	PF/PI														
2	Alternate Wet and Dry			7269	a	1.55	d	112	ab	58	ab	58	abc	73.9	a	68.1	a
3	100/50 lb N/A	150	PF/PI														
3	Aerobic			4590	a	2.29	b	105	b	57	ab	57	bc	74.5	a	68.9	a
3	100/50 lb N/A	150	PF/PI														
1	Conventional flood			5868	a	1.54	d	90	cd	44	cd	44	de	73.1	a	66.1	a
4	80/35/35 lb N/A	150	PF/PI/Boot														
2	Alternate Wet and Dry			6257	a	1.36	e	85	d	40	d	40	e	73.1	a	65.9	a
4	80/35/35 lb N/A	150	PF/PI/Boot														
3	Aerobic			4157	a	2.47	a	101	bc	54	b	54	c	74.3	a	67.0	a
4	80/35/35 lb N/A	150	PF/PI/Boot														
P				0.6708		0.0001		0.0259		0.04		0.0261		0.5493		0.8926	
LSD P=.05				964.5		0.141		14.4		10.1		9.7		0.64		3.08	

Continued.

Table 86. Continued.

Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage	Rice Tissue 50% HD biomass lb/A Main		Rice Tissue N 50% HD Abvgrd % N Main		Rice N Uptake 50% HD Abvgrd lb/A Main		Rice N fert Eff. 50% HD % by block		Rice N fert Eff. 50% HD % by mean		Rice Milling (%) head Main		Rice Milling (%) total Main	
TABLE OF A (Water Management) B (Variety) C (Fertilizer) MEANS																	
1	Delayed flood/CL153			2941	a	0.73	jk	21	a	0	a	0	a	72.8	a	57.8	a
1	0 N/A	0															
2	AWD/CL153			3367	a	0.61	k	21	a	0	a	0	a	72.0	a	61.5	a
1	0 N/A	0															
3	Aerobic/CL153			2520	a	0.87	j	21	a	0	a	0	a	72.8	a	62.8	a
1	0 N/A	0															
1	Delayed flood/CLXL745			3936	a	0.66	k	26	a	0	a	0	a	71.9	a	59.0	a
1	0 N/A	0															
2	AWD/CLXL745			4184	a	0.69	jk	29	a	0	a	0	a	72.5	a	59.0	a
1	0 N/A	0															
3	Aerobic/CLXL745			2201	a	0.81	jk	18	a	0	a	0	a	72.8	a	60.8	a
1	0 N/A	0															
1	Delayed flood/CL153			6339	a	2.02	cd	127	a	71	a	69	a	73.3	a	68.5	a
2	150 lb N/A	150	PF														
2	AWD/CL153			6161	a	1.98	d	121	a	67	a	64	a	73.0	a	68.5	a
2	150 lb N/A	150	PF														
3	Aerobic/CL153			3862	a	2.47	a	96	a	50	a	50	a	74.5	a	67.0	a
2	150 lb N/A	150	PF														
1	Delayed flood/CLXL745			6530	a	1.77	ef	116	a	60	a	61	a	74.3	a	64.5	a
2	150 lb N/A	150	PF														
2	AWD/CLXL745			7073	a	1.85	de	128	a	66	a	69	a	74.5	a	67.3	a
2	150 lb N/A	150	PF														
3	Aerobic/CLXL745			5342	a	2.18	bc	115	a	65	a	64	a	74.8	a	68.3	a
2	150 lb N/A	150	PF														

Continued.

Table 86. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Tissue		Tissue N		N Uptake		N fert Eff.		N fert Eff.			
Part Rated				50% HD		50% HD		50% HD		50% HD		50% HD			
Rating Type				biomass		Abvgrd		Abvgrd						Milling (%)	
Rating Unit				lb/A		% N		lb/A		%		%		head	total
Crop Stage Majority				Main		Main		Main		by block		by mean		Main	Main
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage												
1	Delayed flood/CL153			6031	a	1.67	efg	100	a	53	a	51	a	73.3 a	68.5 a
3	100/50 N/A	150	PF/PI												
2	AWD/CL153			6641	a	1.71	ef	114	a	62	a	59	a	73.5 a	69.5 a
3	100/50 N/A	150	PF/PI												
3	Aerobic/CL153			4597	a	2.22	b	101	a	53	a	54	a	74.8 a	69.5 a
3	100/50 N/A	150	PF/PI												
1	Delayed flood/CLXL745			6980	a	1.45	h	102	a	50	a	52	a	73.5 a	65.3 a
3	100/50 lb N/A	150	PF/PI												
2	AWD/CLXL745			7897	a	1.40	hi	111	a	55	a	58	a	74.3 a	66.8 a
3	100/50 lb N/A	150	PF/PI												
3	Aerobic/CLXL745			4584	a	2.37	ab	108	a	60	a	59	a	74.3 a	68.3 a
3	100/50 lb N/A	150	PF/PI												
1	Delayed flood/CL153			5403	a	1.59	fgh	86	a	43	a	41	a	73.3 a	68.5 a
4	80/35/35 lb N/A	150	PF/PI/Boot												
2	AWD/CL153			5986	a	1.50	gh	90	a	46	a	43	a	73.0 a	66.8 a
4	80/35/35 lb N/A	150	PF/PI/Boot												
3	Aerobic/CL153			3764	a	2.50	a	94	a	49	a	50	a	74.3 a	67.0 a
4	80/35/35 lb N/A	150	PF/PI/Boot												
1	Delayed flood/CLXL745			6333	a	1.49	gh	94	a	45	a	47	a	73.0 a	63.8 a
4	80/35/35 lb N/A	150	PF/PI/Boot												
2	AWD/CLXL745			6528	a	1.23	i	80	a	34	a	37	a	73.3 a	65.0 a
4	80/35/35 lb N/A	150	PF/PI/Boot												
3	Aerobic/CLXL745			4549	a	2.45	a	108	a	60	a	59	a	74.3 a	67.0 a
4	80/35/35 lb N/A	150	PF/PI/Boot												
P				0.5148		0.0344		0.3284		0.384		0.5487		0.5287	0.5054
LSD P=.05				1363.9		0.200		20.4		14.2		13.7		0.91	4.36
Standard Deviation				966.9		0.141		14.4		10.1		9.7		0.64	3.09
CV				18.8		8.887		17.1		24.5		23.6		0.87	4.72

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 87. Two-way comparison of evaluation of water management practices on nitrogen uptake and nitrogen use efficiency yield components. Yield components. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description								Yield Components					
Rating Type				WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed	
Rating Unit				grams		number		grams		grams		number	
Crop Stage Majority				Main		Main		Main		Main		Main	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
TABLE OF A (Water Management) MEANS													
1	Conventional flood			307.0	a	77.0	b	135.9	a	20.4	a	865.5	a
2	Alternate Wet and Dry			310.9	a	81.6	b	137.7	a	19.9	a	838.5	a
3	Aerobic			251.6	b	88.1	a	98.5	b	13.3	b	566.7	b
P				0.0001		0.0012		0.0001		0.0001		0.0001	
LSD P=.05				22.91		5.78		14.39		1.81		93.24	
TABLE OF B (Variety) MEANS													
1	CL153			259.6	b	88.1	a	103.7	b	14.1	b	642.7	b
2	CLXL745			320.1	a	76.3	b	144.3	a	21.6	a	871.1	a
P				0.0001		0.0001		0.0001		0.0001		0.0001	
LSD P=.05				18.71		4.72		11.75		1.48		76.13	
TABLE OF C (Fertilizer) MEANS													
1	0 N/A	0		124.3	b	43.3	b	50.4	b	16.1	b	655.6	b
2	150 lb N/A	150	PF	350.3	a	96.9	a	149.2	a	18.8	a	833.0	a
3	100/50 lb N/A	150	PF/PI	347.8	a	96.8	a	149.7	a	18.7	a	812.2	a
4	80/35/35 lb N/A	150	PF/PI/Boot	336.8	a	91.9	a	146.7	a	18.0	ab	726.8	ab
P				0.0001		0.0001		0.0001		0.0394		0.0055	
LSD P=.05				26.46		6.67		16.62		2.09		107.67	

Continued.

Table 87. Continued.

Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage	Rice WP dry wt. grams Main		Rice Panicle # number Main		Rice Grain wt. grams Main		Rice 10 P gr wt. grams Main		Rice 10 P seed number Main	
Crop Name				Rice		Rice		Rice		Rice		Rice	
Description								Yield Components					
Rating Type				WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed	
Rating Unit				grams		number		grams		grams		number	
Crop Stage Majority				Main		Main		Main		Main		Main	
TABLE OF A (Water Management) B (Variety) MEANS													
1	Conventional flood			260.6	d	80.6	a	104.4	bc	15.5	b	698.9	a
1	CL153												
2	Alternate Wet and Dry			294.7	bc	90.4	a	115.9	b	16.0	b	750.1	a
1	CL153												
3	Aerobic			223.4	e	93.4	a	90.8	c	10.9	c	479.2	a
1	CL153												
1	Conventional flood			353.3	a	73.3	a	167.3	a	25.4	a	1032.1	a
2	CLXL745												
2	Alternate Wet and Dry			327.0	ab	72.8	a	159.4	a	23.8	a	926.9	a
2	CLXL745												
3	Aerobic			279.9	cd	82.8	a	106.3	bc	15.7	b	654.3	a
2	CLXL745												
P				0.0359		0.1982		0.0063		0.0223		0.1592	
LSD P=.05				32.40		8.17		20.35		2.56		131.87	
TABLE OF B (Variety) C (Fertilizer) MEANS													
1	CL153			111.9	a	46.2	a	40.8	c	12.5	a	537.5	a
1	0 N/A	0											
2	CLXL745			136.8	a	40.3	a	60.1	c	19.6	a	773.8	a
1	0 N/A	0											
1	CL153			322.0	a	104.2	a	124.0	b	14.8	a	682.7	a
2	150 lb N/A	150	PF										
2	CLXL745			378.7	a	89.6	a	174.5	a	22.9	a	983.3	a
2	150 lb N/A	150	PF										
1	CL153			314.0	a	104.1	a	135.2	b	14.8	a	739.3	a
3	100/50 lb N/A	150	PF/PI										
2	CLXL745			381.6	a	89.5	a	164.2	a	22.5	a	885.1	a
3	100/50 lb N/A	150	PF/PI										
1	CL153			290.4	a	98.1	a	114.9	b	14.4	a	611.4	a
4	80/35/35 lb N/A	150	PF/PI/Boot										
2	CLXL745			383.3	a	85.8	a	178.6	a	21.5	a	842.2	a
4	80/35/35 lb N/A	150	PF/PI/Boot										
P				0.0896		0.5172		0.0398		0.9525		0.5595	
LSD P=.05				37.41		9.43		23.50		2.96		152.27	

Continued.

Table 87. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Yield Components									
Rating Type				WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed	
Rating Unit				grams		number		grams		grams		number	
Crop Stage Majority				Main		Main		Main		Main		Main	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
TABLE OF A (Water Management) C (Fertilizer) MEANS													
1	Conventional flood			127.7	a	43.4	e	48.9	fg	16.1	a	651.6	a
1	0 N/A	0											
2	Alternate Wet and Dry			144.3	a	45.6	e	67.3	f	19.3	a	790.4	a
1	0 N/A	0											
3	Aerobic			101.0	a	40.8	e	35.1	g	12.8	a	524.9	a
1	0 N/A	0											
1	Conventional flood			382.8	a	90.8	cd	176.7	a	23.7	a	1048.8	a
2	150 lb N/A	150	PF										
2	Alternate Wet and Dry			387.0	a	102.9	ab	164.6	ab	20.0	a	888.4	a
2	150 lb N/A	150	PF										
3	Aerobic			281.2	a	97.0	abc	106.3	e	12.9	a	561.8	a
2	150 lb N/A	150	PF										
1	Conventional flood			355.8	a	87.8	cd	157.2	abc	21.4	a	946.8	a
3	100/50 lb N/A	150	PF/PI										
2	Alternate Wet and Dry			381.5	a	95.1	bc	174.5	a	21.0	a	906.4	a
3	100/50 lb N/A	150	PF/PI										
3	Aerobic			306.0	a	107.5	a	117.5	de	13.6	a	583.5	a
3	100/50 lb N/A	150	PF/PI										
1	Conventional flood			361.6	a	86.0	cd	160.7	abc	20.6	a	814.8	a
4	80/35/35 lb N/A	150	PF/PI/Boot										
2	Alternate Wet and Dry			330.6	a	82.6	d	144.2	bcd	19.4	a	768.9	a
4	80/35/35 lb N/A	150	PF/PI/Boot										
3	Aerobic			318.3	a	107.1	a	135.3	cd	13.9	a	596.8	a
4	80/35/35 lb N/A	150	PF/PI/Boot										
P				0.0665		0.0023		0.0364		0.1086		0.1241	
LSD P=.05				45.82		11.56		28.78		3.62		186.49	

Continued.

Table 87. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description								Yield Components					
Rating Type				WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed	
Rating Unit				grams		number		grams		grams		number	
Crop Stage Majority				Main		Main		Main		Main		Main	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
TABLE OF A (Water Management) B (Variety) C (Fertilizer) MEANS													
1	Delayed flood/CL153			107.9	a	44.3	a	38.8	a	13.0	a	561.8	gh
1	0 N/A	0											
2	AWD/CL153			132.2	a	50.0	a	49.6	a	14.0	a	617.0	fgh
1	0 N/A	0											
3	Aerobic/CL153			95.6	a	44.3	a	33.9	a	10.4	a	433.8	h
1	0 N/A	0											
1	Delayed flood/CLXL745			147.5	a	42.5	a	59.0	a	19.2	a	741.5	c-g
1	0 N/A	0											
2	AWD/CLXL745			156.4	a	41.3	a	85.0	a	24.5	a	963.8	bc
1	0 N/A	0											
3	Aerobic/CLXL745			106.4	a	37.3	a	36.3	a	15.2	a	616.0	fgh
1	0 N/A	0											
1	Delayed flood/CL153			340.7	a	93.3	a	146.0	a	16.3	a	687.5	d-h
2	150 lb N/A	150	PF										
2	AWD/CL153			370.7	a	112.8	a	133.2	a	18.3	a	920.0	b-e
2	150 lb N/A	150	PF										
3	Aerobic/CL153			254.6	a	106.5	a	92.8	a	9.7	a	440.5	h
2	150 lb N/A	150	PF										
1	Delayed flood/CLXL745			424.9	a	88.3	a	207.5	a	31.0	a	1410.0	a
2	150 lb N/A	150	PF										
2	AWD/CLXL745			403.4	a	93.0	a	196.1	a	21.7	a	856.8	b-f
2	150 lb N/A	150	PF										
3	Aerobic/CLXL745			307.7	a	87.5	a	119.9	a	16.1	a	683.0	d-h
2	150 lb N/A	150	PF										

Continued.

Table 87. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description								Yield Components					
Rating Type				WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed	
Rating Unit				grams		number		grams		grams		number	
Crop Stage Majority				Main		Main		Main		Main		Main	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage										
1	Delayed flood/CL153			305.8	a	95.0	a	125.8	a	16.0	a	859.5	b-f
3	100/50 N/A	150	PF/PI										
2	AWD/CL153			347.9	a	102.8	a	150.1	a	16.4	a	832.8	b-f
3	100/50 N/A	150	PF/PI										
3	Aerobic/CL153			288.4	a	114.5	a	129.7	a	12.0	a	525.8	gh
3	100/50 N/A	150	PF/PI										
1	Delayed flood/CLXL745			405.9	a	80.5	a	188.5	a	26.7	a	1034.0	b
3	100/50 lb N/A	150	PF/PI										
2	AWD/CLXL745			415.2	a	87.5	a	199.0	a	25.6	a	980.0	bc
3	100/50 lb N/A	150	PF/PI										
3	Aerobic/CLXL745			323.6	a	100.5	a	105.2	a	15.2	a	641.3	fgh
3	100/50 lb N/A	150	PF/PI										
1	Delayed flood/CL153			288.2	a	90.0	a	107.1	a	16.5	a	686.8	d-h
4	80/35/35 lb N/A	150	PF/PI/Boot										
2	AWD/CL153			328.0	a	96.0	a	130.6	a	15.3	a	630.8	fgh
4	80/35/35 lb N/A	150	PF/PI/Boot										
3	Aerobic/CL153			254.8	a	108.3	a	106.9	a	11.4	a	516.8	gh
4	80/35/35 lb N/A	150	PF/PI/Boot										
1	Delayed flood/CLXL745			434.9	a	82.0	a	214.4	a	24.7	a	942.8	bcd
4	80/35/35 lb N/A	150	PF/PI/Boot										
2	AWD/CLXL745			333.1	a	69.3	a	157.7	a	23.5	a	907.0	b-e
4	80/35/35 lb N/A	150	PF/PI/Boot										
3	Aerobic/CLXL745			381.8	a	106.0	a	163.7	a	16.3	a	676.8	e-h
4	80/35/35 lb N/A	150	PF/PI/Boot										
P				0.2676		0.6711		0.1126		0.1047		0.0236	
LSD P=.05				64.80		16.34		40.71		5.12		263.73	
Standard Deviation				45.94		11.58		28.86		3.63		186.96	
CV				15.85		14.09		23.27		20.32		24.70	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Effect of Nitrogen Sources and Time of Applications on Rice Yield, Nitrogen Uptake, and Nitrogen Use Efficiency – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-40

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 4.67 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 0.55
- **pH** ..... : 7.38
- **Extractable nutrients** ppm ..... : Ca-1,654; Cu-0.54; Mg-278; P-9.6; K-64; Na-39; S-6.1; Zn-4.5

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date** ..... : April 1
- **Harvest date** ..... : Aug. 6
- **Ratoon Harvest date** ..... : NA

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 24
- **Drain** ..... : July 24

Pest management ..... :
- **Herbicides** ..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides** ..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Comments: May 7 – Mud, no water standing.
May 16 – Hard mud, no water, walk with shoes.
Preflood treatments changed to (24d, 17d, 8d, 1d) because of excessive rainfall.

Table 88. Effect of N sources and time of applications on rice grain yield, N uptake, and nitrogen use efficiency (NUE). H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd		Tip of Panicle								NUE		NUE	
Rating Date						8/6/2019		8/6/2019									
Rating Type		50% HD		50% HD		Heights		Yield		BIOMAS-50%HD		N-50%HD		N uptake			
Rating Unit		days		days		in		lb/A		lb/A		%		lb/A		%		%	
Crop Stage Majority		Main		Main		Main		Main		Main		Main		Main		by block		by mean	
Trt No.	Treatment Name																		
1	Urea - 24DPF	101.5	e	87.5	e	34.0	ef	6769	c-f	7883	ab	0.710	e	56	d	31	d	31	d
2	Urea - 17DPF	104.3	d	90.3	d	34.3	def	6490	def	8221	a	0.735	e	60	cd	35	cd	35	cd
3	Urea - 8DPF	106.5	ab	92.5	ab	34.5	def	6225	f	7142	ab	0.810	de	58	d	32	d	32	d
4	Urea - 1DPF	106.0	abc	92.0	abc	37.5	ab	7669	a	7171	ab	1.388	b	100	b	68	b	68	b
5	Agrotain Adv. + Urea - 24DPF	104.3	d	90.3	d	33.8	ef	6505	def	6546	b	0.830	de	54	d	29	d	29	d
6	Agrotain Adv. + Urea - 17DPF	104.8	cd	90.8	cd	34.8	c-f	6954	bcd	7816	ab	0.760	e	58	d	32	d	32	d
7	Agrotain Adv. + Urea - 8DPF	107.0	a	93.0	a	35.8	b-e	6591	def	7216	ab	1.020	c	73	cd	45	cd	45	cd
8	Agrotain Adv. + Urea - 1DPF	107.0	a	93.0	a	38.0	a	7281	abc	7215	ab	1.590	a	115	ab	78	ab	78	ab
9	ANVOL + Urea - 24DPF	104.5	d	90.5	d	33.3	f	7061	bcd	8177	a	0.718	e	59	d	33	d	33	d
10	ANVOL + Urea - 17DPF	105.5	bcd	91.5	bcd	33.5	f	6340	ef	7542	ab	0.763	e	58	d	33	d	33	d
11	ANVOL + Urea - 8DPF	106.5	ab	92.5	ab	36.3	a-d	7356	ab	8031	a	0.988	cd	80	c	51	c	51	c
12	ANVOL + Urea - 1DPF	106.5	ab	92.5	ab	36.8	abc	6907	b-e	7550	ab	1.600	a	121	a	85	a	85	a
13	0 N	99.5	f	85.5	f	28.5	g	3316	g	2939	c	0.653	e	19	e	0	e	0	e
LSD P=.05		1.45		1.45		2.01		573.9		1416.6		0.1836		20.3		16.5		16.3	
Standard Deviation		1.01		1.01		1.40		400.2		987.8		0.1280		14.2		11.5		11.4	
CV		0.96		1.11		4.04		6.09		13.74		13.25		20.22		27.06		26.87	
Treatment F		19.625		19.625		11.884		28.395		7.639		28.029		15.523		16.149		16.309	
Treatment Prob(F)		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 88. Two-way comparison on the effect of N sources and time of applications on rice grain yield, N uptake, and NUE. H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd		Tip of Panicle										NUE		NUE	
Rating Date						8/6/2019		8/6/2019											
Rating Type		50% HD		50% HD		Heights		Yield		BIOMAS-50%HD		N-50%HD		N uptake					
Rating Unit		days		days		in		lb/A		lb/A		%		lb/A		%		%	
Crop Stage Majority		Main		Main		Main		Main		Main		Main		Main		by block		by mean	
Trt No.	Treatment Name																		
TABLE OF A (N Source) MEANS																			
1	Urea	104.6	b	90.6	b	35.1	a	6788	a	7604	a	0.911	b	68	a	41	a	41	a
2	Agrotain Advanced - Urea	105.8	a	91.8	a	35.6	a	6833	a	7198	a	1.050	a	75	a	46	a	46	a
3	ANVOL - Urea	105.8	a	91.8	a	34.9	a	6916	a	7825	a	1.017	a	80	a	50	a	50	a
P		0.0032		0.0032		0.3945		0.6737		0.2308		0.0139		0.1205		0.1093		0.1144	
LSD P=.05		0.75		0.75		0.97		295.3		738.8		0.0948		10.6		8.6		8.6	
TABLE OF B (Application Timing) MEANS																			
1	24DPF	103.4	c	89.4	c	33.7	c	6778	b	7535	a	0.753	c	56	c	31	c	31	c
2	17DPF	104.8	b	90.8	b	34.2	c	6594	b	7860	a	0.753	c	59	bc	33	bc	33	bc
3	8DPF	106.7	a	92.7	a	35.5	b	6724	b	7463	a	0.939	b	70	b	43	b	43	b
4	1DPF	106.5	a	92.5	a	37.4	a	7286	a	7312	a	1.526	a	112	a	77	a	77	a
P		0.0001		0.0001		0.0001		0.0013		0.6153		0.0001		0.0001		0.0001		0.0001	
LSD P=.05		0.87		0.87		1.12		341.0		853.1		0.1095		12.3		9.9		9.9	
TABLE OF A (N Source) B (Application Timing) MEANS																			
1	Urea - 24DPF	101.5	a	87.5	a	34.0	a	6769	b-e	7883	a	0.710	a	56	a	31	a	31	a
2	Agrotain Adv. + Urea - 24DPF	104.3	a	90.3	a	33.8	a	6505	cde	6546	a	0.830	a	54	a	29	a	29	a
3	ANVOL + Urea - 24DPF	104.5	a	90.5	a	33.3	a	7061	bc	8177	a	0.718	a	59	a	33	a	33	a
1	Urea - 17DPF	104.3	a	90.3	a	34.3	a	6490	cde	8221	a	0.735	a	60	a	35	a	35	a
2	Agrotain Adv. + Urea - 17DPF	104.8	a	90.8	a	34.8	a	6954	bc	7816	a	0.760	a	58	a	32	a	32	a
3	ANVOL + Urea - 17DPF	105.5	a	91.5	a	33.5	a	6340	de	7542	a	0.763	a	58	a	33	a	33	a
1	Urea	106.5	a	92.5	a	34.5	a	6225	e	7142	a	0.810	a	58	a	32	a	32	a
2	Agrotain Adv. + Urea - 8DPF	107.0	a	93.0	a	35.8	a	6591	cde	7216	a	1.020	a	73	a	45	a	45	a
3	ANVOL + Urea - 8DPF	106.5	a	92.5	a	36.3	a	7356	ab	8031	a	0.988	a	80	a	51	a	51	a
1	Urea	106.0	a	92.0	a	37.5	a	7669	a	7171	a	1.388	a	100	a	68	a	68	a
2	Agrotain Adv. + Urea - 1DPF	107.0	a	93.0	a	38.0	a	7281	ab	7215	a	1.590	a	115	a	78	a	78	a
3	ANVOL + Urea - 1DPF	106.5	a	92.5	a	36.8	a	6907	bcd	7550	a	1.600	a	121	a	85	a	85	a
P		0.0972		0.0972		0.4691		0.0009		0.4712		0.5618		0.5639		0.5441		0.5513	
LSD P=.05		1.50		1.50		1.95		590.6		1477.6		0.1896		21.2		17.2		17.1	
Standard Deviation		1.04		1.04		1.35		410.5		1027.1		0.1318		14.8		12.0		11.9	
CV		0.99		1.14		3.84		6.0		13.6		13.2796		19.9		26.0		25.9	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Urea Treated with NBPT Products (ContaiN, Agrotain, N Fixx, and ContaiN Max) on Rice Grain Yield – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-32

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.55
- **pH**..... : 7.38
- **Extractable nutrients** ppm ..... : Ca-1,654; Cu-0.54; Mg-278; P-9.6; K-64; Na-39; S-6.1; Zn-4.5

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 18
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 1
- **Harvest date** ..... : August 6
- **Ratoon Harvest date**..... : NA

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 250 lb 0-24-24-2.7, March 20

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 24
- **Drain** ..... : July 24
- **Ratoon flood** ..... : NA
- **Ratoon drain** ..... : NA

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 89. Evaluation of urea treated with NBPT products (ContaiN, Agrotain, N Fixx, and ContaiN Max) on rice grain yield. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of Panicle			
Rating Date								8/6/2019			
Rating Type				50% HD		50% HD		Heights		Yield	
Rating Unit				days		days		in		lb/A	
Trt No.	Treatment Name	Rate (lb N/A)	Growth Stage	2		3		4		10	
1	Untreated Check			100.0	e	86.0	e	29.3	e	4018	c
2	UREA	100	10 DPF	104.3	cd	90.3	cd	34.5	a-d	7644	ab
3	UREA	150	10 DPF	105.3	bcd	91.3	bcd	34.8	a-d	7633	ab
4	UREA	200	10 DPF	107.3	ab	93.3	ab	35.8	a-d	8301	a
5	UREA + ContaiN	100	10 DPF	105.0	bcd	91.0	bcd	33.3	d	7129	b
6	UREA + ContaiN	150	10 DPF	106.8	ab	92.8	ab	35.5	a-d	7902	ab
7	UREA + ContaiN	200	10 DPF	107.0	ab	93.0	ab	37.3	ab	7806	ab
8	UREA + Agrotain Advanced	100	10 DPF	105.0	bcd	91.0	bcd	34.3	bcd	7310	ab
9	UREA + Agrotain Advanced	150	10 DPF	105.3	bcd	91.3	bcd	34.8	a-d	7914	ab
10	UREA + Agrotain Advanced	200	10 DPF	107.0	ab	93.0	ab	37.3	ab	7938	ab
11	UREA + N Fixx	100	10 DPF	106.0	a-d	92.0	a-d	33.8	cd	7482	ab
12	UREA + N Fixx	150	10 DPF	106.8	ab	92.8	ab	35.5	a-d	7684	ab
13	UREA + N Fixx	200	10 DPF	106.5	abc	92.5	abc	37.5	a	8290	a
14	UREA + ContaiN Max	100	10 DPF	104.0	d	90.0	d	34.3	bcd	7375	ab
15	UREA + ContaiN Max	150	10 DPF	105.5	bcd	91.5	bcd	35.8	a-d	7720	ab
16	UREA + ContaiN Max	200	10 DPF	108.0	a	94.0	a	36.8	abc	7770	ab
LSD P=.05				1.50		1.50		1.86		630.1	
Standard Deviation				1.05		1.05		1.30		442.4	
CV				1.0		1.15		3.73		5.9	
Treatment F				12.736		12.736		9.451		19.609	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Prevent, MicroCoat, BacPak, and Profound on P Response of CL153 and Soil P Availability –Calcasieu Parish

Experiment number ..... : 19-CP-23

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.52
- **pH**..... : 5.72
- **Extractable nutrients** ppm ..... : Ca-573; Cu-0.85; Mg-107; P-10.4; K-93; Na-21; S-7.4; Zn-0.9

Crop/Variety ..... : Rice / See Data Sheet
- **Planting method/date** ..... : Drill seeded / March 28
- **Seeding rate/depth** ..... : 33 seeds/ft^2 / 0.5 inch
- **Emergence date**..... : April 14
- **Harvest date** ..... : Aug. 16
- **Ratoon Harvest date**..... : NA

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt

Fertilization ..... : 60 lb/A Potash + 15 lb/A $ZnSO_4$, March 29
120 lb N/A 46-0-0, May 17

Water management ..... : Underground irrigation
- **Flush** ..... : NA
- **Flood** ..... : May 19
- **Drain** ..... : July 29
- **Ratoon Flood**..... : NA
- **Ratoon Drain**..... : NA

Pest management ..... :
- **Herbicides**..... : 3 qt/A Stam + 2 pt/A Prowl H_2O, May 3
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/a Londax + 1 oz/A Permit, May 17
- **Insecticides** ..... : No blanket applications
- **Fungicides**..... : No blanket applications

Table 90. Evaluation of Prevent, MicroCoat, BacPak, and Profound on P response of CL153 and soil P availability. Calcasieu Parish.

Crop Name					Rice		Rice		Rice		Rice		Rice		Rice	
Description					Plant-hd		Emer-hd		Tip of Panicle							
Rating Date									8/13/2019				8/16/2019		8/13/2019	
Part Rated											Biomass		Biomass			
Rating Type					50% HD		50% HD		Height		at PI		at 50% HD		Moist		Yield	
Rating Unit					days		days		in		lb/A		lb/A		%		lb/A	
Trt No.	Treatment Name	Rate	Rate Unit	Growth Stage														
1	P UNTREATED	60	lb ai/a	ATPLAN	96.8	a	79.8	a	35.8	a	4383	a	7608	a	14.60	a	5999	a
2	P treated Prevent	60	lb ai/a	ATPLAN	97.0	a	80.0	a	38.5	a	4456	a	8376	a	14.53	a	6009	a
3	P treated microCOAT	60	lb ai/a	ATPLAN	96.8	a	79.8	a	37.3	a	4047	a	9004	a	14.48	a	6524	a
4	P treated HumaPak	60	lb ai/a	ATPLAN	97.3	a	80.3	a	36.3	a	4065	a	7676	a	14.83	a	6426	a
5	P UNTREATED	60	lb ai/a	ATPLAN	96.5	a	79.5	a	37.0	a	3616	a	8708	a	14.58	a	6350	a
	ProFound	16	oz/a	ATPLAN														
LSD P=.05					0.73		0.73		2.95		860.5		1934.3		0.775		593.2	
Standard Deviation					0.47		0.47		1.91		558.5		1255.5		0.503		385.0	
CV					0.49		0.59		5.18		13.58		15.17		3.45		6.15	
Treatment F					1.444		1.444		1.210		1.422		0.973		0.286		1.597	
Treatment Prob(F)					0.2790		0.2790		0.3569		0.2856		0.4579		0.8812		0.2383	

Continued.

Table 90. Continued.

Part Rated					Pre-Plant Soil Analysis																	
Rating Date					3/28/2019																	
Rating Type					pH (1:1)		P		K		Ca		Mg		S		Na		Zn		Cu	
Rating Unit							ppm		ppm		ppm		ppm		ppm		ppm		ppm		ppm	
Crop Stage Majority					Main		Main		Main		Main		Main		Main		Main		Main		Main	
Trt No.	Treatment Name	Rate	Rate Unit	Growth Stage																		
1	P UNTREATED	60	lb ai/a	ATPLAN	5.15	a	16.7	a	98.8	a	560	a	102	a	11.25	a	25.0	a	1.18	a	0.90	a
2	P treated Prevent	60	lb ai/a	ATPLAN	5.35	a	15.9	a	98.0	a	612	a	109	a	11.18	a	27.0	a	1.07	a	0.94	a
3	P treated microCOAT	60	lb ai/a	ATPLAN	5.23	a	14.7	a	92.8	a	555	a	98	a	10.50	a	22.0	a	0.99	a	0.87	a
4	P treated HumaPak	60	lb ai/a	ATPLAN	5.21	a	15.5	a	93.8	a	539	a	99	a	10.95	a	23.6	a	1.02	a	0.88	a
5	P UNTREATED	60	lb ai/a	ATPLAN	5.14	a	14.7	a	87.5	a	562	a	98	a	9.90	a	25.0	a	1.07	a	0.91	a
	ProFound	16	oz/a	ATPLAN																		
LSD P=.05					0.1846		2.175		12.32		48.57		8.63		1.853		4.910		0.2059		0.0743	
Standard Deviation					0.1198		1.412		8.00		31.52		5.60		1.202		3.187		0.1337		0.0482	
CV					2.3		9.11		8.49		5.57		5.53		11.18		12.99		12.55		5.36	
Treatment F					1.937		1.397		1.287		3.014		2.708		0.868		1.370		1.211		1.294	
Treatment Prob(F)					0.1688		0.2933		0.3289		0.0617		0.0811		0.5106		0.3015		0.3563		0.3266	

Continued.

Table 90. Continued.

Part Rated					Post-Harvest Soil Analysis															
Rating Date					8/16/2019															
Rating Type					pH (1:1)		P		K		Ca		Mg		S		Na		Zn		Cu	
Rating Unit							ppm		ppm		ppm		ppm		ppm		ppm		ppm		ppm	
Crop Stage Majority					Main		Main		Main		Main		Main		Main		Main		Main		Main	
Trt No.	Treatment Name	Rate	Rate Unit	Growth Stage																		
1	P UNTREATED	60	lb ai/a	ATPLAN	4.78	a	19.0	a	55.2	a	608	a	112	a	17.98	a	61.6	a	5.66	a	1.19	a
2	P treated Prevent	60	lb ai/a	ATPLAN	4.62	a	16.7	a	49.6	a	651	a	107	a	16.13	a	58.0	a	3.13	a	1.15	a
3	P treated microCOAT	60	lb ai/a	ATPLAN	4.69	a	16.2	a	51.7	a	665	a	105	a	17.40	a	59.4	a	3.83	a	1.10	a
4	P treated HumaPak	60	lb ai/a	ATPLAN	4.47	a	15.6	a	52.5	a	589	a	107	a	16.63	a	58.7	a	3.29	a	1.09	a
5	P UNTREATED	60	lb ai/a	ATPLAN	4.73	a	15.1	a	49.3	a	625	a	107	a	16.13	a	58.5	a	3.64	a	1.12	a
	ProFound	16	oz/a	ATPLAN																		
LSD P=.05					0.4207		3.327		5.046		85.86		13.03		2.920		7.952		3.8406		0.1484	
Standard Deviation					0.2731		2.160		3.275		55.73		8.46		1.895		5.162		2.4928		0.0963	
CV					5.86		13.1		6.34		8.88		7.87		11.25		8.71		63.78		8.53	
Treatment F					0.753		1.916		2.151		1.227		0.425		0.744		0.310		0.663		0.798	
Treatment Prob(F)					0.5748		0.1723		0.1369		0.3503		0.7877		0.5805		0.8661		0.6292		0.5490	

Continued.

Table 90. Continued.

Part Rated					Tissue analysis at Panicle Initiation											
Rating date					6/11/2019											
Rating Type					P		P Uptake		K		Na		S		Zn	
Rating Unit					(%)		lb/A		(%)		(ppm)		(%)		(ppm)	
Crop Stage Majority					Main		Main		Main		Main		Main		Main	
Trt No.	Treatment Name	Rate	Rate Unit	Appl Timing												
1	P UNTREATED	60	lb ai/a	ATPLAN	0.36	b	15.8	a	2.82	c	1984	a	0.26	a	54.6	a
2	P treated Prevent	60	lb ai/a	ATPLAN	0.37	b	16.3	a	2.99	ab	1719	a	0.26	a	56.7	a
3	P treated microCOAT	60	lb ai/a	ATPLAN	0.36	b	14.7	a	3.05	a	1869	a	0.26	a	62.2	a
4	P treated HumaPak	60	lb ai/a	ATPLAN	0.36	b	14.7	a	2.91	abc	1734	a	0.26	a	54.6	a
5	P UNTREATED	60	lb ai/a	ATPLAN	0.38	a	13.7	a	2.83	bc	1628	a	0.26	a	54.8	a
	ProFound	16	oz/a	ATPLAN												
LSD P=.05					0.014		3.21		0.161		615.71		0.015		12.520	
Standard Deviation					0.009		2.09		0.104		399.64		0.010		8.126	
CV					2.47		13.88		3.58		22.37		3.69		14.37	
Treatment F					3.516		0.976		3.551		0.488		0.341		0.651	
Treatment Prob(F)					0.0403		0.4565		0.0392		0.7445		0.8453		0.6369	

Continued.

Table 90. Continued.

