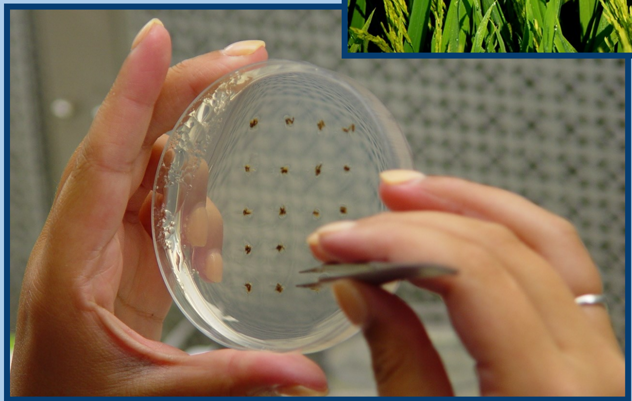
109th Annual Research Report

H. Rouse Caffey Rice Research Station

Crowley, Louisiana
2017



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Cover Photos

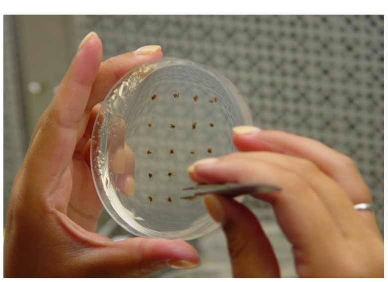
Panicle length in experimental hybrids.

Drone used to increase pollen transfer in plots for hybrid seed production – 2017 Field Day, Crowley.

Access impacts of new rice insecticide applications on crawfish.

Harvesting Breeding plots with a small plot combine.

Whitehead caused by rice stem borers feeding within the stem during the reproductive stage of the rice plant.



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

109th Annual Research Report

H. ROUSE CAFFEY RICE RESEARCH STATION

Crowley, Louisiana

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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 2017 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.

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 2017 are presented in this report representing the 109th 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, a large number of farmers, extension personnel, and others were trained and otherwise contacted during 2017. 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 Evangeline, Jefferson Davis, Morehouse, St. Landry, and Vermilion parishes. In addition, the faculty participated in industry meetings, both on and off of the station, and worked individually with farmers and others in solving immediate problems. Several thousand people received services from the HRCRRS during 2017.

Projects at this station are conducted under the supervision of research scientists from the HRCRRS and also by cooperating personnel from certain departments of the Louisiana Agricultural Experiment Station. Following the reports, station personnel and cooperators in 2017 are listed.

MONTHLY RAINFALL DATA
H. ROUSE CAFFEY RICE RESEARCH STATION - CROWLEY, LA
2017

DATE	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	YEAR TOTAL
1	5.10					.46			.05		.11		
2	.17		.02			.05					4.10		
3	.84			1.94						.23			
4					6.06	1.21							
5						.39							
6	.15		.12			.39	.05	.06				1.27	
7	.14	.05				.49	.07	.07				.22	
8			.20					.06		.41			
9							.06	.38			.11	1.20	
10			.06					.24		.28		.06	
11			.15				1.40	.02		.70			
12			.05	.07	.07	.32	1.90	.12					
13					.58	.57	.24	2.20					
14						.36	.14						
15		.22		.18			.07	.97					
16							.01	.47					
17				1.46			.77	.04				.86	
18		.03		.08			.11	.09	.42			.20	
19	2.72	.12		.09			.17					.02	
20	.40											1.15	
21	.47	1.30		.12	.74	.18	.02						
22	.07	.25			.21	1.38			.28	.66	.19		
23				.30	1.08	1.29	.24			.58		.19	
24					.04		.18						
25			.66				.02	.10					
26	.10		.07					.32					
27		.04						1.15				1.50	
28						1.00		1.68		1.15		.18	
29						.48		2.50				.02	
30			2.21	1.46	.48	.73		1.05			.30		
31					.62			.15				.23	
MONTH TOTAL													
2017	**10.16**	**2.01**	**3.54**	**5.70**	**9.88**	**9.30**	**5.45**	**11.67**	**.75**	**4.01**	**4.81**	**7.10**	**74.38**
2016	3.14	2.60	7.68	8.15	13.12	6.54	1.70	23.13	3.83	.59	2.91	6.86	80.25

RICE BREEDING

GENETIC IMPROVEMENT OF RICE FOR LOUISIANA PRODUCTION[1]

S.D. Linscombe, 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 varieties of both long- and medium-grain types. The project is also placing major emphasis on the development of special purpose types. Work is also progressing on incorporating the Clearfield trait in the Jazzman and Jazzman-2 varieties.

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 2017 rice breeding nursery included more than 90,000 breeding rows and 1,125 Preliminary Yield populations. About 500 new crosses were made along with 50 marker-assisted selection (MAS) greenhouse populations. On- and off-station testing included more than 5,000 yield plots. Yield testing included the Cooperative Uniform Regional Rice Nursery, which contained 200 experimental lines and checks (49 Louisiana entries). The Commercial Advanced trial was conducted at the H. Rouse Caffey Rice Research Station and six off-station locations.

The Preliminary Yield testing program evaluated over 1,000 lines (mainly of F_5 and F_6 generations), most for the first time. In addition to yield testing, these lines were also evaluated for seedling vigor, milling characteristics, quality parameters, and numerous other agronomic characteristics.

COMMERCIAL ADVANCED TRIAL

The Commercial Advanced Trial (CA) 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.

Trial locations in 2017 included the H. Rouse Caffey Rice Research Station (HRCRRS) at Crowley and six on-farm test sites in Jefferson Davis, Evangeline, Vermilion, Acadia, St. Landry, and Tensas parishes.

Sixty entries were tested in a randomized complete block design with three replications. Varieties and hybrids were seeded at 90 lb/A and 38 lb/A, respectively. Planting dates were: HRCRRS, March 14; Acadia, March 22; Evangeline, March 23; Jefferson Davis, March 9; St. Landry, March 21; Vermilion, March 8; and Tensas April 26. Harvest dates were: HRCRRS, Aug. 2; Acadia, Aug. 10; Evangeline, Aug. 17; Jefferson Davis, Aug. 1; St. Landry, Aug. 15; Vermilion, July 27, and Tensas Sept. 7. Results from these trials are shown in Tables 1-8.

Table 1. Entry number, pedigree, grain type, and source information for entries in the Commercial Advanced Trial, 2017.

ENTRY	PEDIGREE	GRAIN TYPE†	SOURCE‡
201	CL111	L	LAES
202	CL151	L	LAES
203	CL163	L	LAES
204	CL172	L	LAES
205	CL153	L	LAES
206	CL272	L	LAES
207	COCODRIE	L	LAES
208	CHENIERE	L	LAES
209	CATAHOULA	L	LAES
210	CYPRESS	L	LAES
211	MERMENTAU	L	LAES
212	LAKAST	L	AAES
213	ROY J	L	AAES
214	ANTONIO	L	TAES
215	PRESIDIO	L	TAES
216	JAZZMAN	L(A)	LAES
217	JAZZMAN-2	L(A)	LAES
218	DELLA-2	L(A)	LAES
219	JUPITER	M	LAES
220	CAFFEY	M	LAES
221	BASMATI	L	LAES
222	TITAN	M	AAES
223	DIAMOND	L	AAES
224	THAD	L	MAES
225	CHENIERE/BANKS	L	MAES
226	CL131/PSCL	L	MAES
227	CL151//COLUMBIA2/BENGAL	L	MAES
228	CLXL729	L	RICETEC

Continued.

Table 1. Continued.

ENTRY	PEDIGREE	GRAIN TYPE†	SOURCE‡
229	CLXL745	L	RICETEC
230	XL753	L	RICETEC
231	XL760	L	RICETEC
232	GEMINI 214 CL	L	RICETEC
233	AURA 115	L	RICETEC
234	CLH161	L	LAES
235	LAH169	L	LAES
236	09A/R608	L	LAES
237	PVL 24A	L	LAES
238	CPRS/BASF 1-13	L	LAES
239	TRNS/BASF 1-10	L	LAES
240	CHENIERE/BASF 1-2	L	LAES
241	CHENIERE/BASF 1-2	L	LAES
242	CHENIERE/BASF 1-6	L	LAES
243	JZMN/08CLR004//RU0802146/3/RU0802146	L(A)	LAES
244	TRNS/4/9502008A/DREW//CLR20/3/CPRS/KBNT//WELLS/CFX 18	L	LAES
245	CL131/TRNS	L	LAES
246	CL131/3/CPRS/KBNT//9502008-A	L	LAES
247	9502008/3/MBLE//LMNT/200015/4/WELLS/CFX18/5/TAGGART	L	LAES
248	9502008A/DREW//CLR20/5/9502008A/DREW//CLR20/4/CPRS/ KBNT//…	L	LAES
249	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/CFX-18//..	L	LAES
250	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	L	LAES
251	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29//…	L	LASE
252	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//…	L	LAES
253	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/…	L	LAES
254	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/…	L	LAES
255	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	M	LAES
256	CAFFEY/CL261	M	LAES
257	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/…	L	LAES
258	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/LGRU/LCSN/3/ CFX-18//…	L	LAES
259	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS	M	LAES
260	CATAHOULA/3/TRNS//9502008-A/DREW	L	LAES

† L = Long grain and M = Medium grain, (A) = Aromatic.

‡ AAES – Rice Research and Extension Center, Arkansas Agricultural Experiment Station, Stuttgart, AR; LAES – H. Rouse Caffey Rice Research Station, Louisiana Agricultural Experiment Station, LSU Agricultural Center, Crowley, LA; 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 2017 Commercial Advanced Trial. Acadia Parish, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
232	RICETEC	GEMINI 214 CL (hybrid)	3	87	43	11619	54.2	69.1
229	RICETEC	CLXL745 (hybrid)	3	84	39	11347	50.9	70.7
231	RICETEC	XL760 (hybrid)	3	87	43	11013	51.7	64.3
230	RICETEC	XL753 (hybrid)	4	89	39	10910	47.6	71.4
228	RICETEC	CLXL729 (hybrid)	4	87	40	10088	52.8	69.2
234	1602071	CLH161 (hybrid)	5	86	42	8945	58.8	70.1
236	1702085	09A/R608 (hybrid)	4	88	48	8479	50.0	64.9
235	1602082	LAH169 (hybrid)	5	83	37	8370	55.2	72.4
256	1702165	CAFFEY/CL261	4	87	35	8130	64.6	68.7
250	1602195	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	3	86	37	8003	61.1	68.6
212	LKST	LAKAST	4	84	38	7890	42.3	66.9
255	1702162	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	3	89	36	7855	65.5	69.2
253	1702042	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/…	4	85	34	7795	59.6	67.1
227	MS 4122	CL151//COLUMBIA2/BENGAL	5	89	36	7615	55.7	65.6
203	CL163	CL163	3	87	36	7611	58.7	69.6
219	JPTR	JUPITER	4	94	35	7529	59.5	63.8
244	1602002	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//…	4	88	33	7518	59.0	65.7
202	CL151	CL151	4	84	35	7494	64.4	71.4
248	1602112	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/…	4	85	34	7440	63.2	70.4
205	CL153	CL153	4	85	35	7410	63.1	72.1
245	1602097	CL131/TRNS	3	87	37	7391	57.8	66.5
249	1602131	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/…	4	80	35	7375	61.1	70.8
233	RICETEC	AURA 115	5	85	37	7300	56.6	71.5
220	CFFY	CAFFEY	4	90	35	7292	60.8	65.0
252	1602189	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/…	4	79	35	7274	62.3	71.0
222	AR 1021	TITAN	4	86	35	7159	62.3	67.3
223	AR 1084	DIAMOND	3	87	36	7132	47.0	68.7
206	CL272	CL272	3	90	33	7060	61.4	69.6
258	1702189	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/…	4	82	34	7025	58.9	69.1
246	1402091	CL131/3/CPRS/KBNT//9502008-A	4	84	30	6983	58.4	68.9
239	PVL 038	TRNS/BASF 1-10	6	83	35	6820	60.0	68.3
204	CL172	CL172	3	85	35	6810	61.8	71.7

Continued.