Part Rated					Tissue analysis at 50% Heading											
Rating date					7/2/2019											
Rating Type					P		P Uptake		K		Na		S		Zn	
Rating Unit					(%)		lb/A		(%)		(ppm)		(%)		(ppm)	
Crop Stage Majority					Main		Main		Main		Main		Main		Main	
Trt No.	Treatment Name	Rate	Rate Unit	Appl Timing												
1	P UNTREATED	60	lb ai/a	ATPLAN	0.33	a	25.2	a	1.98	a	1518	a	0.17	a	46.0	a
2	P treated Prevent	60	lb ai/a	ATPLAN	0.34	a	28.9	a	2.08	a	1275	a	0.17	a	44.2	a
3	P treated microCOAT	60	lb ai/a	ATPLAN	0.33	a	29.5	a	1.99	a	1027	a	0.16	a	48.5	a
4	P treated HumaPak	60	lb ai/a	ATPLAN	0.33	a	25.1	a	2.03	a	1402	a	0.16	a	47.9	a
5	P UNTREATED	60	lb ai/a	ATPLAN	0.33	a	29.3	a	2.11	a	1480	a	0.16	a	46.7	a
	ProFound	16	oz/a	ATPLAN												
LSD P=.05					0.032		7.10		0.238		442.71		0.032		10.77	
Standard Deviation					0.021		4.61		0.155		287.36		0.021		6.99	
CV					6.15		16.68		7.59		21.44		12.72		14.99	
Treatment F					0.428		0.935		0.544		1.907		0.180		0.233	
Treatment Prob(F)					0.7855		0.4762		0.7071		0.1739		0.9441		0.9146	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Inbred and Hybrid for Nutrien Experimental Varieties (19-Y3-11 and 19-Y3-22) – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-36 & 37

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.55
- **pH**..... : 7.38
- **Extractable nutrients** ppm ..... : Ca-1,654; Cu-0.54; Mg-278; P-9.6; K-64; Na-39; S-6.1; Zn-4.5

Crop/Variety ..... : Rice / See Treatment Name
- **Planting method/date** ..... : Drill seeded / March 19
- **Seeding rate/depth** ..... : Conv. - 33, Hyb - 33seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 3
- **Harvest date** ..... : August 13
- **Ratoon Harvest date**..... : November 14

Seed treatment/cwt : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt
Hybrids:
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
120 lb N/A 46-0-0, May 23
90 lb N/A 46-0-0, August 15

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 24
- **Drain** ..... : July 24
- **Ratoon flood** ..... : August 15
- **Ratoon drain** ..... : October 17

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate + 2 oz/A Sharpen + 10 oz/A Command + .25% MOS, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**……: 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 91. Evaluation of inbred and hybrid for Nutrien experimental varieties (19-Y3-11). H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd											
Rating Date						8/13/2019		8/13/2019		11/13/2019					
Rating Type		50% HD		50% HD		Heights		Yield		Yield		Total Yield		Milling (%)	
Rating Unit		days		days		in		lb/A		lb/A		lb/A		head	total
Crop		Main		Main		Main		Main		Ratoon		MC+RC		Main	Main
Trt No.	Treatment Name														
1	16R-T321-44	118.3	a	102.3	a	39.0	bcd	7590	i	3689	gh	11279	ij	59.0 e	70.0 e
2	16R-T263 - 2	116.8	a	100.8	a	41.0	ab	9116	cd	1724	l	10840	j	58.8 e	69.3 e
3	2051-21	110.8	cd	94.8	cd	34.8	f	8022	f-i	3844	fgh	11867	ghi	63.3 abc	72.3 a-d
4	18PR-22-19	111.3	c	95.3	c	42.5	a	8227	e-i	4846	bc	13073	cde	58.8 e	71.5 d
5	2051-2-1	114.8	b	98.8	b	39.0	bcd	7919	ghi	4849	bc	12767	c-g	61.5 b-e	71.8 cd
6	2131-3-1	110.0	cde	94.0	cde	39.3	bcd	8946	cde	3077	jk	12023	f-i	64.8 ab	73.3 ab
7	2140-13-1	111.8	c	95.8	c	39.0	bcd	8582	d-h	2845	k	11428	hij	63.3 abc	72.5 a-d
8	2065-11-1	111.0	c	95.0	c	37.5	de	8681	c-g	3204	ijk	11885	ghi	64.5 ab	73.5 a
9	2131-48-1	109.0	def	93.0	def	37.5	de	8955	cde	3212	ijk	12167	e-i	63.8 abc	73.3 ab
10	2140-12-1	111.5	c	95.5	c	36.3	ef	8695	c-f	3449	hij	12133	e-i	65.3 a	73.5 a
11	18PR - 19-19	108.8	efg	92.8	efg	42.5	a	10059	b	4175	def	14235	b	59.5 de	69.3 e
12	17R - T336-52	110.5	cde	94.5	cde	42.5	a	8424	d-h	4751	bc	13175	cd	59.5 de	71.8 cd
13	18PR-23-19	111.0	c	95.0	c	42.5	a	8089	f-i	4281	de	12371	d-h	60.3 cde	72.3 a-d
14	18PR-23-49	118.0	a	102.0	a	40.3	abc	7547	i	5361	a	12908	c-f	61.5 b-e	71.8 cd
15	18PR-23-61	118.0	a	102.0	a	42.5	a	7895	hi	5107	ab	13002	c-f	61.8 a-e	72.0 bcd
16	CL 153	107.0	g	91.0	g	38.3	cde	9379	bc	4085	efg	13464	bc	63.0 a-d	73.0 abc
17	Diamond	107.5	fg	91.5	fg	39.5	bcd	8249	e-i	4514	cd	12764	c-g	59.0 e	71.8 cd
18	XL 753	98.3	h	82.3	h	39.8	bcd	12111	a	3540	hi	15651	a	55.0 f	73.3 ab
LSD P=.05		1.93		1.93		2.66		769.1		425.1		979.1		3.54	1.44
Standard Deviation		1.36		1.36		1.87		541.5		299.5		689.4		2.49	1.01
CV		1.22		1.42		4.72		6.23		7.64		5.47		4.07	1.41
Treatment F		50.837		50.837		6.114		15.574		38.303		10.717		4.750	6.923
Treatment Prob(F)		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 92. Evaluation of inbred and hybrid for Nutrien experimental varieties (19-Y3-22). H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd											
Rating Date						8/13/2019		8/13/2019		11/13/2019					
Rating Type		50% HD		50% HD		Heights		Yield		Yield		Total Yield		Milling (%)	
Rating Unit		days		days		in		lb/A		lb/A		lb/A		head	total
Crop		Main		Main		Main		Main		Ratoon		MC+RC		Main	Main
Trt No.	Treatment Name														
1	16R-T321-45 - 2	120.0	a	104.0	a	40.5	bcd	7346	hi	3960	c	11306	hi	58.0 gh	70.3 g
2	4525-17	120.8	a	104.8	a	40.3	bcd	6019	j	3882	cd	9901	j	64.8 abc	71.8 c-g
3	2051 - 40	109.3	d-g	93.3	d-g	38.0	e	8042	d-g	3704	cde	11747	e-i	64.0 a-d	72.3 a-f
4	18PR-022-31	111.8	c	95.8	c	41.3	abc	8339	c-f	4632	ab	12970	bc	61.5 def	73.5 ab
5	2051-22-1	116.0	b	100.0	b	40.3	bcd	7683	fgh	3796	cd	11479	ghi	63.0 b-e	71.8 c-g
6	2140-10-1	111.0	cd	95.0	cd	38.3	e	8049	d-g	3545	c-f	11594	f-i	65.0 ab	72.8 a-d
7	2065-3-1	110.3	cde	94.3	cde	37.8	e	8991	bc	3288	ef	12278	c-f	66.0 a	73.8 a
8	2131-24-1	108.0	efg	92.0	efg	39.5	cde	9026	b	3139	f	12165	d-g	66.0 a	73.8 a
9	2140-14-1	109.0	d-g	93.0	d-g	39.5	cde	7792	e-h	3554	c-f	11346	hi	63.3 a-e	72.5 a-e
10	2128-20-1	116.0	b	100.0	b	40.3	bcd	7351	hi	3795	cd	11145	i	62.0 c-f	71.3 d-g
11	18PR-20-85	111.8	c	95.8	c	43.0	a	7639	gh	4599	b	12239	c-g	57.8 gh	71.0 efg
12	18PR-21-49	110.8	cd	94.8	cd	41.8	ab	7614	gh	4918	ab	12402	cde	55.8 hi	70.8 fg
13	18PR-23-43	109.8	c-f	93.8	c-f	42.0	ab	8407	b-e	4764	ab	13171	b	59.5 fg	72.0 b-f
14	18PR-23-55	118.5	a	102.5	a	42.0	ab	6861	i	5065	a	11926	d-h	60.5 efg	71.3 d-g
15	CL 153	107.0	g	91.0	g	38.0	e	8728	bcd	3920	cd	12648	bcd	65.3 ab	73.5 ab
16	Diamond	107.5	fg	91.5	fg	38.8	de	7752	e-h	4732	ab	12483	b-e	55.8 hi	71.8 c-g
17	XL 753	98.8	h	82.8	h	39.3	de	11328	a	3481	def	14761	a	54.5 i	73.0 abc
LSD P=.05		2.41		2.41		1.93		686.7		463.5		763.4		2.94	1.55
Standard Deviation		1.70		1.70		1.35		483.0		325.6		536.3		2.07	1.09
CV		1.52		1.78		3.38		6.0		8.05		4.44		3.38	1.51
Treatment F		41.290		41.290		5.561		21.881		13.997		15.054		13.713	3.976
Treatment Prob(F)		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Inbred and Hybrid Rice Toxicity on Benzobicyclon Herbicide at 1x and 2x Rates in a Drill-Seeded System – H. Rouse Caffey Rice Research Station

Experiment number ..... : 19-CM-43

Site and design ..... :
- **Location/Cooperator** ..... : H. Rouse Caffey Rice Research Station (Crowley)
- **Tillage type** ..... : Spring Stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 4.67 x 16 ft
- **Row width/rows per plot**..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter**..... : 0.57
- **pH**..... : 7.56
- **Extractable nutrients** ppm ..... : Ca-1,512; Cu-0.31; Mg-338; P-7.8; K-77; Na-55; S-6.9; Zn-6.4

Crop/Variety ..... : Rice / See Treatment Name
- **Planting method/date** ..... : Drill seeded / March 29
- **Seeding rate/depth** ..... : Conv. – 33, Hyb – 10 seeds/ft^2 / 0.5 inches
- **Emergence date**..... : April 10
- **Harvest date** ..... : Aug. 14 and 15

Seed treatment/cwt ..... : **Conventional Varieties:**
Apron (fungicide) – 8.88 ml
Maxim (fungicide) – 0.88 ml
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz
Dermacor- 0.137 lb ai/cwt
Hybrids:
Clothianidin (Nipsit Inside)
Fludioxonil (Spirato 480FS)
Fludioxonil (Maxim 4FS)
Gibberellic acid, Zinc
AV-1011 (bird repellent) – 18.3 oz

Fertilization ..... : 250 lb/A 0-24-24-2.7, March 20
150 lb N/A 46-0-0, May 27

Water management ..... : Underground irrigation
- **Flush** ..... : No irrigation flushing was needed
- **Flood** ..... : May 27
- **Drain** ..... : Aug. 5

Pest management ..... :
- **Herbicides**..... : 1.5 qt/A Glyphosate, March 12
  1.5 qt/A Glyphosate + .25 oz/A Permit + .25% NIS, March 25
  3 qt/A Stam + 1 qt/A Prowl H_2O + .75 oz/A Permit, April 12
  2 qt/A Rice Beaux + 2 qt/A Stam + 1 oz/A Londax + .75 oz/A Permit, May 17
  20 oz/A Clincher + 1 qt/A COC, June 4
- **Insecticides** ..... : 2.5 oz/A Warrior II, July 2
- **Fungicides**..... : 16 oz/A Amistar Top + 4.5 oz/A Sercadis, July 2

Table 93. Evaluation of inbred and hybrid rice toxicity on benzobicyclon herbicide at 1x and 2x rates in a drill-seeded System. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd							
Rating Date								8/14/2019		8/14/2019			
Rating Type				50% HD		50% HD		Heights		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage										
1	Check Presidio			106.3	c-h	94.3	c-h	41.0	f-m	22.83	d-k	7117	m-q
2	Check Diamond			108.7	bc	96.7	bc	41.3	e-m	24.90	a-h	8031	i-p
3	Check PVL02			105.3	d-i	93.3	d-i	46.3	ab	21.57	e-l	7327	l-q
4	Check Mermentau			106.3	c-h	94.3	c-h	40.7	g-n	24.73	a-h	6858	opq
5	Check CL111			101.3	mno	89.3	mno	43.0	c-i	20.77	i-l	8595	f-k
6	Check CL153			106.7	b-g	94.7	b-g	43.0	c-i	24.23	a-i	8004	i-p
7	Check CLJ01			106.3	c-h	94.3	c-h	42.7	c-j	24.10	b-j	7904	j-p
8	Check PVL01			115.0	a	103.0	a	41.7	d-l	25.47	a-e	6932	n-q
9	Check RT7301			105.3	d-i	93.3	d-i	43.3	b-h	21.07	g-l	8954	f-j
10	Check RT3201			99.0	op	87.0	op	41.3	e-m	19.90	klm	9781	b-f
11	Check CLXL745			102.0	lmn	90.0	lmn	46.7	a	21.00	h-l	11070	a
12	Check CLL15			106.0	d-i	94.0	d-i	43.7	a-g	22.77	d-k	8196	g-m
13	Check CLM04			106.7	b-g	94.7	b-g	44.7	a-d	24.73	a-h	8854	f-k
14	Check Titan			102.3	k-n	90.3	k-n	40.3	h-n	25.33	a-f	8576	f-l
15	Check Jupiter			109.0	b	97.0	b	39.7	j-n	26.80	abc	7688	k-q
16	Check Cheniere			106.3	c-h	94.3	c-h	41.3	e-m	24.27	a-i	6541	q

Continued.

Table 93. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd							
Rating Date								8/14/2019		8/14/2019			
Rating Type				50% HD		50% HD		Heights		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage										
17	1X rate Presidio	12.6	Post Flood	104.3	g-l	92.3	g-l	40.0	i-n	23.13	c-k	8024	i-p
18	1X rate Diamond	12.6	Post Flood	107.3	b-e	95.3	b-e	43.3	b-h	25.80	a-d	7866	j-p
19	1X rate PVL02	12.6	Post Flood	105.0	e-j	93.0	e-j	43.3	b-h	23.43	b-k	8203	g-m
20	1X rate Mermentau	12.6	Post Flood	106.3	c-h	94.3	c-h	40.3	h-n	24.83	a-h	6809	pq
21	1X rate CL111	12.6	Post Flood	102.7	j-n	90.7	j-n	41.0	f-m	21.67	e-l	8862	f-k
22	1X rate CL153	12.6	Post Flood	105.7	d-i	93.7	d-i	42.7	c-j	23.80	b-k	8230	g-m
23	1X rate CLJ01	12.6	Post Flood	106.7	b-g	94.7	b-g	43.0	c-i	23.07	c-k	8236	g-m
24	1X rate PVL01	12.6	Post Flood	115.0	a	103.0	a	41.0	f-m	24.07	b-j	8552	f-l
25	1X rate RT7301	12.6	Post Flood	104.7	f-k	92.7	f-k	42.0	c-k	21.90	d-l	10279	a-e
26	1X rate RT3201	12.6	Post Flood	102.7	j-n	90.7	j-n	35.0	p	22.70	d-k	3874	r
27	1X rate CLXL745	12.6	Post Flood	100.7	no	88.7	no	46.3	ab	20.43	i-m	10817	ab
28	1X rate CLL15	12.6	Post Flood	105.3	d-i	93.3	d-i	40.7	g-n	23.83	b-k	9044	e-j
29	1X rate CLM04	12.6	Post Flood	106.3	c-h	94.3	c-h	44.0	a-f	25.00	a-g	10596	abc
30	1X rate Titan	12.6	Post Flood	102.3	k-n	90.3	k-n	40.7	g-n	25.80	a-d	9224	d-i
31	1X rate Jupiter	12.6	Post Flood	109.0	b	97.0	b	39.7	j-n	28.10	a	8072	h-o
32	1X rate Cheniere	12.6	Post Flood	106.7	b-g	94.7	b-g	41.7	d-l	24.27	a-i	7805	j-p

Continued.

Table 93. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd							
Rating Date								8/14/2019		8/14/2019			
Rating Type				50% HD		50% HD		Heights		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage										
33	2X rate Presidio	25.2	Post Flood	104.3	g-l	92.3	g-l	39.7	j-n	21.53	e-l	8090	h-o
34	2X rate Diamond	25.2	Post Flood	107.0	b-f	95.0	b-f	40.7	g-n	24.90	a-h	8449	g-l
35	2X rate PVL02	25.2	Post Flood	105.0	e-j	93.0	e-j	45.0	abc	21.47	f-l	8991	f-j
36	2X rate Mermentau	25.2	Post Flood	103.7	i-m	91.7	i-m	38.7	l-o	22.63	d-k	8011	i-p
37	2X rate CL111	25.2	Post Flood	98.0	p	86.0	p	38.3	mno	20.17	j-m	9299	d-h
38	2X rate CL153	25.2	Post Flood	105.0	e-j	93.0	e-j	41.0	f-m	21.40	f-l	8328	g-m
39	2X rate CLJ01	25.2	Post Flood	105.3	d-i	93.3	d-i	40.3	h-n	22.20	d-k	7971	j-p
40	2X rate PVL01	25.2	Post Flood	115.0	a	103.0	a	41.3	e-m	22.50	d-k	8008	i-p
41	2X rate RT7301	25.2	Post Flood	104.0	h-l	92.0	h-l	38.7	l-o	21.47	f-l	10392	a-d
42	2X rate RT3201	25.2	Post Flood	104.3	g-l	92.3	g-l	28.3	q	16.57	m	1516	s
43	2X rate CLXL745	25.2	Post Flood	100.7	no	88.7	no	44.3	a-e	18.23	lm	10380	a-d
44	2X rate CLL15	25.2	Post Flood	102.7	j-n	90.7	j-n	39.0	k-o	21.13	g-l	8839	f-k
45	2X rate CLM04	25.2	Post Flood	107.0	b-f	95.0	b-f	43.0	c-i	24.73	a-h	9414	c-g
46	2X rate Titan	25.2	Post Flood	101.3	mno	89.3	mno	36.3	op	24.07	b-j	8644	f-k
47	2X rate Jupiter	25.2	Post Flood	107.7	bcd	95.7	bcd	37.7	nop	27.17	ab	8139	h-n
48	2X rate Cheniere	25.2	Post Flood	106.0	d-i	94.0	d-i	37.7	nop	23.40	b-k	8336	g-m
LSD P=.05				2.36		2.36		3.25		3.939		1250.1	
Standard Deviation				1.46		1.46		2.01		2.430		771.1	
CV				1.38		1.56		4.87		10.51		9.31	
Treatment F				17.332		17.332		7.224		2.573		12.749	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0001	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 94. Two-way comparison of inbred and hybrid rice toxicity on benzobicyclon herbicide at 1x and 2x rates in a drill-seeded System. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd							
Rating Date								8/14/2019		8/14/2019		8/14/2019	
Rating Type				50% HD		50% HD		Heights		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage										
TABLE OF A (benzobicyclon rate) MEANS													
1	Check			105.8	a	93.8	a	42.5	a	23.40	a	8152	a
2	1X rate	12.6	Post Flood	105.7	a	93.7	a	41.5	b	23.86	a	8406	a
3	2X rate	25.2	Post Flood	104.8	b	92.8	b	39.4	c	22.10	b	8300	a
P				0.0024		0.0024		0.0001		0.0017		0.2734	
LSD P=.05				0.59		0.59		0.81		0.985		312.5	
TABLE OF B (Cultivar) MEANS													
1	Presidio			105.0	ef	93.0	ef	40.2	efg	22.50	def	7744	gh
2	Diamond			107.7	bc	95.7	bc	41.8	de	25.20	ab	8115	efg
3	PVL02			105.1	ef	93.1	ef	44.9	ab	22.16	d-g	8174	efg
4	Mermentau			105.4	def	93.4	def	39.9	fg	24.07	bcd	7226	h
5	CL111			100.7	g	88.7	g	40.8	d-g	20.87	fgh	8919	cd
6	CL153			105.8	def	93.8	def	42.2	cd	23.14	b-e	8187	efg
7	CLJ01			106.1	de	94.1	de	42.0	de	23.12	b-f	8037	fg
8	PVL01			115.0	a	103.0	a	41.3	def	24.01	bcd	7831	gh
9	RT7301			104.7	f	92.7	f	41.3	def	21.48	e-h	9875	b
10	RT3201			102.0	g	90.0	g	34.9	h	19.72	h	5057	i
11	CLXL745			101.1	g	89.1	g	45.8	a	19.89	gh	10756	a
12	CLL15			104.7	f	92.7	f	41.1	def	22.58	c-f	8693	def
13	CLM04			106.7	cd	94.7	cd	43.9	bc	24.82	bc	9621	bc
14	Titan			102.0	g	90.0	g	39.1	g	25.07	b	8815	de
15	Jupiter			108.6	b	96.6	b	39.0	g	27.36	a	7966	g
16	Cheniere			106.3	cde	94.3	cde	40.2	efg	23.98	bcd	7561	gh
P				0.0001		0.0001		0.0001		0.0001		0.0001	
LSD P=.05				1.36		1.36		1.88		2.274		721.8	

Continued.

Table 94. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd							
Rating Date								8/14/2019		8/14/2019		8/14/2019	
Rating Type				50% HD		50% HD		Heights		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage										
TABLE OF A (benzobicyclon rate) B (Cultivar) MEANS													
1	Check			106.3	c-h	94.3	c-h	41.0	f-m	22.83	a	7117	m-q
1	Presidio												
2	1X rate	12.6	Post Flood	104.3	g-l	92.3	g-l	40.0	i-n	23.13	a	8024	i-p
1	Presidio												
3	2X rate	25.2	Post Flood	104.3	g-l	92.3	g-l	39.7	j-n	21.53	a	8090	h-o
1	Presidio												
1	Check			108.7	bc	96.7	bc	41.3	e-m	24.90	a	8031	i-p
2	Diamond												
2	1X rate	12.6	Post Flood	107.3	b-e	95.3	b-e	43.3	b-h	25.80	a	7866	j-p
2	Diamond												
3	2X rate	25.2	Post Flood	107.0	b-f	95.0	b-f	40.7	g-n	24.90	a	8449	g-l
2	Diamond												
1	Check			105.3	d-i	93.3	d-i	46.3	ab	21.57	a	7327	l-q
3	PVL02												
2	1X rate	12.6	Post Flood	105.0	e-j	93.0	e-j	43.3	b-h	23.43	a	8203	g-m
3	PVL02												
3	2X rate	25.2	Post Flood	105.0	e-j	93.0	e-j	45.0	abc	21.47	a	8991	f-j
3	PVL02												
1	Check			106.3	c-h	94.3	c-h	40.7	g-n	24.73	a	6858	opq
4	Mermentau												
2	1X rate	12.6	Post Flood	106.3	c-h	94.3	c-h	40.3	h-n	24.83	a	6809	pq
4	Mermentau												
3	2X rate	25.2	Post Flood	103.7	i-m	91.7	i-m	38.7	l-o	22.63	a	8011	i-p
4	Mermentau												
1	Check			101.3	mno	89.3	mno	43.0	c-i	20.77	a	8595	f-k
5	CL111												
2	1X rate	12.6	Post Flood	102.7	j-n	90.7	j-n	41.0	f-m	21.67	a	8862	f-k
5	CL111												
3	2X rate	25.2	Post Flood	98.0	p	86.0	p	38.3	mno	20.17	a	9299	d-h
5	CL111												
1	Check			106.7	b-g	94.7	b-g	43.0	c-i	24.23	a	8004	i-p
6	CL153												
2	1X rate	12.6	Post Flood	105.7	d-i	93.7	d-i	42.7	c-j	23.80	a	8230	g-m
6	CL153												
3	2X rate	25.2	Post Flood	105.0	e-j	93.0	e-j	41.0	f-m	21.40	a	8328	g-m
6	CL153												

Continued.

Table 94. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd							
Rating Date								8/14/2019		8/14/2019		8/14/2019	
Rating Type				50% HD		50% HD		Heights		Moist		Yield	
Rating Unit				days		days		in		%		lb/ ı	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage										
TABLE OF A (benzobicyclon rate) B (Cultivar) MEANS (Continued)													
1 7	Check CLJ01			106.3	c-h	94.3	c-h	42.7	c-j	24.10	a	7904	j-p
2 7	1X rate CLJ01	12.6	Post Flood	106.7	b-g	94.7	b-g	43.0	c-i	23.07	a	8236	g-m
3 7	2X rate CLJ01	25.2	Post Flood	105.3	d-i	93.3	d-i	40.3	h-n	22.20	a	7971	j-p
1 8	Check PVL01			115.0	a	103.0	a	41.7	d-l	25.47	a	6932	n-q
2 8	1X rate PVL01	12.6	Post Flood	115.0	a	103.0	a	41.0	f-m	24.07	a	8552	f-l
3 8	2X rate PVL01	25.2	Post Flood	115.0	a	103.0	a	41.3	e-m	22.50	a	8008	i-p
1 9	Check RT7301			105.3	d-i	93.3	d-i	43.3	b-h	21.07	a	8954	f-j
2 9	1X rate RT7301	12.6	Post Flood	104.7	f-k	92.7	f-k	42.0	c-k	21.90	a	10279	a-e
3 9	2X rate RT7301	25.2	Post Flood	104.0	h-l	92.0	h-l	38.7	l-o	21.47	a	10392	a-d
1 10	Check RT3201			99.0	op	87.0	op	41.3	e-m	19.90	a	9781	b-f
2 10	1X rate RT3201	12.6	Post Flood	102.7	j-n	90.7	j-n	35.0	p	22.70	a	3874	r
3 10	2X rate RT3201	25.2	Post Flood	104.3	g-l	92.3	g-l	28.3	q	16.57	a	1516	s
1 11	Check CLXL745			102.0	lmn	90.0	lmn	46.7	a	21.00	a	11070	a
2 11	1X rate CLXL745	12.6	Post Flood	100.7	no	88.7	no	46.3	ab	20.43	a	10817	ab
3 11	2X rate CLXL745	25.2	Post Flood	100.7	no	88.7	no	44.3	a-e	18.23	a	10380	a-d
1 12	Check CLL15			106.0	d-i	94.0	d-i	43.7	a-g	22.77	a	8196	g-m
2 12	1X rate CLL15	12.6	Post Flood	105.3	d-i	93.3	d-i	40.7	g-n	23.83	a	9044	e-j
3 12	2X rate CLL15	25.2	Post Flood	102.7	j-n	90.7	j-n	39.0	k-o	21.13	a	8839	f-k

Continued.

Table 94. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd							
Rating Date								8/14/2019		8/14/2019		8/14/2019	
Rating Type				50% HD		50% HD		Heights		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt No.	Treatment Name	Rate (oz/A)	Growth Stage										
TABLE OF A (benzobicyclon rate) B (Cultivar) MEANS (Continued)													
1 13	Check CLM04			106.7	b-g	94.7	b-g	44.7	a-d	24.73	a	8854	f-k
2 13	1X rate CLM04	12.6	Post Flood	106.3	c-h	94.3	c-h	44.0	a-f	25.00	a	10596	abc
3 13	2X rate CLM04	25.2	Post Flood	107.0	b-f	95.0	b-f	43.0	c-i	24.73	a	9414	c-g
1 14	Check Titan			102.3	k-n	90.3	k-n	40.3	h-n	25.33	a	8576	f-l
2 14	1X rate Titan	12.6	Post Flood	102.3	k-n	90.3	k-n	40.7	g-n	25.80	a	9224	d-i
3 14	2X rate Titan	25.2	Post Flood	101.3	mno	89.3	mno	36.3	op	24.07	a	8644	f-k
1 15	Check Jupiter			109.0	b	97.0	b	39.7	j-n	26.80	a	7688	k-q
2 15	1X rate Jupiter	12.6	Post Flood	109.0	b	97.0	b	39.7	j-n	28.10	a	8072	h-o
3 15	2X rate Jupiter	25.2	Post Flood	107.7	bcd	95.7	bcd	37.7	nop	27.17	a	8139	h-n
1 16	Check Cheniere			106.3	c-h	94.3	c-h	41.3	e-m	24.27	a	6541	q
2 16	1X rate Cheniere	12.6	Post Flood	106.7	b-g	94.7	b-g	41.7	d-l	24.27	a	7805	j-p
3 16	2X rate Cheniere	25.2	Post Flood	106.0	d-i	94.0	d-i	37.7	nop	23.40	a	8336	g-m
P				0.0128		0.0128		0.0054		0.9979		0.0001	
LSD P=.05				2.36		2.36		3.25		3.939		1250.1	
Standard Deviation				1.46		1.46		2.01		2.430		771.1	
CV				1.38		1.56		4.87		10.508		9.3	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

ROTATIONAL CROP RESEARCH

D.L. Harrell, M. Kongchum, J.P. Leonards, J.S. Fluitt, and J.R. Hartman

INTRODUCTION

The following research focuses on soybean production in southwestern Louisiana. Research topics include the effects of planting date and maturity group on soybean yield, potassium and phosphorus rate and time of application, and sulfur fertilization rate.

Evaluation of Date of Planting on Non-Irrigated Soybeans
in Southwest Louisiana — H. Rouse Caffey Rice Research Station (South Unit)

Experiment number ..... : 2019 Soybean Date of Planting at Crowley

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Spring stale
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 5.33 ft. x 20 ft.
- **Row width/rows per plot** ..... : 16 inch / 4

Soil type ..... : Crowley Silt Loam
- **% organic matter** ..... : 1.86
- **pH** ..... : 5.09
- **Extractable nutrients** ppm ..... : Ca-1,451; Cu-1.66; Mg-176; P-27.7; K-79; Na-38.8; S-8.3; Zn-8.7

Crop/Variety ..... : Soybean / See Treatment Name
- **Planting method** ..... : Drill seeded
- **Planting date** ..... : DOP 1 – April 2
  DOP 2 – April 16
  DOP 3 – April 29
  DOP 4 – May 22
  DOP 5 – June 11
  DOP 6 – June 20
- **Seeding rate/depth** ..... : 130,000 seeds/A / 0.5 to 1 inch depending on soil moisture
- **Emergence date** ..... : DOP 1 – April 15
  DOP 2 – April 26
  DOP 3 – May 5
  DOP 4 – May 28
  DOP 5 – June 17
  DOP 6 – June 27
- **Harvest date** ..... : DOP 1 & DOP 2 – Sept. 24
  DOP 3 & DOP 4 – Sept. 25
  DOP 5 & DOP 6 – Oct. 7

Seed treatment/cwt ..... : NA

Fertilization ..... : 250 lb/A 0-24-24-2.7, April 17

Pest management ..... :
- **Herbicides** ..... : 1.5 qt/A Roundup + 0.0025% NIS, April 23
  1.5 qt/A Roundup + 1.33 pt/A Charger Max, May 3
  1.5 qt/A Roundup + 1.33 pt/A Dual + .0025% NIS, June 12
  10.7 oz/A Devour + .0025% NIS, Sept. 10 (DOP 1 & 2)
  10.7 oz/A Devour + .0025% NIS, Sept. 10 (DOP 3 & 4)
  10.7 oz/A Devour + .0025% NIS, Sept. 10 (DOP 5 & 6)
- **Insecticides** ..... : 2 oz/A Karate Z + 1% NIS, June 13, July 8, July 25
  10 oz/A Besiege + 1% NIS, Aug. 13, Aug. 28
- **Fungicides** ..... : 7 oz/A Quadris Top SBx + 1% NIS, July 8, July 25, Aug. 13 & 28

Table 1. Evaluation of date of planting on non-irrigated soybeans in southwest Louisiana. H Rouse Caffey Rice Research Station (South Unit).

Crop Name		Soybeans	Soybeans		Soybeans		Soybeans	
Description		Maturity*	Plt Height		Moisture		Yield	
Rating Date			9/24/2019		9/24/2019			
Rating Type			Height		Moisture		Yield	
Rating Unit		days	in		%		bu/A	
Trt No.	Treatment Name							
TABLE OF A (Date of Planting) MEANS								
1	DOP-1 (Apr 2)		16.4	e	9.94	f	15.8	f
2	DOP-2 (Apr 16)		21.0	d	10.57	e	36.2	e
3	DOP-3 (Apr 29)		26.7	c	11.45	d	54.1	b
4	DOP-4 (May 22)		33.9	b	11.86	c	61.8	a
5	DOP-5 (Jun 11)		37.2	a	13.71	a	44.8	c
6	DOP-6 (Jun 20)		36.6	a	13.00	b	40.3	d
P			0.0001		0.0001		0.0001	
LSD P=.05			0.79		0.3285		3.93	
TABLE OF B (Group/Variety) MEANS								
1	P42A96X		26.4	e	11.68	c-f	37.5	d
2	Delta Grow 46X25		30.1	c	11.84	cde	43.8	bc
3	Dleta Grow 49X15		33.1	a	11.99	bcd	50.2	a
4	Delta Grow 52X05		34.1	a	11.63	def	50.0	a
5	P54A54X		21.3	g	11.36	fg	43.8	bc
6	C4845RX		27.6	d	12.39	ab	36.5	d
7	LGS4931RX		31.7	b	12.11	bc	39.4	cd
8	AG52X9		33.5	a	12.76	a	48.9	ab
9	Delta Grow 54X25		22.8	f	11.08	g	41.3	cd
10	S44-C7X		26.4	e	11.59	def	36.8	d
11	LS4487XS		30.0	c	11.12	g	39.8	cd
12	S41XS98		26.8	de	11.49	efg	38.0	d
P			0.0001		0.0001		0.0001	
LSD P=.05			1.11		0.4646		5.56	

* No maturity data for DOP-1 (Apr 2) due to some plots did not mature. No statistical analysis was performed.

Continued.

Table 1. Continued.

Crop Name		Soybeans	Soybeans		Soybeans		Soybeans	
Description		Maturity*	Plt Height		Moisture		Yield	
Rating Date			9/24/2019		9/24/2019			
Rating Type			Height		Moisture		Yield	
Rating Unit		days	in		%		bu/A	
Trt No.	Treatment Name							
TABLE OF A (Date of Planting) B (Group/Variety) MEANS								
1	DOP-1 (Apr 2)	*	15.0	K	8.98	xyz	8.7	CD
1	P42A96X							
2	DOP-2 (Apr 16)	146.0	19.8	E-H	9.14	xyz	26.1	y-B
1	P42A96X							
3	DOP-3 (Apr 29)	138.5	25.3	x-A	11.25	k-r	39.3	p-y
1	P42A96X							
4	DOP-4 (May 22)	116.8	32.0	q-t	12.18	h-l	65.3	a-e
1	P42A96X							
5	DOP-5 (Jun 11)	97.8	34.3	n-r	14.85	a	45.5	j-t
1	P42A96X							
6	DOP-6 (Jun 20)	92.5	32.3	p-t	13.70	b-f	40.3	p-x
1	P42A96X							
1	DOP-1 (Apr 2)	*	15.0	K	9.23	w-z	5.9	D
2	Delta Grow 46X25							
2	DOP-2 (Apr 16)	147.0	22.8	A-D	11.23	k-r	31.4	v-z
2	Delta Grow 46X25							
3	DOP-3 (Apr 29)	135.8	26.8	wxy	11.74	i-p	66.9	a-d
2	Delta Grow 46X25							
4	DOP-4 (May 22)	115.3	37.3	h-l	11.95	h-n	72.0	abc
2	Delta Grow 46X25							
5	DOP-5 (Jun 11)	100.0	39.5	b-i	13.55	c-f	47.0	h-s
2	Delta Grow 46X25							
6	DOP-6 (Jun 20)	94.0	39.5	b-i	13.38	c-g	39.5	p-y
2	Delta Grow 46X25							
1	DOP-1 (Apr 2)	*	20.5	D-G	10.73	o-u	31.7	u-z
3	Delta Grow 49X15							
2	DOP-2 (Apr 16)	146.0	25.3	x-A	11.04	l-s	56.2	d-n
3	Delta Grow 49X15							
3	DOP-3 (Apr 29)	138.5	31.8	r-u	11.88	i-n	63.0	b-f
3	Delta Grow 49X15							
4	DOP-4 (May 22)	115.8	39.8	b-h	12.05	h-m	73.7	ab
3	Delta Grow 49X15							
5	DOP-5 (Jun 11)	101.0	40.5	b-f	13.60	c-f	40.3	p-x
3	Delta Grow 49X15							
6	DOP-6 (Jun 20)	94.5	41.0	bcd	12.63	e-j	36.6	r-y

Continued.

Table 1. Continued.

Crop Name		Soybeans	Soybeans		Soybeans		Soybeans	
Description		Maturity*	Plt Height		Moisture		Yield	
Rating Date			9/24/2019		9/24/2019			
Rating Type			Height		Moisture		Yield	
Rating Unit		days	in		%		bu/A	
Trt No.	Treatment Name							
TABLE OF A (Date of Planting) B (Group/Variety) MEANS (Continued)								
3	Dleta Grow 49X15							
1	DOP-1 (Apr 2)	*	24.5	y-B	11.38	k-r	57.6	d-l
4	Delta Grow 52X05							
2	DOP-2 (Apr 16)	144.5	27.3	wx	10.98	m-t	57.0	d-m
4	Delta Grow 52X05							
3	DOP-3 (Apr 29)	138.5	36.8	j-n	11.55	j-q	56.8	d-m
4	Delta Grow 52X05							
4	DOP-4 (May 22)	115.3	38.3	e-j	11.40	k-r	60.2	b-h
4	Delta Grow 52X05							
5	DOP-5 (Jun 11)	101.0	40.0	b-g	12.83	e-i	33.2	t-z
4	Delta Grow 52X05							
6	DOP-6 (Jun 20)	94.3	37.8	g-k	11.68	j-q	35.2	s-z
4	Delta Grow 52X05							
1	DOP-1 (Apr 2)	*	9.3	L	8.68	z	15.5	A-D
5	P54A54X							
2	DOP-2 (Apr 16)	143.5	15.3	K	9.76	u-z	44.0	l-v
5	P54A54X							
3	DOP-3 (Apr 29)	134.8	18.3	G-J	11.50	j-q	50.2	f-r
5	P54A54X							
4	DOP-4 (May 22)	116.0	24.3	y-B	11.90	h-n	59.2	c-i
5	P54A54X							
5	DOP-5 (Jun 11)	102.8	29.3	uvw	13.75	a-e	46.3	i-t
5	P54A54X							
6	DOP-6 (Jun 20)	95.8	31.3	s-v	12.58	f-j	47.5	g-s
5	P54A54X							
1	DOP-1 (Apr 2)	*	17.0	IJK	9.80	u-z	6.2	D
6	C4845RX							
2	DOP-2 (Apr 16)	148.0	21.3	C-F	11.73	i-p	26.1	y-B
6	C4845RX							
3	DOP-3 (Apr 29)	140.0	26.8	wxy	12.25	g-k	47.9	g-s
6	C4845RX							
4	DOP-4 (May 22)	116.8	33.8	o-s	11.98	h-m	52.5	e-p
6	C4845RX							
5	DOP-5 (Jun 11)	101.8	33.0	o-t	14.38	abc	44.0	l-v
6	C4845RX							
6	DOP-6 (Jun 20)	97.3	33.8	o-s	14.23	abc	42.7	n-w
6	C4845RX							

Continued.

Table 1. Continued.

Crop Name		Soybeans	Soybeans		Soybeans		Soybeans	
Description		Maturity*	Plt Height		Moisture		Yield	
Rating Date			9/24/2019		9/24/2019			
Rating Type			Height		Moisture		Yield	
Rating Unit		days	in		%		bu/A	
Trt No.	Treatment Name							
TABLE OF A (Date of Planting) B (Group/Variety) MEANS (Continued)								
1	DOP-1 (Apr 2)	*	16.5	JK	9.88	t-y	7.4	D
7	LGS4931RX							
2	DOP-2 (Apr 16)	148.0	22.3	B-E	11.90	h-n	29.2	w-z
7	LGS4931RX							
3	DOP-3 (Apr 29)	138.5	29.0	vw	11.23	k-r	58.5	c-k
7	LGS4931RX							
4	DOP-4 (May 22)	116.5	38.0	f-k	12.13	h-l	59.0	c-j
7	LGS4931RX							
5	DOP-5 (Jun 11)	102.0	43.8	a	13.40	c-f	45.1	k-u
7	LGS4931RX							
6	DOP-6 (Jun 20)	98.0	40.8	b-e	14.13	a-d	37.2	r-y
7	LGS4931RX							
1	DOP-1 (Apr 2)	*	20.8	D-G	11.88	i-n	21.7	z-C
8	AG52X9							
2	DOP-2 (Apr 16)	146.8	26.3	xy	11.60	j-q	60.1	b-h
8	AG52X9							
3	DOP-3 (Apr 29)	138.3	32.3	p-t	12.13	h-l	77.0	a
8	AG52X9							
4	DOP-4 (May 22)	115.8	38.3	e-j	11.93	h-n	60.3	b-h
8	AG52X9							
5	DOP-5 (Jun 11)	102.8	42.0	ab	14.20	abc	37.2	r-y
8	AG52X9							
6	DOP-6 (Jun 20)	97.3	41.8	abc	14.83	ab	37.2	r-y
8	AG52X9							
1	DOP-1 (Apr 2)	*	9.0	L	9.55	v-z	10.3	CD
9	Delta Grow 54X25							
2	DOP-2 (Apr 16)	147.3	15.0	K	10.58	q-v	35.9	s-y
9	Delta Grow 54X25							
3	DOP-3 (Apr 29)	139.8	19.3	F-I	11.33	k-r	59.1	c-i
9	Delta Grow 54X25							
4	DOP-4 (May 22)	117.0	25.8	xyz	11.58	j-q	60.7	b-g
9	Delta Grow 54X25							
5	DOP-5 (Jun 11)	102.8	33.0	o-t	11.85	i-o	40.3	p-x
9	Delta Grow 54X25							
6	DOP-6 (Jun 20)	95.5	34.5	m-q	11.63	j-q	41.2	o-x
9	Delta Grow 54X25							

Continued.

Table 1. Continued.