Table 2. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
259	1502183	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS	4	86	34	6792	60.1	64.7
243	1602088	JZMN/08CLR004//RU0802146/3/RU0802146	3	88	34	6763	64.0	70.8
213	ROY J	ROY J	3	89	41	6739	46.3	66.9
247	1402174	9502008/3/MBLE//LMNT/200015/4/WELLS/CFX18/5/…	4	86	35	6721	61.3	68.3
214	ANTO	ANTONIO	4	83	33	6675	62.5	71.1
201	CL111	CL111	5	79	35	6610	63.4	71.4
242	PVL 108	CHENIERE/BASF 1-6	4	84	40	6605	60.3	72.0
237	PVL01	PVL01	4	89	37	6584	51.0	71.7
254	1702045	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/…	4	77	32	6535	63.7	72.2
209	CHTL	CATAHOULA	5	81	35	6489	51.6	68.8
251	1502094	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/…	4	90	35	6485	58.2	67.7
260	1602051	CATAHOULA/3/TRNS//9502008-A/DREW	4	83	35	6420	56.6	67.4
226	MS 4083	CL131/PSCL	6	87	33	6357	50.7	65.7
238	PVL 013	CPRS/BASF 1-13	4	85	35	6275	61.3	69.2
257	1702168	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/…	4	83	33	6209	60.7	70.3
218	DLLA 2	DELLA-2	3	85	36	6135	53.1	65.7
208	CHNR	CHENIERE	5	86	34	5984	52.5	69.6
240	PVL 080	CHENIERE/BASF 1-2	6	84	36	5973	63.8	72.1
215	PSDO	PRESIDIO	4	85	36	5917	58.7	69.3
211	MRMT	MERMENTAU	6	84	35	5723	58.0	68.4
225	MS 4114	CHENIERE/BANKS	6	94	39	5648	49.6	69.3
210	CPRS	CYPRESS	4	86	33	5536	54.6	69.2
221	BSMT	BASMATI	4	85	36	5360	47.0	68.2
224	MS 4077	THAD	6	91	36	5337	51.4	68.2
216	JZMN	JAZZMAN	4	96	37	5178	53.9	68.0
241	PVL 081	CHENIERE/BASF 1-2	5	95	41	5010	45.0	65.8
217	JZMN2	JAZZMAN-2	4	86	32	4316	59.5	68.9
207	CCDR	COCODRIE	7	89	35	4161	50.5	66.0

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

Table 3. Grain and milling yields and agronomic performance of entries in the 2017 Commercial Advanced Trial. Evangeline Parish, LA

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
232	RICETEC	GEMINI 214 CL (hybrid)	3	86	43	9692
236	1702085	09A/R608 (hybrid)	4	91	50	9666
230	RICETEC	XL753 (hybrid)	4	90	41	9498
231	RICETEC	XL760 (hybrid)	5	89	43	9465
234	1602071	CLH161 (hybrid)	4	89	45	9026
228	RICETEC	CLXL729 (hybrid)	4	86	40	8879
229	RICETEC	CLXL745 (hybrid)	3	81	40	8749
235	1602082	LAH169 (hybrid)	5	90	41	7892
202	CL151	CL151	4	87	34	7403
205	CL153	CL153	3	90	35	7271
233	RICETEC	AURA 115	6	90	36	7234
219	JPTR	JUPITER	5	100	37	7148
255	1702162	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	3	94	36	7067
203	CL163	CL163	4	90	35	6988
209	CTHL	CATAHOULA	5	92	38	6936
245	1602097	CL131/TRNS	3	91	38	6817
222	AR 1021	TITAN	4	91	35	6789
206	CL272	CL272	3	95	37	6772
249	1602131	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/…	3	83	32	6704
243	1602088	JZMN/08CLR004//RU0802146/3/RU0802146	3	94	34	6651
250	1602195	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	88	35	6639
259	1502183	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS	4	93	38	6514
227	MS 4122	CL151//COLUMBIA2/BENGAL	5	92	37	6436
253	1702042	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/…	3	80	31	6411
216	JZMN	JAZZMAN	4	98	37	6288
251	1502094	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29//..	3	91	36	6282
208	CHNR	CHENIERE	6	96	35	6152
256	1702165	CAFFEY/CL261	4	92	36	6143

Continued.

Table 3. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
237	PVL01	PVL01	5	100	37	6140
220	CFFY	CAFFEY	6	99	36	6089
239	PVL 038	TRNS/BASF 1-10	5	93	33	6059
242	PVL 108	CHENIERE/BASF 1-6	5	97	38	6033
223	AR 1084	DIAMOND	5	94	37	6028
246	1402091	CL131/3/CPRS/KBNT//9502008-A	3	84	31	5996
218	DLLA 2	DELLA-2	4	96	38	5983
248	1602112	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/CPRS/…	4	90	32	5967
260	1602051	CATAHOULA/3/TRNS//9502008-A/DREW	4	92	39	5906
224	MS 4077	THAD	6	95	36	5885
214	ANTO	ANTONIO	6	97	36	5875
247	1402174	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/5/TAGGART	4	86	35	5872
215	PSDO	PRESIDIO	4	94	36	5850
252	1602189	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//…	3	81	33	5820
212	LKST	LAKAST	6	97	39	5805
254	1702045	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/…	3	46	33	5794
204	CL172	CL172	4	82	33	5786
244	1602002	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	4	90	34	5759
258	1702189	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/LGRU/…	3	81	31	5723
240	PVL 080	CHENIERE/BASF 1-2	5	88	36	5680
201	CL111	CL111	5	83	34	5547
213	ROY J	ROY J	6	104	40	5546
257	1702168	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/…	3	80	33	5431
225	MS 4114	CHENIERE/BANKS	8	103	41	5328
226	MS 4083	CL131/PSCL	6	88	32	5017
207	CCDR	COCODRIE	7	105	36	4971
210	CPRS	CYPRESS	4	96	36	4970
221	BSMT	BASMATI	5	95	35	4953
217	JZMN2	JAZZMAN-2	5	97	32	4625
238	PVL 013	CPRS/BASF 1-13	6	95	33	4530
211	MRMT	MERMENTAU	8	103	37	3230
241	PVL 081	CHENIERE/BASF 1-2	7	105	40	2376

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

Table 4. Grain and agronomic performance of entries in the 2017 Commercial Advanced Trial. Jefferson Davis Parish, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
232	RICETEC	GEMINI 214 CL (hybrid)	3	83	42	11576
231	RICETEC	XL760 (hybrid)	2	83	41	11065
236	1702085	09A/R608 (hybrid)	5	90	48	11028
230	RICETEC	XL753 (hybrid)	4	83	40	10724
228	RICETEC	CLXL729 (hybrid)	5	83	41	10611
229	RICETEC	CLXL745 (hybrid)	3	81	42	9274
234	1602071	CLH161 (hybrid)	6	85	43	9132
219	JPTR	JUPITER	5	91	36	9126
235	1602082	LAH169 (hybrid)	6	82	38	8970
206	CL272	CL272	3	91	37	8794
202	CL151	CL151	5	86	34	8693
204	CL172	CL172	3	85	32	8502
247	1402174	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/5/TAGGART	5	84	34	8397
255	1702162	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	4	54	36	8396
203	CL163	CL163	4	85	35	8383
222	AR 1021	TITAN	2	84	36	8375
256	1702165	CAFFEY/CL261	4	87	35	8373
220	CFFY	CAFFEY	5	90	35	8339
257	1702168	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/…	4	82	33	8315
249	1602131	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/…	4	83	33	8240
223	AR 1084	DIAMOND	4	82	37	8227
251	1502094	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29//..	4	87	35	8152
212	LKST	LAKAST	4	84	39	8080
245	1602097	CL131/TRNS	4	84	36	8072
259	1502183	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS	5	87	35	8070
226	MS 4083	CL131/PSCL	7	85	35	8051
250	1602195	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	5	85	35	8038
246	1402091	CL131/3/CPRS/KBNT//9502008-A	4	84	32	8035
213	ROY J	ROY J	3	87	38	8030

Continued.

Table 4. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD
209	CTHL	CATAHOULA	5	87	33	8026
244	1602002	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	6	84	33	8013
252	1602189	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//…	5	83	35	7980
248	1602112	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/CPRS/…	4	86	34	7976
205	CL153	CL153	5	87	34	7827
233	RICETEC	AURA 115	5	84	33	7694
253	1702042	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//…	4	82	31	7675
260	1602051	CATAHOULA/3/TRNS//9502008-A/DREW	5	86	35	7564
243	1602088	JZMN/08CLR004//RU0802146/3/RU0802146	4	86	32	7546
208	CHNR	CHENIERE	6	88	34	7390
224	MS 4077	THAD	6	85	33	7388
215	PSDO	PRESIDIO	5	85	33	7326
201	CL111	CL111	7	85	35	7233
216	JZMN	JAZZMAN	6	89	37	7206
242	PVL 108	CHENIERE/BASF 1-6	5	52	39	7200
258	1702189	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/…	4	82	33	7014
214	ANTO	ANTONIO	5	87	33	6981
207	CCDR	COCODRIE	7	90	34	6757
254	1702045	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26…	4	81	33	6642
240	PVL 080	CHENIERE/BASF 1-2	5	82	37	6633
227	MS 4122	CL151//COLUMBIA2/BENGAL	8	87	35	6456
210	CPRS	CYPRESS	5	89	34	6332
211	MRMT	MERMENTAU	8	87	34	6316
237	PVL 24A	PVL 24A	5	90	34	6261
221	BSMT	BASMATI	5	82	33	6242
241	PVL 081	CHENIERE/BASF 1-2	5	92	38	6075
225	MS 4114	CHENIERE/BANKS	7	89	40	6033
217	JZMN2	JAZZMAN-2	4	86	32	5996
239	PVL 038	TRNS/BASF 1-10	5	86	33	5558
218	DLLA 2	DELLA-2	5	88	35	5302
238	PVL 013	CPRS/BASF 1-13	5	88	32	4644

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

Table 5. Grain and milling yields and agronomic performance of entries in the 2017 Commercial Advanced Trial. H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
232	RICETEC	GEMINI 214 CL (hybrid)	4	83	41	11902	47.3	71.3
231	RICETEC	XL760 (hybrid)	4	81	42	11860	46.2	73.2
230	RICETEC	XL753 (hybrid)	5	80	38	11851	48.1	75.0
228	RICETEC	CLXL729 (hybrid)	5	82	40	11358	44.1	76.0
229	RICETEC	CLXL745 (hybrid)	4	78	41	10520	51.6	74.6
236	1702085	09A/R608 (hybrid)	4	86	51	9965	46.0	65.8
234	1602071	CLH161 (hybrid)	4	79	43	9899	56.8	75.7
222	AR 1021	TITAN	3	80	37	9885	60.4	70.3
235	1602082	LAH169 (hybrid)	4	77	41	9600	57.6	75.4
220	CFFY	CAFFEY	4	85	36	9329	61.5	66.6
223	AR 11084	DIAMOND	4	81	38	9279	48.5	72.4
255	1702162	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	3	83	36	9174	65.0	75.0
206	CL272	CL272	3	84	35	9162	59.0	72.5
256	1702165	CAFFEY/CL261	3	80	36	9161	67.9	71.1
212	LKST	LAKAST	3	81	40	9054	50.2	73.5
213	ROY J	ROY J	3	83	40	9034	52.4	73.9
219	JPTR	JUPITER	5	85	37	8956	60.8	62.7
202	CL151	CL151	3	82	36	8903	62.0	76.0
245	1602097	CL131/TRNS	3	79	38	8852	60.4	73.4
224	MS 14077	THAD	6	81	35	8844	57.2	73.2
259	1502183	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS	4	82	36	8794	61.0	70.5
247	1402174	9502008/3/MBLE//LMNT/200015/4/WELLS/CFX18/5/TAGGART	4	82	34	8737	56.2	75.0
248	1602112	9502008A/DREW//CLR20/5/9502008A/DREW//CLR20/4/CPRS/ KBNT//…	4	82	33	8707	58.1	75.1
205	CL153	CL153	3	81	35	8523	55.5	75.0
226	MS 14083	CL131/PSCL	6	81	35	8472	46.3	72.5

Continued.

Table 5. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
233	RICETEC	AURA 115	4	79	38	8452	58.7	75.9
250	1602195	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	82	37	8451	56.8	74.7
227	MS 14122	CL151//COLUMBIA2/BENGAL	6	82	36	8437	48.7	71.8
208	CHNR	CHENIERE	5	82	34	8346	69.1	78.4
225	MS 14114	CHENIERE/BANKS	6	84	42	8326	67.6	77.1
253	1702042	TRNS//CCDR/JEFF/5/9502008A/DREW//CLR20/4/CPRS/KBNT//…	4	78	33	8250	57.2	73.7
254	1702045	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	4	77	35	8200	64.1	77.2
203	CL163	CL163	3	81	36	8171	61.2	75.9
249	1602131	LGRU/LCSN/3/CFX18//CCDR/9770532DH2/4/CCDR/JEFF/3/CFX18//…	3	79	33	8159	63.4	75.1
204	CL172	CL172	3	82	32	8099	56.2	74.8
260	1602051	CATAHOULA/3/TRNS//9502008-A/DREW	4	81	36	8073	48.6	72.6
246	1402091	CL131/3/CPRS/KBNT//9502008-A	4	81	32	8069	57.2	75.7
257	1702168	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/…	4	80	33	8064	61.0	76.0
251	1502094	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29/…	3	83	35	8060	47.6	74.5
244	1602002	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	5	80	33	8055	59.3	76.9
243	1602088	JZMN/08CLR004//RU0802146/3/RU0802146	3	81	33	8027	69.7	78.0
209	CTHL	CATAHOULA	4	81	35	7994	50.5	77.0
215	PSDO	PRESIDIO	4	81	34	7985	61.1	78.0
252	1602189	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//…	4	79	35	7967	60.1	76.3
258	1702189	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/LGRU/…	4	79	35	7888	60.5	75.2
201	CL111	CL111	4	81	35	7830	61.3	76.5
242	PVL 108	CHENIERE/BASF 1-6	4	81	37	7519	64.2	78.6
237	PVL 24A	PVL 24A	3	84	35	7484	60.8	76.1
216	JZMN	JAZZMAN	4	85	37	7454	66.4	75.7
211	MRMT	MERMENTAU	6	81	34	7255	62.5	77.2
221	BSMT	BASMATI	4	79	35	7207	50.3	76.1
214	ANTO	ANTONIO	4	82	33	7167	61.8	75.9

Continued.

Table 5. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
210	CPRS	CYPRESS	3	83	33	7012	62.5	76.7
218	DLLA 2	DELLA-2	4	83	37	6928	60.6	75.5
240	PVL 080	CHENIERE/BASF 1-2	5	78	36	6897	55.7	75.5
238	PVL 013	CPRS/BASF 1-13	4	83	34	6892	57.5	73.1
217	JZMN2	JAZZMAN-2	4	83	33	6843	70.1	77.1
239	PVL 038	TRNS/BASF 1-10	5	81	32	6742	60.2	72.9
207	CCDR	COCODRIE	5	82	33	6350	46.9	75.0
241	PVL 081	CHENIERE/BASF 1-2	5	87	36	6037	55.0	73.8

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

Table 6. Grain and milling yields and agronomic performance of entries in the 2017 Commercial Advanced Trial. Vermilion Parish, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
232	RICETEC	GEMINI 214 CL (hybrid)	3	82	44	11872	52.2	66.9
231	RICETEC	XL760 (hybrid)	3	82	42	11596	55.5	68.8
230	RICETEC	XL753 (hybrid)	3	81	37	11530	56.7	72.8
229	RICETEC	CLXL745 (hybrid)	3	77	39	10939	58.8	72.3
228	RICETEC	CLXL729 (hybrid)	3	82	40	10046	57.7	70.6
236	1702085	09A/R608 (hybrid)	5	89	47	9355	45.2	60.3
234	1602071	CLH161 (hybrid)	6	81	44	8963	58.4	70.4
219	JPTR	JUPITER	4	88	35	8683	55.0	57.9
206	CL272	CL272	2	88	36	8396	61.0	69.4
222	AR 1021	TITAN	3	84	36	8214	60.9	66.6
233	RICETEC	AURA 115	5	82	37	8175	56.3	73.2
252	1602189	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/…	5	79	34	7996	65.2	73.5
220	CFFY	CAFFEY	4	88	36	7956	58.2	63.5
203	CL163	CL163	3	81	37	7948	58.9	71.5
235	1602082	LAH169 (hybrid)	7	80	41	7924	57.6	71.7
257	1702168	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/…	4	81	33	7840	59.9	70.8
249	1602131	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/…	4	82	33	7833	63.4	73.0
202	CL151	CL151	5	83	34	7795	59.1	71.6
255	1702162	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	4	86	35	7741	65.2	69.0
246	1402091	CL131/3/CPRS/KBNT//9502008-A	4	83	32	7658	56.6	70.9
256	1702165	CAFFEY/CL261	3	84	36	7624	65.4	71.0
259	1502183	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS	4	84	35	7618	60.8	67.3
223	AR 1084	DIAMOND	3	82	38	7608	51.8	69.4
258	1702189	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/…	4	80	32	7564	63.5	71.1
204	CL172	CL172	4	82	34	7501	57.2	71.8

Continued.

Table 6. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
205	CL153	CL153	4	84	34	7451	63.4	73.3
243	1602088	JZMN/08CLR004//RU0802146/3/RU0802146	5	87	33	7384	63.9	71.7
254	1702045	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/…	4	76	34	7340	64.9	73.5
212	LKST	LAKAST	4	82	39	7245	48.7	70.1
245	1602097	CL131/TRNS	4	83	37	7242	59.3	69.9
244	1602002	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/ CFX 18	5	82	33	7160	57.9	69.4
250	1602195	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	5	84	34	7155	62.4	72.6
251	1502094	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3..	4	85	34	7135	60.6	70.3
248	1602112	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/..	5	85	34	7094	36.4	72.0
213	ROY J	ROY J	3	85	40	7087	49.7	67.9
224	MS 4077	THAD	6	80	34	7042	57.3	71.1
247	1402174	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/5/…	4	83	33	7007	61.7	69.8
237	PVL 24A	PVL01	4	89	35	6806	51.9	70.5
208	CHNR	CHENIERE	6	84	34	6806	60.1	74.7
215	PSDO	PRESIDIO	4	82	35	6733	60.1	71.7
253	1702042	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/…	4	81	32	6697	60.3	70.1
240	PVL 080	CHENIERE/BASF 1-2	5	81	37	6641	63.7	73.1
242	PVL 108	CHENIERE/BASF 1-6	5	82	39	6462	63.2	72.9
209	CTHL	CATAHOULA	6	82	34	6434	57.2	71.7
201	CL111	CL111	6	83	35	6418	59.5	69.1
214	ANTO	ANTONIO	5	85	36	6322	59.4	70.9
260	1602051	CATAHOULA/3/TRNS//9502008-A/DREW	6	83	35	6169	54.1	68.8
210	CPRS	CYPRESS	4	83	33	6124	59.6	70.4
238	PVL 013	CPRS/BASF 1-13	5	85	34	6122	61.5	71.0
221	BSMT	BASMATI	5	81	35	6081	52.1	72.2

Continued.

Table 6. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
239	PVL 038	TRNS/BASF 1-10	5	85	33	5848	61.9	70.6
216	JZMN	JAZZMAN	6	91	39	5570	48.8	63.2
226	MS 4083	CL131/PSCL	7	83	32	5569	53.0	69.0
207	CCDR	COCODRIE	7	84	33	5501	53.3	68.0
218	DLLA 2	DELLA-2	5	86	36	5488	51.3	68.9
241	PVL 081	CHENIERE/BASF 1-2	6	90	39	5482	49.3	66.6
227	MS 4122	CL151//COLUMBIA2/BENGAL	8	86	36	5116	35.9	65.7
225	MS 1504114	CHENIERE/BANKS	8	87	41	4460	46.1	71.5
211	MRMT	MERMENTAU	8	83	35	4454	55.6	66.1
217	JZMN2	JAZZMAN-2	4	85	31	4435	56.5	71.6

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

Table 7. Grain performance of entries in the 2017 Commercial Advanced Trial. St. Landry Parish, LA.

ENT	SOURCE	PEDIGREE	HTE	LDG	YIELD
232	RICETEC	GEMINI 214 CL (hybrid)	42	27	12900
228	RICETEC	CLXL729 (hybrid)	44		12319
231	RICETEC	XL760 (hybrid)	40	17	11639
230	RICETEC	XL753 (hybrid)	41	10	11045
229	RICETEC	CLXL745 (hybrid)	45	40	10508
236	1702085	09A/R608 (hybrid)	47	43	10416
233	RICETEC	AURA 115	38	27	10326
235	1602082	LAH169 (hybrid)	41	30	10014
234	1602071	CLH161 (hybrid)	42	37	9297
223	AR 1084	DIAMOND	36		9230
255	1702162	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	38		9078
225	MS 4114	CHENIERE/BANKS	43		9038
213	ROY J	ROY J	39	17	8895
222	AR 1021	TITAN	37	14	8784
224	MS 4077	THAD	36	10	8748
212	LKST	LAKAST	35		8686
204	CL172	CL172	38	27	8650
219	JPTR	JUPITER	36		8493
256	1702165	CAFFEY/CL261	39		8483
220	CFFY	CAFFEY	36		8469
216	JZMN	JAZZMAN	40		8329
227	MS 4122	CL151//COLUMBIA2/BENGAL	38		8132
215	PSDO	PRESIDIO	36	13	7803
202	CL151	CL151	38	23	7589
226	MS 4083	CL131/PSCL	34	20	7536
206	CL272	CL272	38		7449
208	CHNR	CHENIERE	37	13	7406

Continued.

Table 7. Continued.