Crop Name		Soybeans	Soybeans		Soybeans		Soybeans	
Description		Maturity*	Plt Height		Moisture		Yield	
Rating Date			9/24/2019		9/24/2019			
Rating Type			Height		Moisture		Yield	
Rating Unit		days	in		%		bu/A	
Trt No.	Treatment Name							
TABLE OF A (Date of Planting) B (Group/Variety) MEANS (Continued)								
1	DOP-1 (Apr 2)	*	15.5	K	9.00	xyz	8.7	CD
10	S44-C7X							
2	DOP-2 (Apr 16)	146.5	19.3	F-I	10.66	p-v	27.6	x-A
10	S44-C7X							
3	DOP-3 (Apr 29)	138.5	24.3	y-B	11.43	k-r	47.8	g-s
10	S44-C7X							
4	DOP-4 (May 22)	115.3	31.0	tuv	11.55	j-q	59.0	c-j
10	S44-C7X							
5	DOP-5 (Jun 11)	96.5	34.8	l-p	14.80	ab	51.7	e-q
10	S44-C7X							
6	DOP-6 (Jun 20)	91.3	33.5	o-t	12.13	h-l	26.1	y-B
10	S44-C7X							
1	DOP-1 (Apr 2)	*	19.3	F-I	10.08	s-x	12.2	CD
11	LS4487XS							
2	DOP-2 (Apr 16)	146.0	20.5	D-G	8.92	yz	27.7	x-A
11	LS4487XS							
3	DOP-3 (Apr 29)	134.0	26.8	wxy	10.83	n-u	44.4	l-v
11	LS4487XS							
4	DOP-4 (May 22)	116.3	35.5	k-o	11.95	h-n	65.3	a-e
11	LS4487XS							
5	DOP-5 (Jun 11)	96.5	39.3	c-j	12.83	e-i	43.9	m-v
11	LS4487XS							
6	DOP-6 (Jun 20)	93.3	38.8	d-j	12.13	h-l	45.3	k-t
11	LS4487XS							
1	DOP-1 (Apr 2)	*	15.0	K	10.08	s-x	3.4	D
12	S41XS98							
2	DOP-2 (Apr 16)	147.0	17.5	H-K	9.33	w-z	13.1	BCD
12	S41XS98							
3	DOP-3 (Apr 29)	134.0	23.5	z-C	10.34	r-w	38.6	q-y
12	S41XS98							
4	DOP-4 (May 22)	112.3	33.0	o-t	11.73	i-p	54.8	d-n
12	S41XS98							
5	DOP-5 (Jun 11)	96.5	37.0	i-m	14.45	abc	63.4	a-f
12	S41XS98							
6	DOP-6 (Jun 20)	92.3	34.5	m-q	13.03	d-h	54.7	d-o
12	S41XS98							
P		N/A	0.0001		0.0001		0.0001	
LSD P=.05		N/A	2.72		1.1381		13.62	
Standard Deviation		N/A	1.95		0.8165		9.77	
CV		N/A	6.82		6.9465		23.18	

* No maturity data for DOP-1 (Apr 2) due to some plots did not mature.
N/A No statistical analysis was performed.
Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Potassium (K) Fertilizer Rate of Application on Soybean Yield — Calcasieu Parish

Experiment number ..... : 19-CP-Soybean (SB 01)

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 5.33 x 20 ft
- **Row width/rows per plot**..... : 16 in / 4

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.93 (2018)
- **pH**..... : 5.74 (2018)
- **Extractable nutrients** ppm ..... : Ca-650; Cu-1.3; Mg-133; P-17; K-110; Na-29; S-8.8; Zn-4.6 (2018)

Crop/Variety ..... : Soybean / AG52X9
- **Planting method/date** ..... : Drill seeded / May 31, *Replanted June 19
- **Seeding rate/depth** ..... : 130,000 seeds /A / 1 inch
- **Emergence date**..... : June 26
- **Harvest date** ..... : Oct. 24

Fertilization ..... : No blanket application

Water management ..... : NA
- **Flush** ..... : NA

Pest management ..... :
- **Herbicides**..... : 1.33 pt/A Dual + 1 qt/A Roundup, May 30
  1.5 qt/A Roundup, July 26
  1.5 qt/a Roundup, Aug. 22
  10.7 oz/A Devour + .0025% NIS, Oct. 2
- **Insecticides** ..... : 2 oz/A Karate Z + 1% NIS, July 26
  2 oz/A Karate Z + 1% NIS, Aug. 22
- **Fungicides**..... : None

Table 2. Evaluation of potassium (K) fertilizer rate of application on soybean yield. Calcasieu Parish.

Crop Name				Soybeans		Soybeans		Soybeans		Soybeans		Soybeans	
Description				Maturity		Maturity		Plt Height		Moisture		Yield	
Rating Date								10/24/2019		10/24/2019		10/24/2019	
Rating Type				Plant-R8		Emerg-R8		Height					
Rating Unit				days		days		in		%		bu/A	
Trt No.	Treatment Name	Rate (lb K_2O/A)	Growth Stage										
1	Muriate of Potash 0-0-60	0	ATPLAN	104.0	a	97.0	a	34.3	a	19.3	a	42.7	a
2	Muriate of Potash 0-0-60	30	ATPLAN	104.0	a	97.0	a	33.8	a	19.3	a	42.9	a
3	Muriate of Potash 0-0-60	60	ATPLAN	104.0	a	97.0	a	34.0	a	19.0	a	43.7	a
4	Muriate of Potash 0-0-60	90	ATPLAN	104.0	a	97.0	a	33.8	a	19.4	a	41.1	a
5	Muriate of Potash 0-0-60	120	ATPLAN	104.0	a	97.0	a	32.8	a	19.1	a	42.7	a
6	Muriate of Potash 0-0-60	150	ATPLAN	104.0	a	97.0	a	33.0	a	19.3	a	41.4	a
LSD P=.05				N/A		N/A		1.87		0.29		5.05	
Standard Deviation				0.00		0.00		1.24		0.19		3.35	
CV				0.0		0.0		3.7		0.99		7.9	
Treatment F				0.000		0.000		0.885		2.553		0.343	
Treatment Prob(F)				1.0000		1.0000		0.5150		0.0730		0.8788	

N/A = No statistical analysis was performed.

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Potassium (K) Fertilizer Time of Application on Soybean Yield — Calcasieu Parish

Experiment number ..... : 19-CP-Soybean (SB 02)

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 5.33 x 20 ft
- **Row width/rows per plot**..... : 16 in / 4

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.93 (2018)
- **pH**..... : 5.74 (2018)
- **Extractable nutrients** ppm ..... : Ca-650; Cu-1.3; Mg-133; P-17; K-110; Na-29; S-8.8; Zn-4.6 (2018)

Crop/Variety ..... : Soybean / AG52X9
- **Planting method/date** ..... : Drill seeded / May 31, *Replanted June 19
- **Seeding rate/depth** ..... : 130,000 seeds /A / 1 inch
- **Emergence date**..... : June 26
- **Harvest date** ..... : Oct. 24

Fertilization ..... : No blanket application

Water management ..... : NA
- **Flush** ..... : NA

Pest management ..... :
- **Herbicides**..... : 1.33 pt/A Dual + 1 qt/A Roundup, May 30
  1.5 qt/A Roundup, July 26
  1.5 qt/a Roundup, Aug. 22
  10.7 oz/A Devour + .0025% NIS, Oct. 2
- **Insecticides** ..... : 2 oz/A Karate Z + 1% NIS, July 26
  2 oz/A Karate Z + 1% NIS, Aug. 22
- **Fungicides**..... : None

Table 3. Evaluation of potassium (K) fertilizer time of application on soybean yield. Calcasieu Parish.

Crop Name				Soybeans		Soybeans		Soybeans		Soybeans		Soybeans	
Description				Maturity		Maturity		Plt Height		Moisture		Yield	
Rating Date								10/24/2019		10/24/2019		10/24/2019	
Rating Type				Plant-R8		Emerg-R8		Height					
Rating Unit				days		days		in		%		bu/A	
Trt No.	Treatment Name	Rate (lb K_2O/A)	Growth Stage										
1	Untreated Check	0		104.0	a	97.0	a	32.5	a	19.2	a	42.9	bc
2	Muriate of Potash 0-0-60	120	ATPLAN	104.0	a	97.0	a	32.0	a	19.3	a	40.1	c
3	Muriate of Potash 0-0-60	120	V1	104.0	a	97.0	a	33.3	a	19.2	a	42.4	bc
4	Muriate of Potash 0-0-60	120	V3	104.0	a	97.0	a	32.5	a	19.2	a	45.7	ab
5	Muriate of Potash 0-0-60	120	V5	104.0	a	97.0	a	31.8	a	18.9	a	45.6	ab
6	Muriate of Potash 0-0-60	120	R1	104.0	a	97.0	a	33.0	a	19.2	a	46.0	ab
7	Muriate of Potash 0-0-60	120	R3	104.0	a	97.0	a	33.3	a	19.2	a	41.4	bc
8	Muriate of Potash 0-0-60	120	R5	104.0	a	97.0	a	33.3	a	19.0	a	48.3	a
9	Muriate of Potash 0-0-60	120	R6	104.0	a	97.0	a	34.3	a	19.0	a	42.9	bc
LSD P=.05				N/A		N/A		2.46		0.34		4.66	
Standard Deviation				0.00		0.00		1.68		0.23		3.19	
CV				0.0		0.0		5.13		1.21		7.28	
Treatment F				0.000		0.000		0.817		1.539		2.693	
Treatment Prob(F)				1.0000		1.0000		0.5949		0.1962		0.0287	

N/A = No statistical analysis was performed.
Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Phosphorus (P) Fertilizer Rate of Application on Soybean Yield — Calcasieu Parish

Experiment number ..... : 19-CP-Soybean (SB 03)

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 5.33 x 20 ft
- **Row width/rows per plot** ..... : 16 in / 4

Soil type ..... : Crowley-Vidrine complex
- **% organic matter** ..... : 1.93 (2018)
- **pH** ..... : 5.74 (2018)
- **Extractable nutrients** ppm ..... : Ca-650; Cu-1.3; Mg-133; P-17; K-110; Na-29; S-8.8; Zn-4.6 (2018)

Crop/Variety ..... : Soybean / AG52X9
- **Planting method/date** ..... : Drill seeded / May 31, *Replanted June 19
- **Seeding rate/depth** ..... : 130,000 seeds /A / 1 inch
- **Emergence date** ..... : June 26
- **Harvest date** ..... : Oct. 24

Fertilization ..... : No blanket application

Water management ..... : NA
- **Flush** ..... : NA

Pest management ..... :
- **Herbicides** ..... : 1.33 pt/A Dual + 1 qt/A Roundup, May 30
  1.5 qt/A Roundup, July 26
  1.5 qt/a Roundup, Aug. 22
  10.7 oz/A Devour + .0025% NIS, Oct. 2
- **Insecticides** ..... : 2 oz/A Karate Z + 1% NIS, July 26
  2 oz/A Karate Z + 1% NIS, Aug. 22
- **Fungicides** ..... : None

Table 4. Evaluation of phosphorus (P) fertilizer rate of application on soybean yield. Calcasieu Parish.

Crop Name				Soybeans		Soybeans		Soybeans		Soybeans		Soybeans	
Description				Maturity		Maturity		Plt Height		Moisture		Yield	
Rating Date								10/24/2019		10/24/2019		10/24/2019	
Rating Type				Plant-R8		Emerg-R8		Height					
Rating Unit				days		days		in		%		bu/A	
Trt No.	Treatment Name	Rate (lb P_2O_5/A)	Growth Stage										
1	Triple superphosphate (0-46-0)	0	ATPLAN	104.0	a	97.0	a	33.8	a	18.4	a	44.8	a
2	Triple superphosphate (0-46-0)	30	ATPLAN	104.0	a	97.0	a	33.3	a	18.5	a	46.7	a
3	Triple superphosphate (0-46-0)	60	ATPLAN	104.0	a	97.0	a	33.0	a	18.6	a	46.1	a
4	Triple superphosphate (0-46-0)	90	ATPLAN	104.0	a	97.0	a	33.3	a	18.6	a	46.5	a
5	Triple superphosphate (0-46-0)	120	ATPLAN	104.0	a	97.0	a	33.8	a	18.6	a	46.8	a
6	Triple superphosphate (0-46-0)	150	ATPLAN	104.0	a	97.0	a	32.8	a	18.4	a	46.0	a
LSD P=.05				N/A		N/A		2.58		0.41		4.78	
Standard Deviation				0.00		0.00		1.71		0.27		3.17	
CV				0.0		0.0		5.14		1.46		6.87	
Treatment F				0.000		0.000		0.219		0.604		0.222	
Treatment Prob(F)				1.0000		1.0000		0.9488		0.6983		0.9474	

N/A = No statistical analysis was performed.

Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Phosphorus (P) Fertilizer Time of Application on Soybean Yield — Calcasieu Parish

Experiment number ..... : 19-CP-Soybean (SB 04)

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size**..... : 5.33 x 20 ft
- **Row width/rows per plot**..... : 16 in / 4

Soil type ..... : Crowley-Vidrine complex
- **% organic matter**..... : 1.93 (2018)
- **pH**..... : 5.74 (2018)
- **Extractable nutrients** ppm ..... : Ca-650; Cu-1.3; Mg-133; P-17; K-110; Na-29; S-8.8; Zn-4.6 (2018)

Crop/Variety ..... : Soybean / AG52X9
- **Planting method/date** ..... : Drill seeded / May 31, *Replanted June 19
- **Seeding rate/depth** ..... : 130,000 seeds /A / 1 inch
- **Emergence date**..... : June 26
- **Harvest date** ..... : Oct. 24

Fertilization ..... : No blanket application

Water management ..... : NA
- **Flush** ..... : NA

Pest management ..... :
- **Herbicides**..... : 1.33 pt/A Dual + 1 qt/A Roundup, May 30
  1.5 qt/A Roundup, July 26
  1.5 qt/a Roundup, Aug. 22
  10.7 oz/A Devour + .0025% NIS, Oct. 2
- **Insecticides** ..... : 2 oz/A Karate Z + 1% NIS, July 26
  2 oz/A Karate Z + 1% NIS, Aug. 22
- **Fungicides**..... : None

Table 5. Evaluation of phosphorus (P) fertilizer time of application on soybean yield. Calcasieu Parish.

Crop Name				Soybeans		Soybeans		Soybeans		Soybeans		Soybeans	
Description				Maturity		Maturity		Plt Height		Moisture		Yield	
Rating Date								10/24/2019		10/24/2019		10/24/2019	
Rating Type				Plant-R8		Emerg-R8		Height					
Rating Unit				days		days		in		%		bu/A	
Trt No.	Treatment Name	Rate (lb P_2O_5/A)	Growth Stage										
1	Untreated Check	0		104.0	a	97.0	a	32.5	a	18.5	a	43.6	a
2	Triple superphosphate (0-60-0)	120	ATPLAN	104.0	a	97.0	a	34.3	a	18.6	a	48.5	a
3	Triple superphosphate (0-60-0)	120	V1	104.0	a	97.0	a	34.3	a	18.6	a	48.3	a
4	Triple superphosphate (0-60-0)	120	V3	104.0	a	97.0	a	34.5	a	18.5	a	48.6	a
5	Triple superphosphate (0-60-0)	120	V5	104.0	a	97.0	a	33.5	a	18.4	a	47.6	a
6	Triple superphosphate (0-60-0)	120	R1	104.0	a	97.0	a	34.5	a	18.4	a	47.0	a
7	Triple superphosphate (0-60-0)	120	R3	104.0	a	97.0	a	32.3	a	18.4	a	46.8	a
8	Triple superphosphate (0-60-0)	120	R5	104.0	a	97.0	a	33.8	a	18.4	a	46.5	a
9	Triple superphosphate (0-60-0)	120	R6	104.0	a	97.0	a	32.8	a	18.1	a	46.8	a
LSD P=.05				N/A		N/A		3.04		0.56		4.76	
Standard Deviation				0.00		0.00		2.08		0.38		3.26	
CV				0.0		0.0		6.2		2.08		6.92	
Treatment F				0.000		0.000		0.722		0.639		0.876	
Treatment Prob(F)				1.0000		1.0000		0.6707		0.7378		0.5499	

N/A = No statistical analysis was performed.
Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Sulfur (S) Fertilizer Rate of Application on Soybean Yield — Calcasieu Parish

Experiment number ..... : 19-CP-Soybean (SB 05)

Site and design ..... :
- **Location/Cooperator** ..... : Calcasieu Parish / Johnny Hensgens
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** 4
- **Plot size** ..... : 5.33 x 20 ft
- **Row width/rows per plot** ..... : 16 in / 4

Soil type ..... : Crowley-Vidrine complex
- **% organic matter** ..... : 1.93 (2018)
- **pH** ..... : 5.74 (2018)
- **Extractable nutrients** ppm ..... : Ca-650; Cu-1.3; Mg-133; P-17; K-110; Na-29; S-8.8; Zn-4.6 (2018)

Crop/Variety ..... : Soybean / AG52X9
- **Planting method/date** ..... : Drill seeded / May 31, *Replanted June 19
- **Seeding rate/depth** ..... : 130,000 seeds /A / 1 inch
- **Emergence date** ..... : June 26
- **Harvest date** ..... : Oct. 24

Fertilization ..... : No blanket application

Water management ..... : NA
- **Flush** ..... : NA

Pest management ..... :
- **Herbicides** ..... : 1.33 pt/A Dual + 1 qt/A Roundup, May 30
  1.5 qt/A Roundup, July 26
  1.5 qt/a Roundup, Aug. 22
  10.7 oz/A Devour + .0025% NIS, Oct. 2
- **Insecticides** ..... : 2 oz/A Karate Z + 1% NIS, July 26
  2 oz/A Karate Z + 1% NIS, Aug. 22
- **Fungicides** ..... : None

Table 6. Evaluation of sulfur (S) fertilizer rate of application on soybean yield. Calcasieu Parish.

Crop Name					Soybeans		Soybeans		Soybeans		Soybeans		Soybeans	
Description					Maturity		Maturity		Plt Height		Moisture		Yield	
Rating Type					Plant-R8		Emerg-R8		Height					
Rating Unit					days		days		in		%		bu/A	
Trt No.	Treatment Name	Rate	Rate Unit	Growth Stage										
1	Urea	52.5	lb ai/A	ATPLAN	104.0	a	97.0	a	36.8	a	18.2	a	48.3	a
2	50 lbs ammonium sulfate	12	lb ai/A	ATPLAN	104.0	a	97.0	a	35.8	a	18.3	a	47.1	a
	Urea	42	lb ai/A	ATPLAN										
3	100 lbs ammonium sulfate	24	lb ai/A	ATPLAN	104.0	a	97.0	a	37.0	a	18.3	a	49.9	a
	Urea	31.5	lb ai/A	ATPLAN										
4	150 lbs ammonium sulfate	36	lb ai/A	ATPLAN	104.0	a	97.0	a	36.8	a	18.0	a	47.0	a
	Urea	21	lb ai/A	ATPLAN										
5	200 lbs ammonium sulfate	48	lb ai/A	ATPLAN	104.0	a	97.0	a	35.5	a	18.3	a	47.6	a
	Urea	10.5	lb ai/A	ATPLAN										
6	250 lbs ammonium sulfate	60	lb ai/A	ATPLAN	104.0	a	97.0	a	36.0	a	18.2	a	48.5	a
7	None				104.0	a	97.0	a	35.8	a	18.3	a	48.0	a
LSD P=.05					N/A		N/A		2.50		0.37		3.52	
Standard Deviation					0.00		0.00		1.68		0.25		2.37	
CV					0.0		0.0		4.65		1.38		4.93	
Treatment F					0.000		0.000		0.513		0.713		0.702	
Treatment Prob(F)					1.0000		1.0000		0.7911		0.6437		0.6517	

N/A = No statistical analysis was performed.
Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

RICE DISEASE CONTROL RESEARCH
RICE DISEASE CONTROL STUDIES, 2019[1]

D.E. Groth, J. Green, and L.L. Monte

Numerous diseases pose major threats to rice (*Oryzae sativa* L.) production. In Louisiana, sheath blight (*Rhizoctonia solani Kuhn*), bacterial panicle blight (*Burkholderia glumae* Kurita and Tabei), blast (*Pyricularia grisea* Sacc.), and narrow brown leaf spot (*Cercospora oryzae* (Racib.) O. Const.) continue to be the most important diseases of rice causing significant yield and quality reductions costing farmers millions of dollars each year. Narrow brown leaf spot developed into a major pest during the 2006 growing season, and since that year, it has been problematic in later-planted rice and the second crop. Bacterial panicle blight has been a major problem in many rice fields during abnormally hot conditions. In 2010 and 2011, strobilurin fungicide-resistant sheath blight pathogen was detected in Acadia Parish. In 2012 and 2015, major blast epidemics developed on several major rice varieties causing significant damage. Information is critically needed on these disease pests and their interactions to determine best control practices. Data from inoculated research plots and surveys in farmers' fields suggest that these rice diseases cause an average of 6- 25% loss each year in yield and quality. With present production costs and the low rice prices, these yield and quality losses can represent negative net returns due to rice diseases. Direct losses to disease include thin stands, lodging, spotted kernels, fewer and smaller grains, reduced milling, and a general reduction in plant efficiency. Indirect losses include the cost of pesticides used to manage diseases, application costs, and reduced yields associated with special cultural control practices that reduce disease but may not be conducive to producing maximum yields.

A number of factors affect disease development, including varietal resistance, cultural management, cropping history, weather, and pesticides. Host resistance is the best control method, but often it is not available or breaks down after varietal release. Most long-grain varieties are susceptible to sheath blight, and several major varieties are also susceptible to blast. Cultural practices often play an important role in disease development as evidenced by the fact that sheath blight was a minor disease until the introduction of semi dwarf varieties, high fertilization rates, and soybeans as a rotational crop. Cultural practices, such as reducing seeding rates and nitrogen levels, can reduce disease development, but this can limit yield. As a result, rice farmers often rely on fungicides to control diseases. Constant effort on breeding for resistance and development of effective chemical control programs is needed to keep rice diseases at tolerable levels.

Diseases occur in all rice growing regions of the world. In the United States, disease pressure is higher in the mid-south growing region than in the arid California production area, although California has had significantly more disease pressure recently with the introduction of blast in 1997 and the introduction of bakanae in 1999. The United States is fortunate that it does not have any of the devastating viral diseases that occur in most other production areas of the world. Also, the United States has a limited number of nematode and bacterial diseases compared with most of the world production areas. Unfortunately, there are enough fungal diseases that increase production costs, and reduce yields and quality, to limit the economic return U.S. farmers receive for their crop.

The objective of these studies is to develop effective economical rice disease management practices. These include disease resistance, cultural management, and chemical control.

[1] This research is supported in part by funds provided by rice producers through the Louisiana Rice Research Board and various agricultural chemical companies.

Table 1. List of fungicides tested in 2019.

Trade Name	**Common Name**	**Company**
Quadris 2.08 SC	Azoxystrobin	Syngenta
Stratego 2.08 EC	Trifloxystrobin/Propiconazole	Bayer
Excalia	-------	Valent
Sercadis	Xemium	BASF
Tilt 3.6 EC	Propiconazole	Syngenta
Quilt Xcel 2.2SC	Azoxystrobin/Propiconazole	Syngenta
Elegia	Flutolanil	Nichino
Amistar Top	Azoxystrobin/Difenoconazole	Syngenta

2019 Rice Disease Nurseries

First Planting:

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 /kg)

Variety/Seed Rate: Various 100 lb/A

Plot Size: 1 row x 4 ft

Planting Method/Date: Drill seeded, March 20

Fertilization: Preplant 0-60-60+**7**zn, Sept. 26; Preflood 145-0-0, April 30

Experimental Design: Randomized complete block design with 2-4 replications

Water Management: Flooded, May 1; Drained, July 16

Herbicides: Tank-Mix Propanil 1 qt/A, and Prowl 1 qt/A, April 3
Tank-Mix Propanil 2 qt/A, Rice Beaux 2 qt/A, and Basagran 1 ½ pt/A, April 27

Insecticides: Dermacor X-100 seed treatment

Fungicides: None

Inoculation Dates: Rhizoctonia solani culture grown on rice grain/hull mixture, June 5, *Burkholderia glumae* in July

Application Equipment: CO_2 backpack sprayer, 1 tip (TJ8002) hand wand

Disease Ratings: Sheath blight (SB), and bacterial panicle blight (BPB) July 25

Drained: July 16

Harvest: N/A

Results: See Tables 2 - 10

Comments: Sheath blight severity was high and bacterial panicle blight was moderate.

Second Planting:

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 /kg)

Variety/Seed Rate: Various 100 lb/A

Plot Size: 1 row x 4 ft

Planting Method/Date: Drill seeded, May 1

Fertilization: Preplant 0-62-62+7zn, Sept. 26; Preflood 133-0-0, May 22; Top-dressed 46-0-0, June 7

Experimental Design: Randomized complete block design with 2-4 replications

Water Management: Flushed, May 15; Flood-up, May 21; Drained, Aug. 10

Herbicides: Prowl 1 qt/A, May 11; Propanil 3 qt/A, May 14
Tank-Mix Propanil 2 qt/A, RiceBeaux 2 qt/A, May 21

Insecticides: Dermacor X-100 seed treatment

Fungicides: None

Inoculation Dates: None

Application Equipment: N/A

Disease Ratings: Aug. 23

Drained: Aug. 10

Harvest: N/A

Results: See Tables 2 - 10

Comments: Rotten neck blast, false smut, and Cercospora were moderate in severity.

Table 2. Disease reaction of various rice varieties and experimental lines to sheath blight (SB), bacterial panicle blight (BPB), leaf blast (L BLAST), rotten neck blast (RNB), false smut (FS), and narrow brown leaf spot (NBLS) at the H. Rouse Caffey Rice Research Station, Crowley, LA.

Pest Name	SB	BPB	L BLAST	RNB	FS	NBLS
Rating Date	July 25	July 25	July 9	Aug. 13	Aug. 13	Sept. 4
Rating Type	Severity	Severity	Severity	Severity	Severity	Severity
Rating Unit	0-9	0-9	0-9	0-9	0-9	0-9
Trt No.	Treatment Name	1	2	3	4	5	6
1	Caffey	5.5a-d	3.3a-e	3.7a-d	2.5c-h	1.1bcd	1.6g-j
2	Cheniere	4.8b-e	2.4a-e	4.2a-d	1.7d-k	2.1bcd	3.4b-f
3	CL111	6.8ab	5.4abc	0.6de	2.7b-h	0.0d	3.5b-f
4	CL151	5.8a-d	4.4a-d	3.2a-d	4.9abc	1.2bcd	4.3a-d
5	CL153	5.3a-e	4.4a-d	1.9b-e	0.2jk	1.1bcd	4.2a-d
6	CL163	5.3a-e	4.7a-d	5.2ab	4.3bcd	1.2bcd	1.4g-j
7	CL172	4.5cde	2.9a-e	0.6de	0.2jk	4.8ab	4.0a-e
8	CL272	5.3a-e	4.5a-d	4.4abc	3.9b-e	0.3cd	1.1hij
9	CLJ01	5.0a-e	5.9a	3.1a-d	0.4ijk	1.9bcd	3.5b-f
10	RT3201	3.5de	1.5de	2.0a-e	4.6bcd	0.0d	1.2hij
11	CLXL745	4.0de	1.7cde	0.8cde	1.3e-k	0.1d	2.3d-j
12	Della -2	4.3cde	4.5a-d	4.2a-d	0.6h-k	0.8bcd	5.2ab
13	Diamond	4.4cde	4.5a-d	2.2a-e	4.8a-d	3.8ab	1.1hij
14	Gemini 214 CL	3.0e	1.4de	0.9cde	0.7h-k	6.6a	2.6d-i
15	Jazzman	4.8b-e	5.6ab	1.9b-e	0.0k	0.0d	6.0a
16	Jazzman-2	5.3a-e	5.0a-d	3.4a-d	0.0k	4.3ab	4.4a-d
17	Jupiter	5.0a-e	1.8b-e	3.7a-d	1.3e-k	1.2bcd	1.7f-j
18	LaKast	3.8de	3.7a-d	2.4a-e	3.6b-f	0.2cd	2.8c-h
19	Mermentau	4.8b-e	2.2a-e	1.7b-e	2.0c-j	0.8bcd	3.6b-f
20	Presidio	4.8b-e	3.7a-d	3.5a-d	1.9c-j	0.0d	0.9j
21	PVL01	4.0de	1.7cde	4.3abc	3.9b-e	3.2abc	1.2hij
22	Thad	4.3cde	2.8a-e	5.0ab	4.1bcd	2.9abc	1.0ij
23	Titan	4.3cde	5.7ab	4.4abc	3.1b-g	0.3cd	1.4g-j
24	XP753	3.8de	3.3a-e	1.8b-e	2.3c-i	0.0d	1.4g-j
25	RT7301	3.8de	1.4de	0.8cde	3.3b-f	0.0d	2.6d-i
26	MM17	4.4cde	4.5a-d		6.0ab	0.0d	3.8a-e
27	LAH169	3.8de	2.9a-e	0.8cde	0.8g-k	0.1d	1.2hij
28	PVL108	4.5cde	4.4a-d	5.2ab	1.2f-k	0.0d	3.5b-f
29	1602195	6.5abc	6.2a	1.2b-e	0.5h-k	0.8bcd	3.0b-g
30	1602097	5.5a-d	4.9a-d	2.4a-e	0.0k	0.0d	1.4g-j
31	1702140	5.3a-e	2.7a-e	3.2a-d	4.7a-d	1.6bcd	5.0abc
32	Purple	1.0f	0.7e	0.0e	0.0k	0.0d	
33	M202	7.0a	3.5a-d	6.6a	8.0a	0.0d	2.0e-j
LSD P=.05		1.23	1.28 - 2.44	1.60 - 2.81	0.94 - 2.44	0.66 - 3.26	0.85 - 1.50
Standard Deviation		0.87	2.32t	0.42t	0.36t	3.49t	0.25t
CV		18.79	21.81t	24.1t	22.75t	73.27t	14.43t
Replicate F		2.321	3.703	3.977	1.743	2.944	0.281
Replicate Prob(F)		0.0802	0.0143	0.0104	0.1445	0.0229	0.8899
Treatment F		6.594	4.656	5.321	14.700	7.651	12.652
Treatment Prob(F)		0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Table 3. Disease reaction of various rice varieties and experimental lines to leaf blast (L BLAST), sheath blight (SB), bacterial panicle blight (BPB), rotten neck blast (RNB), and false smut (FS) at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2019. (URN Group I).

	Character Rated	L BLAST	SB	BPB	RNB	FS
	Rating Date	July 25	July 25	July 25	Aug. 16	Aug. 16
	Rating Unit	0-9	0-9	0-9	0-9	0-9
	Trt Treatment No. Name	1	2	3	4	5
	1 IRGA409/RXMT/5/NWBT/3/LBNT/....;	0.8de	3.8bc	3.0b-e	0.0e	3.0ab
	2 TRNS//CCDR/JEFF/5/9502008/DREW//....	0.8de	5.5abc	6.0a	0.0e	1.0ab
	3 RSMT/KATY//Bowman	3.5abc	4.3abc	2.3cde	2.3b-e	0.0b
	4 CCDR/MILL	2.3b-e	4.3abc	4.0a-d	1.3de	2.3ab
	5 RU0801076/5/KATY/NWBT//L201/....	2.5b-e	3.5c	1.8de	4.5a-d	5.0a
	6 CL 131/TRNS	1.3cde	6.3a	5.8a	0.0e	0.0b
	7 DXBL//NWBT/KATY/3/Bowman	5.3a	3.8bc	3.8a-d	6.5a	1.0ab
	8 4579	0.5e	3.3c	1.0e	0.0e	3.0ab
	9 19991516/19951166/7/LBNT/9902/....	0.5e	3.7bc	3.0b-e	1.3de	5.0a
	10 CHNR/MRMT	2.8b-e	4.8abc	3.0b-e	5.8ab	0.0b
	11 Texmont/TeQing(BF7-46)/Trenasse	4.3ab	4.8abc	3.3b-e	3.5a-e	0.0b
	12 CPRS/NWBT//KATY/3/CCDR	0.7de	4.0abc	6.0a	2.5b-e	4.0ab
	13 CL172/RU1102034	0.5e	5.0abc	3.3b-e	0.8de	1.7ab
	14 LGRU/CLR11/4/9302065/3/CFX29/....	3.3bc	6.0ab	5.3ab	2.5b-e	0.0b
	15 RSMT/KATY//Bowman	3.8ab	4.0abc	3.0b-e	5.0abc	0.0b
	16 CPRS/CCDR	3.0bcd	5.5abc	5.3ab	2.5b-e	0.0b
	17 91642//KATY/NWBT/5/RU9201176/....	2.5b-e	3.5c	4.3abc	5.8ab	1.3ab
	18 CL153	0.5e	5.5abc	4.8ab	0.8de	0.7b
	19 PRESIDIO	2.3b-e	4.8abc	5.0ab	1.8cde	2.0ab
__	20 CL111	0.5e	6.3a	5.3ab	0.0e	1.0ab
	LSD P=.05	1.40	1.35	1.43	2.28	2.40
	Standard Deviation	0.99	0.95	1.01	1.61	1.45
	CV	47.99	20.72	25.63	69.18	93.53
	Replicate F	1.160	5.026	7.537	2.133	1.142
	Replicate Prob(F)	0.3333	0.0039	0.0003	0.1061	0.3299
	Treatment F	8.855	4.060	8.215	7.234	4.011
	Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Table 4. Disease reaction of various rice varieties and experimental lines to leaf blast (L BLAST), sheath blight (SB), bacterial panicle blight (BPB), rotten neck blast (RNB), and false smut (FS) at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2019. (URN Group II).

	L BLAST	SB	BPB	RNB	FS
Rating Date	July 25	July 25	July 25	Aug. 16	Aug. 16
Rating Unit	0-9	0-9	0-9	0-9	0-9
Trt Treatment No. Name	1	2	3	4	5
21 CL172/4/9502008-A//AR1188/CCDR/....,	0.5d	4.3b-f	5.4a-d	1.5bcd	0.0d
22 CAFFEY/CL261	4.5ab	5.0a-f	4.2a-f	5.5a	0.0d
23 REX/Templeton	3.3bc	4.8a-f	5.6a-d	3.0a-d	0.1bcd
24 IR64/IR 1321-12	1.0d	3.3ef	3.0ef	1.0bcd	0.0d
25 ROYJ/RU1501024	0.8d	4.3b-f	3.4def	0.8cd	3.9ab
26 WLLS/CFX18//DREW/CFX18/3/CHNR//....	0.3d	5.3a-e	5.7a-d	1.0bcd	0.2bcd
27 Trenasse/Bowman	3.3bc	5.8a-d	5.4a-d	5.0ab	0.1bcd
28 WAB 450-11-1-1-P31-HB (NERICA 5)/RSMT	3.5b	3.8def	2.5f	2.0a-d	2.0a-d
29 EARL/9902028//JPTR	4.8ab	5.0a-f	3.8c-f	1.8a-d	2.2a-d
30 9502008-A/DREW//CLR 20/4/CPRS/KBNt.....	0.8d	6.0abc	6.0abc	1.0bcd	0.2bcd
31 Bowman/L201//TBNT/BLMT/3/RXMT/IR36	3.8ab	4.8a-f	3.0ef	3.3a-d	2.6a-d
32 IR64/IR 1321-12	1.0d	4.3b-f	3.5c-f	0.0d	0.1cd
33 RICO/BNGL//RU0602162/RU0502031	5.3a	6.0abc	7.0a	4.8abc	0.1bcd
34 9502008/DREW//CLR20/3/CPRS/KBNT//....	1.0d	6.5a	5.0a-e	0.0d	0.6a-d
35 REX/Templeton	1.8cd	4.0c-f	5.9a-d	1.8a-d	0.2bcd
36 AC110DH2/AC108DH2//CHEN	3.5b	3.0f	2.7f	0.0d	4.2a
37 CL162/3/TRNS//CCDR/JEFF	4.3ab	6.8a	6.5ab	3.5a-d	0.1bcd
38 WELLS	3.3bc	4.8a-f	5.0a-e	4.8abc	3.3abc
39 16AR1111	1.3d	6.3ab	6.5ab	1.3bcd	0.0d
40 DIAMOND	3.0bc	4.8a-f	4.0b-f	4.5abc	5.2a
LSD P=.05	1.08	1.17	1.24 - 1.69	2.27	1.42 - 3.45
Standard Deviation	0.76	0.82	0.23t	1.60	3.93t
CV	30.11	16.77	10.26t	69.26	83.18t
Replicate F	4.642	0.380	1.972	1.694	0.504
Replicate Prob(F)	0.0057	0.7676	0.1286	0.1785	0.6811
Treatment F	17.932	6.486	7.400	5.169	5.333
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Table 5. Disease reaction of various rice varieties and experimental lines to leaf blast (L BLAST), sheath blight (SB), bacterial panicle blight (BPB), rotten neck blast (RNB), and false smut (FS) at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2019. (URN Group III).

Character Rated	L BLAST	SB	BPB	RNB	FS
Rating Date	July 25	Aug. 6	Aug. 6	Aug. 16	Aug. 16
Rating Unit	0-9	0-9	0-9	0-9	0-9
Trt Treatment No.Name	1	2	3	4	5
41 CLXAR19 (248WE16i-5/TGRT/....	0.5e	6.0ab	4.0bc	0.0b	2.8a-d
42 TRNS//CCDR/JEFF/4/CHNR/3/NWBT/....	3.0a-d	6.8ab	3.8bc	2.5ab	1.5bcd
43 DXBL//NWBT/KATY/3/Bowman	4.0abc	6.5ab	3.5bc	2.8ab	0.0d
44 CPRS/9901081	1.8d	5.3abc	3.3bc	2.0ab	2.5a-d
45 JPTR/EARL	5.0a	6.0ab	4.5abc	3.0ab	4.3ab
46 CHNR/3/NWBT/KATY//9902207X2/4/CTHL	4.0abc	6.0ab	3.8bc	5.0a	0.8bcd
47 REX/Templeton	3.8abc	5.3abc	6.5a	1.8ab	2.8a-d
48 WAB 450-11-1-1-P31-HB (NERICA 5)/RSMT	3.0a-d	5.5abc	2.5c	4.8a	2.8a-d
49 FRNS//WLLS/CL161/3/248DREW/CL161	3.8abc	5.8ab	5.5ab	3.0ab	0.8bcd
50 ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NPTN	5.0a	6.3ab	3.8bc	0.0b	1.8a-d
51 Bowman/L201//TBNT/BLMT/3/RXMT/IR36	4.0abc	5.3abc	2.5c	5.5a	0.5cd
52 043752/0047277/CHEN	3.3a-d	5.3abc	3.5bc	5.0a	5.0a
53 CFFY/RU1202168	5.0a	4.8bc	3.0bc	4.8a	1.3bcd
54 CCDR/JEFF//CFX-26/9702128/3/CL151	2.8bcd	6.3ab	5.3abc	3.3ab	2.3a-d
55 Bowman/L201//TBNT/BLMT/3/RXMT/IR36	3.5a-d	6.0ab	3.3bc	5.3a	4.0abc
56 SABR/CCDR//PRESIDIO	4.3abc	4.0c	2.8bc	3.8ab	3.8abc
57 RSMT/KATY//Bowman	4.0abc	7.0a	2.8bc	6.3a	0.5cd
58 CHENIERE	3.5a-d	6.3ab	4.5abc	3.3ab	4.0abc
59 COCODRIE	2.3cd	7.0a	4.0bc	3.0ab	1.0bcd
60 CL272	4.5ab	6.5ab	5.0abc	4.8a	2.8a-d
LSD P=.05	1.16	1.11	1.53	2.63	2.02
Standard Deviation	0.82	0.78	1.08	1.86	1.43
CV	23.15	13.35	27.8	53.51	63.73
Replicate F	0.516	1.870	4.553	1.393	1.039
Replicate Prob(F)	0.6730	0.1449	0.0063	0.2541	0.3824
Treatment F	7.587	3.787	3.934	3.417	4.147
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0002	0.0001

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Table 6. Disease reaction of various rice varieties and experimental lines to leaf blast (L BLAST), sheath blight (SB), bacterial panicle blight (BPB), rotten neck blast (RNB), and false smut (FS) at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2019. (URN Group IV).

Character Rated	L BLAST	SB	BPB	RNB	FS
Rating Date	July 25	Aug . 6	Aug. 6	Aug. 16	Aug. 16
Rating Unit	0-9	0-9	0-9	0-9	0-9
Trt Treatment No. Name	1	2	3	4	5
61 CTHL/CL172	0.3e	6.3abc	2.9cde	0.0d	4.0abc
62 CLH161 (HYBRID)	0.5e	5.5abc	1.9e	0.0d	0.0d
63 CPRS//NWBT/KATY/3/Bowman	4.5ab	5.8abc	3.4b-e	5.3ab	0.8d
64 043752/0047277/CHEN	2.8bcd	5.5abc	3.2cde	1.8bcd	4.5ab
65 FRNS/6/LBNT/9902/3/DAWN/....	0.0e	5.0abc	6.0ab	0.0d	4.0abc
66 PVL108	3.0bcd	5.3abc	3.2cde	4.3abc	0.0d
67 RSMT/KATY//Bowman	3.8a-d	5.5abc	3.6b-e	3.0bcd	0.0d
68 CL161/CPRS	3.3a-d	5.8abc	3.2cde	3.0bcd	0.8d
69 ROYJ/CL142-AR	4.0a-d	6.0abc	5.0a-d	2.5bcd	5.0a
70 CHNR/3/NWBT/KATY//9902207X2/4/BASF 2-21	0.8e	6.8a	3.4b-e	3.8abc	0.0d
71 JODON/3/KATY//GFMT/PCOS/Templeton	4.3abc	4.3bc	3.6b-e	3.8abc	0.5d
72 L202/LQ39a//SABR	2.5cd	5.8abc	3.4b-e	1.8bcd	2.8a-d
73 LMNT//82CAY21/CICA8/3/DLMT/....	2.8bcd	5.8abc	7.0a	3.8abc	4.0abc
74 CPRS/BASF 1-14	5.0a	5.8abc	2.5de	6.5a	1.8bcd
75 Taggart/CL111	2.8bcd	6.5ab	4.2b-e	2.3bcd	3.8abc
76 IR64/IR 1321-12	0.3e	4.8abc	2.7cde	0.0d	1.3cd
77 CCDR/L202//TRENASSE	2.3d	6.3abc	2.7cde	0.0d	2.8a-d
78 JUPITER	4.3abc	5.5abc	2.2e	0.0d	2.3a-d
79 ROY J	3.3a-d	4.0c	3.2cde	1.5cd	4.8a
80 TITAN	4.3abc	6.5ab	5.2abc	2.3bcd	0.0d
LSD P=.05	1.10	1.33	1.23 - 1.87	2.07	1.75
Standard Deviation	0.78	0.94	1.59t	1.46	1.24
CV	28.65	16.72	14.67t	64.59	57.8
Replicate F	2.395	2.608	1.720	3.440	0.816
Replicate Prob(F)	0.0777	0.0605	0.1734	0.0226	0.4903
Treatment F	16.532	2.315	5.383	6.944	8.921
Treatment Prob(F)	0.0001	0.0079	0.0001	0.0001	0.0001

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Table 7. Disease reaction of various rice varieties and experimental lines to leaf blast (L BLAST), sheath blight (SB), bacterial panicle blight (BPB), rotten neck blast (RNB), and false smut (FS) at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2019. (URN Group V).

Character Rated		L BLAST	SB	BPB	RNB	FS
Rating Date		July 25	Aug . 6	Aug. 6	Aug. 16	Aug. 16
Rating Unit		0-9	0-9	0-9	0-9	0-9
Trt No.	Treatment Name	1	2	3	4	5
81	FRNS//WLLS/CL161/7/FRNS/6/LBNT/....	4.5a-d	5.5a-d	6.5a	4.5abc	3.5ab
82	CHNR/3/NWBT/KATY//9902207X2/4/BASF2-21	0.0i	7.5ab	4.0ab	4.5 abc	0.0 b
83	Rex/CL151	4.5a-d	6.0a-d	5.5ab	4.5abc	0.0b
84	IR64/IR 1321-12	1.0f-i	3.0d	1.0b	0.0c	1.5ab
85	LGRU//KATY/STBN/5/LGRU//LMNT/....	4.0a-d	4.5bcd	3.0ab	6.0a	5.0ab

Continued.

Table 7. Continued.

86	DREW/BASF1-4	4.5a-d	7.5ab	6.5a	6.0a	2.0ab
87	Rex/CL151	5.0abc	7.0abc	4.5ab	1.5abc	0.0b
88	CPRS/NWBT//KATY/3/CCDR	2.0d-h	5.5a-d	3.0ab	1.5abc	3.5ab
89	WLLS/CL161//TGRT/3/DREW/CL161//CL142-AR	0.0i	6.5a-d	3.5ab	0.0c	1.5ab
90	CTHL/BASF2-22	2.0d-h	6.5a-d	3.5ab	2.5abc	0.0b
91	RSMT/3/MARS/NWRX//TBNT/4/CL151	4.5a-d	5.5a-d	7.0a	2.0abc	4.0ab
92	Hayakogane/BALDO	2.5c-g	5.0a-d	3.5ab	4.5abc	3.5ab
93	TGRT/3/FRNS/CL161//TEMPLETON	0.0i	6.5a-d	4.5ab	0.0c	5.5a
94	9302065/BASF1-6	0.8ghi	8.5a	3.0ab	1.0bc	0.0b
95	Rex/CL151	4.0a-d	4.5bcd	4.5ab	4.0abc	1.5ab
96	CPRS/3/CPRS/NWBT/KATY	3.5a-e	6.0a-d	4.0ab	1.0bc	3.5ab
97	RU1102034/RU1302045	1.0f-i	6.0a-d	3.5ab	1.5abc	0.0b
98	CTHL/BASF2-18	2.5c-g	5.0a-d	4.0ab	5.5ab	0.0b
99	CL151//COLUMBIA2/BENGAL	3.0b-f	5.0a-d	4.0ab	5.0ab	3.0ab
100	IR64/IR 1321-12	0.4hi	3.5cd	1.0b	0.0c	0.5b
101	ROYJ/RU1501024	3.5a-e	7.0abc	4.0ab	5.0ab	0.0b
102	CCDR/JEFF//CFX-26/9702128/3/CL151	3.0b-f	7.5ab	7.0a	2.5abc	0.0b
103	CL151/JSMN85//CL151	2.0d-h	4.5bcd	4.0ab	0.0c	5.0ab
104	IR64/IR 1321-12	1.5e-h	3.0d	1.0b	0.0c	4.0ab
105	JZMN/RU0701124//PI632283	1.0f-i	5.5a-d	4.5ab	0.0c	1.5ab
106	KBNT/CL111	0.0i	6.0a-d	4.0ab	0.0c	0.0b
107	GFMT/KDM105//CL151/JSMN85	4.0a-d	5.5a-d	6.0a	0.0c	1.0ab
108	M202*5/Katy	0.4hi	8.0ab	3.0ab	0.0c	3.5ab
109	JZMN/PI560239//JES	1.0f-i	5.0a-d	3.0ab	0.0c	3.0ab
110	LGRU/CLR11/4/9302065/3/CFX29/AR1142/....	1.5e-h	7.5ab	5.0ab	2.5abc	1.5ab
111	Rex/CL151	6.5a	4.5bcd	4.5ab	1.5abc	3.5ab
112	Carolina Gold/Presidio	4.5a-d	7.0abc	5.0ab	1.5abc	0.0b
113	EARL/9902028//RU1202068	5.0abc	6.0a-d	4.5ab	4.0abc	3.5ab
114	CFX18//CCDR/9770532DH2/3/CPRS/KBNT//....	0.4hi	7.5ab	4.5ab	0.0c	0.0b
115	CL161/Priscilla//CL151/JSMN85	2.5c-g	5.0a-d	6.0a	3.0abc	0.0b
116	CL161/CPRS	4.5a-d	7.0abc	5.5ab	5.0ab	2.5ab
117	A:NEPTUNE/3/BNGL/CL 161//CAFFEY	5.0abc	6.0a-d	4.0ab	4.5abc	1.5ab
118	A:NEPTUNE/3/BNGL/CL 161//CAFFEY	6.0ab	5.0a-d	2.5ab	4.5abc	3.5ab
119	16AR1030	5.0abc	5.5a-d	3.5ab	0.0c	3.5ab
120	CL163	5.5ab	5.5a-d	3.5ab	3.5abc	1.5ab
LSD P=.05		0.88 - 1.87	1.84	2.29	2.33	2.54
Standard Deviation		0.19t	0.91	1.13	1.15	1.25
CV		10.9t	15.5	27.34	49.64	64.75
Replicate F		0.033	1.236	2.515	0.038	0.071
Replicate Prob(F)		0.8561	0.2736	0.1215	0.8474	0.7906
Treatment F		19.236	4.144	3.300	6.613	3.831
Treatment Prob(F)		0.0001	0.0001	0.0002	0.0001	0.0001

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Table 8. Disease reaction of various rice varieties and experimental lines to leaf blast (L BLAST), sheath blight (SB), bacterial panicle blight (BPB), rotten neck blast (RNB), and false smut (FS) at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2019. (URN Group VI).

	Character Rated	L BLAST	SB	BPB	RNB	FS
	Rating Date	July 25	Aug. 6	Aug. 6	Aug. 16	Aug. 16
	Rating Unit	0-9	0-9	0-9	0-9	0-9
	Trt Treatment No.Name	1	2	3	4	5
	121RU1102131/CL172	0.0f	5.0ab	3.5abc	0.0b	1.5cde
	122CHNR/6/CPRS/KBNT//9502008/....	0.0f	6.5ab	3.5abc	2.0ab	0.0e
	123Lemont/Jasmine	3.0b-e	5.0ab	3.5abc	6.5a	3.5a-e
	124Hayakogane/BALDO	2.5c-f	4.0b	4.0abc	3.5ab	3.0a-e
	125JPTR/3/EARL//BNGL/SHORTRICO	5.0abc	6.0ab	2.0c	1.0ab	4.0a-e
	126CHNR/6/CPRS/KBNT//9502008/5/KATY/....	2.0def	5.0ab	2.5bc	3.5ab	1.5cde
	127RSMT//9403113/3/KCAL/LEAH//LEAH/4///Temp	0.0f	4.5b	3.0bc	0.0b	0.5e
	128AC110DH2/AC108DH2//CYBT	3.5b-e	5.5ab	4.0abc	4.5ab	0.0e
	129RU1102131/14CSIT203	3.0b-e	6.5ab	3.0bc	4.0ab	5.0a-d
	130CHNR/3/CCDR//CFX29/CCDR	3.5b-e	6.0ab	3.0bc	5.5ab	0.0e
	131Rexmont/7///FRNS/6/LBNT/9902/3/Dawn/9695	3.0b-e	4.5b	4.5abc	0.0b	3.0a-e
	132CPRS/3/CPRS/NWBT/KATY	4.0bcd	6.0ab	2.5bc	3.5ab	0.0e
	133TITN/RU1202168	5.5ab	5.5ab	4.4abc	1.5ab	5.5abc
	134CHNR/4/CPRS/9502008/3/CFX29//AR1142/LA2031	2.0def	6.5ab	4.0abc	5.0ab	0.0e
	135Lemont/Jasmine 85-220//Francis	2.0def	4.5b	1.9c	4.0ab	3.5a-e
	136CPRS/3/CPRS/NWBT/KATY	3.0b-e	5.5ab	2.0c	2.0ab	3.5a-e
	137CL271/JPTR	5.0abc	5.5ab	2.0c	1.5ab	3.5a-e
	138CCDR//CFX29/CCDR/3/CCDR	2.0def	5.5ab	3.5abc	5.0ab	0.0e
	139Lemont/Jasmine 85-220//Francis	3.5b-e	4.5b	4.5abc	6.5a	4.0a-e
	140Jangseongbyeo/IR 1321-12	1.0ef	4.5b	2.0c	0.0b	6.5a
	141TMPT//CYBT/TMPT	2.0def	4.5b	2.5bc	2.0ab	6.0ab
	1429502008/DREW//CLR20/4/9502008//AR1188....	0.0f	6.5ab	4.8abc	2.5ab	2.0b-e
	143Rex/Cheniere	5.0abc	6.5ab	2.5bc	4.0ab	4.0a-e
	144CPRS/SABR//Francis	0.0f	4.0b	2.0c	0.0b	4.5a-e
	145VSNTLM//L201/9NRZ/3/KATY/4/VSNTLM//.....	3.0b-e	4.0b	3.0bc	3.5ab	6.0ab
	146TRNS//TRNS/CL131	0.0f	8.0a	7.0ab	0.0b	0.0e
	147Rexmont/7///FRNS/6/LBNT/9902/3/Dawn/9695	5.0abc	5.5ab	3.0bc	4.5ab	4.5a-e
	148CPRS/3/CPRS/NWBT/KATY	2.5c-f	6.0ab	3.9abc	4.0ab	4.0a-e
	149VSNTLM//L201/9NRZ/3/KATY/4/VSNTLM//....	3.5b-e	4.0b	4.0abc	4.0ab	5.0a-d
	150LGRU/CLR11/4/9302065/3/CFX29/AR1142/....	0.0f	6.0ab	8.0a	1.5ab	1.0de
	151Rex/Cheniere	7.0a	5.5ab	4.5abc	6.0a	0.0e
	152FRAN/WELLS//BANKS	4.5bcd	4.5b	2.5bc	1.0ab	3.0a-e
	153TMPT/8/RU9201176/3/KATY/NWBT//L201/....	4.0bcd	6.0ab	4.8abc	1.5ab	5.5abc
	154TRNS//TRNS/CL131	0.0f	6.0ab	3.5abc	2.0ab	1.5cde
	155Cheniere/Bowman	0.0f	3.5b	2.0c	0.0b	3.5a-e
	156CPRS/SABR//Gulfmont	4.0bcd	5.0ab	2.5bc	4.0ab	2.0b-e
	157A:NEPTUNE/3/BNGL/CL 161//CAFFEY)	4.5bcd	6.0ab	5.5abc	4.5ab	2.0b-e
	158Mo0204044/Kataki	4.5bcd	5.5ab	3.5abc	4.5ab	0.0e
	159CPRS/CCDR (ANTONIO)	2.5c-f	5.0ab	2.9bc	0.0b	0.0e
	160Thad	4.5bcd	6.0ab	5.5abc	4.5ab	1.5cde
	LSD P=.05	1.45	1.59	1.82 - 2.69	2.83	2.27
Standard	Deviation	0.72	0.78	0.25t	1.40	1.12
CV		26.04	14.55	12.54t	49.35	42.9

Continued.

Table 8. Continued.

Replicate F	0.000	1.663	0.527	0.006	8.369
Replicate Prob(F)	1.0000	0.2065	0.4733	0.9368	0.0062
Treatment F	13.950	2.863	3.362	4.136	6.808
Treatment Prob(F)	0.0001	0.0015	0.0003	0.0001	0.0001

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Table 9. Disease reaction of various rice varieties and experimental lines to leaf blast (L BLAST), sheath blight (SB), bacterial panicle blight (BPB), rotten neck blast (RNB), and false smut (FS) at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2019. (URN Group VII)

Character Rated	L BLAST	SB	BPB	RNB	FS
Rating Date	July 25	Aug. 6	Aug. 6	Aug. 16	Aug. 16
Rating Unit	0-9	0-9	0-9	0-9	0-9
Trt Treatment No. Name	1	2	3	4	5
161 LGRU//KATY/STBN/5/LGRU//LMNT/....	3.0b-e	5.5a-d	5.5-	6.0ab	4.0ab
162 DREW//CHNR/LMNT/5/9502008/DREW/...	0.0f	6.5a-d	2.5-	2.5ab	4.0ab
163 Bowman//Bowman/Te Quing	4.5abc	6.0a-d	2.5-	5.0ab	3.5ab
164 CPRS/3/CPRS/NWBT/KATY	4.0abc	5.5a-d	2.5-	5.5ab	4.0ab
165 RU1001067/RU0602171	4.5abc	5.5a-d	5.5-	2.0ab	1.5ab
166 WLLS/CFX18/5/KATY/CPRS//NWBT....	0.5ef	5.0a-d	3.5-	1.5ab	0.0b
167 Bowman/Roy J	5.0ab	6.0a-d	4.5-	4.0ab	4.0ab
168 CPRS/NWBT//KATY/3/CCDR	4.0abc	5.5a-d	3.0-	3.0ab	5.5a
169 EARL/9902028//RU1202068	5.0ab	4.0bcd	2.5-	4.0ab	5.0ab
1701002146*4//JZMN/08CLR004	1.0def	7.5ab	4.5-	2.0ab	0.0b
171 Bowman//Bowman/Te Quing	3.0b-e	6.5a-d	3.5-	7.0a	0.0b
172 AC110DH2/AC108DH2//CHEN	4.0abc	4.5a-d	2.0-	4.0ab	4.0ab
173 RU1102034/RU1501024*2	3.0b-e	7.0abc	4.5-	1.5ab	3.5ab
174 NPTN//BNGL/CL161/3/NPTN	3.5bcd	5.5a-d	4.0-	3.0ab	5.0ab
175 Bowman/Roy J	5.5ab	5.5a-d	3.0-	4.0ab	4.0ab
176 CPRS/CCDR//WELLS	3.0b-e	5.5a-d	4.0-	0.0b	5.0ab
177 LMNT//82CAY21/CICA8/3/DLMT/....	3.0b-e	4.5a-d	4.0-	3.5ab	4.5ab
178 NPTN//BNGL/CL161/5/BNGL//MERC/.....	3.0b-e	4.0bcd	2.5-	6.0ab	0.0b
179 Cheniere/Bowman	4.5abc	3.5cd	2.5-	5.0ab	1.5ab
180 CPRS/SABR//MADISON	1.5c-f	3.5cd	2.0-	2.0ab	3.5ab
181 BRAZ/TBNT/3/164986-4/NV66//NTAI/....	4.0abc	4.5a-d	5.5-	1.5ab	4.5ab
182 BNGL/CL161//CFFY/3/NPTN//BNGL/CL161	5.0ab	5.5a-d	4.5-	6.0ab	1.5ab
183 Rex/CL181-AR	4.5abc	5.5a-d	5.0-	2.0ab	0.0b
184 CPRS/SABR//MADISON	0.0f	4.0bcd	3.5-	0.0b	0.0b
185 RU1001067/TITN	0.5ef	6.5a-d	2.5-	1.0b	1.5ab
186 TGRT/3/TRNS//CCDR/JEFF	2.5b-f	5.0a-d	4.0-	2.5ab	2.0ab
187 Taggart/CL111	3.0b-e	6.0a-d	5.5-	3.0ab	4.5ab
188 Jangseongbyeo/IR 1321-12	0.5ef	4.0bcd	2.0-	0.0b	5.5a
189 STG11P-04-196/PI632283	1.0def	4.5a-d	4.5-	0.0b	1.5ab
190 TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	3.5bcd	8.0a	4.0-	5.5ab	1.5ab
191 Rex/CL151	4.5abc	6.5a-d	2.5-	5.5ab	0.0b
192 CL161/CPRS	3.5bcd	4.0bcd	4.0-	3.0ab	1.5ab
193 BRAZ/TBNT/3/164986-4/NV66//NTAI/4/....	1.0def	4.5a-d	3.0-	0.0b	5.5a
194 CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	1.5c-f	7.0abc	4.0-	0.0b	3.5ab
195 Rex/CL181-AR	6.5a	7.0abc	4.5-	2.0ab	0.0b
196 LD 183-3/Jasmine 85	0.5ef	3.0d	1.5-	0.0b	4.5ab
197 (9502008-A/DREW//CLR-120/4/CPRS/....	1.5c-f	8.0a	4.5-	0.0b	0.5b
198 CATAHOULA/TRNS	0.5ef	7.0abc	5.0-	1.0b	0.0b
199 CLJ01	1.0def	7.0abc	6.5-	1.0b	3.5ab
200 PVL01	4.0abc	6.5a-d	4.5-	3.5ab	4.5ab
LSD P=.05	1.56	1.88	2.41	2.90	2.46
Standard Deviation	0.77	0.93	1.19	1.43	1.21
CV	26.94	16.85	31.89	52.49	44.76

Continued.

Table 9. Continued.

Replicate F	0.526	3.692	6.416	0.611	0.687
Replicate Prob(F)	0.4728	0.0620	0.0154	0.4393	0.4123
Treatment F	10.264	3.815	2.040	4.198	5.217
Treatment Prob(F)	0.0001	0.0001	0.0143	0.0001	0.0001

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Table 10. Disease reaction of various rice varieties and experimental lines to leaf blast (L BLAST), sheath blight (SB), bacterial panicle blight (BPB), rotten neck blast (RNB), and false smut (FS) at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2019. (URN Group VIII).

Character Rated	L BLAST	SB	BPB	RNB	FS
Rating Date	July 25	Aug. 6	Aug. 6	Aug. 16	Aug. 16
Rating Unit	0-9	0-9	0-9	0-9	0-9
Trt Treatment No. Name	1	2	3	4	5
201 LGRU//KATY/STBN/5/LGRU//LMNT/RA73....	2.0ab	3.5-	3.0a-d	3.0ab	5.5a
202 CPRS/KBNT//9502008/3/CCDR/JEFF/4/MRMT	2.0ab	6.0-	2.5bcd	5.5ab	2.0ab
203 A: CL271/3/NEPTUNE//BNGL/CL 161	3.5ab	5.5-	3.0a-d	5.5ab	4.0ab
204 CL151/JSMN85//CL161	2.5ab	6.0-	4.0a-d	4.0ab	1.5ab
205 CPRS/SABR//MADISON	1.0ab	4.5-	2.0cd	1.0ab	1.0ab
206 JZMN/STG05F5-08-104//DLL2	4.5ab	4.5-	6.5abc	2.0ab	0.0b
207 CTHL/4/CPRS/KBNT//9502008/3/CCDR	0.0b	5.5-	3.0a-d	2.5ab	3.0ab
208 Mo0239718/CL161	3.5ab	4.5-	4.5a-d	6.0ab	0.0b
209 CL111//CL151/JSMN85	0.5ab	4.0-	3.5a-d	1.5ab	0.0b
210 RU0302088/CHEN	3.5ab	4.5-	1.5d	2.0ab	3.5ab
2119865216DH2/EARL//JPTR	2.0ab	5.0-	2.0cd	3.0ab	0.0b
212 TRNS//CCDR/JEFF/3/AR1188/CCDR//....	2.5ab	5.5-	5.0a-d	6.5a	0.0b
213 B: NEPTUNE/3/BNGL/CL 161//CAFFEY	3.5ab	6.0-	5.0a-d	4.0ab	1.5ab
214 Taggart/CL111	2.0ab	7.0-	5.0a-d	4.5ab	3.5ab
215 CPRS/SABR//Gulfmont	1.0ab	5.0-	1.0d	0.0b	1.5ab
216 ROYJ/WLLS	2.0ab	4.0-	4.0a-d	0.0b	5.0ab
217 TRNS//CCDR/JEFF/4/CHNR/3/NWBT/....	2.0ab	5.5-	3.5a-d	6.0ab	0.0b
218 B: NEPTUNE/3/BNGL/CL 161//CAFFEY	4.5ab	4.5-	5.0a-d	2.0ab	3.0ab
219 CL131//CL162-616	2.5ab	5.0-	3.0a-d	1.5ab	1.0ab
220 CPRS/SABR//MADISON	1.5ab	4.0-	3.0a-d	4.5ab	2.0ab
221 RICO/BNGL//RU1202068	4.5ab	4.0-	2.0cd	5.0ab	0.0b
222 MRMT/JPTR	5.0a	5.0-	2.0cd	4.0ab	3.0ab
223 Mo0215035 / CIRAD141Q244-3	1.0ab	6.5-	4.5a-d	6.5a	2.5ab
224 Lemont/CL111	2.0ab	6.5-	2.5bcd	5.5ab	3.0ab
225 RU0302085/4593	2.5ab	4.0-	2.0cd	1.0ab	4.5ab
226 RPG/WLLS/2/ROYJ/3/FRAN /ROYJ	1.0ab	3.5-	5.5a-d	1.0ab	1.5ab
227 NPTN/JPTR	2.5ab	6.0-	4.5a-d	4.0ab	3.5ab
228 Mo0215035/MM14-1	4.5ab	6.0-	7.5a	2.5ab	2.0ab
229 Rex/CL181-AR	4.5ab			1.0ab	0.0b
230 FRAN/WELLS//BANKS	3.5ab	6.0-	3.0a-d	5.0ab	5.0ab
231 JZMN/RU0701124//TGRT	1.5ab	4.5-	4.0a-d	5.0ab	1.5ab
232 LAH169 (HYBRID)	1.0ab	4.5-	2.5bcd	1.5ab	1.5ab
233 Mo04062311	0.5ab	4.5-	5.0a-d	0.0b	4.5ab
234 MM17	2.5ab	5.5-	7.0ab	3.0ab	0.0b
235 Hayakogane/BALDO	4.0ab	6.0-	3.0a-d	4.0ab	2.0ab
236 CPRS/KBNT//WELLS-1CFX-118/5/TACAURI/....	4.5ab	5.0-	2.5bcd	3.0ab	1.5ab
237 NEPTUNE/4/BNGL//MERC/RICO/3/MERC/....	3.0ab	4.5-	5.0a-d	2.5ab	5.5a
238 Mo0204044 / Cypress	4.5ab	5.0-	3.0a-d	2.5ab	0.0b
239 JZMN/PI597046	1.5ab	6.0-	5.5a-d	1.0ab	0.0b
240 Rex	5.0a	6.5-	5.0a-d	1.5ab	3.0ab
LSD P=.05	2.34	2.01	2.42	3.04	2.59
Standard Deviation	1.16	0.99	1.19	1.50	1.28
CV	43.88	19.4	31.89	48.23	62.06

Continued.

Table 10. Continued.

Replicate F	0.457	1.055	3.599	1.603	8.310
Replicate Prob(F)	0.5029	0.3115	0.0661	0.2130	0.0064
Treatment F	2.968	1.669	3.322	3.237	3.713
Treatment Prob(F)	0.0005	0.0645	0.0003	0.0002	0.0001

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

2019 HRCRRS SB 1 FUNGICIDE TEST

Location: H. Rouse Caffey Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4/kg)

Variety/Seed Rate: CL111 / 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill seeded / March 19

Fertilization: At planting 22-66-66; Pre-flood 132-0-0, May 17; Top-dressed 46-0-0, June 7

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, March 27; Flooded, May 18; Drained, July 25

Herbicides: Tank-Mix propanil 3 qt/A; Prowl 1 qt/A; Permit 0.75 oz/A, April 12
Tank-Mix propanil 3 qt/A; Prowl 1 qt/A; Permit 0.75 oz/A, May 16
Post emerge, Clincher 20 oz/A; COC 1 qt/A, June 4

Insecticides: Dermacor X-100 seed treatment

Fungicides: Various

Inoculation Dates: *Rhizoctonia solani* culture grown on rice grain/hull mixture, June 5

Application Equipment: CO_2 backpack sprayer, 3 tip (TJ8002) hand wand, 20 gal/A

Application Dates:	Growth Stage	Time	Temp	Wind	RH	Clouds	Dew
June 14	PD + 5	9:00	82°F	3.0 mph	82%	25%	light
June 27	BOOT	8:45	84°F	2.0 mph	84%	30%	medium
July 5	HEADING	11:00	86°F	3.0 mph	90%	30%	none

Disease Ratings: July 5 and 26

Drained: July 25

Harvest: Aug. 14-15

Results: See Table 11

Comments: Sheath blight severity was moderate. Other diseases were light.

Table 11. Effect of fungicide application on sheath blight (SB) development rice yield and milling. H. Rouse Caffey Rice Research Station, Crowley, LA. 2019.

Pest Name			SB	SB	SB	Yield	Milling Head	Milling Total
Rating Date			July 5	July 26	July 26	Aug. 14	Sept. 11	Sept. 11
Rating Type			Severity	Severity	Infest			
Rating Unit			0-9	0-9	%	LB/A	%	%
Trt No.	Treatment Name	Rate Rate Unit	1	2	5	11	12	13
1	Untreated Check		6.2a	7.0a	73a	7424bc	62.5-	69.5-
2	Amistar Top	15oz/A	3.0d	3.7bc	27c	9326a	63.5-	70.5-
3	Amistar Top	15oz/A	3.7bcd	3.7bc	22c	9084a	64.0-	70.5-
4	Amistar Top	15oz/A	6.2a	5.0b	47b	8062abc	61.5-	69.0-
5	Amistar Top	15oz/A	3.0d	3.5bc	18c	9456a	64.0-	70.5-
6	Amistar Top	15oz/A	3.0d	3.0c	19c	8642abc	59.5	69.0-
7	Amistar Top	15oz/A	4.1bcd	3.5bc	22c	8798ab	63.0-	70.0-
8	Amistar Top Tilt	15oz/A 6oz/A	3.7bcd	3.5bc	23c	9641a	64.5-	70.5-
9	Amistar Top COC	15oz/A 0.25% v/v	3.9bcd	4.0bc	27c	9455a	64.5-	70.5-
10	Tilt	6oz/A	4.7bc	6.5a	67a	7320c	64.0-	70.5-
11	Amistar Top 2017 Form	15oz/A	5.0ab	4.5b	35bc	8665abc	64.5-	70.5-
12	Amistar Top 2016 Form	15oz/A	3.5cd	3.7bc	23c	9441a	65.0-	71.5-
13	Elegia	32oz/A	3.7bcd	4.7b	37bc	8671abc	62.5-	70.5-
14	Elegia Amistar Top	32oz/A 15oz/A	4.4bc	3.7bc	21c	8658abc	64.5-	71.0-
LSD P=.05			0.73 - 1.11	0.80 - 1.08	12.8	920.8	2.77	1.40
Standard Deviation			0.05t	0.14t	8.9	548.6	1.27	0.65
CV			7.2t	6.56t	27.32	6.26	2.0	0.92
Replicate F			2.559	0.931	2.443	1.280	0.381	8.553
Replicate Prob(F)			0.0689	0.4351	0.0786	0.2949	0.5486	0.0118
Treatment F			11.170	12.604	15.522	5.383	1.317	2.342
Treatment Prob(F)			0.0001	0.0001	0.0001	0.0001	0.3203	0.0689

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

2019 HRCRRS SB 2 FUNGICIDE TEST

Location: H. Rouse Caffey Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4/kg)

Variety/Seed Rate: CL111 / 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill seeded / March 19

Fertilization: At planting 22-66-66; Preflood 132-0-0, May 17; Top dressed 46-0-0, June 7

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, March 27; Flooded, May 18; Drained, July 25

Herbicides: Tank-mix propanil 3 qt/A; Prowl 1 qt/A; Permit 0.75 oz/A, April 12
Tank-mix propanil 3 qt/A; Prowl 1 qt/A; Permit 0.75 oz/A, May 16
Post emerge, Clincher 20 oz/A; COC 1 qt/A, June 4

Insecticides: Dermacor X-100 seed treatment

Fungicides: Various

Inoculation Dates: *Rhizoctonia solani* culture grown on rice grain/hull mixture, June 5

Application Equipment: CO_2 backpack sprayer, 3 tip (TJ8002) hand wand, 20 gal/A

Application Dates:	Growth Stage	Time	Temp	Wind	RH	Clouds	Dew
June 14	PD + 10	9:00	82°F	3.0 mph	82%	25%	light

Disease Ratings: July 5 and 26

Drained: July 25

Harvest: Aug. 14-15

Results: See Table 12

Comments: Sheath blight severity was moderate. Other diseases were light.

Table 12. Effect of fungicide application on sheath blight (SB) development rice yield and milling. H. Rouse Caffey Rice Research Station, Crowley, LA. 2019.

Pest Name			SB	SB	SB	Yield	Milling Head	Milling Total
Rating Date			July 5	July 26	July 26	Aug. 14	Sept. 11	Sept. 11
Rating Type			Severity	Severity	Infest			
Rating Unit			0-9	0-9	%	LB/A	%	%
Trt No.	Treatment Name	Rate Rate Unit	Appl Code	1	2	5	11	12	13
1	UNTREATED CHECK			6.9a	6.9a	92a	7024c	60.5b	70.5-
2	QUADRIS FLOWABLE	12fl oz/a	A	3.2b	4.0de	25cd	9203ab	63.0ab	71.0-
3	SERCADIS	6.8fl oz/a	A	3.9b	5.5bc	41c	8237b	62.0ab	69.0
4	AMISTAR TOP	15fl oz/a	A	3.0b	3.5e	20d	8991ab	61.5ab	71.0-
5	STRATEGO	19fl oz/a	A	3.7b	6.0ab	58b	8545ab	63.5ab	71.0-
6	ELEGIA	32fl oz/a	A	3.2b	5.3bcd	39c	8632ab	61.5ab	71.0-
7	EXCALIA	2fl oz/a	A	3.7b	4.3cde	21d	9283ab	60.0b	70.5-
	COC	1% v/v	A						
8	EXCALIA	2fl oz/a	A	3.0b	3.5e	18d	9559a	64.5a	72.0-
	COC	1% v/v	A						
	TILT	6fl oz/a	A						
LSD P=.05				0.76 - 1.26	1.05	13.2	781.8	2.35	1.96
Standard Deviation				0.05t	0.71	9.0	530.0	1.00	0.80
CV				7.57t	14.65	22.98	6.1	1.6	1.13
Replicate F				0.847	1.611	2.854	0.218	7.631	11.111
Replicate Prob(F)				0.4842	0.2183	0.0631	0.8830	0.0280	0.0157
Treatment F				14.467	12.215	32.120	9.080	4.676	0.778
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0297	0.6160

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV 41Treatment P(F) is significant at mean comparison OSL.

2019 CALCASIEU FUNGICIDE SYNGENTA TEST

Location: Powell Farm Partners, Johnny Hensgens cooperator, Iowa, LA

Soil Type: Crowley Vidrine Complex

Variety/Seed Rate: CL111 / 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill seeded / March 28

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, March 27; Flooded, May 18; Drained, July 30

Herbicides: Tank-mix Stam 3 qt/A; Prowl 2 pt/A, May 3
Tank-mix Stam 2 qt/A; RiceBeaux 2 qt/A; Permit 1 oz/A, May 17

Insecticides: Dermacor X-100 seed treatment

Fungicides: Various

Inoculation Dates: *Rhizoctonia solani*, Nature

Application Equipment: CO_2 backpack sprayer, 3 tip (TJ8002) hand wand, 20 gal/A

Application Dates:	Growth Stage	Time	Temp	Wind	RH	Clouds	Dew
June 18	PD +5	9:35	82°F	3.0 mph	87%	20%	light
June 28	Boot	8:05	77°F	3.0 mph	85%	25%	moderate
July 05	Heading	9:00	84°F	6.0 mph	81%	5%	heavy

Disease Ratings: July 5 and 26

Drained: July 30

Harvest: Aug. 14-15

Results: See Table 13

Comments: Sheath blight severity was high.

Table 13. Effect of fungicide applications on sheath blight (SB) development and rice yield and milling at Iowa, Calcasieu Parish. 2019.

Pest Name			SB	SB	SB	Yield	Milling Head	Milling Total
Rating Date			July 5	July 26	July 26	Aug. 14	Sept. 11	Sept. 11
Rating Type			Severity	Severity	Infest			
Rating Unit			0-9	0-9	%	LB/A	%	%
Trt No.	Treatment Name	Rate Rate Unit	5	1	4	11	12	13
1	Untreated Check		6.0	7.3a	81a	6945	60.0	69.5
2	Amistar Top	15oz/A	5.3	6.5ab	74a	7024	61.0	72.0
3	Amistar Top	15oz/A	5.5	6.8ab	77a	7368	60.0	71.0
4	Amistar Top	15oz/A	4.8	5.3bc	48ab	7030	57.5	68.5
5	Amistar Top	15oz/A	4.5	5.8abc	60ab	8103	62.0	71.5
6	Amistar Top	15oz/A	5.0	5.8abc	59ab	7496	63.5	71.5
7	Amistar Top	15oz/A	6.0	5.5abc	55ab	7800	62.0	72.0
8	Amistar Top Tilt	15oz/A 6oz/A	5.3	6.8ab	68ab	7111	58.5	70.5
9	Amistar Top COC	15oz/A 0.25% v/v	5.0	6.5ab	71a	7692	59.0	71.0
10	Tilt	6oz/A	5.5	6.5ab	76a	7203	59.0	71.0
11	Amistar Top 2017 Form	15oz/A	5.5	6.5ab	66ab	7492	58.5	70.5
12	Amistar Top 2016 Form	15oz/A	5.3	5.8abc	56ab	7693	60.0	70.5
13	Elegia	32oz/A	4.5	6.0abc	62ab	7880	63.0	71.0
14	Elegia Amistar Top	32oz/A 15oz/A	4.3	4.5c	32b	7478	64.0	72.0
LSD P=.05			1.52	1.07	22.6	742.2	5.25	2.03
Standard Deviation			1.06	0.75	15.8	442.2	2.43	0.93
CV			20.54	12.27	25.04	5.94	4.01	1.31
Replicate F			5.015	4.468	8.821	5.892	6.996	0.711
Replicate Prob(F)			0.0049	0.0086	0.0001	0.0078	0.0202	0.4156
Treatment F			1.013	3.763	2.752	1.950	1.419	1.237
Treatment Prob(F)			0.4585	0.0006	0.0073	0.0714	0.2685	0.3592

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

2019 CALCASIEU FUNGICIDE VALENT TEST

Location: Powell Farm Partners, Johnny Hensgens cooperator, Iowa, LA

Soil Type: Crowley Vidrine Complex

Variety/Seed Rate: CL111 / 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill seeded / March 28

Fertilization: At planting 20-60-60; Preflood 126.5-0-0, May 17

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, March 27; Flooded, May 18; Drained, July 30

Herbicides: Tank-mix Stam 3 qt/A; Prowl 2 pt/A, May 3
Tank-mix Stam 2 qt/A; RiceBeaux 2 qt/A; Permit 1 oz/A, May 17

Insecticides: Dermacor X-100 seed treatment

Fungicides: Various

Inoculation Dates: *Rhizoctonia solani*, Nature

Application Equipment: CO_2 backpack sprayer, 3 tip (TJ8002) hand wand, 20 gal/A

Application Dates:	Growth Stage	Time	Temp	Wind	RH	Clouds	Dew
June 18	PD +5	9:35	82°F	3.0 mph	87%	20%	light
June 28	Boot	8:05	77°F	3.0 mph	85%	25%	moderate
July 05	Heading	9:00	84°F	6.0 mph	81%	5%	heavy

Disease Ratings: July 5 and July 26

Drained: July 30

Harvest: Aug. 15

Results: See Table 14

Comments: Sheath blight severity was high.

Table 14. Effect of fungicide applications on sheath blight (SB) development and rice yield and milling, Iow Calcasieu Parish. 2019.

Pest Name Rating Date Rating Type Rating Unit				SB Jul-5 Severity 0-9	SB Jul-26 Severity 0-9	SB Jul-26 Infest %	Yield Aug.14 LB/A	Milling Head Sept. 11 %	Milling Total Sept.-11 %
Trt.Treatment No.Name	Rate	Rate Unit	Appl Code	5	4	6	1	2	3
1 UNTREATED CHECK				5.6a	7.0a	50a	5909	54.0	71.0
2 QUADRIS FLOWABLE	12	fl oz/AA		5.0ab	7.0a	45ab	6390	58.0	71.0
3 SERCADIS	6.8	fl oz/AA		3.7b	4.8b	24b	7246	56.0	69.0
4 AMISTAR TOP	15	fl oz/AA		4.7ab	7.0a	42ab	6543	56.0	70.0
5 STRATEGO	19	fl oz/AA		4.2ab	6.0ab	41ab	6896	60.5	72.0
6 ELEGIA	32	fl oz/AA		4.2ab	5.5ab	31ab	7076	59.0	71.0
7 EXCALIA COC	2 1%	fl oz/AA v/v	A	4.0ab	5.3ab	26b	7098	55.5	69.0
8 EXCALIA COC TILT	2 1% 6	fl oz/AA v/v fl oz/AA	A	3.7b	5.5ab	27b	7240	57.5	70.0
LSD P=.05				1.05 - 1.20	1.25	14.6	1155.6	10.34	4.71
Standard Deviation				0.06t	0.85	9.9	785.9	4.37	1.99
CV				8.11t	14.2	27.93	11.56	7.67	2.83
Replicate F				2.107	1.033	2.289	5.233	0.395	0.568
Replicate Prob(F)				0.1298	0.3983	0.1080	0.0074	0.5495	0.4758
Treatment F				2.997	4.426	4.079	1.476	0.459	0.568
Treatment Prob(F)				0.0240	0.0037	0.0057	0.2294	0.8372	0.7638

Means followed by the same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

GENETIC MAPPING, BREEDING, AND DEVELOPMENT OF NEW STRATEGIES TO IMPROVE RICE DISEASE MANAGEMENT FOR SHEATH BLIGHT AND BACTERIAL PANICLE BLIGHT

J.H. Ham, J.C. Ontoy, J. Bruno, A. Maharjan, I.K. Barphagha, A.N. Famoso, and D.E. Groth

Introduction

Bacterial panicle blight (BPB) and sheath blight (SB) cause serious damage in Louisiana rice production. BPB is caused by the bacterial pathogens *Burkholderia glumae* and *Burkholderia gladioli*, for which fungicides are not effective and few antibiotic products are commercially available. Sheath blight, the fungal disease caused by *Rhizoctonia solani*, can be managed by fungicide application, but this disease management practice carries the risk of fungicide resistance. The main goal of this project is to mitigate the problems caused by these major diseases through various approaches, including utilization of genetic traits of disease resistance and development of new disease-suppressing materials. With this goal, three lines of research activities have been performed in this project; 1) genetic mapping of the quantitative trait loci (QTL) associated with BPB and SB, 2) breeding of disease-resistant lines, and 3) development of new chemical and biological materials.

Research Progress in 2019

I. Genetic Mapping of QTLs Associated with BPB and SB.

Four populations of recombinant inbred lines (RIL) derived from the crosses between disease-resistant rice (i.e. Jupiter and LM-1) and disease-susceptible rice (i.e. Trenasse and Bengal) have been constructed at their $F_{8:10}$ generation as a foundation material for genetic and genomic studies, as well as breeding. Each population contains 288-300 RILs, ensuring the population size to be large enough for reliable statistical analysis. This year's work was focused on three parts: 1) phenotyping of the Bengal/Jupiter population and selected lines from the United States Department of Agriculture – Germplasm Resources Information Network (USDA-GRIN) and the International Rice Research Institute (IRRI) for BPB, 2) genome sequence analysis of LM-1 (a disease-resistant mutant line derived from Lemont) in comparison with the wild type Lemont, and 3) characterization of the major QTLs (on Chromosome 3) associated with both BPB and SB,

1) Phenotyping of the Bengal/Jupiter population and selected lines from USDA-GRIN and IRRI for BPB.