ENT	SOURCE	PEDIGREE	HTE	LDG	YIELD
242	PVL 108	CHENIERE/BASF 1-6	39	27	7228
259	1502183	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS	36	13	7216
250	1602195	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	37		7191
203	CL163	CL163	35	33	7070
260	1602051	CATAHOULA/3/TRNS//9502008-A/DREW	37		7021
211	MRMT	MERMENTAU	35		7020
205	CL153	CL153	36		7006
248	1602112	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//…	45	43	6942
245	1602097	CL131/TRNS	39	40	6924
252	1602189	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/…	36		6879
218	DLLA 2	DELLA-2	38		6751
253	1702042	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	36	40	6550
243	1602088	JZMN/08CLR004//RU0802146/3/RU0802146	38	20	6478
240	PVL 080	CHENIERE/BASF 1-2	39	10	6356
244	1602002	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	37	13	6350
209	CTHL	CATAHOULA	38	13	6139
257	1702168	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/CFX-29/…	35	50	6090
237	PVL01	PVL01	36	27	5742
246	1402091	CL131/3/CPRS/KBNT//9502008-A	33	17	5700
251	1502094	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29//AR 1142/…	36		5686
258	1702189	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/LGRU/LCSN/3/…	37	17	5591
239	PVL 038	TRNS/BASF 1-10	39		5580
214	ANTO	ANTONIO	40		5572
247	1402174	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/5/TAGGART	41	13	5499
254	1702045	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	36	47	5489
207	CCDR	COCODRIE	33	17	5326
217	JZMN2	JAZZMAN-2	35	17	5248
238	PVL 013	CPRS/BASF 1-13	37		5199

Continued.

Table 7. Continued.

ENT	SOURCE	PEDIGREE	HTE	LDG	YIELD
249	1602131	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/CFX-18//CCDR/…	35		5167
201	CL111	CL111	37	27	5096
210	CPRS	CYPRESS	37		5086
221	BSMT	BASMATI	35		4990
241	PVL 081	CHENIERE/BASF 1-2	38		4016

Table 8. Grain agronomic performance of entries in the 2017 Commercial Advanced Trial. Tensas Parish, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HTE	LDG	YIELD
230	RICETEC	XL753 (hybrid)	4	42		11406
231	RICETEC	XL760 (hybrid)	4	44		11207
232	RICETEC	GEMINI 214 CL (hybrid)	5	45		11084
228	RICETEC	CLXL729 (hybrid)	5	41	10	10677
229	RICETEC	CLXL745 (hybrid)	4	43		10420
236	1702085	09A/R608 (hybrid)	4	48	23	10141
234	1602071	CLH161 (hybrid)	4	47	47	10061
235	1602082	LAH169 (hybrid)	5	42	47	9815
222	AR 1021	TITAN	4	38		9761
245	1602097	CL131/TRNS	4	39		9671
223	AR 1084	DIAMOND	4	39		9497
244	1602002	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	4	35		9437
253	1702042	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	34		9302
202	CL151	CL151	4	38		9168
203	CL163	CL163	4	38		9097
249	1602131	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/CFX-18//…	3	38		9005
212	LKST	LAKAST	3	40		8994
260	1602051	CATAHOULA/3/TRNS//9502008-A/DREW	4	40		8977
208	CHNR	CHENIERE	5	37		8935
259	1502183	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS	4	36		8900
258	1702189	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/LGRU/LCSN/3/CFX-18//…	4	37		8857
252	1602189	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/3/CPRS/ KBNT//9502008-A	4	38		8845
209	CTHL	CATAHOULA	4	38		8815
248	1602112	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//…	4	36		8784
206	CL272	CL272	4	36		8699

Continued.

Table 8. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HTE	LDG	YIELD
250	1602195	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	3	40		8646
233	RICETEC	AURA 115	5	38		8634
246	1402091	CL131/3/CPRS/KBNT//9502008-A	4	36		8629
219	JPTR	JUPITER	6	37		8588
256	1702165	CAFFEY/CL261	5	37		8583
251	1502094	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29//AR 1142/…	3	40		8523
254	1702045	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	4	37		8475
255	1702162	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	4	37		8429
242	PVL 108	CHENIERE/BASF 1-6	4	42		8405
257	1702168	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/CFX-29/…	4	35		8375
220	CFFY	CAFFEY	4	37		8305
205	CL153	CL153	3	36		8292
239	PVL 038	TRNS/BASF 1-10	5	36		8289
247	1402174	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/5/TAGGART	5	36		8279
238	PVL 013	CPRS/BASF 1-13	4	37		8209
240	PVL 080	CHENIERE/BASF 1-2	5	39		8174
201	CL111	CL111	5	38		8156
213	ROY J	ROY J	4	39		8142
243	1602088	JZMN/08CLR004//RU0802146/3/RU0802146	4	38		8128
226	MS 4083	CL131/PSCL	7	36		7993
214	ANTO	ANTONIO	4	37		7928
216	JZMN	JAZZMAN	4	40		7894
224	MS 4077	THAD	5	39		7870
204	CL172	CL172	4	35		7808
210	CPRS	CYPRESS	4	37		7719

Continued.

Table 8. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HTE	LDG	YIELD
225	MS 4114	CHENIERE/BANKS	6	41		7666
218	DLLA 2	DELLA-2	4	40		7659
215	PSDO	PRESIDIO	3	38		7643
227	MS 4122	CL151//COLUMBIA2/BENGAL	6	38		7580
237	PVL 24A	PVL 24A	4	38		7401
241	PVL 081	CHENIERE/BASF 1-2	4	44		7044
221	BSMT	BASMATI	5	39		6717
217	JZMN2	JAZZMAN-2	4	36		6635
207	CCDR	COCODRIE	8	38		5370
211	MRMT	MERMENTAU	8	38		5187

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

CLEARFIELD EXPERIMENTAL LINES

Clearfield Multi-Location Trial

The Clearfield Multi-Location Trial is 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 advanced experimental Clearfield lines for a number of important agronomic and yield characteristics.

Trial locations in 2017 included the H. Rouse Caffey Rice Research Station (HRCRRS) at Crowley and two on-farm test sites in Evangeline and Vermilion parishes.

Twenty-one entries were tested in a randomized complete block design with three replications. Varieties were seeded at 90 lb/A. Planting dates were: HRCRRS, March 15; Evangeline, March 23; and Vermilion, March 8. Harvest dates were: HRCRRS, Aug. 3; Evangeline, Aug. 17; and Vermilion, July 27. Results from these trials are shown in Tables 1-3.

Table 1. Grain and milling yields and agronomic performance of entries in the 2017 Clearfield Multi-Location Trial, Evangeline Parish, LA.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD
017	CLH161 (HYBRID)	4	88	47	9360
014	CAFFEY/CL261	3	93	39	8207
020	CL153	3	89	36	7965
013	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	3	93	39	7896
005	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	3	90	36	7819
007	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	3	95	39	7611
006	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/CFX-18//CCDR/9770532 DH2	3	85	37	7558
010	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	3	82	33	7522
019	CL151	3	89	36	7488
021	CL272	3	97	38	7466
003	CL131/3/CPRS/KBNT//9502008-A	3	91	34	7438
002	CL131/TRNS	3	93	39	7357
001	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	4	86	35	6979
015	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/CFX-29/AR 1142/LA 2031	3	81	34	6762
009	9502008-A//AR 1188/CCDR/3/CFX26/9702128/4/9502008A//AR1188/CCDR/3/CPRS/KBNT//9502008-A	3	79	36	6729
011	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	4	81	38	6684
012	JZMN/08CLR004//RU0802146/3/RU0802146	4	96	36	6615
008	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29AR 1142/LA 2031	3	89	39	6506
018	CL111	3	81	35	6369
016	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/LGRU/LCSN/3/CFX18//CCDR/9770532 DH2	3	80	34	6212
004	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/5/TAGGART	4	86	37	6149

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

Table 2. Grain and milling yields and agronomic performance of entries in the 2017 Clearfield Multi-Location Trial, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
011	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	4	84	39	7941	66.2	74.8
018	CL111	2	85	36	7885	57.7	74.1
009	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/…	3	84	36	7576	66.2	73.8
019	CL151	3	89	40	8806	65.5	73.3
006	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/CFX-18//…	3	87	37	7792	65.5	73.3
004	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/5/TAGGART	6	90	36	6392	67.2	73.0
005	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//…	4	88	36	7347	61.9	72.9
013	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	3	89	38	7897	70.5	72.6
010	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	85	35	8596	49.5	72.5
001	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	5	87	35	7532	63.9	72.3
007	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	90	38	7489	64.6	72.3
017	CLH161 (HYBRID)	4	91	45	9401	62.6	72.2
020	CL153	3	89	38	7973	65.2	72.1
012	JZMN/08CLR004//RU0802146/3/RU0802146	5	90	36	6278	65.9	71.6
016	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/LGRU/LCSN/3/…	3	86	37	8265	63.1	71.5
015	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/CFX-29/…	4	87	36	8429	62.8	71.3
002	CL131/TRNS	3	88	38	8366	62.3	71.2
003	CL131/3/CPRS/KBNT//9502008-A	4	87	34	7207	58.5	71.1
008	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29AR 1142/…	3	91	39	6880	60.8	70.3
021	CL272	3	90	39	7683	46.8	68.1
014	CAFFEY/CL261	3	89	37	8254	63.9	67.5

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

Table 3. Grain and agronomic performance of entries in the 2017 Clearfield Multi-Location Trial, Vermilion Parish, LA.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
017	CLH161 (HYBRID)	6	82	42	8737	60.5	71.8
019	CL151	3	82	34	8619	60.7	72.2
021	CL272	3	88	36	8153	62.6	68.4
020	CL153	4	84	33	8036	62.1	72.9
004	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/5/TAGGART	5	84	35	7649	61.2	69.2
009	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/…	5	80	33	7649	65.2	73.5
013	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	4	86	36	7622	68.3	72.5
014	CAFFEY/CL261	5	86	35	7621	66.0	73.1
006	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/CFX-18//…	4	82	34	7568	63.8	73.4
003	CL131/3/CPRS/KBNT//9502008-A	4	83	33	7559	59.1	70.1
005	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//…	3	84	33	7512	62.4	71.3
018	CL111	4	79	35	7506	62.6	72.9
002	CL131/TRNS	4	84	36	7360	61.0	72.7
015	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/CFX-29/…	5	82	33	7291	58.6	70.5
010	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	82	33	7269	60.7	71.2
016	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/LGRU/LCSN/3/…	4	81	34	7255	64.5	72.1
001	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	6	84	34	7124	61.3	72.2
008	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29/…	4	86	36	7116	58.0	71.3
007	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	85	34	6939	59.4	69.6
011	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	5	78	33	6700	67.0	74.2
012	JZMN/08CLR004//RU0802146/3/RU0802146	5	87	33	6596	66.8	74.6

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

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.

Trial locations in 2017 included two on-farm test sites in Richland Parish, Louisiana and Wharton County, Texas.

Fourty-one entries were tested in Louisiana and 31 entries in Texas in a randomized complete block design with three replications. Varieties were seeded at 90 lb/A. Planting dates were: Richland, April 19 and Wharton, March 8. Harvest dates were: Richland, Sept. 13 and Wharton, July 31. Results from these trials are shown in Tables 4-5.

Table 4. Grain and agronomic performance of entries in the 2017 Clearfield Experimental Trial, Richland Parish, LA.

ENT	PEDIGREE	HTE	YIELD
038	CLXL745 (hybrid)	38	8154
039	GEMINI 214 CL (hybrid)	35	7484
026	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT//9502008-A	33	6701
041	BNGL/CL161//CAFFEY/3/NEPTUNE//BNGL/CL161	33	6420
028	CCDR/JEFF/3/CFX-18//CCDR/9770532 DH2/4/CFX-18//CPRS/KBNT/3/CFX-29/CCDR	35	6266
014	CLH161 (HYBRID)	41	6259
002	CL131/TRNS	32	6136
015	CL162/3/TRNS//CCDR/JEFF	32	6071
037	CLXL729 (hybrid)	33	5985
025	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	32	5936
022	CL162/CATAHOULA	32	5788
013	CL272	33	5751
029	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	31	5706
040	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	34	5695
027	JZMN/08CLR004//RU0802146/3/RU0802146	31	5656
011	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT//9502008-A	31	5586
004	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/5/TAGGART	32	5569
023	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/CATHOULA	32	5563
036	CL151//COLUMBIA2/BENGAL	33	5528
008	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/CFX-18//CCDR/9770532 DH2	32	5459
010	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29AR 1142/LA 2031	33	5378
033	CL163	34	5338
034	CL172	32	5317
024	CCDR/JEFF/3/CFX-18//CCDR/9770532 DH2/4/AR 1188/CCDR//9502008/LGRU	34	5308
032	CL151	32	5301
001	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	33	5300
035	CL131/PSCL	32	5265
006	CL153	33	5204
020	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT//9502008-A	32	5200

Continued.

Table 4. Continued.

ENT	PEDIGREE	HTE	YIELD
003	CL131/3/CPRS/KBNT//9502008-A	32	5172
030	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/977532 DH2/4/TRNS//CCDR/JEFF	32	5141
031	CPRS/KBNT//9502008-A/3/CCDR/4/CL131	31	5124
009	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	33	5044
018	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/TRNS	33	5009
017	CCDR/JEFF/3/CFX-18//CPRS/KBNT/4/TRNS//CCDR/JEFF	31	5007
021	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/CHENIERE	34	4831
016	CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031/4/CCDR//CFX-29/CCDR	32	4819
012	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	28	4730
019	CCDR/JEFF//CFX-26/9702128/3/WELLS/CFX-18//DREW/CFX-18	32	4617
005	CL111	31	4590
007	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	33	4333

Table 5. Grain and agronomic performance of entries in the 2017 Clearfield Experimental Trial, Wharton County, TX.

ENT	PEDIGREE	VIG[1]	HDT	HTE	LDG	YIELD
030	GEMINI 214 CL (hybrid)	3	85	43		12877
029	CLXL745 (hybrid)	3	80	43	13	12456
028	CLXL729 (hybrid)	4	84	42	10	12327
011	CCDR/JEFF/3/CFX-18//CPRS/KBNT/4/TRNS//CCDR/JEFF	3	81	38		11543
006	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/CFX-18//CCDR/9770532 DH2	3	83	36		11430
004	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/5/TAGGART	4	84	37		11416
021	CL151	4	84	36		11373
016	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	4	84	37		11307
005	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	85	37		11213
026	CL131/PSCL	5	83	35		11134
012	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/TRNS	5	81	35		10994
007	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	3	84	38		10978
014	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/CHENIERE	5	82	37		10910
027	CL151//COLUMBIA2/BENGAL	7	83	38		10906
008	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29AR 1142/LA 2031	4	85	38		10756
009	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT //9502008-A	4	83	36		10754
002	CL131/TRNS	4	83	36		10752
020	CL111	3	82	36		10671
031	CLH161 (HYBRID)	4	83	44	80	10645
010	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	5	82	34		10488
024	CL153	4	84	37		10393
003	CL131/3/CPRS/KBNT//9502008-A	4	86	36		10391
013	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT //9502008-A	4	80	36		10356
023	CL172	3	85	34		10213
001	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	6	79	40		10191
015	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/CATHOULA	5	79	35		10174
025	CL272	4	89	37		10132
018	LAKAST/5/9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031	3	86	38	10	9981
017	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT //9502008-A	4	80	35		9941
019	JZMN/08CLR004//RU0802146/3/RU0802146	4	85	36		9818
022	CL163	4	84	36		9665

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

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.

Trials were conducted using standard agronomic practices (except that no fungicides were applied) at the H. Rouse Caffey Rice Research Station at Crowley, LA. A randomized complete block design was applied to arrange trial entries. The plot size was 4.66 x 16 ft. Seeding rate was 90 lb/A. This trial was drill seeded on March 3 and harvested on July 26 and 28. Data is presented for trial 1 in Table 1 and for trial 2 in Table 2.

Table 1. Grain and milling yields and agronomic performance of entries in the 2017 Clearfield Preliminary Yield Trial 1. H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
375	CLXL745	3	78	41	10434	58.9	73.1
374	CLXL729	4	87	39	9979	49.5	66.5
101	CCDR/CL131	4	86	34	9172	65.3	72.8
173	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/ CHENIERE//…	4	85	33	9070	n/a	n/a
159	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/ 6/ CHENIERE//…	4	83	35	8987	59.4	72.7
343	TRNS//TRNS/CL131	3	84	36	8974	63.0	71.3
131	CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031/4/CCDR/JEFF//CFX-26/9702128	4	87	34	8886	62.6	72.5
320	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	88	40	8848	64.2	72.5
202	CCDR/JEFF//CFX-26/9702128/3/CL151	5	87	34	8830	64.8	73.1
217	TRNS//TRNS/CL131	4	84	35	8829	60.1	70.8
355	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/ 9502008-A/…	4	86	35	8783	61.0	70.1
201	CCDR/JEFF//CFX-26/9702128/3/CL151	5	87	34	8727	63.1	73.6
147	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	4	87	36	8717	34.0	74.4
132	CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031/4/CCDR/JEFF//CFX-26/9702128	4	85	35	8705	64.6	72.2
205	CCDR/JEFF//CFX-26/9702128/3/CL151	4	90	36	8666	64.7	71.7
331	9302065/4/CFX-18//CCDR/9770532 DH2/3/9502008-A//AR 1188/CCDR	4	85	31	8650	61.4	71.6
140	CHENIERE/3/CCDR//CFX-29/CCDR	3	85	33	8643	62.9	72.7
252	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/ 9502008-A/…	4	87	37	8641	61.0	74.4
204	CCDR/JEFF//CFX-26/9702128/3/CL151	4	86	35	8638	60.2	70.5
136	CHENIERE/6/CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/ CLR9	3	84	37	8623	56.6	71.8
216	TRNS//TRNS/CL131	4	85	32	8616	59.5	68.7
203	CCDR/JEFF//CFX-26/9702128/3/CL151	4	88	35	8609	64.0	71.7
365	TRNS//TRNS/CL131	4	84	36	8565	62.8	71.5
262	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/DREW// CLR 20	4	85	33	8556	64.8	71.3
151	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	3	84	36	8550	64.4	73.3

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
141	CHENIERE/3/CCDR//CFX-29/CCDR	4	85	34	8474	61.3	73.7
192	9502008-A/DREW//CLR 20/3/CPRS/KBNT//9502008-A/6/KATY/CPRS//NWBT/ KATY/3/…	4	86	31	8438	56.4	70.0
189	WELLS/CFX-18//DREW/CFX-18/3/CHENIERE//CCDR/JEFF	5	85	31	8433	60.3	70.0
112	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/TRNS//CCDR/JEFF	4	86	32	8431	61.4	74.7
155	CCDR//CFX-29/CCDR/3/CCDR	4	85	33	8414	66.2	74.1
129	CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031/4/CPRS	4	85	33	8397	64.2	72.1
128	CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031/4/CCDR//CFX-29/CCDR	3	86	32	8396	65.4	73.4
134	CHENIERE/6/CPRS/KBNT//9502008- A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9	4	84	33	8391	60.5	73.0
263	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/ DREW//CLR 20	4	86	31	8389	64.6	71.1
178	9502008-A//AR 1188/CCDR/3/CFX-26/9702128 /4/TRNS	4	80	32	8387	66.0	73.5
098	CCDR/CL131	4	87	35	8376	60.8	69.9
267	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/ DREW//CLR 20	4	86	33	8373	66.2	73.0
085	CL131/3/TRNS//CCDR/JEFF	3	85	35	8372	64.5	71.9
369	CL153	3	86	33	8345	n/a	n/a
251	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/ 9502008-A/…	5	88	36	8345	63.5	73.3
135	CHENIERE/6/CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008 /4/CLR9	4	84	36	8341	61.1	73.3
293	WELLS//CL131/CHENIERE	4	87	34	8322	62.5	71.6
330	9302065/4/CFX-18//CCDR/9770532 DH2/3/9502008-A//AR 1188/CCDR	4	85	33	8290	n/a	n/a
194	9502008-A/DREW//CLR 20/3/CPRS/KBNT//9502008-A /4/CL131	5	85	33	8282	59.9	70.0
373	CL272	4	90	34	8279	61.7	70.0
143	CHENIERE/4/'CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031	4	85	33	8278	58.0	71.7
338	9502008-A/DREW//CLR 20/3/TRNS//CCDR/JEFF	3	86	34	8278	64.5	73.0
334	DREW//CCDR/CLPY 003	5	86	36	8277	62.7	70.5
367	CL151	4	86	35	8241	60.9	72.5
213	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	3	80	34	8240	65.8	72.5

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
342	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/3/ CFX29//…	5	85	36	8233	56.3	72.0
265	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/ DREW//CLR 20	4	85	34	8230	61.8	70.5
332	CCDR/4/CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031	4	89	35	8221	62.8	71.8
182	CCDR//CLPY 003/3/CCDR/JEFF//CPRS	4	85	32	8217	59.6	71.6
047	CHENIERE/CL111	3	85	35	8207	64.0	72.5
074	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/ 9602065/3/…	4	85	32	8205	64.9	73.7
307	TRNS//CCDR/9502008-A/6/CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/ KATY/…	4	85	34	8204	61.6	73.3
339	9502008-A/DREW//CLR 20/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT//9502008-A	4	86	33	8202	65.1	73.7
345	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS CFX 18	4	89	37	8192	60.2	68.3
311	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/NWBT/KATY//…/5/CL131/ CHENIERE	4	87	37	8188	62.7	70.9
174	CCDR/JEFF/3/CFX-18//CPRS/KBNT/4/TRNS//CCDR/JEFF	4	81	35	8183	63.9	72.9
295	CL111/CL152	4	86	31	8181	62.9	71.6
161	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/ 6/ CHENIERE//…	5	85	32	8179	62.6	73.1
247	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CPRS/KBNT//9502008- A/3/…	3	84	36	8168	64.2	73.0
190	FRANCIS/CLR 13//9502008-A/DREW/3/MERMENTAU	4	84	34	8158	65.4	73.4
358	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/ CLR9/5/…	4	88	35	8153	65.8	72.8
120	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF//CFX-26/ 9702128	4	83	33	8151	62.7	71.0
264	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/ DREW//CLR 20	5	86	34	8134	65.5	73.3
133	CHENIERE/6/CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/ CLR9	4	84	33	8132	60.5	71.9
097	CCDR/CL131	3	83	33	8100	63.0	73.2
290	9502008-A/TACAURI//CLR 5/3/DREW/CFX-18/4/DREW//CHENIERE/LMNT	4	90	35	8096	63.4	72.5
154	CCDR//CFX-29/CCDR/3/CCDR	4	85	34	8094	63.1	73.0
337	9502008-A/DREW//CLR 20/3/TRNS//CCDR/JEFF	5	87	35	8090	65.3	72.0
259	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/3/ 9502008/4/…	5	84	36	8078	59.6	71.2