An RIL population was developed from Bengal and Jupiter to identify QTLs associated for BPB resistance. Jupiter is known to be moderately resistance to BPB, while Bengal is highly susceptible. This year the BPB phenotypes of the Bengal/Jupiter RIL population were evaluated in both greenhouse and field conditions (Table 1). Overall, rice plants showed more susceptible phenotypes in the greenhouse condition compared with those in the field condition (Table 1). Meanwhile, new germplasm lines from USDA-GRIN and IRRI were also evaluated for the resistance to BPB in the greenhouse to find new sources of durable resistance to BPB (Table 2 and Figs. 1 and 2). For the inoculation of bacterial pathogen in the greenhouse condition, the bacterial suspension (~ 10^9 cells/ml) of the pathogen (*B. glumae* strain 336gr-1) was inoculated on the sheath of ~ 7-week-old rice plants. For bacterial inoculation in the field condition, the same type of bacterial suspension was inoculated with a metal brush dipped in the inoculum on ~7-week-old rice plants. Disease scoring was conducted at the reproductive stage based on the symptoms on panicles.

Table 1. The BPB phenotypes of the Bengal/Jupiter RIL population (Resistant lines highlighted).

	Disease Score of BPB*						
BJ-F8 RIL #	**Greenhouse**				**Field**		
	Rep1	Rep2	Rep3	Mean (GH)	Rep1	Rep2	Mean (Field)
1	5	5	7	5.67	3	3	3.00
2	1	1	1	1.00	3	3	3.00
3	5	5	7	5.67	7	9	8.00
4	7	7	7	7.00	9	7	8.00

Continued.

Table 1. Continued.

	Disease Score of BPB*						
BJ-F8 RIL #	**Greenhouse**				**Field**		
5	5	5	7	5.67	7	9	8.00
6	7	7	7	7.00	3	9	6.00
7	7	7	7	7.00	7	9	8.00
8	7	7	7	7.00	7	9	8.00
9	9	7	7	7.67	9	9	9.00
10	5	7	7	6.33	9	9	9.00
11	7	7	7	7.00	3	3	3.00
12	9	9	7	8.33	9	9	9.00
13	7	7	7	7.00	9	7	8.00
14	7	9	7	7.67	7	9	8.00
15	7	7	7	7.00	5	9	7.00
16	3	3	7	4.33	3	3	3.00
17	7	7	7	7.00	9	9	9.00
18	7	7	7	7.00	5	5	5.00
19	7	7	7	7.00	5	5	5.00
20	7	9	5	7.00	5	5	5.00
21	5	7	7	6.33	5	7	6.00
22	5	7	7	6.33	5	9	7.00
23	9	7	7	7.67	5	5	5.00
24	7	7	7	7.00	5	9	7.00
25	5	5	7	5.67	5	5	5.00
26	7	7	7	7.00	5	5	5.00
27	7	7	9	7.67	7	5	6.00
28	7	7	7	7.00	9	5	7.00
29	7	7	7	7.00	5	9	7.00
30	7	9	9	8.33	5	5	5.00
31	7	7	7	7.00	5	5	5.00
32	7	9	9	8.33	5	9	7.00
33	7	9	9	8.33	5	5	5.00
34	7	7	9	7.67	5	9	7.00
35	7	7	7	7.00	5	9	7.00
36	7	7	7	7.00	5	5	5.00
37	7	7	7	7.00	5	5	5.00
38	5	7	7	6.33	5	5	5.00
39	7	7	7	7.00	5	9	7.00
40	7	7	7	7.00	7	7	7.00

Continued.

Table 1. Continued.

	Disease Score of BPB*						
BJ-F8 RIL #	**Greenhouse**				**Field**		
41	7	7	7	7.00	5	5	5.00
42	7	7	7	7.00	5	7	6.00
43	5	7	7	6.33	5	5	5.00
44	7	7	7	7.00	5	9	7.00
45	9	7	7	7.67	5	5	5.00
46	7	7	7	7.00	5	9	7.00
47	7	9	9	8.33	5	9	7.00
48	5	7	7	6.33	9	9	9.00
49	7	7	7	7.00	9	5	7.00
50	7	7	7	7.00	9	7	8.00
51	3	3	5	3.67	9	7	8.00
52	7	7	7	7.00	9	9	9.00
53	5	5	5	5.00	9	9	9.00
54	5	7	7	6.33	7	5	6.00
55	7	7	7	7.00	7	7	7.00
56	9	7	7	7.67	5	5	5.00
57	7	7	7	7.00	5	5	5.00
58	7	7	7	7.00	3	3	3.00
59	7	7	9	7.67	5	9	7.00
60	7	7	7	7.00	5	5	5.00
61	7	7	9	7.67	5	5	5.00
62	7	7	7	7.00	9	9	9.00
63	7	7	7	7.00	7	7	7.00
64	9	7	7	7.67	7	9	8.00
65	9	7	7	7.67	5	5	5.00
66	5	7	7	6.33	5	9	7.00
67	7	7	9	7.67	9	7	8.00
68	5	7	7	6.33	3	3	3.00
69	7	7	5	6.33	5	9	7.00
70	7	7	7	7.00	9	9	9.00
71	7	7	7	7.00	5	9	7.00
72	7	7	7	7.00	5	5	5.00
73	5	5	7	5.67	3	5	4.00
74	7	7	7	7.00	9	9	9.00
75	9	7	7	7.67	5	5	5.00
76	7	7	7	7.00	5	5	5.00

Continued.

Table 1. Continued.

	Disease Score of BPB*						
BJ-F8 RIL #	**Greenhouse**				**Field**		
77	9	9	7	8.33	9	5	7.00
78	7	7	7	7.00	7	5	6.00
79	5	7	7	6.33	7	5	6.00
80	3	7	7	5.67	3	7	5.00
81	7	7	7	7.00	5	5	5.00
82	5	7	7	6.33	7	5	6.00
83	7	7	7	7.00	5	5	5.00
84	5	7	7	6.33	5	5	5.00
85	9	7	7	7.67	5	7	6.00
86	7	7	7	7.00	5	9	7.00
87	7	7	7	7.00	7	7	7.00
88	7	7	7	7.00	5	5	5.00
89	5	7	7	6.33	5	5	5.00
90	5	5	5	5.00	5	7	6.00
91	7	7	7	7.00	5	7	6.00
92	5	5	7	5.67	9	9	9.00
93	7	7	7	7.00	7	5	6.00
94	7	7	7	7.00	9	9	9.00
95	5	5	5	5.00	9	9	9.00
96	5	7	7	6.33	7	7	7.00
97	5	7	7	6.33	9	9	9.00
98	7	7	7	7.00	9	9	9.00
99	9	7	7	7.67	5	5	5.00
100	5	7	7	6.33	5	5	5.00
101	7	7	9	7.67	5	5	5.00
102	7	3	3	4.33	7	9	8.00
103	7	7	7	7.00	5	9	7.00
104	9	7	7	7.67	7	9	8.00
105	9	9	7	8.33	5	9	7.00
106	5	5	5	5.00	5	5	5.00
107	7	7	7	7.00	5	9	7.00
108	5	7	7	6.33	7	9	8.00
109	7	7	7	7.00	9	9	9.00
110	7	7	7	7.00	5	5	5.00
111	5	5	7	5.67	7	9	8.00
112	7	7	9	7.67	7	9	8.00

Continued.

Table 1. Continued.

	Disease Score of BPB*						
BJ-F8 RIL #	**Greenhouse**				**Field**		
113	7	7	7	7.00	7	9	8.00
114	7	7	7	7.00	9	7	8.00
115	7	7	7	7.00	9	7	8.00
116	7	7	7	7.00	7	7	7.00
117	9	7	7	7.67	7	5	6.00
118	9	7	7	7.67	5	7	6.00
119	5	7	7	6.33	9	9	9.00
120	5	5	7	5.67	7	7	7.00
121	9	7	7	7.67	9	9	9.00
122	9	7	7	7.67	5	5	5.00
123	7	7	7	7.00	9	9	9.00
124	3	5	7	5.00	3	7	5.00
125	9	9	7	8.33	5	5	5.00
126	9	7	7	7.67	7	7	7.00
127	7	7	7	7.00	9	9	9.00
128	7	7	7	7.00	5	5	5.00
129	5	7	7	6.33	7	9	8.00
130	7	7	7	7.00	5	9	7.00
131	5	7	7	6.33	5	9	7.00
132	7	7	7	7.00	7	9	8.00
133	7	7	7	7.00	5	5	5.00
134	3	5	7	5.00	3	9	6.00
135	7	7	7	7.00	5	9	7.00
136	5	7	7	6.33	5	5	5.00
137	7	7	7	7.00	9	9	9.00
138	5	7	7	6.33	5	9	7.00
139	7	7	7	7.00	5	5	5.00
140	7	9	9	8.33	9	9	9.00
141	7	7	7	7.00	7	7	7.00
142	5	5	5	5.00	5	9	7.00
143	7	7	7	7.00	9	7	8.00
144	7	7	7	7.00	9	9	9.00
145	9	9	9	9.00	9	9	9.00
146	7	7	7	7.00	5	5	5.00
147	7	7	9	7.67	5	7	6.00
148	7	7	7	7.00	9	9	9.00

Continued.

Table 1. Continued.

	Disease Score of BPB*						
BJ-F8 RIL #	**Greenhouse**				**Field**		
149	9	7	7	7.67	5	5	5.00
150	7	7	9	7.67	7	7	7.00
151	7	7	9	7.67	5	5	5.00
152	7	7	7	7.00	5	5	5.00
153	7	7	7	7.00	5	9	7.00
154	5	5	7	5.67	7	9	8.00
155	7	7	7	7.00	7	9	8.00
156	7	7	7	7.00	7	5	6.00
157	5	5	7	5.67	7	9	8.00
158	7	7	7	7.00	7	9	8.00
159	5	7	7	6.33	9	9	9.00
160	7	7	7	7.00	5	5	5.00
161	5	7	7	6.33	5	7	6.00
162	9	7	7	7.67	5	9	7.00
163	5	7	7	6.33	7	9	8.00
164	7	7	9	7.67	9	9	9.00
165	7	7	7	7.00	5	7	6.00
166	7	7	7	7.00	5	7	6.00
167	7	7	7	7.00	5	9	7.00
168	7	7	7	7.00	7	9	8.00
169	9	7	7	7.67	5	9	7.00
170	7	7	9	7.67	7	9	8.00
171	5	7	7	6.33	9	9	9.00
172	7	7	7	7.00	5	5	5.00
173	7	7	7	7.00	5	7	6.00
174	7	7	7	7.00	5	5	5.00
175	7	7	7	7.00	5	7	6.00
176	7	7	7	7.00	9	9	9.00
177	9	7	7	7.67	5	9	7.00
178	7	7	7	7.00	5	5	5.00
179	7	7	7	7.00	9	9	9.00
180	7	7	7	7.00	3	3	3.00
181	7	7	7	7.00	5	5	5.00
182	7	7	7	7.00	5	7	6.00
183	7	7	7	7.00	9	9	9.00
184	7	7	7	7.00	5	5	5.00

Continued.

Table 1. Continued.

	Disease Score of BPB*						
BJ-F8 RIL #	**Greenhouse**				**Field**		
185	7	7	7	7.00	9	7	8.00
186	7	7	7	7.00	7	7	7.00
187	5	5	5	5.00	3	7	5.00
188	9	7	7	7.67	9	9	9.00
189	7	7	7	7.00	3	7	5.00
190	7	7	7	7.00	7	9	8.00
191	7	7	7	7.00	9	9	9.00
192	7	7	7	7.00	9	9	9.00
193	3	7	7	5.67	9	3	6.00
194	5	7	7	6.33	9	7	8.00
195	9	7	7	7.67	9	9	9.00
196	7	7	7	7.00	9	9	9.00
197	7	7	7	7.00	5	5	5.00
198	5	5	7	5.67	5	5	5.00
199	7	7	7	7.00	9	9	9.00
200	7	7	7	7.00	7	7	7.00
201	5	7	7	6.33	5	5	5.00
202	1	1	3	1.67	9	9	9.00
203	7	9	7	7.67	5	5	5.00
204	7	7	7	7.00	5	5	5.00
205	7	7	7	7.00	7	7	7.00
206	7	7	7	7.00	7	7	7.00
207	5	7	7	6.33	9	9	9.00
208	5	7	7	6.33	3	5	4.00
209	7	7	7	7.00	9	9	9.00
210	3	3	5	3.67	5	5	5.00
211	7	7	7	7.00	5	7	6.00
212	1	7	7	5.00	5	9	7.00
213	3	3	7	4.33	5	5	5.00
214	3	5	5	4.33	9	9	9.00
215	1	3	3	2.33	7	9	8.00
216	7	7	7	7.00	9	9	9.00
217	5	7	7	6.33	7	7	7.00
218	7	7	7	7.00	5	9	7.00
219	7	7	7	7.00	5	7	6.00
220	7	7	7	7.00	5	7	6.00

Continued.

Table 1. Continued.

	Disease Score of BPB*						
BJ-F8 RIL #	**Greenhouse**				**Field**		
221	5	7	7	6.33	5	9	7.00
222	9	9	7	8.33	7	7	7.00
223	7	7	5	6.33	5	7	6.00
224	7	7	9	7.67	5	9	7.00
225	7	7	7	7.00	5	5	5.00
226	7	7	7	7.00	9	5	7.00
227	5	5	7	5.67	5	5	5.00
228	7	7	7	7.00	5	9	7.00
229	5	7	7	6.33	5	7	6.00
230	5	7	7	6.33	7	9	8.00
231	5	5	7	5.67	9	9	9.00
232	3	3	7	4.33	5	3	4.00
233	5	7	7	6.33	9	9	9.00
234	9	7	7	7.67	9	9	9.00
235	7	7	7	7.00	9	7	8.00
236	9	7	7	7.67	5	7	6.00
237	7	7	7	7.00	5	5	5.00
238	7	7	7	7.00	9	9	9.00
239	7	7	7	7.00	9	9	9.00
240	7	7	7	7.00	7	7	7.00
241	5	5	7	5.67	5	7	6.00
242	7	7	7	7.00	5	7	6.00
243	7	7	7	7.00	7	9	8.00
244	7	7	7	7.00	5	3	4.00
245	5	5	5	5.00	7	7	7.00
246	7	7	9	7.67	7	9	8.00
247	7	7	7	7.00	7	7	7.00
248	7	7	3	5.67	5	9	7.00
249	7	7	7	7.00	7	9	8.00
250	7	7	7	7.00	7	7	7.00
251	9	5	5	6.33	7	7	7.00
252	9	9	7	8.33	7	7	7.00
253	9	7	7	7.67	9	9	9.00
254	7	7	7	7.00	9	9	9.00
255	3	5	7	5.00	3	5	4.00
256	5	7	7	6.33	7	7	7.00

Continued.

Table 1. Continued.

	Disease Score of BPB*						
BJ-F8 RIL #	**Greenhouse**				**Field**		
257	7	7	7	7.00	5	7	6.00
258	3	1	1	1.67	3	5	4.00
259	7	7	9	7.67	5	7	6.00
260	7	7	7	7.00	5	7	6.00
261	9	7	7	7.67	9	9	9.00
262	5	7	7	6.33	5	5	5.00
263	7	7	7	7.00	5	5	5.00
264	9	7	7	7.67	5	5	5.00
265	7	7	7	7.00	5	7	6.00
266	9	7	5	7.00	5	5	5.00
267	5	5	5	5.00	7	7	7.00
268	9	7	7	7.67	5	5	5.00
269	7	7	7	7.00	7	5	6.00
270	7	7	9	7.67	3	3	3.00
271	9	7	7	7.67	9	9	9.00
272	7	7	7	7.00	9	7	8.00
273	9	7	7	7.67	7	9	8.00
274	5	7	7	6.33	9	7	8.00
275	7	7	7	7.00	7	7	7.00
276	7	7	7	7.00	9	9	9.00
277	5	7	7	6.33	9	5	7.00
278	7	7	7	7.00	7	5	6.00
279	7	7	9	7.67	9	5	7.00
280	7	7	7	7.00	9	9	9.00
281	5	7	7	6.33	9	9	9.00
282	7	7	7	7.00	7	9	8.00
283	7	5	5	5.67	5	7	6.00
284	7	9	9	8.33	7	7	7.00
285	5	7	7	6.33	5	7	6.00
286	5	7	7	6.33	9	9	9.00
287	7	7	7	7.00	3	5	4.00
288	9	7	7	7.67	9	9	9.00
289	5	5	5	5.00	5	7	6.00
290	5	7	7	6.33	5	9	7.00
291	7	7	7	7.00	3	5	4.00
292	5	7	7	6.33	5	5	5.00

Continued.

Table 1. Continued.

	Disease Score of BPB*						
BJ-F8 RIL #	**Greenhouse**				**Field**		
293	5	7	7	6.33	7	7	7.00
Jupiter	5	5	3	4.33	5	7	6.00
Bengal	7	7	7	7.00	7	9	8.00

***BPB phenotype was scored in a **scale of 1 to 9**, where 1 and 9 indicate that less than 10% and more than 80% of panicle areas were symptomatic, respectively.

Table 2. The BPB phenotypes of the germplasm lines from USDA-GRIN and IRRI (Resistant lines highlighted).

USDA-GRIN & IRRI Lines	**BPB (Disease Score)**				**Remarks**	**Origin**
	Rep 1	**Rep 2**	**Rep 3**	**Mean Score**		
PI483833	5	5	7	5.67	IRRI (germplasm collection of Dr. Rush)	IRRI
Newrex	5	7	7	6.33	Bluebelle/Dawn//Belle Patna/Dawn/3/Bluebonnet 50*2/Jojutla	Texas, United States
Rexoro	5	7	7	6.33	selection from Marong-Paroc (PI 31169, Philippines)	Louisiana, United States
Stg 611811	3	3	5	3.67	selection from Vegold	Arkansas, United States
Bah Butong	7	7	9	7.67	IRRI (germplasm collection of Dr. Rush)	IRRI
Utri Merah	5	5	5	5.00	IRRI (germplasm collection of Dr. Rush)	IRRI
Ketam Hitam	9	7	7	7.67	IRRI (germplasm collection of Dr. Rush)	IRRI
Pulut Hitam	9	9	9	9.00	IRRI (germplasm collection of Dr. Rush)	IRRI
PI389001	9	9	9	9.00	IRRI (germplasm collection of Dr. Rush) Corresponding variety: Tadukan	Philippines
IR28	1	1	3	1.67	IRRI (germplasm collection of Dr. Rush)	IRRI
Nipponbare	3	5	5	4.33	Yamabiko/Sachikaze = Chukyoasahi/Norin 22 (Kinki 34)//Sachikaze	Aiti Japan
Cl 5451-2	9	9	9	9.00	selection from CI 5451	United States
PI452224	1	3	3	2.33	IRRI (germplasm collection of Dr. Rush)	IRRI
67Bmt705	3	3	5	3.67	Belle Patna/Dawn	Texas, United States
Bujang	7	7	9	7.67	IRRI (germplasm collection of Dr. Rush)	Malaysia
PI452218	3	3	5	3.67	IRRI (germplasm collection of Dr. Rush)	IRRI
Taichung Native	7	5	5	5.67	Tie-cha-oo-chien/Tsai-yuan-chung	Taiwan
Stg 69645	5	7	7	6.33	Starbonnet/Dawn	Arkansas, United States

Continued.

Table 2. Continued.

USDA-GRIN & IRRI Lines	BPB (Disease Score)				Remarks	Origin
	Rep 1	Rep 2	Rep 3	Mean Score		
IR52	3	3	5	3.67	IRRI (germplasm collection of Dr. Rush)	IRRI
IR40	7	7	7	7.00	IRRI (germplasm collection of Dr. Rush)	IRRI
Bellevue	7	9	9	8.33	Bluebonnet 50/Gulfrose	Louisiana, United States
Jasmine 85	7	7	9	7.67	IR262/Khao-Dawk-Mali 105	Texas, United tates
Leah	5	7	7	6.33	natural outcross in CI 9902	Louisiana, United States
Pare Beureum	7	7	5	6.33	Germplasm collection of Dr. Rush	?
PI452201	7	7	5	6.33	IRRI (germplasm collection of Dr. Rush)	IRRI
Stg 651354	3	5	5	4.33	CI 9402/Dawn	Arkansas, United States
Stg 511784	5	5	5	5.00	Hill sel./3/Texas Patna//Rexoro/Supreme Blue Rose	Arkansas, United States
Tetep	1	1	3	1.67	indica	Vietnam
PI452140	3	3	3	3.00	IRRI (germplasm collection of Dr. Rush)	IRRI
Fortuna	7	7	5	6.33	selection from Pa Chiam, PI 13056	Louisiana, United States
SC46H73-49B-1	9	9	9	9.00		Arkansas, United States
IR64	9	9	9	9.00	IRRI (germplasm collection of Dr. Rush)	
PI452200	3	3	5	3.67	IRRI (germplasm collection of Dr. Rush)	
Bengal	7	7	5	6.33	tropical japonica	Louisiana, United States
Kele	3	3	3	3.00	indica	Bangladesh
Jupiter	5	5	7	5.67	tropical japonica	Louisiana, United States

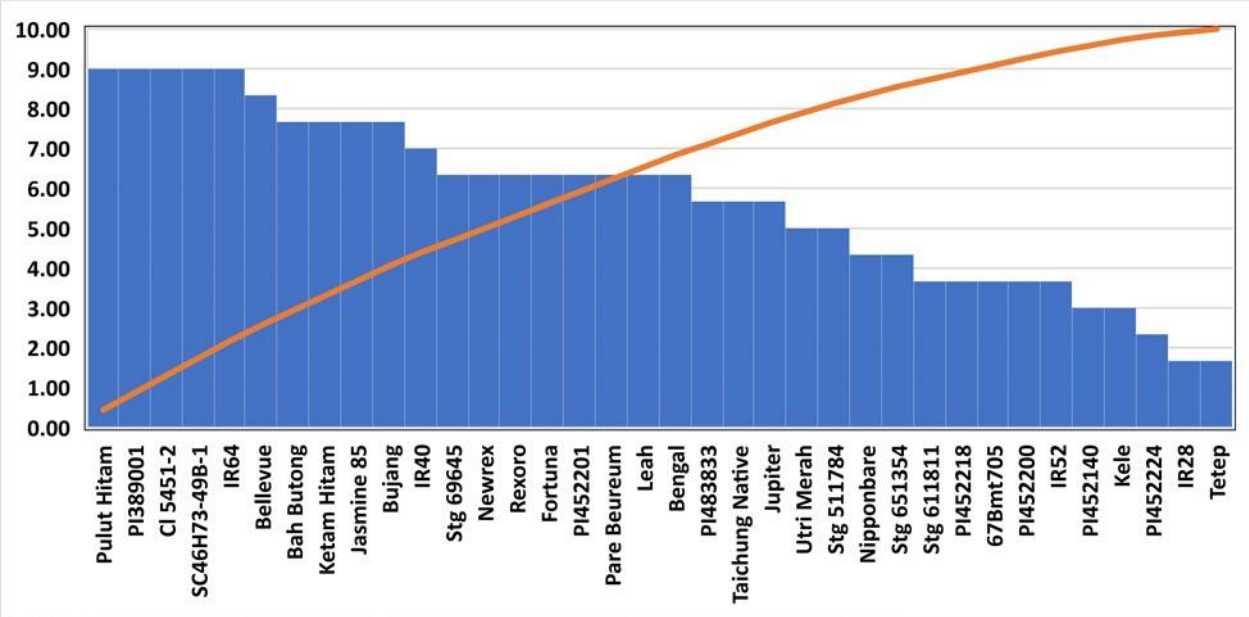


Figure 1. The disease index of the newly tested rice lines for BPB.

Figure 2. The BPB symptoms on the panicles of selected rice germplasm lines from USDA-GRIN and IRRI.

2) Comparative genome sequence analysis of LM-1 and its parent variety Lemont.

Whole genome sequences of two rice genotypes, Lemont and LM-1, were compared to identify genome-wide genetic variants between them. Lemont (Lebonnet//CI9881/PI331581) is an early maturing, long-grain variety released at Texas A&M University Agricultural Research and Extension Center, TX, in 1982 for commercial cultivation. It has better grain yield with better cooking qualities; however, it is susceptible to BPB and other fungal diseases. LM-1 on the other hand is a mutant germplasm line developed by the LSU AgCenter through gamma radiation ((250 Gy) from ^{60}Co) of Lemont, and it was released in 2006. It is moderately resistant to SB and BPB (Fig. 3).

Figure 3. BPB panicle symptoms in the Lemont (left) and LM-1 (right).

Quality of sequence reads from both genotypes were examined using FastaQC, and later mapped with the International Rice Genome Sequence Project (IRGSP) pseudomolecules version 7 of the reference genome of the japonica cultivar, Nipponbare, using BWA-MEM with its default parameters. SAM files were sorted and converted to BAM files. Then generation of alignment and insertion metrics, as well as marking of duplicates, were made using Picard tools. Variant calling and generating of variant calling format (VCF) files were done using GATK Haplotypecaller. Comparison of VCF files was conducted thru vcftools. Variants and their effects on protein translation in different regions of the genome were annotated using Snpeff using the in-house database for *Oryza sativa* (Table 3).

Table 3. Basic statistics of variants of Lemont and LM-1 relative to Nipponbare.

SNPs by functional class (count)		
	Lemont	LM-1
Missense	32,091	28,930
Nonsense	501	436
Silent	27,636	24,885
Missense/ Silent ratio	1.16	1.14
SNPs by region (count)		
	Lemont	LM-1
Downstream	1,245,731	1,107,505
Exon	86,217	77,064
Intergenic	789,767	690,968
Intron	115,304	106,389
Splice site acceptor	92	88
Splice site donor	116	112
Splice site region	3,580	3,371
Upstream	1,275,796	1,130,728
UTR 3 prime	28,320	26,412
UTR 5 prime	19,171	16,800
INDELs by region (count)		
	Lemont	LM-1
Downstream	287034	243076
Exon	12276	9894
Gene	105	92
Intergenic	156716	131265
Intron	32521	28715
Splice site acceptor	99	80
Splice site donor	65	60
Splice site region	1121	987
Transcript	135	116
Upstream	292598	246514
UTR 3 prime	7308	6645
UTR 5 prime	5004	3829

The annotated genes with variants from SNPeff having significant value were selected and run for Singular Enrichment Analysis (SEA) using AgriGO v2.0., a web-based tool and database for gene ontology analyses. After generating the significant GO terms for both Lemont and LM-1, cross comparison of SEA (SEACOMPARE) were also conducted using AgriGO v2.0 to highlight significant GO from LM-1 relative to Lemont. The SEACOMPARE involved comparative analysis with heatmaps (*not shown*) to display the common or specific significant terms. The GO terms specific to LM-1 with significant levels of adjusted p-values or false discovery rates (FDRs) are listed in Table 4.

Table 4. Enrichment analysis of highly significant gene ontology found in LM-1 relative to Lemont.

Gene Ontology	Description	FDR value
Biological process	response to stimuli	3.00E-12
Biological process	response to stress	1.50E-10
Biological process	protein metabolic process	7.10E-10
Biological process	hetorocycle catabolic process	4.90E-04
Biological process	cell cycle process	8.90E-04
Biological process	cellular amino acid derivative biosynthetic process	7.00E-03
Biological process	cellular amide metabolic process	1.20E-02
Biological process	negative regulation of molecular function	4.40E-02
Biological process	negative regulation of catalytic activity	4.40E-02
Molecular function	monooxygenase activity	5.90E-08
Molecular function	iron ion binding	7.90E-05
Molecular function	heme binding	8.50E-05
Molecular function	tetrapyrrole binding	1.10E-05
Molecular function	lyase activity	2.00E-02

3) Characterization of the major QTL on Chromosome 3 associated with BPB and SB.

The major QTL associated with both BPB and SB on Chromosome 3, which was identified from the genetic studies of the past several years, is located between the SNP marker, SNP225, and the SSR marker, RM3203 (Fig. 4). Additional SNP markers that can be used for fine mapping of this locus were designed using the whole genome sequence data of Trenasse and Jupiter (Fig. 4 and Table 5). The list of the candidate genes within this locus was given in the 2018 annual report. However, errors were found in that list while working on continuation of this project this year, for which a corrected list is presented here as Table 6.

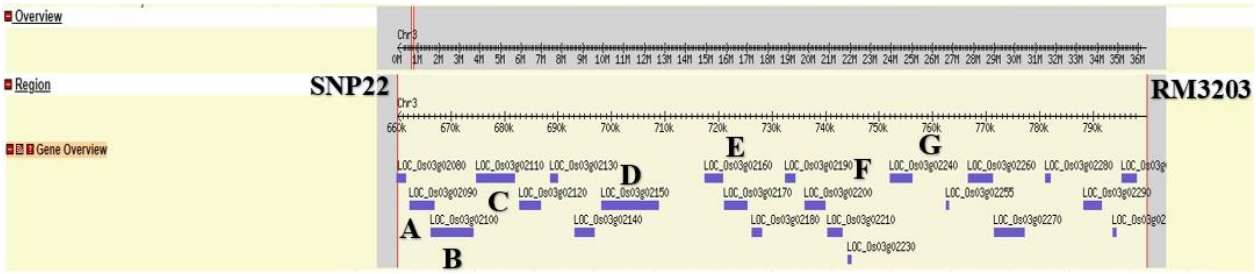


Figure 4. The major QTL and genes detected from Jupiter x Trenasse RILs population flanked by markers SNP225 (664,982bp) and RM3203 (796,772bp).

Table 5. Gene IDs and primers for genotyping that correspond to the marker locations in Figure 4.

	Gene ID		Primers for Genotyping
A	LOC_Os03g02090	F	GCGAAGGGTTTCTTACCGAT
		R	GTACTACCGATGGTAAGTTTC
B	LOC_Os03g02100	F	TGGGTTCCAGGAGTCGACCAT
		R	AGTACGAATGATGGGTTAGC
C	LOC_Os03g02110	F	CATTAGGATCTCTTCAGGAT
		R	AGTCGTCAATTTCCAGACAG
D	LOC_Os03g02150	F	CTCTAAGTTCTCCCGATTA
		R	AACCAGACCATTCAACATG
E	LOC_Os03g02160	F	TCCTGCCTCTGGAGTTGAGT
		R	GGGGCTAGAGCATGTGGATA
		F	CATGCCGCAGACAAGTTCTA
		R	TACAGGGCTGGGAACATCTC
		F	TCCTGCCTCTGGAGTTGAGT
		R	GGGGCTAGAGCATGTGGATA
		F	GGGAACACCAAGAACTGGAA
		R	GATCTCGACGATCCACCAGT
F	LOC_Os03g02200	F	GCTGACCGTGATGGAAAAAT
		R	CACATCAGCTCCTCCAATGA
G	LOC_Os03g02240	F	CTCTCTGGGAGGACATCTCG
		R	TAGGGGCATGTCTTGGAGTC

Table 6. Genes found in the major QTL detected from Jupiter x Trenasse RILs flanked by markers SNP225 and RM3203.

Gene ID	Start	End	Putative Function
LOC_Os03g02090	662280	666761	expressed protein
LOC_Os03g02100	666221	674058	valyl-tRNA synthetase, putative, expressed
LOC_Os03g02110	674687	681881	WD domain, G-beta repeat domain containing protein, expressed
LOC_Os03g02120	682780	686714	transposon protein, putative, Mariner sub-class, expressed
LOC_Os03g02130	688570	689879	hypothetical protein
LOC_Os03g02140	693070	696825	transposon protein, putative, unclassified, expressed
LOC_Os03g02150	698193	708134	adapitin protein, putative, expressed
LOC_Os03g02160	717447	720837	zinc finger C-x8-C-x5-C-x3-H type family protein, expressed
LOC_Os03g02170	721113	725227	transmembrane and coiled-coil domain-containing protein 4, putative, expressed
LOC_Os03g02180	726213	728004	cytochrome P450, putative, expressed
LOC_Os03g02190	732486	734247	protein kinase domain containing protein, expressed
LOC_Os03g02200	736183	739882	thymidine kinase, putative, expressed
LOC_Os03g02210	740381	743152	expressed protein
LOC_Os03g02230	744212	744808	expressed protein
LOC_Os03g02240	752024	756170	AT-GTL1, putative, expressed
LOC_Os03g02255	762584	763013	expressed protein
LOC_Os03g02260	766648	771264	DnaK family protein, putative, expressed
LOC_Os03g02270	771440	777098	expressed protein
LOC_Os03g02280	781076	781955	DUF584 domain containing protein, putative, expressed
LOC_Os03g02290	788208	791596	kinesin motor domain containing protein, putative, expressed
LOC_Os03g02300	793649	794329	expressed protein
LOC_Os03g02310	795364	798116	RNA binding protein, putative, expressed

Disease-Resistant Lines

New lines of disease-resistant rice have been selected from various sources of rice germplasm. Germplasm lines have been primarily screened for disease resistance to BPB or SB in the greenhouse, and further tested in the field to confirm the disease resistance and for testing the cross resistance to the other diseases. In the 2019 growing season, twenty lines were tested in the field to confirm their disease resistance to SB (Fig. 5) and BPB (Fig. 6), of which ten lines were finally selected and transferred to Dr. Famoso's laboratory at the H. Rouse Caffey Rice Research Station for variety development (Table 7).

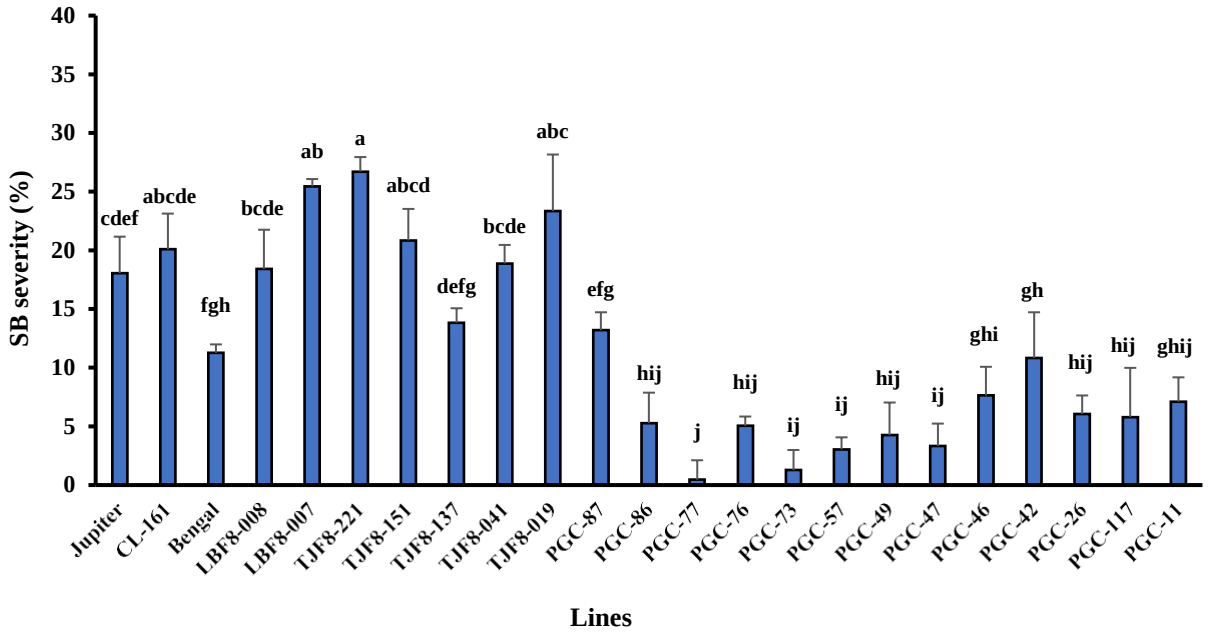


Figure 5. Sheath blight resistance of different breeding lines in the field. Disease severity on the rice plants was rated based on the percentage of symptomatic area in the sheaths. Each error bar indicates the standard error from four blocks/replications. The letters above individual columns indicate significant differences with $P < 0.05$ according to Fisher's LSD.

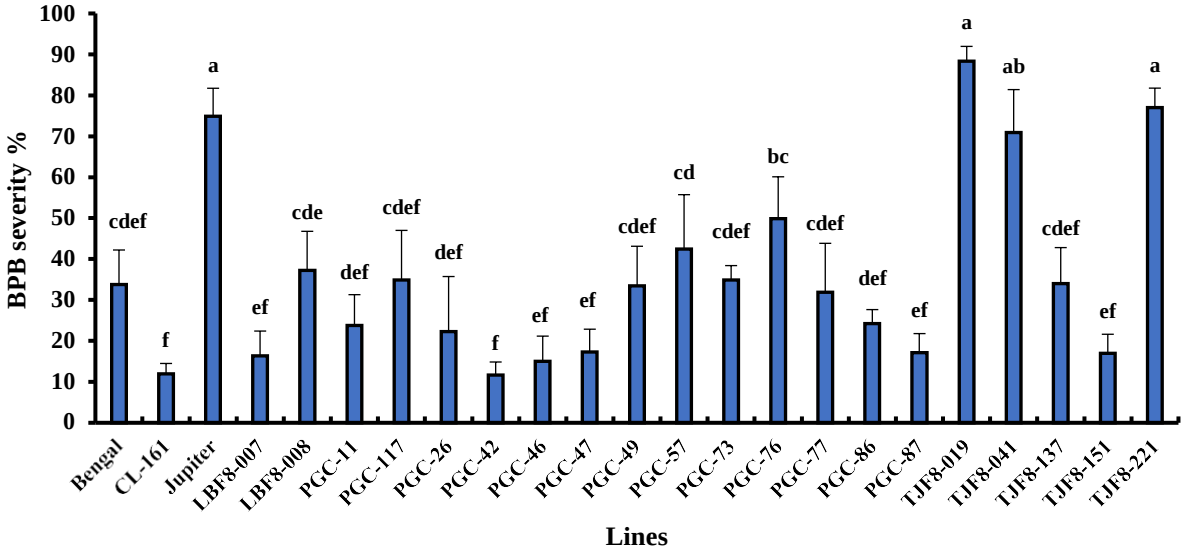


Figure 6. Bacterial panicle blight resistance of different breeding lines in the field. Disease severity of BPB was evaluated in the field. *Burkholderia glumae* 336gr-1 was inoculated at the tillering stage of each breeding line by wounding the plants with a metal brush dipped in a *B. glumae* suspension. Disease severity on the rice panicles was rated based on the percentage of symptomatic area on rice panicles. Each error bar indicates the standard error from four replications. The letters above individual columns indicate significant differences with $P < 0.05$ according to Fisher's LSD.

Table 7. Rice germplasm lines selected for further testing of agronomic traits.

Lines	Grain Types
PGC-77	long grain
PGC-73	medium grain
PGC- 49	medium grain
PGC-86	long grain
PGC-11	long grain
PGC-117	long grain
PGC-42	long grain
PGC-47	long grain
PGC-87	long grain
PGC-46	long grain

New Biotic and Abiotic Materials for Disease Management of BPB and SB

More than 100 bacterial strains isolated from various parts of rice plants have been identified as potential biological control agents for BPB and SB. Field and greenhouse tests have been conducted for multiple years to evaluate the efficacy of these bacterial agents to suppress major rice diseases, including SB, BPB, and blast. Abiotic materials, including ascorbic acid, chitosan, and ZnO, have been identified as potential alternative measures to manage BPB and SB. In 2019, field trials conducted for this subject included: 1) combinational activity of bacterial agents and ascorbic acid on BPB, and 2) combinational activity of the bacterial agent, REB711, and the fungicide, Quadris, on SB.

Combinational activity of the bacterial agents, RRB1044 and RPBNT5, and ascorbic acid on BPB

Two bacterial agents (RRB1044 and RPBNT5) were initially chosen among the three bacterial agents based on their compatible interactions with each other. The three bacterial strains (RRB1044, RRB1047, and RPBNT5) were inoculated on LB agar and grown together as triplicates to determine the compatibility among them. The plates were incubated for two days at 30°C and observed to check the compatibility of the bacterial strains (Fig. 7).

Rice cultivars CL111 and Bengal were used to evaluate the efficacy of the two rice-associated antagonistic bacteria (RRB1044 and RPBNT5) and ascorbic acid in suppressing BPB in the field. Combinational activities among the three materials were also tested this year (Fig. 8).