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
298	DREW//CHENIERE/LMNT/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	3	88	36	8057	62.6	69.4
306	TRNS//CCDR/9502008-A/6/CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/ KATY/…	4	87	36	8052	60.8	71.4
145	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	4	85	35	8051	61.9	73.4
212	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	4	84	34	8047	65.8	72.6
188	WELLS/CFX-18//DREW/CFX-18/3/CHENIERE//CCDR/JEFF	4	83	36	8047	57.7	70.4
249	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CPRS/KBNT//9502008- A/3/…	5	86	36	8039	63.0	71.2
207	CHNR/3/NWBT/KATY//9902207X2/4/CL111	4	87	32	8027	65.0	72.4
218	TRNS/9/9602097/...//JAF4/…/6/CCDR/…/7/JAF4/8/FRANCIS/CLR 13	4	83	33	8010	67.1	74.3
349	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/CL161	4	86	35	8009	61.5	71.6
350	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/DREW//CHENIERE/LMNT	4	81	33	7997	59.1	73.0
162	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/ 6/ CHENIERE//…	5	86	32	7993	60.8	72.3
060	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/CHENIERE	4	86	36	7991	61.2	71.9
093	CCDR/CL131	3	85	33	7989	63.1	72.1
335	CHENIERE/4/CFX18/LM-1/3/9502008-A//AR 1188/CCDR	5	85	36	7984	62.9	72.5
219	TRNS/9/9602097/...//JAF4/…/6/CCDR/…/7/JAF4/8/FRANCIS/CLR 13	4	84	35	7980	60.7	73.1
057	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/9502008-A/DREW//CLR 20/3/CPRS/..	4	88	34	7972	62.0	71.5
333	CCDR/4/CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031	4	85	35	7970	58.8	71.8
150	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	4	82	34	7966	54.2	70.4
305	DREW//CHENIERE/LMNT/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	87	39	7963	61.2	70.5
176	CCDR/JEFF/3/CFX-18//CPRS/KBNT/4/TRNS//CCDR/JEFF	4	81	35	7962	62.1	72.4
019	CPRS/4/CL131/3/CPRS/KBNT//9502008-A	3	84	32	7953	59.9	70.2
018	CPRS/4/CL131/3/CPRS/KBNT//9502008-A	3	86	32	7947	65.1	72.6
215	TRNS//TRNS/CL131	4	84	34	7946	60.3	72.6
352	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CATAHOULA	4	85	34	7945	62.4	70.9
168	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/ CHENIERE//…	5	86	32	7935	61.4	70.9
187	WELLS/CFX-18//DREW/CFX-18/3/CHENIERE//CCDR/JEFF	4	83	33	7935	64.0	71.0
138	CHENIERE/3/CCDR//CFX-29/CCDR	4	85	34	7925	57.7	73.4

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
309	TRNS//CCDR/9502008-A/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	85	36	7915	63.8	70.1
299	DREW//CHENIERE/LMNT/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	88	36	7907	62.8	71.6
253	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/3/ 9502008/4/…	4	89	37	7906	65.0	73.5
291	WELLS//CL131/CHENIERE	4	89	35	7901	56.7	72.8
266	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/ DREW//CLR 20	4	85	35	7891	64.0	71.5
055	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/9502008-A/DREW//CLR 20/3/CPRS/..	4	88	33	7880	61.8	69.5
209	CHENIERE//CCDR/JEFF/3/CFX-26/9702128//CCDR/JEFF	4	86	32	7875	63.5	70.9
255	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/3/ 9502008/4/…	4	844	36	7860	55.7	70.6
153	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	4	87	36	7847	66.4	74.4
323	CL152/3/DREW//CHENIERE/LMNT	3	88	36	7840	62.8	72.6
137	CHENIERE/6/CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008 /4/CLR9	4	88	33	7827	55.7	71.7
242	TACAURI/3/CPRS//82CAY21/TBNT/4/CFX-18/5/CL131/6/TRNS/CL131	4	85	35	7827	64.5	72.5
146	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	4	85	36	7824	63.7	72.8
103	CCDR/CL131	5	86	32	7817	60.1	71.1
160	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/ CHENIERE//…	4	86	33	7816	63.4	71.1
310	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/NWBT/KATY//…/5/CL131/ CHENIERE	4	87	36	7811	63.8	71.6
049	CHENIERE/CL111	5	87	34	7811	60.2	69.5
208	CHENIERE//CCDR/JEFF/3/CFX-26/9702128//CCDR/JEFF	4	86	30	7809	63.5	70.2
370	CL163	4	84	32	7809	61.5	70.7
009	KBNT/CL111	4	87	32	7807	61.6	70.0
326	CL131//DREW/CLR 13/4/9502008-A/TACAURI//CLR 5/3/DREW/CFX-42	4	88	38	7788	64.5	71.7
158	CCDR//CFX-29/CCDR/3/CCDR	3	85	34	7770	61.0	72.6
056	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/9502008-A/DREW//CLR 20/3/…	5	88	34	7768	62.9	72.0
294	CL111/CL152	4	86	37	7767	67.5	73.9
258	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/3/…	5	88	38	7753	63.0	72.3
075	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/ 9602065/3/…	4	85	33	7737	63.7	72.9

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
104	DREW/4/CCDR/JEFF/3/CFX-18//CPRS/KBNT	3	82	32	7734	64.9	74.4
172	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/ CHENIERE//…	4	85	36	7725	59.1	71.0
199	9502008-A/DREW//CLR 20/3/CPRS/KBNT//9502008-A /4/CL111	4	86	33	7713	61.4	69.9
144	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	4	84	34	7711	65.4	73.3
186	WELLS/CFX-18//DREW/CFX-18/3/CHENIERE//CCDR/JEFF	4	86	35	7703	62.1	70.8
171	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/ CHENIERE//…	5	84	33	7703	66.1	74.2
116	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/TRNS//CCDR/JEFF	4	84	33	7699	66.5	73.3
170	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/ CHENIERE//…	4	83	32	7699	58.8	71.6
303	DREW//CHENIERE/LMNT/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	86	34	7694	62.7	72.3
095	CCDR/CL131	4	86	33	7694	60.8	71.2
200	CCDR/JEFF//CFX-26/9702128/3/WELLS/CFX-18//DREW/CFX-18	4	85	33	7684	63.2	73.2
130	CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031/4/CPRS	3	85	33	7683	60.9	70.4
183	CCDR//CLPY 003/3/CCDR/JEFF//CPRS	5	86	31	7670	61.6	71.4
078	MBLE/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	5	84	32	7659	64.1	71.3
109	TAGGART/3/WELLS/CFX-18//DREW/CFX-18	4	85	34	7658	63.3	71.2
094	CCDR/CL131	4	85	33	7655	62.5	71.7
232	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008-A/4/CLR9 /6/ TRNS//…	4	86	36	7652	61.0	73.2
142	CHENIERE/4/'CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031	3	85	35	7640	62.1	72.5
076	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/ 9602065/3/…	4	85	31	7637	63.1	72.3
197	9502008-A/DREW//CLR 20/3/CPRS/KBNT//9502008-A /4/CL111	5	84	33	7628	55.6	72.2
148	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	4	88	34	7617	62.7	74.3
240	TACAURI/3/CPRS//82CAY21/TBNT/4/CFX-18/5/CL131/6/9502008-A/DREW//CLR 20/4/…	5	87	38	7610	60.3	72.1
344	TRNS/9/9602097/...//JAF4/…/6/CCDR/…/7/JAF4/8/FRANCIS/CLR 13	3	82	33	7596	61.8	71.3
003	CCDR/4/CL131/3/CPRS/KBNT//9502008-A	5	90	36	7593	54.9	63.3
004	CCDR/4/CL131/3/CPRS/KBNT//9502008-A	4	88	35	7593	51.2	67.9
105	DREW/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	4	82	32	7590	64.2	72.8
274	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/9502008-A/DREW//CLR 20/3/…	4	84	35	7589	61.6	72.9

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
289	9502008-A/TACAURI//CLR 5/3/DREW/CFX-18/4/DREW//CHENIERE/LMNT	4	84	34	7584	65.2	74.0
364	MBLE/4/DREW/CFX-18/3/CFX-18//CCDR/9770532 DH2	5	88	33	7582	65.4	72.7
048	CHENIERE/CL111	4	87	35	7581	62.5	70.7
152	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	4	82	36	7579	64.8	72.3
149	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	4	85	35	7573	60.8	69.8
096	CCDR/CL131	4	84	33	7571	62.4	72.6
366	CL111	4	83	35	7567	63.9	71.8
051	CHENIERE/CL111	4	88	34	7566	63.6	72.4
246	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CPRS/KBNT//9502008-A/3/…	4	85	37	7559	60.3	73.3
336	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	5	90	34	7558	62.0	72.0
287	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/5/9502008-A/DREW/3/…	4	87	34	7549	64.4	71.6
125	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF//CFX-26/ 9702128	4	82	32	7546	64.0	72.6
123	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF//CFX-26/ 9702128	3	79	32	7539	64.3	73.0
269	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/..	3	85	33	7537	65.2	71.9
193	9502008-A/DREW//CLR 20/3/CPRS/KBNT//9502008-A/6/KATY/CPRS//NWBT/ KATY/3/…	4	86	32	7532	59.6	69.7
270	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/..	4	87	36	7531	63.5	71.4
166	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/ CHENIERE//…	4	87	33	7524	60.0	70.2
167	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/ CHENIERE//…	4	85	33	7513	58.7	71.1
119	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF//CFX-26/ 9702128	4	83	30	7507	61.9	70.6
278	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	4	87	34	7499	64.0	71.3
063	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/CHENIERE	4	82	37	7496	53.7	71.3
071	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/4/CFX-18//CCDR/9770532 DH2/3/…	4	85	35	7489	58.3	69.4
321	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	88	33	7485	61.8	70.0
059	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/9502008-A/DREW//CLR 20 /3/…	3	87	32	7482	64.3	71.7

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
195	9502008-A/DREW//CLR 20/3/CPRS/KBNT//9502008-A /4/CL131	4	86	32	7476	58.1	70.6
013	CPRS/5/LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031	4	87	36	7470	64.9	71.1
275	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/9502008-A/DREW// CLR 20/3/…	4	86	34	7469	62.3	70.8
023	CPRS/4/CL131/3/CPRS/KBNT//9502008-A	4	85	33	7465	63.1	71.0
066	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/4/CFX-18//CCDR/ 9770532 DH2/3/…	4	86	34	7463	61.5	71.5
156	CCDR//CFX-29/CCDR/3/CCDR	4	87	31	7458	64.9	73.4
016	CPRS/5/LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031	4	89	35	7454	64.4	71.9
214	MBLE/3/CL131//DREW/CLR 13	3	82	30	7454	62.8	73.3
347	CPRS/5/9502008-A/DREW/3/NWBT/KATY//9902207x2/4/CFX-18//CCDR/ 9770532 DH2	4	89	35	7447	66.0	72.8
354	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CATAHOULA	3	87	36	7446	59.6	70.8
062	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/CHENIERE	5	88	33	7443	65.8	73.5
313	CL131/CHENIERE/9/9602097/...//JAF4/…/6/CCDR/…/7/JAF4/8/FRANCIS/CLR 13	4	87	37	7441	66.0	74.3
286	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/5/9502008-A/DREW/ 3/…	5	88	37	7434	66.1	73.9
196	9502008-A/DREW//CLR 20/3/CPRS/KBNT//9502008-A /4/CL131	5	86	32	7432	42.1	73.0
008	KBNT/CL111	5	89	33	7422	66.5	73.1
371	CL172	4	88	36	7419	65.7	73.7
288	9502008-A/TACAURI//CLR 5/3/DREW/CFX-18/4/DREW//CHENIERE/LMNT	3	85	34	7418	66.3	72.4
107	DREW/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	4	83	30	7413	67.8	72.6
005	FRANCIS/5/LGRU/CLR 22/4/96020653CFX-29/AR 1142/LA 2031	4	89	39	7410	61.2	72.5
169	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/6/ CHENIERE//…	4	86	32	7396	55.0	71.2
317	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	6	89	34	7389	63.7	72.9
223	CL131//CL131/CHENIERE	5	86	39	7383	63.1	71.7
341	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/5/'9502008/3/MBLE//LMNT/ 20001-5/4/CFX-18//..	4	82	32	7383	67.4	74.2
362	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/9502008-A/DREW/ CLR 20/3/…	4	88	35	7378	65.5	73.0
058	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/9502008-A/DREW//CLR 20/3/…	4	90	34	7370	61.6	71.8
073	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/ 9602065/3/…	4	85	31	7358	64.9	73.0