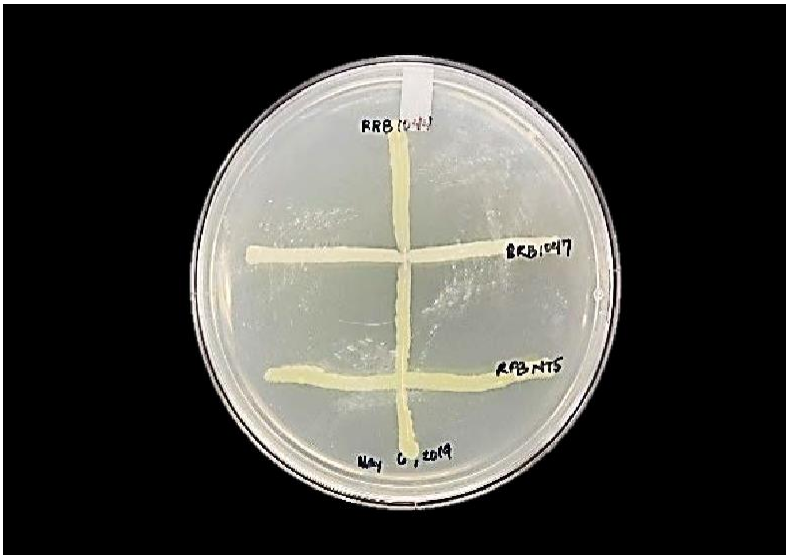


Figure 7. Compatible/Incompatible interactions among three bacterial isolates to be used as biocontrol agents (RRB1044, RRB1047, and RPBNT5). RRB1044 and RBPNT5 show a compatible relationship on the LB agar plate, while RRB1044 and RRB1047 exhibit an incompatible relationship.

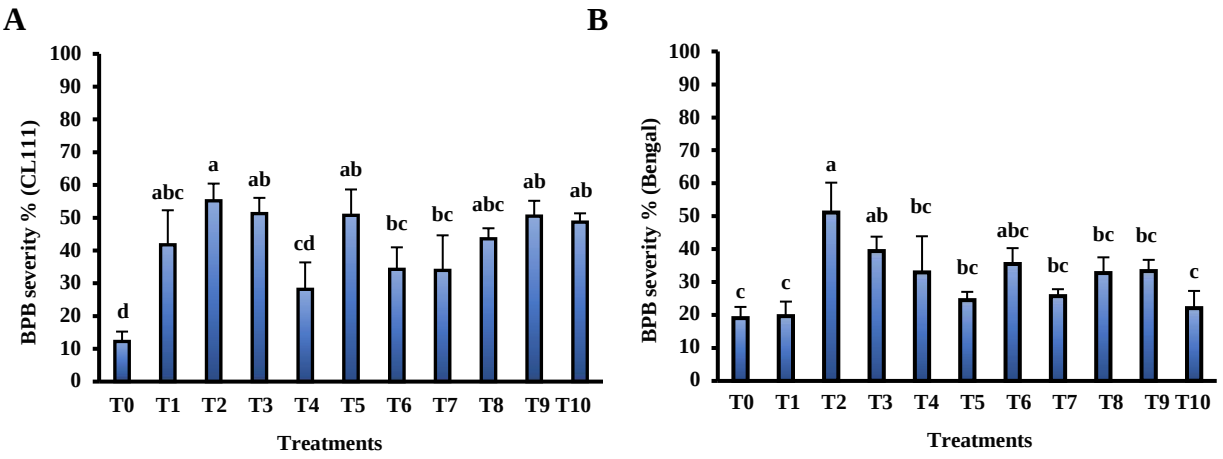


Figure 8. Disease suppression activities of the bacterial agents, RRB1044 and RPBNT5, and ascorbic acid on BPB in the field trial in 2019. (A) The effects of treatments on cv. CL111. (B) The effects of treatments on cv. Bengal. For (A), *Burkholderia glumae* 336gr-1 was inoculated at the tillering stage of rice plants by wounding the plants with a metal brush dipped in a *B. glumae* suspension. For (B), the same pathogen strain was inoculated at the flowering stage by spraying a *B. glumae* suspension. The treatments were as follows: **T0** - No pathogen/no treatment/no wounding or spraying, **T1** - No pathogen/no treatment/wounded or sprayed with water, **T2** - Pathogen/no treatment, **T3** - Pathogen/ascorbic acid (AA) (100 µM), **T4** - Pathogen/AA (200 µM), **T5** - Pathogen/B1 (RRB 1044), **T6** - Pathogen/B2 (RPBNT5), **T7** - Pathogen/B1 + B2, **T 8** - Pathogen/AA (100 µM) + B1, **T9** - Pathogen/AA (100 µM) + B2, and **T10** - Pathogen/AA (100 µM) + B1 + B2. Disease severity on the rice panicles was rated based on the percentage of symptomatic area on panicles. Each error bar indicates standard error from four replications. The letters above individual columns indicate significant differences with $P < 0.05$ according to Fisher's LSD.

Result showed that in both cultivars regardless of the type of inoculation method, T4 (ascorbic acid, 200 µM) was able to suppress BPB consistently. However, effects of the bacterial agents were not consistent between the two sets of trials in different varieties with different inoculation methods.

Combinational activity of the bacterial agent, REB711, and the fungicide, Quadris, on SB

The efficacy of the bacterial agent REB711 to suppress SB was evaluated in combination with various concentrations of the fungicide, Quadris. Unlike the data obtained in previous years, REB711 did not show any significant disease suppression activity (Fig. 9). This bacterial agent did not show any significant additive effect on a lower concentration of Quadris in this year's trial (Fig. 9). A proposed action on this problem is to determine the optimal culture condition for this bacterium to express its antagonistic trait against the SB pathogen.

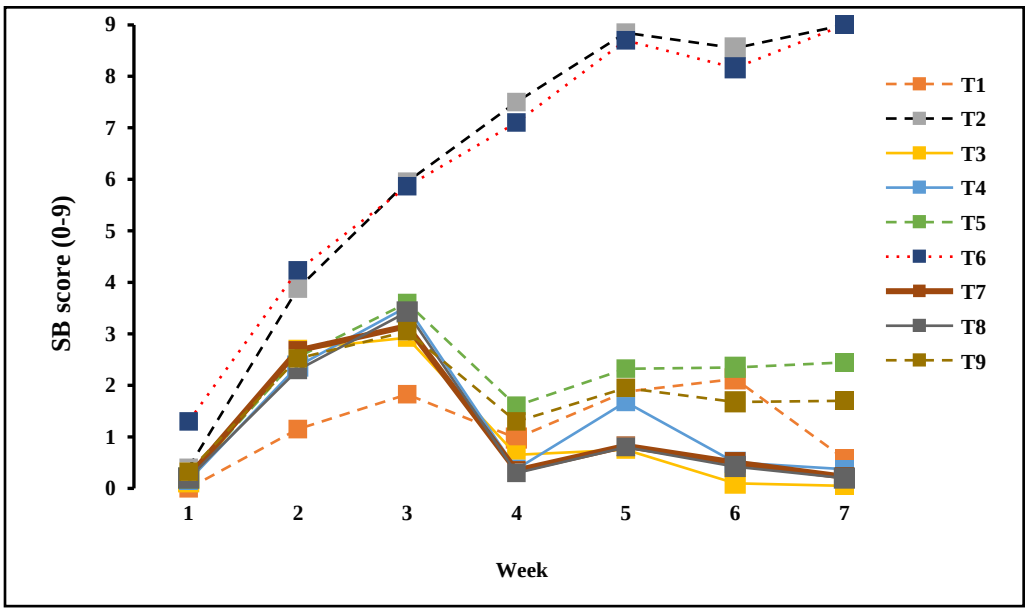


Figure 9. Disease suppression activities of REB711 in combinational treatments with Quadris fungicide on SB in the field trial in 2019. This trial was conducted with cv. CL111. The treatments were as follows: **T1** - No pathogen/no treatment, **T2** - Pathogen/no treatment, **T3** - Pathogen/Fungicide (FC) (1X, 12 oz/A), **T4** - Pathogen/FC (0.5X), **T5** - Pathogen/FC (0.1X), **T6** - Pathogen/B1 (REB711), **T7** - Pathogen/B1 + FC (1X), **T8** - Pathogen/B1 + FC (0.5X), **T9** - Pathogen/B1 + FC (0.1X). Disease severity on the rice plants was rated with a 0-9 scale of the Standard Evaluation System for rice; 0 - No incidence, 1 - <1% sheath area affected, 3 - 1-5% sheath area affected, 5 - 6-25% sheath area affected, 7 - 26-50% sheath area affected, and 9 - 51-100% sheath area affected. Each error bar indicates standard error from four blocks/replications. The letters above individual columns indicate significant differences with $P < 0.05$ according to Fisher's LSD.

RICE INSECTS RESEARCH

EVALUATION OF COMBINATIONS OF SEED TREATMENTS FOR CONTROL OF THE RICE PEST COMPLEX

B.E. Wilson, J.M. Villegas, and K.J. Landry

Seed treatments, including insecticides and fungicides, have become widely used for control of early-season insects and pathogens in drill-seeded rice. The spectrum of pests controlled differs among active ingredients. Greater utilization of combinations of seed treatments for control of multiple pests and diseases has increased input costs. Insecticidal and fungicidal seed treatments were evaluated for control of early-season pathogens, rice water weevil control, and stem borers in early- and late-planted field trials at the H. Rouse Caffey Rice Research Station during the 2019 growing season.

Treatments evaluated included Dermacor X-100 (chlorantraniliprole), Cruiser 5FS (thiamethoxam), CruiserMaxx (thiamethoxam + three fungicides), and Fortenza (cyantraniliprole) in addition to fungicide-only and non-treated control treatments. Treatments were applied to seed of CL153 prior to planting. The experiments utilized a randomized block design with four replications and 18-ft plots. Planting date was March 22 and May 2, 2019, for the early- and late-planted trials, respectively. Plant stand counts were made on May 3 (early planted) and June 11 (late). Soil cores were taken on June 14 and 21 (early) and July 17 and 23 (late), and rice water weevil infestations were recorded. Stem borer infestations were measured by recording the total number of whiteheads in each plot on July 18 and Aug. 26 for early- and late-planted trials, respectively. Early-planted plots were harvested Aug. 12, and late-planted plots were harvested on Sept. 11. Data from early- and late-planted trials were analyzed separately with generalized linear mixed models.

No differences in plant stands were detected in either trial ($P > 0.05$). In the early-planted trial, differences in rice water weevil density were detected at both the first ($F = 26.63$; df = 9, 30; $P < 0.001$) and second core dates ($F = 19.60$; df = 9, 30; $P < 0.001$). Treatments containing Dermacor X-100 (alone or in combination) along with Fortenza and Cruiser combinations provided the greatest level of control (Figure 1A). Differences in weevil density were also detected among treatments at both the first ($F = 10.08$; df = 9, 30; $P < 0.001$) and second ($F = 9.15$; df = 9, 30; $P < 0.001$) core dates in the late-planted trial. Treatments containing Dermacor X-100 or Fortenza (alone or in combination) provided the greatest level of control (Figure 1B). Stem borer infestations as measured by whitehead density differed among treatments in the late-planted trial ($F = 5.74$; df = 9, 30; $P < 0.001$) only. Whitehead density was lower in plots which received Dermacor X-100 (alone or in combination) than in fungicide only or Cruiser-treated plots (Figure 2B). Yield differed among treatments only in the late-planted trial ($F = 13.19$; df = 9, 29; $P < 0.001$). Plots treated with Dermacor X-100 or Fortenza (alone or in combination) improved yields over plots which received no insecticide and plots which received Cruiser alone.

These results demonstrate the superior control of rice water weevil by Fortenza and Dermacor X-100 over Cruiser treatments alone. Only Dermacor X-100 effectively reduced stem borer infestations, but this did not improve yields over Fortenza treatments. The addition of fungicidal seed treatments did not improve early-season plant populations or rice yields in either trial, suggesting the economic return on these products may not be sufficient to justify costs under natural pathogen conditions. Similarly, the addition of Cruiser to Dermacor X-100-treated seed did not improve pest control or yields in either trial. Applying Cruiser to Fortenza-treated seed improved weevil control but did not result in increased yields.

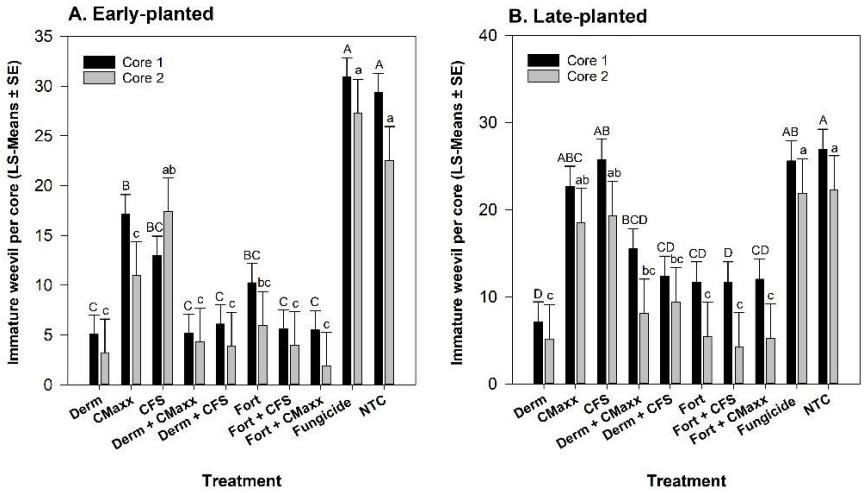


Figure 1. Rice water weevil infestations as affected by seed treatments in early- (A) and late-planted (B) field trials, 2019.

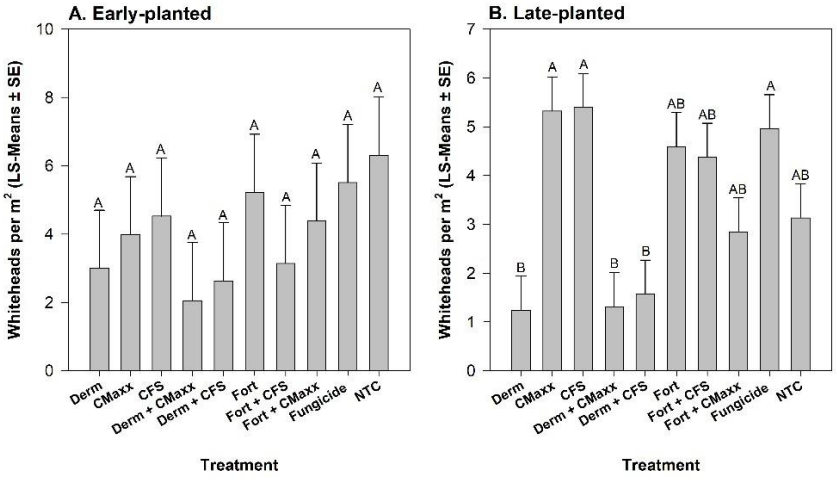


Figure 2. Stem borer infestations as affected by seed treatments in early- (A) and late-planted (B) field trials, 2019.

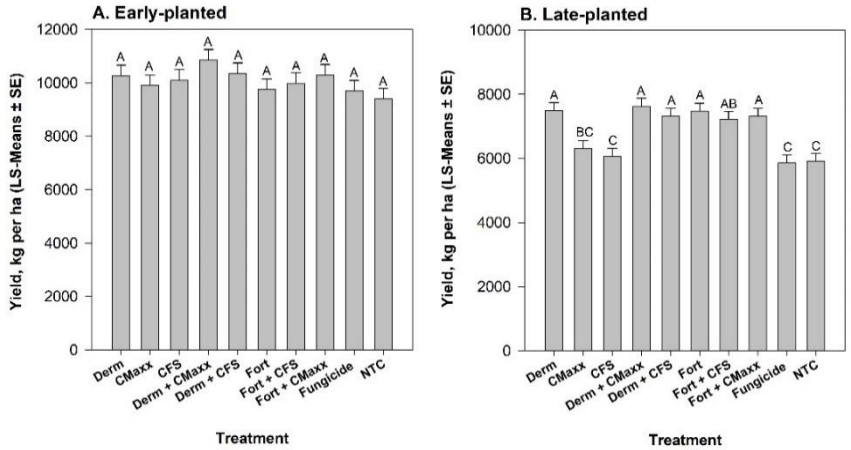


Figure 3. Rice yield as affected by seed treatments in early- (A) and late-planted (B) field trials, 2019.

COMPARISON OF INSECT PEST SUSCEPTIBILITY AMONG COMMERCIAL AND ADVANCED EXPERIMENTAL RICE LINES

B.E. Wilson, J.M. Villegas, and K.J. Landry

Rice varieties differ in susceptibility to key insect pests, including the rice water weevil and stem borers. Weevil and stem borer infestations were investigated among commercial varieties and experimental lines being considered for release. Jefferson was included because this variety has demonstrated some resistance to both pests in previous studies. Jupiter is known to be highly susceptible to both pests. Varieties were planted in 18-ft plots on May 28, 2019, in a randomized complete block design with five replications. Weevil infestations were measured by taking three soil cores per plot on Aug. 14 and 21. Whiteheads caused by stem borers were recorded on Sept. 7. Plots were harvested and yield data recorded on Sept. 23. All data was analyzed with generalized linear mixed models.

Weevil infestations differed among varieties at the first core date ($F = 4.60$; df = 7,30; $P = 0.001$), but differences were not detected at the second date. Infestations were greater in Jupiter than in all other lines evaluated (Figure 1A). Differences in the number of whiteheads were detected among varieties ($F = 47.19$; df = 7,30; $P < 0.001$). Stem borer infestations in PVL02 and 1602097 (released as CLL17) were lower than in all other varieties tested (Figure 1B). The susceptible control, Jupiter, had more than a 4-fold greater whitehead density than other varieties examined. Differences in rice yield were detected among varieties ($F = 23.06$; df = 7,30; $P < 0.001$). LA2097 yielded better than other lines tested under moderate weevil pressure (Figure 1C).

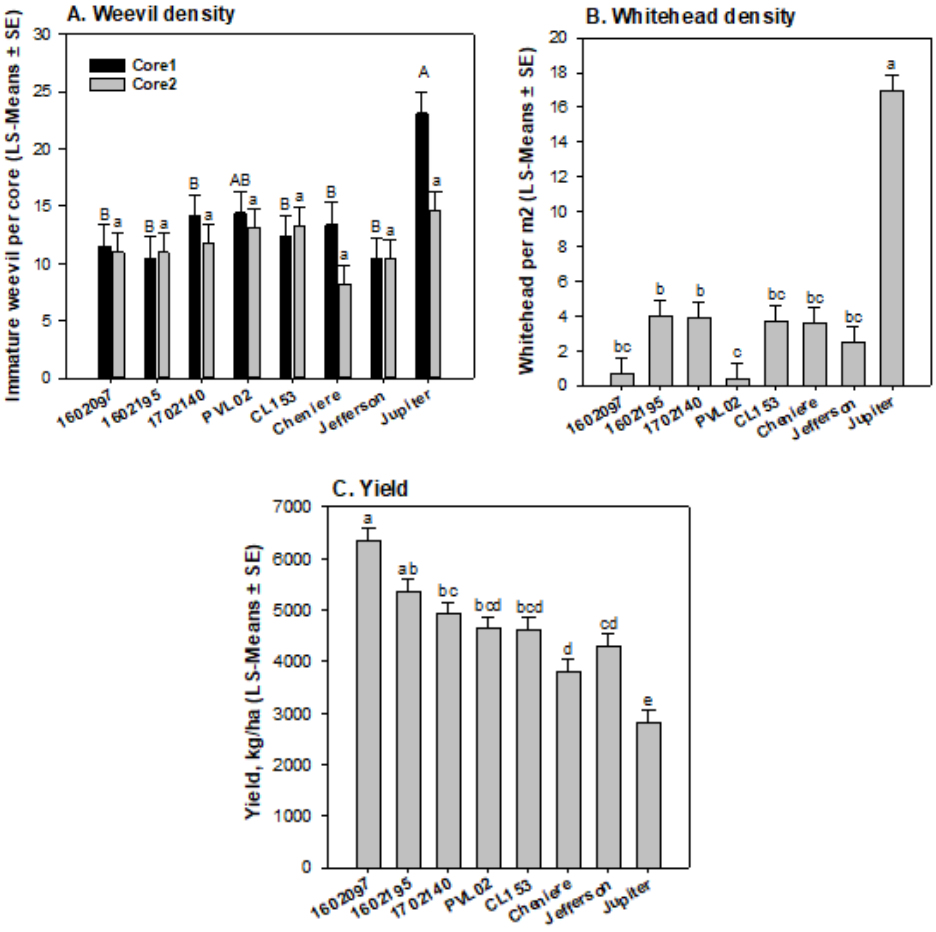


Figure 1. Comparison of insect pest susceptibility among commercial and advanced experimental rice lines (A) weevil density, (B) whitehead density, and (C) yield.

EVALUATION OF RICE STINK BUG, *OEBALUS PUGNAX*, GROWTH AND DEVELOPMENT ON DIFFERENT RICE CULTIVARS

S. Bhavanam and M.J. Stout

The rice stink bug (RSB), *Oebalus pugnax* F. (Hemiptera: Pentatomidae), is a serious pest of rice, *Oryza sativa* L., in the southern United States. Rice stink bugs move into rice fields when plants are at heading. Rice stink bugs feed on rice panicles during flowering and kernel development stages resulting in the reduction of rough and head rice yields and grain quality. Because of the brief period that this insect attacks rice, management tactics mainly consist of the application of chemical insecticides. However, heavy reliance on insecticides may lead to development of resistance in RSB. Two laboratory studies were conducted to evaluate the growth, development, and survival of RSB to determine the resistance of rice cultivars to RSB.

In the first study, two experimental rice lines (cy497-16, cy009-15) that are high in protein and Cypress (parent) as a check were used. All the rice lines/cultivars were grown in a greenhouse. Panicles were tagged at anthesis, and panicles that were in milk and soft dough stages were used for the study. For each cultivar, a panicle was cut with at least 10 cm of the stem and placed in a plastic box with the stem inserted into a floral tube with water. Following this, each panicle was infested with six second-instar nymphs, and the plastic box was covered with a lid. Nymphs from a single egg mass were split among the three cultivars for each replicate, with eight replicates performed. The panicles were changed every third day until all surviving nymphs molted to adults. For each replicate of each cultivar, nymphal survival and development time were recorded. After emergence, adults were sexed and chilled for 5 minutes at 4°C, and their weights were recorded with an analytical balance. Data on development time, survival, and adult male and female weights were analyzed using a randomized complete block design with variety as the fixed effect and egg mass as the block.

In the second study, four rice varieties were tested, which included two long-grain varieties, Cheniere and CL151; Jazzman, an aromatic long-grain variety, and Jupiter, a medium-grain variety. A procedure identical to that described above was followed, and five replicates were established.

Nymphal development time, survival to adult stage, and adult male and female weights did not differ significantly among the rice lines high in protein and Cypress (Table 1). In the second study, no differences in nymphal development time, survival to adult stage, adult male and female weights were found among the 4 tested rice cultivars (Table 2).

Table 1. Nymphal developmental time, survival to adult stage, and adult male and female weights of rice stink bug, *Oebalus pugnax*, reared on different rice cultivars.

Rice Cultivar	Development Time (days)	Percent Survival	Adult Weight (mg) Male	Adult Wight (mg) Female
cy009-15	18.3 ± 0.24	77.78 ± 7.4	31.35 ± 0.76	42.38 ± 1.31
cy497-16	18.6 ± 0.13	75.93 ± 6.3	31.1 ± 0.74	40.91 ± 0.59
Cypress	18.7 ± 0.19	74.07 ± 9.3	31.34 ± 0.63	40.22 ± 0.81

Table 2. Nymphal developmental time, survival to adult stage, and adult male and female weights of rice stink bug, *Oebalus pugnax*, reared on different rice cultivars.

Rice Cultivar	Development Time (days)	Percent Survival	Adult Weight (mg) Male	Adult Wight (mg) Female
Cheniere	17.6 ± 0.31	70.00 ± 9.7	35.12 ± 1.33	43.53 ± 1.54
CL151	18.2 ± 0.44	83.33 ± 9.1	35.13 ± 0.70	44.94 ± 1.12
Jazzman	18.1 ± 0.73	56.67 ± 10.0	34.46 ± 1.01	47.49 ± 1.42
Jupiter	18.1 ± 0.20	70.00 ± 12.2	37.97 ± 2.27	44.79 ± 3.57

EFFICACY OF FOLIAR APPLIED INSECTICIDES AGAINST STEMBORERS

J. Villegas, B. Wilson, and K. Landry

The sugarcane borer, Mexican rice borer, and rice stalk borer are economically important stem boring pests of rice in Louisiana. Injury to rice stems due to feeding of stemborer larvae can result in blanked panicles or "whiteheads", representing 100 percent yield loss for each impacted panicle. The efficacy of foliar applied insecticides against stemborer infestations in rice was evaluated at LSU AgCenter H. Rouse Caffey Rice Research Station in Crowley, Louisiana. Seeds of Clearfield long-grain rice variety 'CL153' were drill-planted at a seeding rate of 70 lb/A on May 17, 2019. Plots were 4.1 ft wide and 18 ft long with 7 rows at 7-inch spacing. Field plots were surface irrigated as necessary to facilitate plant emergence. Complete fertilizer (8-24-24) was applied on June 18, 2019 at 250 lb/A (20 lb N/A, 60 lb P/A, and 60 lb K/A). Whereas, nitrogen was applied in the form of urea (46-0-0) at 140 lb N/A on July 1, 2019. Permanent flood was established two days after urea application. The field was divided into two separate sections, where 25 plots received insecticide treatments at 22 days after permanent flood while the other 25 plots received treatments at 33 days after permanent flood. Four insecticide treatments , along with an untreated check, were assigned to plots following a randomized complete block design with 4 replications. Foliar applications of three rates of Prevathon® (AI: chlorantraniliprole), one rate of Warrior® (AI: λ-cyhalothrin) and an untreated check were made on July 25 and Aug. 5, 2019, respectively. Insecticide treatments were applied using a CO_2-pressurized backpack sprayer calibrated to deliver 15 gpa at 30 psi. The sprayer was equipped with two Teejet TP11001 nozzles at 19-inch spacing. Stem borer damage was assessed by recording the total number of whiteheads in each plot at 100 percent heading. At grain maturity, entire plots were harvested using small-plot combine and grain weights were adjusted to 12 percent moisture to estimate yields. Whitehead and yield data were analyzed separately using a generalized linear mixed model (SAS, PROC GLIMMIX) with insecticide treatment as a fixed effect and block as a random effect. Means were separated using Tukey's HSD ($\alpha = 0.05$).

Prevathon® treatment significantly reduced the number of whiteheads/m^2 compared to untreated check and Warrior® when applied at 22 days after permanent flood ($F_{4, 16} = 49.95$; $P < 0.01$) and at 33 days after permanent flood ($F_{4, 16} = 11.40$; $P < 0.01$). Different rates of Prevathon® were similarly effective in reducing stemborer injury for both application timing (Table 1). On the other hand, no differences in yields were detected among treatments in either application timing (22 days: $F_{4, 16} = 0.97$; $P = 0.45$; 33 days: $F_{4, 16} = 0.5$; $P = 0.73$). Although stemborer injury could have had an impact on yields, the absence of differences on yields was possibly masked by rice water weevils, which were not controlled in these trials.

Table 1. Stemborer injury (whiteheads) and yield as affected by insecticide treatments, Crowley, LA, 2019.

Treatment	Rate (fl oz/A)	Whiteheads/m^2		Yield (kg/ha)	
		22 DAPF*	33 DAPF	22 DAPF	33 DAPF
Prevathon®	10	1.6b	1.3b	6595a	5689a
Prevathon®	14	1.8b	1.4b	6576a	6152a
Prevathon®	18	1.0b	1.1b	6767a	5733a
Warrior®	1.9	6.1a	6.1a	7161a	6043a
Untreated Check	N/A	6.9a	8.8a	6363a	6178a
P>F		<0.01	<0.01	0.45	0.73

*DAPF – Days After Permanent Flood

Means within a column followed by the same letter are not significantly different (P>0.05, Tukey's HSD)

EXPANSION OF INVASIVE APPLE SNAILS INTO RICE PRODUCTION REGIONS IN SOUTHWEST LOUISIANA

J.M. Lucero and B.E. Wilson

The apple snail, *Pomacea maculata* (Caenogastropoda: Ampullariidae), is a global invasive rice pest. Over the last decade, the apple snail has established itself in Louisiana but only lately has it begun infesting rice farms in the southwestern region. Adult apple snails have large, brown-green or gold shells, and they lay large, pink egg masses (Figure 1). Their fast-reproductive rate and voracious appetite allow the snails to reach high population densities in natural bodies of water as well as rice and crawfish ponds. Due to the potential of apple snails becoming pests, it is important to determine the locality and abundance of apple snails in Louisiana and study their expansion into rice production systems. To document current apple snail distribution and future range expansion, we set up 47 sites in rice and crawfish ponds surrounding the Mermentau River, Vermilion River, and Bayou Lacassine. PVC pipes are placed at each site to assist in monitoring by providing structures for egg masses to be laid on. Sites are monitored monthly, and egg mass and adult sightings are recorded. Spatial analysis with ArcGIS software is being used to map current data and help extrapolate future expansion based on current data. Environmental factors, such as temperature and water availability, were also recorded (Figure 2). Since field research has begun recently in September 2019, apple snail presence has been confirmed by adult or egg mass sightings at only five sites so far in Iberia, Vermilion, Jefferson Davis, and Lafayette parishes. As monitoring continues and sampling sites expand, it is expected that the presence and abundance of apple snails will be better understood. Future studies will investigate the types of vegetation that make these environments suitable for the snails' establishment. Please contact your AgCenter extension office to report expansion of apple snails into new rice and crawfish ponds to assist this research.

Figure 1. Adult apple snails mating in a rice field (*left*), and pink egg mass on a rice plant (*right*).

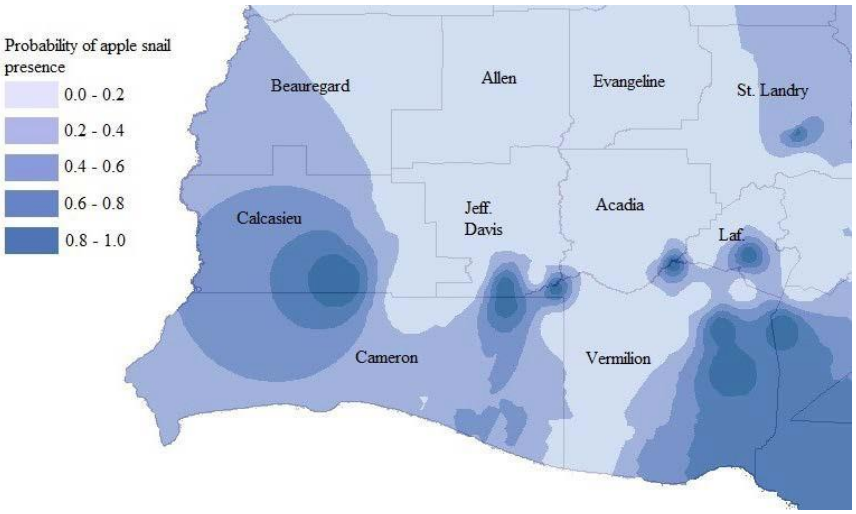


Figure 2. Estimated distribution of apple snails in rice and crawfish production regions of southwest Louisiana as of 2019. Map based on monitoring of 47 rice and crawfish sites in addition to detections provided by the USGS.

ASSESSING THE FEASIBILITY OF USING REMOTE SENSING TO PREDICT POPULATIONS OF RICE WATER WEEVIL

M.M. Mulcahy, B.E. Wilson, J.M. Villegas, K. Landry, R. Diaz, and T.E. Reagan

The aim of this study was to assess the effectiveness of remote sensing, using digital aerial imagery, to predict the distribution of *Lissorhoptrus oryzophilus*, the rice water weevil (RWW), in controlled small-plot experiments.

Using a randomized block design, weevils were excluded from certain rice plots and allowed to feed on others using different insecticidal seed treatment regimes. Each plot was subjected to one of five different treatments with five replicates per treatment (25 plots in total). Research has shown that the seed treatments, chlorantraniliprole (Dermacor X-100) and thiamethoxam (Cruiser 5SF), act on different life stages of RWW. Differential applications of these insecticides were used to manipulate RWW populations. The upper label rate of chlorantraniliprole (80 g AI ha-1) was used to achieve up to 80% weevil control (Figure 1). The chlorantraniliprole-treated plots were considered low-RWW pressure plots. A high rate (186.8 g AI ha-1 — recommended rate), medium rate (93.4 g AI ha-1 — half the recommended rate), and low rate (46.7 g AI ha-1 — quarter of the recommended rate) of thiamethoxam was used to control adult weevils but allowed populations to bounce back after the 5- to 6-leaf stage. Thus, plots treated with thiamethoxam were used to simulate different levels of RWW feeding pressure. Finally, untreated control plots were used to simulate high-RWW pressure (Figure 1).

A DJI Matrice drone, equipped with a MicaSense RedEdge camera, was then used to capture images of rice plots exposed to the varying levels of RWW infestations. Ground weevil data was also taken, using three soil core samples per plot, to ensure the accuracy of the image analyses. Digital aerial images and ground data were collected every 10 days, starting 2 weeks after the permanent flood for a total of 4 sampling dates. The drone was flown at a height of 10 m, 30 m, and 60 m above the rice plots at a speed of 5 m/s with a 60% image overlap for every sample date. The captured images were stitched using Drone Deploy, and different diagnostic vegetation indices were calculated using QGIS by measuring the different bands of light reflected by each plot of rice. The various index output values for each plot were then correlated with corresponding yield values to determine whether remote sensing could predict RWW related yield loss.

The results reported here were analyzed using drone images collected 2 weeks after permanent flooding. Images taken at 30 m were analyzed to calculate the average visible atmospherically resistant index (VARI). The VARI output value (also called the vegetation fraction) was then converted to a percentage, which described the amount of green cover per plot. An ANOVA and post-hoc Tukey analyses were used to determine whether there were any significant differences between plots.

Initial results indicate that digital aerial imagery can be used to differentiate which experimental plots have high RWW infestations. Significant differences ($p < 0.05$) in percentage of green cover were detected between high-pressure and low-pressure plots. Non-treated plots had over 40% less green cover than plots protected with Dermacor X-100 (Figure 2). The VARI output was also highly correlated with rice yields ($R^2 = 0.845$) and may help us to better understand the impacts that RWW has on rice productivity (Figure 3). The ability to rapidly assess damage from such pests could greatly improve scouting tactics and potentially lead to precision targeted control tactics.

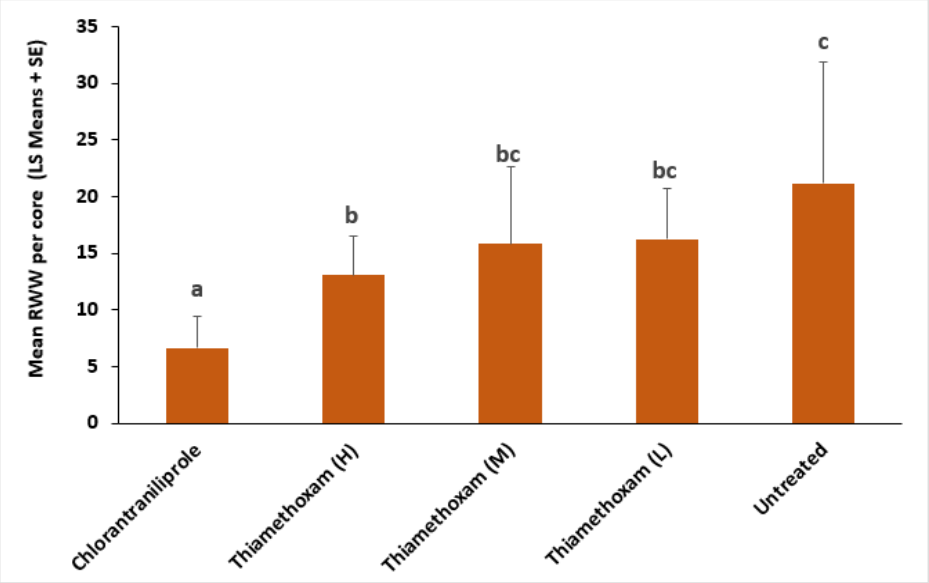


Figure 1: RWW infestations as affected by differential applications of insecticidal seed treatments. Letters located above each bar are used to denote statistical differences at an alpha level of 0.05. ($F = 10.44$, $P < 0.001$).

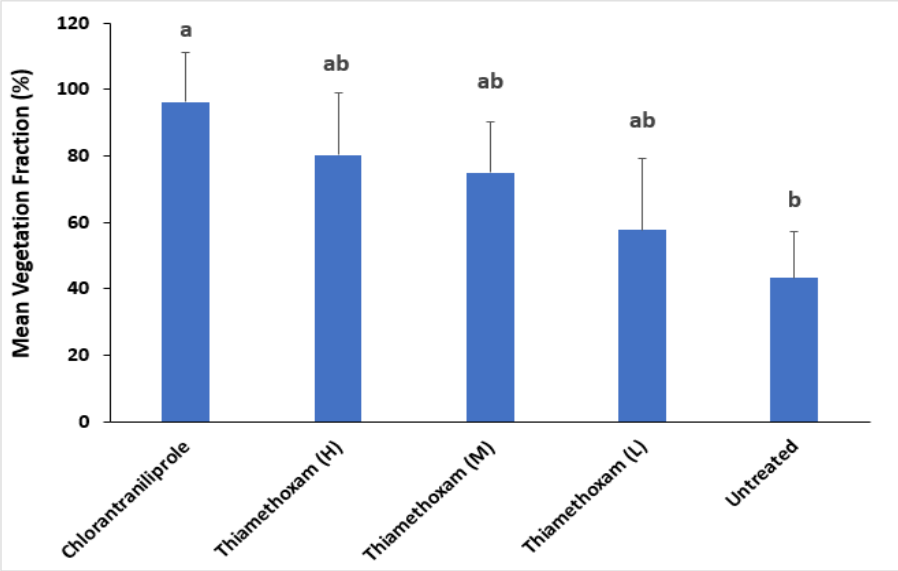


Figure 2: Percentage of green cover as affected by insecticidal seed treatments. Letters located above each bar are used to denote statistical differences at an alpha level of 0.05. ($F = 3.42$, $P = 0.276$).

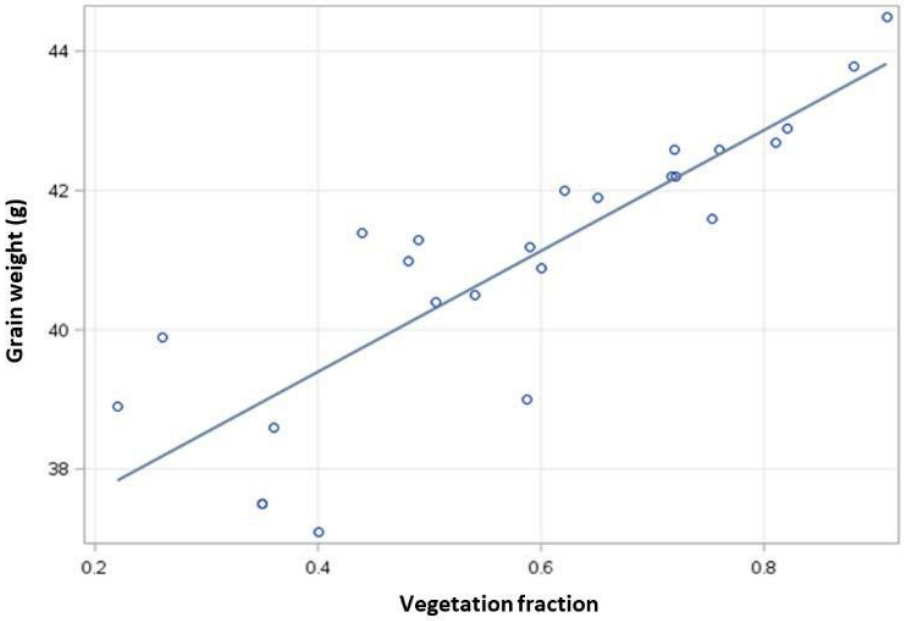


Figure 3: Linear regression model depicting the relationship between vegetation fraction and rice yield in grain weight. ($R^2 = 0.845$, $P < 0.001$).

WEED MANAGEMENT IN HERBICIDE-RESISTANT/TOLERANT AND CONVENTIONAL RICE

E.P. Webster, B.M. McKnight, S.Y. Rustom, Jr.,
L.C. Webster, D.C. Walker, and W.B. Greer

Research Summary to Date: Weed management studies were conducted at the H. Rouse Caffey Rice Research Station (HRCRRS), Northeast Research Station (NERS), and producer locations in Louisiana in 2019. Weed management in rice will continue to be more effective as new technologies and new herbicides become available.

Aquatic Weed Management with Loyant. Two studies were established to evaluate the activity of Loyant when applied either early or late postemergence on several aquatic weeds. The weeds evaluated were alligator weed, yellow nutsedge, ducksalad, creeping water primrose, pickerelweed, and barnyardgrass. Loyant at 16 oz/A, Grasp at 2.3 oz/A, and a mixture of Loyant plus Grasp were evaluated. In the early postemergence study, alligator weed control at 28 days after treatment was 97% with Loyant or Loyant plus Grasp. Biomass for the nontreated alligator weed was 5 times higher than the Loyant-treated alligator weed. Pickerelweed control increased when treated with Loyant plus Grasp, 90% control, compared with the Loyant or Grasp applied alone with 70 and 74% control, respectively. Biomass was 22 times higher in the nontreated compared with pickerelweed treated with Loyant plus Grasp. Loyant applied alone was the most effective for controlling ducksalad and resulted in the greatest reduction in biomass. Barnyardgrass and yellow nutsedge control were similar with 93 to 97% control, respectively, with no biomass recorded. Creeping water primrose control increased slightly when treated with Loyant plus Grasp compared to the two products applied alone. The increase in control resulted in a biomass reduction of 97% for Loyant plus Grasp compared with the nontreated. In the late postemergence study, weed control was similar to the early postemergence timing.

Loyant Impregnated on Urea Fertilizer for Aquatic Weed Management. Loyant was impregnated on 100 and 150 lb/A of urea and applied to several aquatic weeds under flooded conditions. Small weeds that were below the flood surface or no more than 3 to 4 inches above the flood were controlled with Loyant impregnated on urea at 100 or 150 lb/A. Ducksalad control was 98% when treated with the impregnated fertilizer compared with 99% control with Loyant applied at 16 oz/A in a spray. Pickerelweed and grassy arrowhead were 10 to 12 inches tall at the time of treatment. At 28 days after treatment, control was 87 to 97% for pickerelweed and 97 to 99% control of grassy arrowhead, regardless of Loyant applied on a fertilizer or in a spray. Indian jointvetch was 6 to 8 inches above the flood surface and control was greatly reduced with the impregnated fertilizer treatments compared with the sprayed Loyant. This research indicates impregnated fertilizer can be a treatment option when target weeds are small. The most important outcome of the impregnated fertilizer could be the reduction in off-site movement due to drift often observed with a sprayed Loyant treatment.

Provisia Rice Line HPHI2, PVL01, and PVL02. A study was conducted evaluating the tolerance of three Provisia rice lines, the original Indica line HPHI2, the first marketed line PVL01, and a new experimental line PVL02. Three rates/programs of Provisia were applied at the 2- to 3-leaf stage followed by a 4- to 5-leaf stage. The programs evaluated were a 1, 2, and 3 times the labeled rate. The three rates of Provisia were applied in two applications, 15.5 oz/A followed by 15.5 oz/A, 31 oz/A followed by 31 oz/A, and 46.5 oz/A followed by 46.5 oz/A. A nontreated was added for comparison. At 14 days after the 2- to 3-leaf timing, HPHI2 was injured 16, 36, and 49% as the rate of Provisia increased. The PVL01 was injured 10, 23, and 31%, and PVL02 was injured 6, 11, and 19%. At 28 days after the initial treatment, HPHI2, PVL01, and PVL02 treated with Provisia at 46.5 oz/A resulted in injury of 18, 21, and 11%, respectively. At 7 days after the 4- to 5-leaf timing, injury increased slightly; however, data indicates a rice plant with existing symptomology did not result in a significant increase of injury. By 21 days after the second Provisia application, no injury was observed. PVL02 yield was more consistent across Provisia rates and higher than HPHI2 and PVL01.

Evaluation of Provisia Rates on Red Rice and CLXL745. Provisia was applied at 3, 6, 9, 12, and 15 oz/A on red rice and CLXL745 in the 2- to 3-leaf stage and at panicle initiation to determine the rate needed to control red rice or CLXL745. At 14 days after the 2- to 3-leaf timing, 6, 9, 12, and 15 oz/A of Provisia controlled red rice 91 to 98%. At 28 days after treatment, regrowth occurred on red rice treated with 6, 9, and 12 oz/A with observed control of 74 to 79%; however, Provisia applied at 15 oz/A controlled red rice 90%. At 14 days after treatment, control of 2- to 3-leaf CLXL745 was above 90% when treated with 9, 12, and 15 oz/A. However, at 28 days after treatment, 15 oz/A was

needed to control CLXL745 above 90% when treated at the 2- to 3-leaf stage. CLXL745 treated at panicle initiation with 12 or 15 oz/A required 28 days after treatment to obtain at least 90% control. CLXL745 did not recover with the late-season application.

Rice Response to Group 15 Herbicides. A study was established at the HRCRRS and in NERS to evaluate the response of rice to Group 15 herbicides. The herbicides evaluated were Warrant (acetochlor) at 38 oz/A, Outlook (dimethenamid) at 18 oz/A, Dual (metolachlor) at 16 oz/A, Zidua (pyroxasulfone) at 2 oz/A, and pethoxamid at 24 oz/A. Each herbicide was applied as a preemergence, delayed preemergence, or postemergence at the 2- to 3-leaf stage. At 12 days after treatment, rice treated with a preemergence application was injured 53 to 97%, and the highest injury was observed with rice treated with Outlook. For the delayed preemergence treatment, injury was 42 to 65% for rice treated with Warrant, Dual, Zidua, and pethoxamid; however, the delayed preemergence application of Outlook injured rice 90%. By delaying the Group 15 herbicides to a postemergence application, rice injury was 20 to 57%. Rice yield reflected the injury observed across all application timings.

Evaluation of Experimental Herbicides. This project continues to evaluate experimental herbicides. In 2019, this project evaluated six experimental herbicides. The experimental herbicides included several numbered compounds along with several that are close to receiving a full federal label. The experimental herbicides have potential in weed management programs in Louisiana.

FOUNDATION SEED RICE PROGRAM

R.E. Zaunbrecher

INTRODUCTION

Foundation seed rice has been produced by the LSU AgCenter's H. Rouse Caffey Rice Research Station (HRCRRS) for distribution to Louisiana farmers since 1949. The HRCRRS's seed rice program was instituted in response to the critical shortage of pure planting stocks that existed during and after World War II. Since its inception, the program has made available to Louisiana growers more than 172,200 cwt. of pedigreed stock of more than 50 rice varieties.

Concurrent with the distribution of pure seed by the HRCRRS, an industry was developed in Louisiana composed of independent seed dealers for farmers to conduct trade in registered and certified classes of pedigreed rice.

Foundation seed rice, the planting stock from which registered and certified seed are produced, is the farmer's link with the work of the plant breeder. It is the product of hybridization and successive generations of selection and testing to establish its value as crop seed and eventually as a commercial commodity. For this reason, foundation seed and the basic stocks from which it is produced must be grown and conditioned in a manner that will ensure that viability is maintained and that it be genetically pure and free from mechanical mixtures or contamination by noxious weeds.

Through the HRCRRS's seed program, Louisiana farmers may obtain seed rice of improved varieties developed through the HRCRRS's breeding program and of established commercial varieties originating either at Crowley or at research centers in neighboring states.

To fulfill the objectives of the seed program, the HRCRRS uses the personnel, land, machinery, and other facilities needed to plant, harvest, condition, and store its annual seed rice crop. The production of breeder seed, planting stock for the foundation fields, and the maintenance of purity in commercial rice varieties are functions of the seed program. Breeder seed is sometimes grown within fields of foundation rice or in a special nursery set aside for propagating the HRCRRS's seed stocks. The nursery also serves as a site for evaluating, purifying, and increasing selections from the HRCRRS's breeding program that show promise as new varieties.

The distribution of pedigreed seed rice produced by the HRCRRS is done according to a formula adopted by the Louisiana Seed Rice Growers Association. For each rice-producing parish, the amount of seed allotted is determined by the percentage of the state's total rice acreage grown in that parish during the previous crop year.

Personnel from the Louisiana Cooperative Extension Service, in cooperation with parish committees of the Seed Rice Growers Association, assist in the allocation of foundation seed rice. It is at the parish committee level that the allocation of seed to individual growers is decided. The county agents receive applications for seed rice from growers and handle information and publicity for the pure seed program.

In this state, the official seed-certifying agency for all crops is the Louisiana Department of Agriculture and Forestry (LDAF). The rules and regulations pertaining to the certification of agricultural seeds are part of the Louisiana Seed Law. They are formulated by the Louisiana Seed Commission and enforced by the Agronomic Programs Division of the LDAF. Personnel of the Agronomic Programs Division, operating from district offices, conduct field inspections of growing rice and sampling of bagged rice for laboratory analyses, which consist of purity determinations and germination tests.

PRODUCTION PRACTICES

Each year, the HRCRRS devotes approximately 80 acres of land to the production of foundation seed rice. To eliminate noxious weeds, especially red rice, that can disqualify rice from certification, the fields are fallowed for a 2-year period before planting. This also enables the fields to meet the crop history requirements specified in the seed rice regulations.

Seedbed preparation of foundation fields is done in the fall. Burndown herbicides are applied prior to seeding. The foundation fields are planted into a stale seedbed by means of a 24-runner minimum tillage drill. The breeder stock is planted at rates that may vary from 10 to 100 lb/A. The rice receives a preflood application of urea in which the rate of

nitrogen (N) may vary from 45 to 90 lb/A, as well as basic fertilizer applications based on soil test recommendations. A midseason application of N in rates from 21 to 55 lb/A is also applied.

Seedling grasses and weeds are controlled by means of commercially available herbicides applied by airplane or ground rig. Similarly, aerial applications of insecticides are used to protect the fields from outbreaks of harmful insects.

Roguing of the rice fields for the removal of off-types, varietal mixtures, and noxious weeds begins at the onset of heading and continues until harvest. During this interval, the headed rice is inspected by personnel of the Agronomic Programs Division to determine whether it meets minimum field standards of the certifying agency.

The rice is harvested with a conventional combine and dried in the HRCRRS's eight 21-foot diameter grain bins, equipped with vented drying floors and centrifugal fans with temperature-controlled heaters. The rice is dried to a moisture level of approximately 12%. During the storage period between drying and cleaning, the rice is treated with an insecticide to protect it from stored-grain insects.

Cleaning of foundation and breeder seed usually starts in late October and continues until late December. The rice first moves through an air and screen cleaner that removes chaff, straw, and other foreign material and grades the grain according to width and thickness.

It then flows through three length-grading machines that consist of rotating, indented metal cylinders. The first two remove small grains and broken or dehulled kernels of rice. The third one removes stemmy rice grains that have long awns that are attached to portions of the panicle. In the next phase of cleaning, the rice moves through a machine that performs precision grading of the grain by means of rotating perforated cylinders. This machine is designed to separate medium-grain and/or red rice from long-grain rice. It also removes shriveled and slender kernels from medium-grain rice.

In the final phase of cleaning, the rice moves through a machine that aspirates the grain, removing any chaff, straw, and other foreign material from the conditioned product.

From the cleaning machines, foundation and breeder seed rice are bagged, assigned lot numbers, and placed in storage in the HRCRRS's seed rice warehouse where they remain until they are distributed to Louisiana farmers.

The field and laboratory purity standards for foundation seed rice are strict with regard to varietal mixtures and noxious weeds. Therefore, in all phases of production, great care must be exercised to prevent these impurities from contaminating the seed stocks. It is routine procedure at the HRCRRS to partially disassemble all planting and harvesting equipment and to clean it thoroughly with water and/or compressed air before using it in the field. The dryer and cleaning plant, including all elevators and other conveying equipment, are also subjected to meticulous cleaning and inspection before and after use in stubble fields. Therefore, tractors, plows, harrows, and land levelers are carefully washed before they enter fallow land. These measures, together with the inspection and roguing, which are done during the growing season, help to ensure that foundation seed is genetically pure and free of mechanical mixtures and noxious weed seeds.

2019 ACTIVITIES

Of the 1,580 cwt. of foundation seed rice sold in 2019, the varieties and quantities were as follows: Mermentau, 58 cwt.; Caffey, 70 cwt.; Pirogue, 70 cwt.; Jazzman, 66 cwt.; Cheniere, 621 cwt.; Jupiter, 313 cwt.; Titan, 103 cwt.; Catahoula, 12 cwt.; and Della-2, 267 cwt.

The HRCRRS's foundation seed crop in 2019 consisted of 8 acres of Cheniere, 2.5 acres of Dellmati, 1 acre of Mermentau, 5 acres of Della-2, and 6 acres of Jupiter.

Headrows of Cheniere, Jupiter, Mermentau, Dellmati, and Della-2 were grown for replenishment of breeder seed stock.

RICE PRODUCTION ECONOMICS RESEARCH IN 2019

M.A. Deliberto

The 2019 projected cost and return rice enterprise budgets were developed in December 2018 for alternative rice production systems in Louisiana. One of the research objectives in developing these enterprise budgets is that they act to serve as a farm management planning tool for the upcoming crop year. Projected rice crop enterprise budgets were estimated for six typical rice production systems in the southwestern region of Louisiana as well as two rice production system alternatives in the northeastern region of the state. For southwest Louisiana, rice enterprise budgets were estimated for: (a) conventional variety rice that is water planted, (b) Clearfield variety rice that is water planted, (c) conventional variety rice that is drill planted, (d) Clearfield variety rice that is drill planted, (e) Clearfield hybrid rice that is drill planted, and (f) a ratoon rice crop. For northeast Louisiana, rice crop enterprise budgets were estimated for: (a) conventional variety rice that is drill planted and (b) Clearfield variety rice that is drill planted.

A summary of this enterprise budget analysis for rice production systems in southwest Louisiana is presented in Tables 1-4. The values contained in these tables represent tenant operator net returns above total specified production costs per acre. Direct production costs include expenses for custom farming operation charges, drying, fertilizers, chemicals, labor, fuel, repair, and interest on operating capital. Total specified expenses include the aforementioned direct (variable) production expenses plus fixed costs of ownership on machinery and equipment. The land rental arrangement assumption that is made in each of the enterprise tables consists of a 70/30 share rental arrangement with the landlord/waterlord financing the irrigation pumping costs. Returns from the rice crop are assumed to be allocated 70% to the producer and 30% to the landlord/waterlord. Net return estimates for the conventional variety drill-planted production system (Table 1) are based on production cost estimates of $495.98 per acre of variable costs and $599.12 per acre for total specified costs. Net return estimates for the Clearfield variety drill-planted production system (Table 2) are based on production cost estimates of $559.12 per acre of variable costs and $660.95 per acre for total specified costs. Net return estimates for the Clearfield hybrid variety drill-planted production system (Table 3) are based on production cost estimates of $698.64 per acre of variable costs and $795.65 per acre for total specified costs. Net return estimates for the ratoon crop production system (Table 4) are based on production cost estimates of $127.17 per acre of variable costs and $153.57 per acre for total specified costs.

To further assist rice producers in planning for the 2019 crop year, the Projected 2019 Rice Cash Flow Model was developed. The interactive model, programmed in Microsoft® Excel, allows individual rice producers to evaluate the impact on net returns above variable and total (variable plus fixed) production costs for alternative land rental arrangements as well as planting various percentages of available rice base acres. The user enters projected acreage, yield, market price, and production cost data for 2019, and the model will automatically generate estimates for net returns above variable and total production costs. Farm program payments relating to the Price Loss Coverage (PLC) Program are also embedded in the model and are included in net return calculations, if triggered.

Table 1. Estimated Net Returns above Total Specified Costs for a Tenant Operator Rice, Conventional Variety, Drill Planted, Conventional Tillage, Southwest Louisiana, 2019.

		Percent								
		80%	85%	90%	95%	100%	105%	110%	115%	120%
	Yield			Rice	Market	Price	($/cwt)			
Percent	(cwt.)	$8.80	$9.35	$9.90	$10.45	$11.00	$11.55	$12.10	$12.65	$13.20
		($/A)								
80%	56.0	-87	-68	-50	-31	-13	5	24	42	60
85%	59.5	-65	-45	-26	-6	14	34	53	73	93
90%	63.0	-43	-22	-1	20	41	62	83	104	125
95%	66.5	-22	1	23	45	68	90	113	135	157
100%	70.0	0	23	47	71	95	118	142	166	190
105%	73.5	21	46	71	97	122	147	172	197	222
110%	77.0	43	69	96	122	149	175	201	228	254
115%	80.5	64	92	120	148	176	203	231	259	287
120%	84.0	86	115	144	173	202	232	261	290	319

Net returns above total specified costs for a tenant operator is calculated here as the grower's share of market revenue less total specified costs paid by the grower. Specified costs include charges for direct costs and fixed machinery costs but exclude charges for general farm overhead and management expenses. The land rental arrangement charge represented here is a 30% crop share with the landlord paying variable and fixed irrigation pumping costs.

Table 2. Estimated Net Returns above Total Specified Costs for a Tenant Operator Rice, Clearfield Variety, Drill Planted, Conventional Tillage, Southwest Louisiana, 2019.

		Percent								
		80%	85%	90%	95%	100%	105%	110%	115%	120%
	Yield			Rice	Market	Price	($/cwt)			
Percent	(cwt.)	$8.80	$9.35	$9.90	$10.45	$11.00	$11.55	$12.10	$12.65	$13.20
		($/A)								
80%	56.0	-148	-130	-112	-93	-75	-57	-38	-20	-2
85%	59.5	-127	-107	-87	-68	-48	-28	-9	11	31
90%	63.0	-105	-84	-63	-42	-21	0	21	42	63
95%	66.5	-84	-61	-39	-16	6	28	51	73	95
100%	70.0	-62	-38	-15	9	33	57	80	104	128
105%	73.5	-41	-15	10	35	60	85	110	135	160
110%	77.0	-19	7	34	60	87	113	140	166	193
115%	80.5	3	30	58	86	114	141	169	197	225
120%	84.0	24	53	82	112	141	170	199	228	257

Net returns above total specified costs for a tenant operator is calculated here as the grower's share of market revenue less total specified costs paid by the grower. Specified costs include charges for direct costs and fixed machinery costs but exclude charges for general farm overhead and management expenses. The land rental arrangement charge represented here is a 30% crop share with the landlord paying variable and fixed irrigation pumping costs.

Table 3. Estimated Net Returns above Total Specified Costs for a Tenant Operator Rice, Clearfield Hybrid Variety, Drill Planted, Conventional Tillage, Southwest Louisiana, 2019.

		Percent								
		80%	85%	90%	95%	100%	105%	110%	115%	120%
	Yield			Rice	Market	Price	($/cwt)			
Percent	(cwt.)	$8.80	$9.35	$9.90	$10.45	$11.00	$11.55	$12.10	$12.65	$13.20
		($/A)								
80%	64.0	-228	-207	-186	-165	-144	-123	-102	-81	-60
85%	68.0	-203	-181	-158	-136	-113	-91	-68	-46	-23
90%	72.0	-179	-155	-131	-107	-83	-59	-34	-10	14
95%	76.0	-154	-129	-103	-77	-52	-26	-1	25	51
100%	80.0	-130	-102	-75	-48	-21	6	33	60	88
105%	84.0	-105	-76	-48	-19	10	38	67	96	125
110%	88.0	-80	-50	-20	10	41	71	101	131	161
115%	92.0	-56	-24	8	40	71	103	135	167	198
120%	96.0	-31	2	36	69	102	135	169	202	235

Net returns above total specified costs for a tenant operator is calculated here as the grower's share of market revenue less total specified costs paid by the grower. Specified costs include charges for direct costs and fixed machinery costs but exclude charges for general farm overhead and management expenses. The land rental arrangement charge represented here is a 30% crop share with the landlord paying variable and fixed irrigation pumping costs.

Table 4. Estimated Net Returns above Total Specified Costs for a Tenant Operator Rice, Ratoon Crop, Southwest Louisiana, 2019.

		Percent								
		80%	85%	90%	95%	100%	105%	110%	115%	120%
	Yield			Rice	Market	Price	($/cwt)			
Percent	(cwt.)	$8.80	$9.35	$9.90	$10.45	$11.00	$11.55	$12.10	$12.65	$13.20
		($/A)								
80%	18.4	6	12	18	24	30	36	42	48	54
85%	19.6	13	19	26	32	39	45	52	58	64
90%	20.7	20	27	34	41	47	54	61	68	75
95%	21.9	27	34	42	49	56	64	71	78	86
100%	23.0	34	42	50	57	65	73	81	89	96
105%	24.2	41	49	58	66	74	82	91	99	107
110%	25.3	48	57	65	74	83	92	100	109	118
115%	26.5	55	64	73	83	92	101	110	119	128
120%	27.6	62	72	81	91	101	110	120	129	139

Net returns above total specified costs for a tenant operator is calculated here as the grower's share of market revenue less total specified costs paid by the grower. Specified costs include charges for direct costs and fixed machinery costs but exclude charges for general farm overhead and management expenses. The land rental arrangement charge represented here is a 30% crop share with the landlord paying variable and fixed irrigation pumping costs.

LOUISIANA RICE RESEARCH VERIFICATION PROGRAM - 2019[1]

D.L. Harrell and K.A Fontenot

Introduction

The Louisiana Rice Research Verification Program (LRRVP) began in 1997 in three parishes: Allen, Calcasieu, and Jefferson Davis. In 1998, the program was funded and expanded to 10 parishes (Acadia, Avoyelles, East Carroll, Evangeline, Madison, Morehouse, St. Landry, and Vermilion). From 1999 to 2018, 142 fields had been included in the verification program. In 2019, the program included four fields (Figure 1).

The fields were visited on a weekly basis by a Specialist, Extension Associate, or County Agent. Production practice recommendations were made by the Specialist, Associate, or Agent. These recommendations included, but were not limited to, fertilization, weed control, disease control, insect control, and water management to a limited degree. The fields were followed from planting to harvest.

Yield data were collected for each of the fields (Table 1). I Jefferson Davis Parish, the first crop averaged 6,244 lb/A (38.5 bbl/A or 138 bu/A) at 12% moisture. Second crop was harvested adding another 557 lb/A to the total, for a final average of 6,801 lb/A (42 bbl/A or 151 bu/A). This is the 18th highest ranked overall yield of the verification program in the 22 years that the program has been carried out.

Economic data continue to reveal large production cost differences between growers. It also is clear that more needs to be done to help farmers reduce production costs (Table 2). Harvest and water costs remain the most elusive to capture and are often underestimated by all parties involved in the verification program.

The program continues to provide an accurate evaluation of current recommendations and insight into other areas of research. The educational value of the program to all concerned (farmers, researchers, consultants, and extension personnel) increases each year.

[1] This project is supported in part by funding provided by rice producers through their check-off contributions to the Louisiana Rice Research Board.

Figure 1. Verification Parishes in 2019.

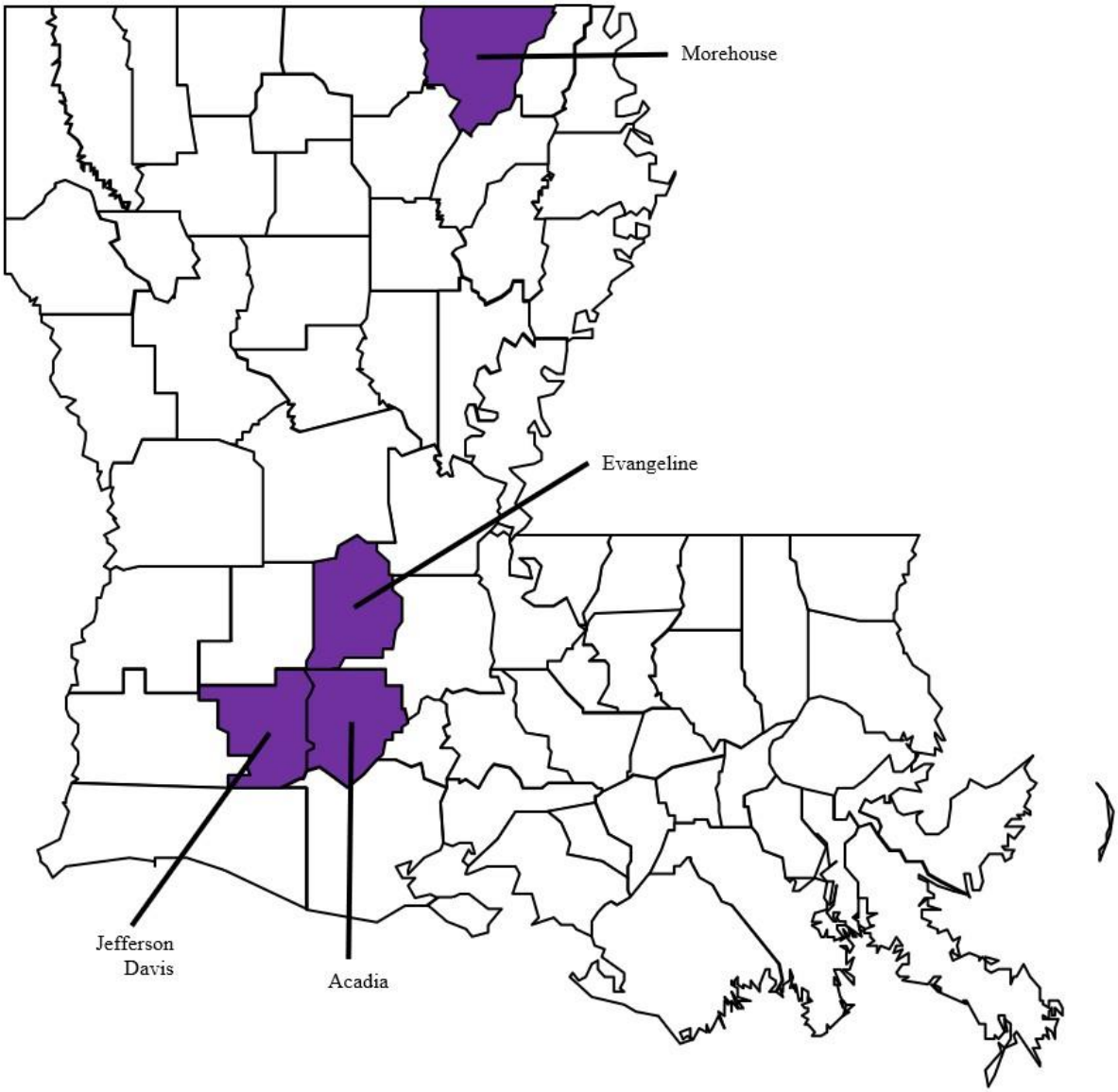


Table 1. Yields of Verification Fields in 2019.

Parish	Acres	Variety	Cwt/A Green	Bbl/A Green	Bu/A Green	Cwt/A Dry	Bbl/A Dry	Bu/A Dry
Acadia	8	CL153	64.4	39.75	143	60.60	37.4	134.6
Evangeline	31	Cheniere	n/a	n/a	n/a	60.60	37.4	134.8
Jefferson Davis [1]	18	Mermentau	93.52	57.7	207.7	87.66	54.07	194.6
Morehouse	13	CLXL745	65.38	40.3	145	63.09	38.9	140.2
Total Acres	70							

[1] Yield includes second crop.

Table 2. 2019 Louisiana Rice Research Verification Program Yield, Milling, and Economic Summary.

Parish	Variety	Yield at 12% Moisture (cwt/A)	Milling (% Whole / % Total)	Variable Costs ($/A)[2]	Cost of Production ($/cwt)[2]	Return on Variable Costs ($/A)[2,3]
Acadia	CL153	60.60	60.6/69.8	524.43	8.65	157.32
Evangeline	Cheniere	60.60	61.6/72.12	468.83	7.73	212.92
Jefferson Davis [1]	Mermentau	87.66	64.25/70.15	712.47	8.12	273.70
Morehouse	CLXL745	63.09	53.83/70.83	682.19	10.81	27.57

[1] Figure includes ratoon crop yield.
[2] Costs captured are from land preparation to getting the crop to the truck. They do not include land rent, transporting, drying, storing, or fixed costs.
[3] This value was obtained using a selling price of $11.25/cwt.

ACADIA PARISH

This 8-acre section of a 40-acre field had an excellent prepared seedbed after disking and harrowing under ideal conditions. On April 3, the field was dry broadcast planted with 70 pounds of Dermacor X-100 treated CL153 seed. No pre-plant basic or starter fertilizer was applied which would become an issue in early plant growth due to extenuating wet weather conditions. Germination and emergence were excellent with a full stand, along with emergence of annual grass and weed species. Recommendations for fertilizer and herbicides were made but would not be applied until May 2 when 6 oz of Newpath + 1.5 oz of Gambit +1.5 pt of Prowl were applied. This was followed the next day with 300 pounds of 0-18-38 fertilizer + 100 pounds of Ammonium Sulfate per acre. The Prowl application was lower than recommended but the applications were followed by a light rain, which did not cover the field with water but did saturate the soil.

On May 7, the water well engine underwent major mechanical repairs which allowed us no water to completely incorporate fertilizer and activate and maintain herbicide activity from application for approximately two weeks. This allowed sprangletop as well as barnyardgrass to escape control and flourish, as well as allow for loss of fertilizer nitrogen. A recommendation of 15 oz of Clincher was made when we knew of water availability but was not applied. On May 27 the plants at green ring stage of growth had only received basic phosphorus and potash plus 21 pounds of starter nitrogen fertilizer. Plants were yellowing, stunted, and had poor tillering throughout the field. Lack of vigor and the lack of water severely limited yield potential as well as weed control.

Finally, on May 28, 200 pounds of 46 % urea was applied followed in 7 days with another 100 pounds of 46% urea. These applications improved the rice plant color and slightly improved tillering, but also enhanced weed growth. The field flood was maintained but required recommendations to pump up the level almost weekly until the onset of heading on July 1. Heading was prolonged and very uneven with some plants at flowering and others just splitting boot stage. Due to the very light tillering of plants, as well as unevenness of maturity, and lack of disease in early heading stages, no recommendation was made for a fungicide. No disease was observed during the first two weeks of heading, but as earlier maturing plants reached milk stage, very light and sparse sheath blight was observed. Rice stink bugs were above economic threshold in early heading, disappeared for two weeks, returning when early maturing rice was ready for drain. No recommendations were made for rice stink bug control as this will be a crawfish production field. On July 22, some rice was ripe enough to drain while other tillers due to unevenness of heading were in milk and soft dough stage. Sheath blight was observed breaching the canopy in a very few widespread spots as well. The decision to drain the field was made on July 29.

Harvest was on Aug. 13 when a sample showed moisture at 17.9%. Yields were as follows 64.40 cwt/A, 39.75 bbl/A, or 143 bu/A. Adjusted to 12% moisture, totals were 60.60 cwt/A, 37.4 bbl/A, or 134.6 bu/A

ACADIA PARISH

Cooperator: Phillip Reiners
Agent: Jeremy Hebert
Consultant:
Field Size: 8 acres

Cultural Practices

Variety: CL153
Method of Planting: Dry Broadcast
Water Management: Delayed flood
Seeding Rate: 70 lb/A
Date of Planting: April 3, 2019
Date of Emergence: April 10, 2019

Growth and Development

Stage	Observation Date
Green Ring	May 27
PD	June 3
50% Heading	July 1
Drain for Harvest	July 29
Harvest	Aug. 13

Yield, Milling, and Economic Data

	Yield at 12% Moisture (cwt/A)	Milling Yield (% Whole / % Total)	Variable Costs ($/A)[1]	Cost of Production ($/cwt)[1]	Return on Variable Costs ($/A)[1,2]
First Crop	60.60	60.6/69.8	524.43	8.65	157.32

[1] Costs captured are from land preparation to getting the crop to the truck. They do not include land rent, transportation, drying, storage, or fixed costs.
[2] This value was obtained using a selling price of $ 11.25/cwt.

Fertilization

Date	Source	Rate (lb/A)	N (lb/A)	P (lb/A)	K (lb/A)	S (lb/A)	Zn (lb/A)
May 3	Am Sul	100	21	0	0	24	0
May 3	0-18-38	300	0	54	114	0	0
May 28	46-0-0	200	92	0	0	0	0
June 4	46-0-0	100	46	0	0	0	0
Total			159	54	114	24	0

Weed Management

Weeds Present	Date of Treatment Decision	Recommendation
Sedge, Grasses, Sprangletop, Dayflower	May 2	1.5pt Prowl + 6 oz Newpath + 1.5 oz Gambit

Disease Management

Diseases Present	Date of Treatment Decision	Recommendation

Insect Management

Insects Present	Date of Treatment Decision	Recommendation

Comments:

7/22/19-- Rice stink bug pressure was over the economic threshold level; however, because this will be a crawfish production field no application of insecticide was made.

ACADIA PARISH

Item	Description	Cost/A	Acres	Total
Herbicide Burndown				$0.00
Application Cost - Herbicide				$0.00
Field Work, Discing, etc.	JD 9300 with 30 ft disc	$30.00	8	$240.00
Water Leveling, Bed Leveling, etc.				$0.00
Ditching	JD 6430	$5.00	8	$40.00
Seed	CL153 @ 70 lb/A with Dermacor X-100	$91.00	8	$728.00
Seed Treatment (If Separate)				$0.00
Planting	JD 6170 with 30 ft drill	$20.00	8	$160.00
Fertilizer	300 lb/A 0-18-38 + 100 #/A 21-0-0-24	$86.50	8	$692.00
Application Cost - Fertilizer	Ground Rig Air Flow Applicator	$10.00	8	$80.00
Herbicide	5 oz Newpath +1.5 oz Gambit + 48 oz Prowl	$46.26	8	$370.08
Application Cost - Herbicide	Ground Rig	$7.00	8	$56.00
Herbicide				$0.00
Application Cost - Herbicide				$0.00
Fertilizer	200 lb/A 46 % Urea	$39.47	8	$315.76
Application Cost - Fertilizer	Aerial Application	$11.40	8	$91.20
Fertilizer	100 lb/A 46% Urea	$19.74	8	$157.92
Application Cost - Fertilizer	Aerial Application	$9.96	8	$79.68
Fertilizer				$0.00
Application Cost - Fertilizer				$0.00
Fertilizer				$0.00
Application Cost - Fertilizer				$0.00
Fungicide				$0.00
Application Cost - Fungicide				$0.00
Fungicide				$0.00
Application Cost - Fungicide				$0.00
Insecticide				$0.00
Application Cost - Insecticide				$0.00
Harvest - Cart with Tractor	JD 4960 With 600 bu cart	$6.86	8	$54.88
Harvest - Combine	JD 9650 with 25 ft draper header	$50.00	8	$400.00
Water Cost	Clearfield drill planted conventional flooded	$91.24	8	$729.92
				$0.00
First Crop Totals		$524.43	8	$4,195.44

Ratoon Crop

Item	Description	Cost/A	Acres	Total
Ratoon Crop Manipulation				$0.00
Ratoon Crop Fertilizer				$0.00
Ratoon Fertilizer Application Cost				$0.00
Ratoon Crop Water Cost				$0.00
Ratoon Crop Harvest Cart				$0.00
Ratoon Crop Harvest Combine				$0.00
Ratoon Crop Totals			0	$0.00

Total for First Crop and Ratoon	$524.43	8	$4,195.44

EVANGELINE PARISH

This 31-acre field was burned down using 32 oz of glyphosate plus ½ oz of first shot herbicide per acre applied by ground rig just prior to planting. Then on May 1 after cultivating, 100 pounds of 17-60-60-20-3.5 fertilizer was applied and harrowed in. Sixty-five pounds per acre of **Dermacor X-100** treated Cheniere seed was drilled into the prepared seedbed followed by a ground rig applying 8 oz of command herbicide per acre with a ditching tractor following to complete planting. Rice emergence observed on May 4 with a good even stand. Leaf bleaching observed from the command application but the vigorous, very even stand of plants quickly grew out of it. On May 29 at 3 leaf growth stage 225 pounds of 38% fertilizer plus 1 gallon of duet and .33 oz of permit were applied followed by flushing. Plans were to continue flushing along with monitoring and adjusting to rainfall to maintain moisture saturation across field. On June 10, twelve inches of rainfall changed that plan, but the farmer had prepared by not flushing and was able to manage getting the excess water off the field.

By June17 plants had canopied over the drill row, tillering was excellent, and all plants had a lush green color going into green ring. On June 18, 125 pounds of 46% urea was applied. On June 24, with plants just past green ring, sheath blight lesions were first observed at the water line scattered throughout the field. Water level was maintained, and disease movement observed with a plan to apply fungicide at 4-inch panicle just prior to boot split. On July 8 just prior to boot split, 21 oz of quilt plus 4 oz of propiconazole was applied. July 12 through 14 the winds and rain of tropical storm Barry affected the heading rice, tearing and desiccating leaf tips and entire leaves while dumping 8 inches of rain on the field. Ten days later, July 22, the heading rice was recovering with better color and new leaves, however sheath blight was still evident throughout the field.

On July 29, rice was flowering well, and some advanced panicles had milk present as was sheath blight. Rice stink bugs came into the field in numbers over the economic threshold. This being a stocked crawfish production field no application for stink bug control was recommended. Rice stink bug numbers remained high the following week but dropped the next week, with plants at hard dough to hard grain stage. Decision to drain the field on Aug. 18 was made based on plant maturity and weather predictions to allow water level to go down slowly.

Field was harvested on Sept. 5, with moisture averaging 12 % with the following yields: 6,060 cwt/A, 37.38 bbl/A, or 134 bu/A.

EVANGELINE PARISH

Cooperator: Jeremy Craton
Agent: Todd Fontenot
Consultant:
Field Size: 31

Cultural Practices

Variety: Cheniere
Method of Planting: Drill
Water Management: Delayed flood
Seeding Rate: 65 lb/A
Date of Planting: May 1, 2019
Date of Emergence: May 4, 2019

Growth and Development

Stage	Observation Date
Green Ring	June 17
PD	June 22
50% Heading	July 22
Drain for Harvest	Aug. 19
Harvest	Sept. 5

Yield, Milling, and Economic Data

	Yield at 12% Moisture (cwt/A)	Milling Yield (% Whole / % Total)	Variable Costs ($/A)[1,3]	Cost of Production ($/cwt)[1,3]	Return on Variable Costs ($/A)[1,2,3]
First Crop	60.60	61.67/72.12	468.83	7.73	212.92

[1] Costs captured are from land preparation to getting the crop to the truck. They do not include land rent, transportation, drying, storage, or fixed costs.
[2] This value was obtained using a selling price of $11.25/cwt.

Fertilization

Date	Source	Rate (lb/A)	N (lb/A)	P (lb/A)	K (lb/A)	S (lb/A)	ZN (lb/A)
May 1	17-60-60-20-3.5	100	17	60	60	20	3.5
May 29	38-0-0	225	84	0	0	0	0
June 18	46-0-0	125	57.5	0	0	0	0
Totals			158.5	60	60	20	3.5

Weed Management

Weeds Present	Date of Treatment Decision	Recommendation
Field Burndown	March 25	32 oz Glyphosate +.5 oz FirstShot
Alligator weed, Duck Salad, Dayflower, Eclipta, Sedges, few grasses at planting	May 1	8 oz Command
Barnyard Grass, Sedges	May 29	1 gal Duet + .25 oz Permit

Disease Management

Diseases Present	Date of Treatment Decision	Recommendation
Sheath blight	July 9	21 oz Quilt + 4 oz Propiconozole

Insect Management

Insects Present	Date of Treatment Decision	Recommendation
Rice Water Weevil	Seed treatment May 1	Dermacor X-100

EVANGELINE PARISH

Item	Description	Cost/A	Acres	Total
Herbicide Burndown	32 oz Glyphosate + .50 oz Firstshot	$10.00	31	$310.00
Application Cost - Herbicide	Ground Rig	$8.00	31	$248.00
Field Work, Disking, etc.	Cultivate & Harrow X 2 350 hp Tractor + 36' Cultivator	$17.42	31	$540.02
Water Leveling, Bed Leveling, etc.				$0.00
Ditching	100 hp Tractor + Ditcher	$1.25	31	$38.75
Seed	Cheniere 65 #/A	$17.55	31	$544.05
Seed Treatment (If Separate)	Dermacor X-100	$22.00	31	$682.00
Planting	300 hp Tractor +20' Drill	$12.00	31	$372.00
Fertilizer	100 #/A of 17-60-60-20-3.5	$66.00	31	$2,046.00
Application Cost - Fertilizer	Airplane	$10.00	31	$310.00
Herbicide	8 oz Command	$9.00	31	$279.00
Application Cost - Herbicide	Ground Rig	$8.00	31	$248.00
Herbicide	1 gal Duet + .25 oz Permit	$48.00	31	$1,488.00
Application Cost - Herbicide	Ground Rig	$8.00	31	$248.00
Fertilizer	225 #/A of 38-0-0	$45.00	31	$1,395.00
Application Cost - Fertilizer	Airplane	$10.00	31	$310.00
Fertilizer	125 #/A of 46-0-0	$23.75	31	$736.25
Application Cost - Fertilizer	Airplane	$10.00	31	$310.00
Fertilizer				$0.00
Application Cost - Fertilizer	21 oz Quilt + 4 oz Propiconozole	$28.00	31	$868.00
Fertilizer	Airplane	$10.00	31	$310.00
Application Cost - Fertilizer				$0.00
Fungicide				$0.00
Application Cost - Fungicide		$6.86	31	$212.66
Fungicide				$0.00
Application Cost - Fungicide		$50.00	31	$1,550.00
Insecticide				$0.00
Application Cost - Insecticide		$48.00	31	$1,488.00
Harvest - Cart with Tractor				$0.00
Harvest - Combine				$0.00
Water Cost				$0.00
				$0.00
First Crop Totals		$468.83	31	$14,533.73

Ratoon Crop

Item	Description	Cost/A	Acres	Total
Ratoon Crop Manipulation				$0.00
Ratoon Crop Fertilizer				$0.00
Ratoon Fertilizer Application Cost				$0.00
Ratoon Crop Water Cost				$0.00
Ratoon Crop Harvest Cart				$0.00
Ratoon Crop Harvest Combine				$0.00
Ratoon Crop Totals			0	$0.00

Total for First Crop and Ratoon	$468.83	31	$14,533.73

JEFFERSON DAVIS PARISH

This 18-acre field was one section of a 120-acre piece farmed by the producer. A burn-down application of 32 oz of glyphosate plus .78 oz of FirstShot was applied by air in early March and was lightly disked then harrowed in preparation for flooding. Field was water planted on March 23, with Dermacor X-100 treated Mermentau seed at the rate of 110 lb/acre. After planting, an application of 177 pounds of 13-34-11-0-2.8 fertilizer impregnated with 8 oz of Command herbicide was aerially applied. Cool weather slowed germination but pipping of seed was seen on April 2 with emergence observed on April 6. Rains and cooler temperatures continuously affected growth and the timing of management practices both early and late in the season, especially affecting early season fertilizer and herbicide applications. With rice at 1-leaf stage on April 8, seven inches of rain fell but drained off very well without stretching or adversely affecting rice. With rice right at 3-leaf stage, 100 pounds of 46% urea was applied on April 11. Again, rains continued but farmer managed water levels exceptionally well. On May 6, rice was tillering well and 138 pounds of 39% fertilizer was aerially applied along with 1.5 oz of Gambit herbicide per acre.