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
356	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/…	4	86	35	7352	63.1	71.5
100	CCDR/CL131	4	85	32	7348	62.5	70.8
296	CL111/CL152	4	90	32	7341	63.4	71.9
012	KBNT/CL111	4	88	37	7338	67.1	72.7
121	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF//CFX-26/ 9702128	3	85	32	7333	60.6	72.7
114	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/TRNS//CCDR/JEFF	3	85	35	7327	64.9	73.2
211	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	4	85	36	7327	65.4	73.9
281	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	5	88	37	7323	65.2	72.8
308	TRNS//CCDR/9502008-A/6/CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/ KATY/3/…	4	86	32	7311	62.8	72.7
080	CL131/3/TRNS//CCDR/JEFF	4	88	31	7299	59.6	71.1
157	CCDR//CFX-29/CCDR/3/CCDR	4	88	33	7297	63.1	72.2
319	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	87	36	7295	61.9	71.5
206	CHNR/3/NWBT/KATY//9902207X2/4/CL111	5	87	34	7294	63.8	71.2
067	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/4/CFX-18//CCDR/9770532 DH2/3/…	4	88	32	7288	64.2	72.9
297	CPRS/KBNT//9502008-A/3/CCDR/4/CL131	4	87	34	7286	63.4	71.1
070	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/4/CFX-18//CCDR/9770532 DH2/3/…	4	86	31	7280	65.1	72.8
033	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/RICO	4	81	32	7280	49.7	71.2
226	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/CL161	5	89	37	7273	65.5	72.2
007	FRANCIS/5/9502008-A/DREW//CFX26/WELLS/4/CPRS/3/CFX29//AR 1142/LA 2031	3	91	36	7272	60.7	72.2
280	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	4	86	34	7271	64.3	73.1
314	CL131/CHENIERE/9/9602097/...//JAF4/…/6/CCDR/…/7/JAF4/8/FRANCIS/CLR 13	5	86	35	7270	65.8	72.1
179	9502008-A//AR 1188/CCDR/3/CFX-26/9702128 /4/TRNS	5	82	32	7267	67.8	74.7
304	DREW//CHENIERE/LMNT/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	87	34	7266	61.2	71.7
034	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/RICO	5	87	34	7262	56.5	70.9
021	CPRS/4/CL131/3/CPRS/KBNT//9502008-A	4	90	36	7259	62.6	70.3
260	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/…	5	85	35	7258	66.5	75.2
327	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/TRNS//CCDR/9502008-A	4	86	35	7256	63.7	72.7

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
231	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008-A/4/CLR9 /6/TRNS//…	5	86	35	7236	63.8	72.2
372	CLPYJ 027	4	90	34	7216	68.3	73.5
002	9302065/CL161	4	87	35	7215	59.8	70.1
360	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/9502008-A/DREW/ CLR20/3/…	5	88	35	7214	64.3	73.0
322	CL152/3/DREW//CHENIERE/LMNT	4	89	34	7186	63.8	71.1
271	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/5/9502008-A/DREW//CLR 20/4/…	4	87	34	7179	64.6	74.4
248	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CPRS/KBNT//9502008-A/ 3/…	5	86	36	7176	60.9	69.9
184	CFX-26/9702128//EP 144/4/FRANCIS/CLR 13/3/9502008-A/TACAURI//CFX-18	4	86	35	7173	56.9	68.2
061	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/CHENIERE	4	86	32	7163	62.6	71.4
359	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/9502008-A/DREW/ CLR20/3/…	5	87	37	7161	66.3	72.8
220	TRNS/9/9602097/...//JAF4/…/6/CCDR/…/7/JAF4/8/FRANCIS/CLR 13	5	84	32	7157	63.8	71.5
122	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF//CFX-26/ 9702128	4	87	33	7141	64.7	72.5
124	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF//CFX-26/ 9702128	3	80	31	7138	63.3	73.4
102	CCDR/CL131	4	87	32	7136	63.5	71.1
027	CPRS//CATAHOULA/CL111	4	88	34	7135	61.7	68.2
089	CL131/3/CCDR//CFX-29/CCDR	4	88	30	7124	63.8	72.5
292	WELLS//CL131/CHENIERE	4	85	38	7121	59.7	73.6
044	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/CL161	4	91	35	7119	63.6	71.1
053	CHENIERE/CL111	4	88	35	7118	62.0	70.8
221	CL131//CL131/CHENIERE	4	86	33	7117	63.3	70.5
198	9502008-A/DREW//CLR 20/3/CPRS/KBNT//9502008-A /4/CL111	5	87	32	7115	62.4	70.6
081	CL131/3/TRNS//CCDR/JEFF	4	85	34	7114	62.9	73.2
301	DREW//CHENIERE/LMNT/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	5	90	36	7109	63.4	71.8
250	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/ 9502008-A/…	4	86	34	7109	59.1	70.0
257	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/3/ 9502008/4/…	5	86	34	7101	62.2	71.2
351	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/DREW//CHENIERE/LMNT	4	89	35	7096	62.9	71.6

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
177	CATAHOULA/6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/9502008-A/ TACAURI//CLR5	4	87	33	7092	55.6	67.8
110	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/TRNS//CCDR/JEFF	4	84	33	7085	63.4	73.2
353	TACAURI/4/CPRS/KBNT//9502008-A/3/CCDR	4	86	33	7084	62.8	70.6
015	CPRS/5/LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031	4	87	34	7081	65.8	71.5
106	DREW/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	5	87	33	7070	65.3	72.1
052	CHENIERE/CL111	4	87	34	7066	64.3	71.3
180	9502008-A//AR 1188/CCDR/3/CFX-26/9702128 /4/TRNS	4	84	36	7066	63.8	71.2
284	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	5	87	35	7063	60.1	70.9
099	CCDR/CL131	3	86	33	7056	63.1	72.8
191	FRANCIS/CLR 13//9502008-A/DREW/3/MERMENTAU	4	85	29	7055	66.8	73.3
165	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/ 6/ CHENIERE//…	4	84	31	7040	62.1	70.0
006	FRANCIS/5/9502008-A/DREW//CFX26/WELLS/4/CPRS/3/CFX29//AR 1142/LA 2031	4	91	42	7040	55.9	69.2
348	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/CL161	5	89	34	7039	61.9	70.7
316	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	87	33	7026	63.7	73.7
254	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/3/ 9502008/…	4	89	37	7022	64.4	71.6
268	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/..	4	86	31	7016	67.9	73.3
127	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF//CFX-26/ 9702128	4	82	33	6993	52.4	72.8
181	9502008-A//AR 1188/CCDR/3/CFX-26/9702128 /4/TRNS	4	81	33	6991	65.4	73.1
357	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/ CLR9/5/KATY/..	4	88	33	6990	59.1	71.2
113	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/TRNS//CCDR/JEFF	3	85	33	6987	65.3	74.3
235	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008-A/4/CLR9/6/ CPRS	6	90	34	6984	62.7	72.1
185	CFX-26/9702128//EP 144/4/FRANCIS/CLR 13/3/9502008-A/TACAURI//CFX-36	4	86	34	6983	54.2	70.4
346	CPRS/5/9502008-A/DREW/3/NWBT/KATY//9902207x2/4/CFX-18//CCDR/9770532 DH2	4	88	35	6981	64.4	72.1

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
069	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/4/CFX-18//CCDR/9770532 DH2/3/…	5	86	32	6980	64.6	71.8
224	CL131//CL131/CHENIERE	4	85	33	6964	63.2	72.3
261	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/…	6	86	36	6944	63.0	72.8
064	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/5/CHENIERE	3	85	35	6930	61.7	71.6
050	CHENIERE/CL111	4	89	34	6930	63.4	72.5
340	9502008-A/DREW//CLR 20/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT//9502008-A	5	86	35	6918	66.8	74.0
010	KBNT/CL111	4	86	33	6912	65.5	72.0
163	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/ 6/CHENIERE//…	5	86	33	6910	61.2	73.1
164	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR9/ 6/CHENIERE//…	4	89	33	6908	62.6	73.1
312	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/NWBT/KATY//9902207x2/3/ 9502008-A/…	4	88	36	6894	64.3	74.1
001	MBLE/4/95025008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX-18	5	85	33	6885	39.9	74.2
040	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/CL161	3	90	33	6884	64.2	71.6
243	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/DREW/CLR 13/5/CCDR	4	84	33	6862	62.9	70.8
082	CL131/3/TRNS//CCDR/JEFF	4	84	31	6856	64.2	73.1
315	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	5	88	35	6855	63.1	72.5
035	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/RICO	3	85	36	6833	53.5	71.0
046	CHENIERE/CL111	4	88	32	6833	59.7	69.3
328	CL131/3/TRNS//CCDR/9502008-A	4	87	33	6827	63.3	71.1
256	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/3/…	5	88	35	6819	62.5	70.8
017	CPRS/5/LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031	4	90	35	6814	63.3	71.4
115	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/TRNS//CCDR/JEFF	5	85	31	6814	64.8	73.8
014	CPRS/5/LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031	4	90	32	6779	21.6	75.8
279	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	4	87	34	6764	65.7	73.1
368	CL152	5	88	37	6752	63.0	73.0
234	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008-A/4/CLR9 /6/ TRNS//…	5	85	34	6747	60.7	70.2
115	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/TRNS//CCDR/JEFF	5	85	31	6814	64.8	73.8
014	CPRS/5/LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031	4	90	32	6779	21.6	75.8
279	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	4	87	34	6764	65.7	73.1