On May 12-13, over 7.5 inches of rain fell, but again the producer controlled water levels exceptionally well. The sedges and alligator weed were yellowing up well following the Gambit application. Water depth in field was excellent with no stretching of rice observed. Plants approaching green ring on May 20 so recommendation of 100 pounds of 46% Urea was applied on May 24. At this time plants were pulled from different areas of field to observe root growth. Although slight some difference noted with “bottle brushing” appearance of some plant roots coming from area along old canal and tree line

On June 9 through 10, approximately 11 inches of rain fell on the field area, and again, the producer was very successful with controlling water levels. No adverse effects on the plants which were at heavy boot swell stage were observed. Several plants split and panicles observed, all developing well. On June 12, eight ounces of Stratego fungicide were aerially applied just prior to boot split. Rice really moved fast from this point with warmer temperatures and sunshine and reached 50% heading on June 17. Throughout the development and growth of this field, plants remained very uniform and even going through and reaching different growth stages.

Rice stink bug numbers were monitored weekly during heading stages and remained very low. On July 8, a decision to drain field was made.

First crop harvest was on July 26, harvest moisture averaged 18.1%, totals were 70.95 cwt/A, 157.6 bu/A, and 43.8 bbl/A. Adjusted to 12 % moisture equals 65.98 cwt/A, 146.6 bu/A, 40.7 bbl/A.

Following first crop harvest, the stubble was mowed, 200 pounds of 46% urea was applied, and the flood re-established on the field.

Ratoon Crop was harvested on Nov. 6. Harvest moisture averaged 15.8% and totals were 21.66 cwt/A, 50.1 bu/A, 13.9 bbl/A. Adjusted to 12% moisture equals 21.66 cwt/A, 48.1 bu/A, 13.4 bbl/A.

Total yield (first and ratoon) adjusted to 12% moisture was 87.66 cwt/A, 194.8 bu/A, and 54.11 bbl/A. These yields on a conventional, water planted variety growing through the environmental stresses of this season highlight the importance of timing of all applications as well as the planning and management abilities of the producer.

JEFFERSON DAVIS PARISH

Cooperator: Dylan Benoit
Agent: Jimmy Meaux
Consultant: Chet Marcantel
Field Size: 18 acres

Cultural Practices

Variety: Mermentau
Method of Planting: Water
Water Management: Pinpoint flood
Seeding Rate: 110 lb/A
Date of Planting: March 23, 2019
Date of Emergence: April 6, 2019

Growth and Development

Stage	Observation Date
Green Ring	May 20
PD	May 24
50% Heading	June 14
Drain for Harvest	July 9
Harvest	July 26
Ratoon Crop Harvest	Nov. 6

Yield, Milling, and Economic Data

	Yield at 12% Moisture (cwt/A)	Milling Yield (% Whole / % Total)	Variable Costs ($/A)[1]	Cost of Production ($/cwt)[1]	Return on Variable Costs ($/A)[1,2,3]
First Crop	66.00	64.25/70.15	566.20	8.57	176.80
Ratoon Crop	21.66		146.27	6.77	96.93
Totals[3]	87.66		712.47	8.12	273.70

[1] Costs captured are from land preparation to getting the crop to the truck. They do not include land rent, transportation, drying, storage, or fixed costs.
[2] This value was obtained using a selling price of $11.25/cwt.
[3] Includes Ratoon Crop Totals

Fertilization

Date	Source	Rate (lb/A)	N (lb/A)	P (lb/A)	K (lb/A)	S (lb/A)	ZN (lb/A)
March 26	13-34-11-0-2.8	177	22	60	20	0	5
April 11	46-0-0	100	46	0	0	0	0
May 3	39-0-0	138	54	0	0	0	0
May 24	46-0-0-	46	0	0	0	0	0
First Crop Totals			168	60	20	0	5
Ratoon	46-0-0	200	92	0	0	0	0
Season Total			260	60	20	0	5

Weed Management

Weeds Present	Date of Treatment Decision	Recommendation
Burndown	Feb. 20	32 oz Glyphosate + .78 oz FirstShot
Grasses & Alligator weed	May 3	1.5 oz Gambit

Disease Management

Diseases Present	Date of Treatment Decision	Recommendation
Very light sheath blight	June 14	8 oz Stratego

Insect Management

Insects Present	Date of Treatment Decision	Recommendation
Rice Water Weevil	Seed treatment, March 23	Dermacor X-100

JEFFERSON DAVIS PARISH

Item	Description	Cost/A	Acres	Total
Herbicide Burndown	32 oz/A Glyphosate + .78 oz/A Firstshot	$10.24	18	$184.32
Application Cost - Herbicide	Aerial Application	$10.76	18	$193.68
Field Work, Discing, etc.	Plow and Chisel Plow (each once)	$16.01	18	$288.18
Water Leveling, Bed Leveling, etc.	Water Level	$37.52	18	$675.36
Ditching	Ditches made	$1.24	18	$22.32
Seed	Mermentau 110 #/A +Dermacor X-100 + AV 1011	$62.28	18	$1,121.04
Seed Treatment (If Separate)				$0.00
Planting	Water Plant- Aerial Application	$10.76	18	$193.68
Fertilizer	177 #/A of 13-34-11-0-2.8 + 8 oz/A of Command	$60.70	18	$1,092.60
Application Cost - Fertilizer	Aerial Application	$10.76	18	$193.68
Herbicide	1.5 oz/A Gambit	$24.90	18	$448.20
Application Cost - Herbicide	Aerial Application	$10.76	18	$193.68
Herbicide				$0.00
Application Cost - Herbicide				$0.00
Fertilizer	100 #/A 46% Urea	$18.75	18	$337.50
Application Cost - Fertilizer	Aerial Application	$10.76	18	$193.68
Fertilizer	138 #/A 39%	$24.84	18	$447.12
Application Cost - Fertilizer	Aerial Application	$10.76	18	$193.70
Fertilizer	100 #/A 46% Urea	$18.75	18	$337.50
Application Cost - Fertilizer	Aerial Application	$10.76	18	$193.68
Fertilizer				$0.00
Application Cost - Fertilizer				$0.00
Fungicide	8 oz/A Stratego	$20.57	18	$370.26
Application Cost - Fungicide	Aerial Application	$10.76	18	$193.68
Fungicide				$0.00
Application Cost - Fungicide				$0.00
Insecticide				$0.00
Application Cost - Insecticide				$0.00
Harvest - Cart with Tractor	410 hp Tractor with 880 bu Cart	$6.86	18	$123.48
Harvest - Combine	770 hp Combine with 40 ft Header	$50.00	18	$900.00
Water Cost	Budget-SW Water Planted Conventional	$127.46	18	$2,294.28
				$0.00
First Crop Totals		$566.20	18	$10,191.62

Ratoon Crop

Item	Description	Cost/A	Acres	Total
Ratoon Crop Manipulation	Mow Stubble	$7.38	18	$132.84
Ratoon Crop Fertilizer	200 #/A 46% Urea	$37.50	18	$675.00
Ratoon Fertilizer Application Cost	Aerial Application	$10.76	18	$193.68
Ratoon Crop Water Cost	Budget-SW Water Planted Conventional Ratoon	$33.77	18	$607.86
Ratoon Crop Harvest Cart	410 hp Tractor with 880 bu Cart	$6.86	18	$123.48
Ratoon Crop Harvest Combine	770 hp Combine with 40 ft Header	$50.00	18	$900.00
Ratoon Crop Totals		$146.27	18	$2,632.86

Total for First Crop and Ratoon	$712.47	18	$12,824.48

MOREHOUSE PARISH

At the Morehouse Parish row rice field, management practices were seriously affected by weather conditions from planting through harvest in 2019. Early season rainfall and flooding delayed planting and applications, and severe storms with damaging winds severely lodged plants prior to harvest.

A burndown application of 32 oz of glyphosate tank mixed with 2.5 oz Sharpen was applied by ground rig in mid-March. This application had major problems with spray tips clogging adversely affecting weed control across the field. Disking and running a buster roller over the rowed-up field preceded planting on May 25. CLXL745 Dermacor X-100 and gibberellic acid treated seed, was drill planted at the rate of 22 pounds per acre. Planting was stopped due to rain and delayed two days until completion on May 27. A ground rig was used to apply 21 oz of Command herbicide at planting.

Emergence was on June 4 and 6 with the stand being good but slow to progress. On June 18, 100 pounds per acre of 18-46-42 fertilizer was applied. Barnyardgrass, sprangletop, pigweed, and a few broadleaves, were the major weed problems in the field. That same day an aerial application of 6 oz of Newpath + 48 oz of RiceBeaux controlled the smaller weeds, but only suppressed the larger pigweed and sprangletop. On June 28, 100 pounds per acre of 46% urea was applied and flushed into the row rice field. This stimulated rice growth well. The only weed issues in the field were the larger weed escapes from the failed burndown. Plants reached green ring on July 17 and another 100 pounds of 46% urea was applied and flushed in. Checking plants for 2- to 4-inch panicle for kernel smut prevention fungicide application began on July 23. On July 29, plants reached 2- to 4-inch panicle and recommendation made for 8-10 oz of Propiconazole in 10 gallons of water per acre if possible, as well as 100 pounds of 46% urea to be flushed in. The fungicide application was not made at this time, but the fertilizer application was made. On Aug. 8, another 100 pounds of 46% urea was applied and flushed into the field. Heading was starting and 50% heading stage was reached on Aug. 19, when an application of 14 oz of Stratego fungicide was applied. Rice stink bug levels were monitored and reached economic threshold on Aug. 26 when an application of 4 oz of Ravage insecticide was aerially applied. The plants were completely headed with plant growth stages ranging from flowering to milk stage.

On Labor Day, Sept. 2, the decision to drain the field and cease water applications was made. Harvest date was Oct. 25, 53 days from drain date. This time lapse was due in part to the producers harvesting other crops as well as environmental conditions preventing harvest. During this time frame, a strong storm system with high winds swept across this area lodging a very high percentage of the plants in the field. Estimates ranged from 65 to 85% plants lodged. This affected grain yield and quality significantly.

Harvest at 15.2% moisture had the following totals 65.38 cwt/A, 145 bu/A, and 40.3 bbl/A. Adjusted to 12% moisture the totals were 63.09 cwt/A, 140.2 bu/A, and 38.9 bbl/A.

MOREHOUSE PARISH

Cooperator: Robert & Ty Warren
Agent: None
Consultant: None
Field Size: 13 acres

Cultural Practices

Variety: CLXL745
Method of Planting: Drill
Water Management: Row Rice
Seeding Rate: 22 lb/A
Date of Planting: May 25 & May 27
Date of Emergence: June 4 & June 6

Growth and Development

Stage	Observation Date
Green Ring	July 15
PD	July 23
50% Heading	Aug. 19
Drain for Harvest	Sept. 2
Harvest	Oct. 25

Yield, Milling, and Economic Data

	Yield at 12% Moisture (cwt/A)	Milling Yield (% Whole / % Total)	Variable Costs ($/A)[1]	Cost of Production ($/cwt)[1]	Return on Variable Costs ($/A)[1,2]
First Crop	63.09	53.82/70.83	682.19	10.81	27.57

[1] Costs captured are from land preparation to getting the crop to the truck. They do not include land rent, transportation, drying, storage, or fixed costs.
[2] This value was obtained using a selling price of $11.25/cwt.

Fertilization

Date	Source	Rate (lb/A)	N (lb/A)	P (lb/A)	K (lb/A)	Zn (lb/A)	S (lb/A)
June 18	18-46-42	100	18	46	42	0	0
June 28	46-0-0	100	46	0	0	0	0
July 17	46-0-0	100	46	0	0	0	0
July 29	46-0-0	100	46	0	0	0	0
Aug. 8	46-0-0	100	46	0	0	0	0
Season Total			202	46	42	0	0

Weed Management

Weeds Present	Date of Treatment Decision	Recommendation
Various Grasses & Broadleaf weeds	May 25 and May 27	32 oz glyphosate + 2.5 oz Sharpen + 21 oz Command
	June 18	6 oz Newpath + 48 oz RiceBeaux

Disease Management

Diseases Present	Date of Treatment Decision	Recommendation
Kernel Smut Prevention *	July 30*	8 oz Propiconazole
	Aug. 14	14 oz Stratego Applied

Note: Application made at later than desired growth stage for kernel smut prevention

Insect Management

Insects Present	Date of Treatment Decision	Recommendation
Seed Treatment rice water weevil	May 25 and May 27	Dermacor X-100
Rice Stink Bug	Aug. 20	4 oz Rage

MOREHOUSE PARISH

Item	Description	Cost/A	Acres	Total
Herbicide Burndown	32ox glyphosate + 2.5 oz sharpen	$26.77	13	$348.01
Application Cost - Herbicide	Case IH 2250 with 90 ft boom	$6.35	13	$82.55
Field Work, Discing, etc.	Case IH 310 with 25 ft disc 2 times	$17.78	13	$231.14
Water Leveling, Bed Leveling, etc.	Case IH 310 with 25 ft buster roller	$8.30	13	$107.90
Ditching		$1.25	13	$16.25
Seed	CLXL 745 22 #/A + Dermacor X-100 + Gibberilic Acid	$153.00	13	$1,989.00
Seed Treatment (If Separate)				$0.00
Planting	Case IH 310 with 25 ft drill	$14.44	13	$187.72
Fertilizer	18-46-42 100 #/A	$22.00	13	$286.00
Application Cost - Fertilizer	Aerial Application	$7.25	13	$94.25
Herbicide	21 oz Command	$25.92	13	$336.96
Application Cost - Herbicide	Case IH 2250 Sprayer with 90 ft boom	$6.35	13	$82.55
Herbicide	6 oz Newpath + 48 oz Rice Beaux + surfactant	$59.20	13	$769.60
Application Cost - Herbicide	Aerial Application	$7.10	13	$92.30
Fertilizer	46% urea 100 #/A	$18.50	13	$240.50
Application Cost - Fertilizer	Aerial Application	$7.25	13	$94.25
Fertilizer	46% urea 100 #/A	$18.50	13	$240.50
Application Cost - Fertilizer	Aerial Application	$7.25	13	$94.25
Fertilizer	46% urea 100 #/A	$18.50	13	$240.50
Application Cost - Fertilizer	Aerial Application	$7.25	13	$94.25
Fertilizer	46% urea 100 #/A	$18.50	13	$240.50
Application Cost - Fertilizer	Aerial Application	$7.25	13	$94.25
Fungicide	14 oz Stratego	$21.82	13	$283.66
Application Cost - Fungicide	Aerial Application	$5.90	13	$76.70
Fungicide				$0.00
Application Cost - Fungicide				$0.00
Insecticide	4 oz Ravage	$3.00	13	$39.00
Application Cost - Insecticide	Aerial Application	$5.90	13	$76.70
Harvest - Cart with Tractor	Case IH 310 with 850 bu cart	$6.86	13	$89.18
Harvest - Combine	Case IH 9340 with 30 ft draper header	$50.00	13	$650.00
Water Cost	Row Rice 16 pumpings @ $8.12 /A	$130.00	13	$1,690.00
				$0.00
First Crop Totals		$682.19	13	$8,868.47

Ratoon Crop

Item	Description	Cost/A	Acres	Total
Ratoon Crop Manipulation				$0.00
Ratoon Crop Fertilizer				$0.00
Ratoon Fertilizer Application Cost				$0.00
Ratoon Crop Water Cost				$0.00
Ratoon Crop Harvest Cart				$0.00
Ratoon Crop Harvest Combine				$0.00
Ratoon Crop Totals			0	$0.00

Total for First Crop and Ratoon	$682.19	13	$8,868.47

Table 1. Summary of Management Practices and Economic Data per Acre for 2019 Verification Fields.

Parish	Planting Method	Rice Variety	Planting Date	Water Management	Seed Costs $/A	Insecticide Seed Treatment Costs $/A	Herbicide Costs $/A	Herbicide App. Costs $/A
Acadia	Dry Broadcast	**CL153**	April 3	Delayed	69.00	22.00	46.26	7.00
Evangeline	Drill	Cheniere	May 1	Delayed	17.55	22.00	67.00	24.00
Jefferson Davis	Water	Mermentau	March 23	Pin Point	40.28	22.00	47.14	26.52
Morehouse	Drill	CLXL-74	June 4	Row Rice	121.00	22.00	111.18	19.80

Table 1. Continued. Summary of Management Practices and Economic Data per Acre for 2019 Verification Fields.

Parish	Fertilizer Costs $/A	Fertilizer App. Costs $/A	Fungicide Costs $/A	Fungicide App. Costs $/A	Insecticide Costs $/A[2]	Insecticide App. Costs $/A	Water Costs $/A
Acadia	145.71	31.36	N/A	N/A	N/A	N/A	91.24
Evangeline	134.75	30.00	28.00	10.00	N/A	N/A	48.00
Jefferson Davis[1]	110.34	37.78	20.57	10.76	N/A	N/A	127.46
Morehouse	96.00	36.25	21.82	5.90	3.00	5.90	130.00

[1] Costs include first and ratoon crop.
[2] Does not include insecticide seed treatment

Table 2. Summary of Management Practices and Economic Data for 2019 Verification Field.

Parish	Harvest Date	Yield at 12% Moisture[1]			Milling % % Whole/% Total	Variable Costs ($/A)[1]	Cost of Production ($/cwt)[1]	Return on Variable Costs ($/A)[1,2]
		cwt	**bbls**	**bu**				
Acadia	Aug. 13	60.60	37.4	134.6	60.6/69.8	524.43	8.65	157.32
Evangeline	Sept. 5	60.6	37.4	134.6	61.67/72.12	468.83	7.73	212.92
Jefferson Davis	July 26 & Nov. 6	87.6	54.11	194.8	64.25/70.15	712.47	8.12	273.70
Morehouse	Oct. 25	63.09	38.9	140.2	53.84/70.83	682.19	10.81	27.57

[1] Costs and yields include first and ratoon crop.
[2] Value obtained using selling price of $11.25/cwt

Table 3. Twenty-Two Year Louisiana Rice Research Verification Summary.

1998 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Acadia*	53.0	32.8	118.1	5,314
Avoyelles	32.5	42.9	154.4	6,950
Calcasieu*	60.0	34.1	122.8	5,524
East Carroll	33.9	41.1	148.0	6,658
Evangeline	33.0	42.9	154.4	6,950
Jefferson Davis*	61.8	37.3	134.3	6,043
Madison	36.6	39.0	140.4	6,318
Morehouse	63.0	33.8	121.7	5,476
St. Landry	37.1	38.2	137.5	6,188
Vermilion	16.7	29.4	105.8	4,763
TOTALS	**427.6**	**37.2**	**133.7**	**6,018**

* Yield includes second crop.

1999 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Acadia*	31.1	37.4	134.6	6,059
Avoyelles	32.5	46.6	167.8	7,549
Calcasieu	49.3	34.6	124.6	5,605
Catahoula	30.4	33.4	120.2	5,411
East Carroll	36.1	47.0	169.2	7,614
Evangeline	22.3	43.1	155.2	6,982
Jefferson Davis*	26.6	30.8	110.9	4,990
Madison	38.1	39.0	140.4	6,318
St. Landry	30.1	38.8	139.7	6,286
Vermilion	23.8	36.5	131.4	5,913
TOTALS	**320.3**	**38.7**	**139.4**	**6,273**

* Yield includes second crop

2000 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Acadia	53.3	39.4	141.8	6,383
Avoyelles	63.2	36.7	132.1	5,945
Calcasieu	22.1	25.1	90.4	4,066
Catahoula	39.6	36.4	131.0	5,897
East Carroll	45.1	49.1	176.8	7,956
Evangeline	19.9	38.2	137.5	6,188
Jefferson Davis	30.6	26.7	96.1	4,325
Morehouse	27.7	28.3	101.9	4,585
St. Landry	70.7	39.2	141.1	6,350
Vermilion*	21.6	37.7	135.7	6,107
TOTALS	**393.8**	**35.7**	**128.4**	**5,780**

* Yield includes second crop.

Continued.

Table 3. Continued.

2001 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Acadia*	60.6	50.8	182.9	8,230
Allen	41.6	35.1	126.4	5,686
Avoyelles	63.2	38.1	137.2	6,172
Calcasieu*	61.9	39.4	142.0	6,388
Concordia	79.6	36.1	130.1	5,853
Evangeline*	20.8	52.7	189.7	8,538
Jefferson Davis*	21.6	57.3	206.4	9,289
Richland	65.9	46.0	165.5	7,447
St. Landry*	40.6	51.1	184.0	8,282
Vermilion*	33.3	52.4	188.7	8,493
TOTALS	**489.1**	**45.9**	**165.3**	**7,438**

* Yield includes second crop.

2002 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Acadia*	38.4	49.8	179.3	8,068
Allen*	25.1	46.0	165.6	7,452
Avoyelles	37.4	49.9	179.6	8,084
Beauregard*	49.5	53.1	191.2	8,602
Calcasieu*	41.4	42.4	152.6	6,869
Concordia	67.6	48.2	173.5	7,808
Evangeline	42.0	37.6	135.4	6,091
Jefferson Davis*	31.7	45.0	162.0	7,290
Richland	35.8	42.1	151.5	6,819
St. Landry	32.7	48.8	175.7	7,906
Vermilion*	32.0	49.8	179.4	8,072
TOTALS	**433.6**	**46.6**	**167.8**	**7,551**

* Yield includes second crop.

2003 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Acadia	57.2	44.0	158.4	7,128
Allen*	35.7	46.1	166.0	7,469
Avoyelles	37.4	50.1	180.4	8,116
Beauregard*	45.7	48.7	175.2	7,884
Concordia	79.5	49.2	177.1	7,970
Evangeline*	48.4	44.5	160.2	7,209
Jefferson Davis*	52.9	28.7	103.3	4,649
Richland	40.2	44.7	160.8	7,234
St. Landry*	32.7	61.1	220.0	9,898
Vermilion*	33.0	40.0	144.0	6,480
TOTALS	**462.7**	**45.7**	**164.5**	**7,404**

* Yield includes second crop.

Continued.

Table 3. Continued.

2004 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Allen*	53.2	40.9	147.1	6,620
Avoyelles	33.3	32.8	118.0	5,307
Beauregard*	21.8	42.5	153.3	6,899
Concordia	82.3	36.0	130.0	5,843
East Carroll	54.8	45.8	165.0	7,427
Evangeline	30.7	34.8	125.2	5,638
Jefferson Davis*	42.3	38.5	138.6	6,237
Natchitoches	47.2	44.1	158.8	7,144
St. Landry*	60.1	65.1	234.3	10,543
Vermilion*	30.0	42.1	151.6	6,824
TOTALS	**455.7**	**42.3**	**152.2**	**6,848**

* Yield includes second crop.

2005 Verification Acres and Yields*

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Acadia	28.9	39.6	143.8	6,427
Allen	76.7	25.6	92.0	4,140
Avoyelles	32.1	35.9	129.3	5,819
Calcasieu	49.0	51.0	184.0	8,282
Concordia	60.5	43.0	156.0	7,003
East Carroll	30.4	47.9	172.7	7,771
Evangeline	30.0	37.1	133.6	6,014
Jefferson Davis	39.2	32.5	117.0	5,264
Natchitoches	30.0	43.3	156.0	7,022
Richland	47.4	49.2	177.2	7,974
St. Landry	61.7	47.5	170.9	7,689
Vermilion	52.8	40.9	147.3	6,631
TOTALS	**538.7**	**41.1**	**148.3**	**6,670**

* No ratoon crop was harvested in the verification program in 2005.

2006 Verification Acres and Yields*

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Avoyelles	41.8	43.0	155.0	6,972
Concordia	54.7	50.8	183.0	8,237
East Carroll	60.4	44.5	150.0	7,210
Evangeline	29.4	32.3	116.0	5,227
Jefferson Davis	21.5	43.8	157.8	6,000
St. Landry	40.9	36.8	132.5	5,962
Vermilion	29.6	37.0	133.3	7,100
West Carroll	50.1	53.1	191.2	8,603
TOTALS	**328.4**	**43.4**	**156.4**	**7,040**

* No ratoon crop was harvested in the verification program in 2005.

Continued.

Table 3. Continued.

2007 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Avoyelles	40.9	56.7	204	9,187
Concordia	53.8	53.6	193	8,680
East Carroll	23.0	49.0	176	7,917
Evangeline – St. Landry	33.9	50.1	180	8,122
Jefferson Davis*	38.9	55.8	201	9,046
Vermilion*	36.6	46.0	166	7,451
West Carroll	40.2	45.4	164	7,356
TOTALS	**267.3**	**51.2**	**184**	**8,293**

* Yield includes second crop.

2008 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Avoyelles	40.9	47	170	7,657
Calcasieu*	55.1	51	183	8,247
Concordia	54.7	44	160	7,178
Evangeline	46.4	42	152	6,840
Madison	41.5	51	182	8,208
Jefferson Davis*	37.7	52	189	8,481
St. Landry	60.2	48	173	7,801
Vermilion*	51.1	70	252	11,359
TOTALS	**387.6**	**51**	**183**	**8,228**

* Yield includes second crop.

2009 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Acadia*	56.6	70.9	255.3	11,489
Avoyelles	28.6	50.7	182.5	8,214
Calcasieu*	41.7	58.1	209.3	9,418
Concordia	57.0	49.6	178.6	8,035
East Carroll	33.6	41.3	148.7	6,692
Evangeline*	22.5	61.7	222.2	9,999
Madison	29.0	50.4	181.5	8,168
St. Landry	49.4	49.3	177.5	7,987
Vermilion*	41.5	66.9	241.0	10,843
TOTALS	**359.9**	**56.0**	**201.7**	**9,078**

* Yield includes second crop.

Continued.

Table 3. Continued.

2010 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Avoyelles	41.8	49.7	179.0	8,057
Jefferson Davis*	35.8	67.5	243.1	10,941
St. Landry	31.3	44.3	159.4	7,171
TOTALS	**108.9**	**54.0**	**194.4**	**8,750**

* Yield includes second crop.

2011 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Allen	23.2	48.1	173.3	7,799
Cameron[1]	17.6	57.6	207.4	9,332[1]
Madison	10.5[2]	57.9	208.5	9,382
St. Landry	45.7	42.5	153.1	6,890
Vermilion	24.0	54.0	194.5	8,754
TOTALS	**121.0**	**49.4**	**177.9**	**8,005**

[1] Yield includes second crop.
[2] Yield calculated on 10.5 acres, total field acres 73.4.

2012 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Allen	30.7	45.6	164.2	7,391
Cameron[1]	35.7	42.3	152.4	6,858
Concordia	37.4	45.2	162.7	7,321
St. Landry[1]	44.1	64.9	233.6	10,510
Vermilion	16.5	44.1	158.6	7,137
TOTALS	**164.4**	**49.8**	**179.3**	**8,071**

[1] Yield includes second crop.

2013 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Evangeline	38.0	51.7	186.0	8,368
Jefferson Davis[1]	39.3	65.1	234.2	10,541
St. Landry[1]	52.4	75.2	270.7	12,183
Vermilion	17.3	36.4	131.1	5,898
W. Carroll	34.5	65.3	235.2	10,582
TOTALS	**181.5**	**62.5**	**225.0**	**10,125**

[1] Yield includes second crop.

Continued.

Table 3. Continued.

2014 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Concordia	23.0	48.5	174.8	7,865
Evangeline	20.7	46.2	166.3	7,483
Jefferson Davis[1]	42.6	83.8	301.6	13,574
Vermilion[1]				
W. Carroll	32.2	51.4	185.1	8,329
TOTALS	**118.5**			**9,931**

[1] Yield includes second crop.

2015 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Acadia [1]	40.5	85.5	308	13,867
Cameron [1]	45	65	233	10,522
Concordia	18	52	189	8,487
Vermilion	39.2	40	145	6,529
W. Carroll	36.5	56	202	9,089
TOTALS	**179.2**	**61**	**219.9**	**9,908**

[1] Yield includes second crop.

2016 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Acadia [1]	45	74.34	267.6	12,040
Cameron [1]	25	61.5	221.4	9,960
Concordia	18	48.9	176	7,930
Vermilion[2]	18			
Richland	24	42	151	6,902
TOTALS[3]	**112**	**60.4**	**217**	**9,814**

[1] Yield includes second crop.
[2] Not harvested due to flood
[3]Harvested acres only

2017 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Avoyelles	31.6	35.12	137.23	6,475
Calcasieu[1]	19.5	54.79	197.3	8,887
East Carroll	5[2]	59.8	215.75	9,709
Richland	32.7	52.25	188.12	8,465
Morehouse	34.4	65.8	237	10,667
TOTALS	**123.2**	**52.3**	**191.28**	**8,686**

[1] Yield includes second crop.
[2] Yield calculated on 5 acres, total field area 90 acres

Continued.

Table 3. Continued.

2018 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Avoyelles	31	46.47	167.2	7,528
Calcasieu[1]	16.9	47.7	171.3	7,730
East Carroll	6[2]	56.2	202.6	9,117
Vermilion	30	49.2	177.2	7,978
TOTALS	**83.9**	**48.3**	**174.1**	**7,843**

[1] Yield includes second crop.
[2] Yield calculated on 6 acres, total field area 90 acres

2019 Verification Acres and Yields

		Yield at 12% Moisture		
Parish	**acres**	**bbls/A**	**bu/A**	**lb/A**
Acadia	8	37.4	134.6	6,060
Evangeline	31	37.4	134.6	6,060
Jefferson Davis[1]	18	54.1	194.6	8,766
Morehouse	13	38.9	140.2	6,309
TOTALS	**70**	**41.96**	**151**	**6,244**

[1] Yield includes second crop.

Table 4. 1998 – 2019 Rice Research Verification Yield Summary

Verification Totals			Verification Parish Totals [2]		
Year	**Acres**	**Lb/A**	**Acres**	**Lb/A**	**Difference**
1998	427.6	6,018	475,103	5,052	966
1999	320.3	6,273	444,015	5,502	771
2000	393.8	5,780	385,824	5,620	160
2001	489.1	7,438	412,286	5,794	1,644
2002	433.6	7,551	412,630	5,764	1,787
2003	462.7	7,404	327,843	5,843	1,561
2004	455.7	6,848	311,606	5,582	1,266
2005	538.7	6,670	402,759	6,165	505
2006	328.4	7,040	185,249	5,644	1,396
2007	267.3	8,293	183,357	6,501	1,792
2008	387.6	8,228	258,845	6,047	2,181
2009	359.9	9,078	246,793	6,715	2,363
2010	108.9	8,750	125,856	6,488	2,262
2011	121.0	8,005	110,236	6,175	1,830
2012	164.4	8,071	109,823	6,043	2,028
2013	181.5	10,125	202,366	7,524	2,602
2014	118.5	9,931	194,761	7,541	2,390
2015	179.2	9,908	149,888	6,860	3,048
2016	112	9,814	159,514	6,549	3,265
2017	**123.2**	**8,686**	**50,176**	**7,482**	**1,204**
2018	**83.9**	**7,843**	**77,214**	**6,580**	**1,263**
2019	**70**	**6,801**	*****	*****	*****
Totals	**5,934.1**		**48,016,954**		

[2] Verification Parish totals derived by participating parish acreage multiplied by average parish yield (taken from Ag Summary), add totals, and divide by participating parish total acreage to get lb/A.

* Not available at press time.

STATION PERSONNEL

Donald E. Groth, Professor ---------- Resident Coordinator	
Valerie B. Dartez	Administrative Coordinator 3
Raymond R. Dilly, Jr.	Safety Coordinator/Research Associate
Kimberly G. Guidry	Accounting Specialist 1
Carol D. LeDoux	Administrative Program Specialist-A
Donna L. Sonnier	Custodian 1
Adam N. Famoso, Assistant Professor ---------- Rice Breeding	
Brijesh Angira	**Assistant Professor-Research**
Karen F. Bearb	Research Associate/Coordinator
Corey A. Conner[1]	Research Associate/Specialist
Jennifer D. Dartez	Research Farm Specialist 2
Gavin J. Guidry	Research Associate/Specialist
Christopher Hernandez[2]	Postdoctoral Researcher
Brady L. Williams[3]	Research Farm Specialist 2
Christopher K. Addison	Graduate Assistant
Tommaso Cerioli	Graduate Assistant
Raul Guerra[4]	Graduate Assistant
Donald E. Groth, Professor ---------- Rice Pathology	
Carl W. Dischler[5]	Research Associate/Specialist
Jesse L. Greene, Jr.[6]	Research Associate/Specialist
Laura L. Monte [7]	Research Farm Specialist 2
Dustin L. Harrell, Professor/Research Coordinator ---------- Rice Agronomy/Rotational Crops/Extension	
Jacob S. Fluitt	Research Associate/Specialist
Jason R. Hartman[8]	Research Farm Specialist 1
James P. Leonards	Research Associate/Specialist
Nutifafa Adotey[9]	Postdoctoral Researcher
Anna E. Coker	Graduate Assistant
Wipada Butsai[10]	Graduate Assistant
Manoch Kongchum, Assistant Professor-Research ---------- Rice Agronomy/Rotational Crops	
William J. Leonards, Jr., Research Associate/Coordinator/Manager ---------- Farm Management	
Brent W. Theunissen	Research Associate/Coordinator/Manager
Brian D. Broussard	Research Farm Supervisor
Brandon J. Frey	Research Farm Manager
Paul A. Miller	Research Farm Specialist 1
Jimmy D. Pellerin	Research Farm Specialist 2
Thomas J. Reed	Research Farm Specialist 2
Dustin M. Reiners[11]	Research Farm Specialist 1

[1] Separated 12/31/2019
[2] Appointed 06/24/2019
[3] Promoted to Farm Research Specialist 2 10/23/2019
[4] Appointed 05/24/2019
[5] Retired 02/28/2019
[6] Appointed 3/01/2019, Separated 10/31/2019
[7] Promoted to Research Farm Specialist 2 10/23/2019
[8] Promoted to Research Farm Specialist 1 10/23/2019
[9] Separated 08/23/2019
[10] Appointed 08/05/2019
[11] Separated 05/31/2019

STATION PERSONNEL
(Continued)

Mark G. Shirley, Agent[12] **----------Aquaculture**

John J. Sonnier	Research Farm Specialist

James H. Oard, Professor ----------Rice Hybrid Breeding

Weiki Li	Visiting Scientist
Tara L. Roy	Research Farm Specialist 1
Jessica L. Thornton	Research Associate/Specialist
Anna H. Borjas Artica	Graduate Assistant
Leonard M. Gaspar[13]	Graduate Assistant
Paola Mosquera	Graduate Assistant
Democrito Banay Rebong II	Graduate Assistant

Dean J. LeJeune, Research Farm Maintenance Manager ---------- Maintenance Department

Nathan T. Breaux	Maintenance Repairer 1
Justin P. Sarver	Maintenance Repairer 2

Blake E. Wilson, Assistant Professor---------- Rice Entomology

Marty J. Frey[14]	Research Associate/Specialist
Kim J. Landry[15]	Research Associate/Specialist

Herry S. Utomo, Professor ---------- Marker-Assisted Selection Breeding/Biotechnology

Hayden J. Dugas[16]	Research Farm Specialist 1
Gretchen M. Zaunbrecher	Research Associate/Specialist

Ida Wenefrida, Associate Professor - Research ----------Biotechnology

Richard E. Zaunbrecher, Research Associate/Coordinator ----------Foundation Seed Rice

---

[12] Appointed 01/01/2019
[13] Resigned 12/24/2019
[14] Retired 04/01/2019
[15] Appointed 04/01/2019
[16] Appointed 06/24/2019

LSU AGCENTER CAMPUS PERSONNEL

LSU AgCenter personnel conducting research at the H. Rouse Caffey Rice Research Station include the following:

Michael A. Deliberto, Assistant Professor for Research---------- Economics
Department of Agricultural Economics and Agribusiness

Jong Hyun Ham, Associate Professor ---------- Rice Diseases
Department of Plant Pathology and Crop Physiology

Inderjit K. Barphagha	Research Associate
Jobelle Bruno[17]	Graduate Assistant
John Ontoy	Graduate Assistant

Michael E. Salassi, Professor ---------- Economic
Department of Agricultural Economics and Agribusiness

Michael J. Stout, Professor---------- Rice Entomology
Department of Entomology

Blake E. Wilson	Assistant Professor
Lina Bernaola Alvarado[18]	Graduate Assistant
Megan M. Mulcahy	Graduate Assistant
James M.P. Villegas	Research Associate

Eric P. Webster, Professor ---------- Rice Weed Control
School of Plant, Environmental and Soil Sciences

Benjamin M. McKnight	Postdoctoral Researcher
Samer Y. Rustom, Jr.	Graduate Assistant
David C. Walker	Graduate Assistant

[17] Appointed 01/01/2019
[18] Separated 12/15/2019

COOPERATING PERSONNEL

Cooperating personnel on research projects at the H. Rouse Caffey Rice Research Station include the following:

Lucas Aviles[19] **---------- Rice Breeding**

University of Puerto Rico Research and Extension Center
Lajas, Puerto Rico

Niranjan Baisakh---------- Rice Breeding

School of Plant, Environmental and Soil Sciences
Louisiana State University Agricultural Center

Steve A. Harrison ---------- Wheat, Oats, and Coastal Erosion Control

School of Plant, Environmental and Soil Sciences
Louisiana State University Agricultural Center

Boyd Padgett - Interim----------Soybeans

Dean Lee Research and Extension Center
Louisiana State University Agricultural Center

Anthony Rivera---------- Rice Breeding

University of Puerto Rico Research & Extension Center
Lajas, Puerto Rico

Aaron P. Smith ----------Rice Breeding

Department of Biological Sciences
Louisiana State University

Prasanta K. Subudhi ----------Rice Breeding

School of Plant, Environmental and Soil Sciences
Louisiana State University Agricultural Center

Brenda Tubaña ---------- Rice Fertilization

School of Plant, Environmental and Soil Sciences
Louisiana State University Agricultural Center

William F. Futch[20]**---------- Bird Control**

USDA Animal Damage Control
Crowley, Louisiana

---

[19] Retired 2019
[20] Appointed 2019

Visit our website: www.LSUAgCenter.com

William B. Richardson, LSU Vice President for Agriculture
Louisiana State University Agricultural Center
Louisiana Agricultural Experiment Station
Louisiana Cooperative Extension Service
LSU College of Agriculture

November 2020

This project was partially supported by the USDA National Institute of Food and Agriculture.

This research was supported in part by funding provided by rice producers through the Louisiana Rice Research Board.