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
368	CL152	5	88	37	6752	63.0	73.0
234	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008-A/4/CLR9/6/ TRNS//…	5	85	34	6747	60.7	70.2
175	CCDR/JEFF/3/CFX-18//CPRS/KBNT/4/TRNS//CCDR/JEFF	4	84	34	6744	66.0	72.8
111	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/TRNS//CCDR/JEFF	4	84	31	6741	65.0	73.5
038	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/CL161	5	92	36	6739	59.3	68.6
083	CL131/3/TRNS//CCDR/JEFF	4	87	31	6736	63.9	72.7
363	9502008-A/TACAURI//CLR 5/3/DREW/CFX-18/4/CL152	5	87	34	6734	67.1	74.8
361	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/9502008-A/DREW/ CLR20/3/…	4	87	34	6727	64.3	72.8
225	CPRS/5/9502008-A/DREW/3/NWBT/KATY//9902207x2/4/CFX-18//CCDR/9770532 DH2	4	87	34	6717	67.4	72.8
118	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF//CFX-26/ 9702128	3	80	32	6670	63.5	72.7
045	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/CL161	4	92	35	6667	62.1	70.2
065	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/4/CFX-18//CCDR/9770532 DH2/…	4	86	35	6650	61.1	72.2
011	KBNT/CL111	4	88	35	6614	65.5	70.4
324	CL152/3/DREW//CHENIERE/LMNT	4	88	35	6605	63.4	72.9
024	CPRS/4/CL131/3/CPRS/KBNT//9502008-A	4	86	32	6604	62.0	71.3
029	CPRS//CATAHOULA/CL111	3	88	32	6597	63.2	70.0
273	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/5/9502008-A/DREW//CLR 20/4/…	4	87	33	6586	61.8	74.0
300	DREW//CHENIERE/LMNT/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	5	89	36	6566	60.9	70.4
042	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/CL161	3	91	33	6553	63.6	72.0
285	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/5/9502008-A/DREW/3/…	4	92	38	6532	66.1	72.2
072	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/4/CFX-18//CCDR/9770532 DH2/3/…	4	86	31	6526	61.1	70.9
092	CCDR/CL131	4	88	34	6519	63.8	71.0
086	CL131/3/TRNS//CCDR/JEFF	5	87	30	6509	65.1	72.3
227	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/CL161	4	88	37	6493	62.5	73.2
139	CHENIERE/3/CCDR//CFX-29/CCDR	6	86	32	6478	59.2	73.0
020	CPRS/4/CL131/3/CPRS/KBNT//9502008-A	4	87	32	6458	64.2	71.1
079	CL131/3/TRNS//CCDR/JEFF	4	88	31	6443	64.2	71.4
054	CHENIERE/CL111	4	90	33	6434	63.3	72.4

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
090	CL131/CPRS	4	88	31	6431	63.5	71.5
077	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/ 9602065/3/…	4	83	33	6419	64.0	74.1
041	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/CL161	4	89	31	6405	64.6	73.2
126	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF//CFX-26/ 9702128	4	79	31	6388	62.6	72.5
068	LGRU/CLR 11/4/9302065/3/CFX-29/AR 1142/LA 2031/4/CFX-18//CCDR/ 9770532 DH2/3/…	4	85	31	6381	63.0	70.8
276	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/9502008-A/DREW// CLR 20/3/…	5	86	33	6372	65.9	72.4
329	9302065/4/CFX-18//CCDR/9770532 DH2/3/9502008-A//AR 1188/CCDR	4	83	31	6307	65.0	72.8
036	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/ RICO	5	83	33	6299	53.1	72.0
108	TAGGART/3/WELLS/CFX-18//DREW/CFX-18	4	83	34	6288	59.8	73.1
272	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/5/9502008-A/DREW// CLR 20/4/…	5	84	33	6281	65.6	73.2
228	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/CL161	4	88	34	6239	65.9	73.1
026	CPRS//CATAHOULA/CL111	4	91	32	6238	61.7	68.7
325	CL131//DREW/CLR 13/4/9502008-A/TACAURI//CLR 5/3/DREW/CFX-30	4	84	38	6221	61.3	70.5
277	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/9502008-A/DREW// CLR 20/3/…	5	83	35	6216	65.0	73.6
222	CL131//CL131/CHENIERE	6	88	35	6211	61.8	72.9
022	CPRS/4/CL131/3/CPRS/KBNT//9502008-A	4	89	31	6209	62.2	54.5
032	PRESIDO/CL111	3	87	33	6204	66.6	74.6
084	CL131/3/TRNS//CCDR/JEFF	4	87	31	6191	63.8	72.4
233	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008-A/4/CLR9 /6/TRNS//…	5	87	35	6164	65.3	73.8
087	CL131/3/TRNS//CCDR/JEFF	4	86	29	6128	63.2	72.2
318	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	5	90	37	6072	66.4	73.2
031	PRESIDO/CL111	4	87	33	6061	59.0	71.9
028	CPRS//CATAHOULA/CL111	4	86	32	6047	66.2	71.7
039	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/CL161	4	87	34	6043	62.0	73.2
030	PRESIDO/CL111	4	87	34	5958	62.9	71.4
244	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/DREW/CLR 13/5/CCDR	5	86	35	5901	64.2	73.3

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
238	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CATAHOULA	5	83	33	5885	67.9	73.8
091	CCDR/CL131	4	88	32	5860	63.8	71.6
037	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/ CL161	4	86	41	5822	65.6	72.8
302	DREW//CHENIERE/LMNT/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT// 9502008-A	6	91	37	5771	62.0	72.3
117	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/9770532 DH2/4/DREW	4	84	30	5733	60.4	72.5
043	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/ CL161	3	88	33	5588	62.6	71.0
283	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	5	87	34	5568	63.6	73.1
088	CL131/3/CCDR//CFX-29/CCDR	4	87	29	5557	63.3	72.1
245	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/DREW/CLR 13/5/CCDR	4	88	32	5507	65.6	73.0
229	TACAURI/CL131	5	86	31	5458	61.1	72.8
236	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CATAHOULA	4	85	34	5230	62.7	71.9
230	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/9502008-A/4/CLR9 /6/TRNS//…	4	87	33	4830	44.6	75.1

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

Table 2. Grain and milling yields and agronomic performance of entries in the 2017 Clearfield Preliminary Yield Trial 2. H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
749	CLXL729	5	85	41	10186	52.0	72.6
623	NEPTUNE//BNGL/CL161/3/RICO	4	89	37	10001	68.9	74.4
685	NEPTUNE//BNGL/CL161/3/RICO	4	87	38	9866	63.5	69.5
639	NEPTUNE//BNGL/CL161/3/NEPTUNE	5	89	37	9489	66.3	71.5
702	BNGL/CL161//CAFFEY/3/NEPTUNE//BNGL/CL161	4	89	38	9426	53.2	74.0
677	RICO/3/NEPTUNE//BNGL/CL161	4	89	39	9308	64.5	71.8
663	NEPTUNE//BNGL/CL161/3/NEPTUNE	4	88	35	9245	69.3	74.3
667	NEPTUNE//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3 / MERC//..	4	86	35	9213	61.7	71.8
647	NEPTUNE//BNGL/CL161/3/NEPTUNE	5	88	36	9168	68.1	74.4
627	NEPTUNE//BNGL/CL161/3/RICO	4	88	37	9138	69.3	74.2
603	NEPTUNE//BNGL/CL161/3/BNGL/CL161	4	87	35	9134	64.4	72.5
624	NEPTUNE//BNGL/CL161/3/RICO	4	89	35	9113	67.7	71.7
626	NEPTUNE//BNGL/CL161/3/RICO	5	87	35	9109	68.0	70.6
615	BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	87	34	9105	63.6	71.8
600	BNGL/CL161/3/NEPTUNE//BNGL/CL161	3	89	37	9099	58.7	72.7
616	BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	89	35	9086	69.2	73.1
670	NEPTUNE//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/ CFX18	4	86	39	9040	44.8	71.4
376	TRNS/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	85	36	9018	65.3	71.2
668	NEPTUNE//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3 / MERC//..	4	89	34	8964	66.5	75.1
705	BNGL/CL161//CAFFEY/3/NEPTUNE//BNGL/CL161	4	90	35	8955	66.7	74.4
745	CL163	3	82	37	8920	61.1	70.2
591	NEPTUNE//BNGL/CL161	4	90	36	8882	69.6	73.7
628	NEPTUNE//BNGL/CL161/3/JPTR	4	89	35	8814	67.0	74.4
652	RICO/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18	5	88	36	8797	67.4	71.8
704	BNGL/CL161//CAFFEY/3/NEPTUNE//BNGL/CL161	4	88	36	8793	64.4	72.8
649	9302065/3/RICO//PY 678/CL161	4	89	34	8787	69.5	73.2
703	BNGL/CL161//CAFFEY/3/NEPTUNE//BNGL/CL161	3	89	36	8769	68.0	73.9

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
746	CL172	3	86	32	8761	68.3	76.2
750	CLXL745	4	78	38	8758	57.5	73.5
629	NEPTUNE//BNGL/CL161/3/JPTR	4	89	35	8691	66.0	71.3
654	NEPTUNE/3/NEPTUNE//BNGL/CL161	4	90	33	8690	61.9	72.9
599	BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	87	36	8669	66.2	72.2
701	BNGL/CL161//CAFFEY/3/NEPTUNE//BNGL/CL161	3	88	36	8657	65.2	74.5
660	NEPTUNE//BNGL/CL161/3/NEPTUNE	5	90	34	8640	65.8	72.7
748	CL272	4	89	37	8633	41.5	75.2
631	NEPTUNE//BNGL/CL161/3/BNGL/CL161	4	88	35	8572	61.4	72.0
690	NEPTUNE//BNGL/CL161/3/BNGL/CL161//CAFFEY	4	90	35	8568	72.7	75.5
625	NEPTUNE//BNGL/CL161/3/RICO	5	89	37	8548	64.4	73.9
683	NEPTUNE//BNGL/CL161/3/RICO	4	88	37	8538	67.9	72.6
669	NEPTUNE//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/ MERC//..	4	85	36	8520	54.0	71.9
620	BNGL/CL161/3/NEPTUNE//BNGL/CL161	5	91	35	8492	69.0	73.0
605	BNGL/CL161//CAFFEY	5	89	42	8489	70.5	73.9
617	BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	90	35	8460	68.6	74.3
612	NEPTUNE/3/NEPTUNE//BNGL/CL161	5	91	33	8450	69.8	73.2
744	CL153	3	85	34	8436	64.5	72.0
646	NEPTUNE/3/NEPTUNE//BNGL/CL161	5	91	35	8428	68.1	72.9
650	9302065/3/RICO//PY 678/CL161	4	89	34	8427	59.8	71.3
632	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18 /5/NEPTUNE	4	88	32	8415	70.5	73.4
662	NEPTUNE//BNGL/CL161/3/NEPTUNE	4	89	35	8404	64.5	71.6
598	CAFFEY/CL261	4	88	36	8380	69.3	72.5
684	NEPTUNE//BNGL/CL161/3/NEPTUNE	4	87	35	8375	48.1	73.5
585	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX37	3	84	34	8374	67.9	70.4
621	BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	89	34	8359	67.4	72.8
681	NEPTUNE/3/NEPTUNE//BNGL/CL161	4	89	33	8339	70.3	74.0
630	NEPTUNE//BNGL/CL161/3/JPTR	4	86	33	8324	63.6	72.2
608	BNGL/CL161/4/BNGL//MERC/RICO/3/EARL	4	90	37	8314	69.5	73.8

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
424	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/…	4	82	34	8305	64.1	74.6
634	NEPTUNE//BNGL/CL161/3/NEPTUNE//BNGL/CL161	6	90	35	8297	50.6	73.0
421	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/ DREW//CLR 20	4	89	35	8287	65.6	73.2
653	NEPTUNE/3/NEPTUNE//BNGL/CL161	5	90	34	8282	70.3	73.0
688	CL271/5/BNGL//MERC/RICO/3/MERC/RICO/BNGL/4/BNGL/CFX18	4	85	35	8267	65.2	71.7
614	BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	90	37	8261	70.0	72.7
678	RICO/3/NEPTUNE//BNGL/CL161	4	89	36	8259	64.8	71.1
697	NEPTUNE//BNGL/CL161/3/NEPTUNE	4	88	33	8256	60.1	73.0
601	BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	89	36	8233	67.0	73.3
706	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18 /5/NEPTUNE//BNGL/ CL161	4	86	35	8219	56.5	73.6
587	BNGL/CL161/4/BNGL//MERC/RICO/3/MERC/RICO//BNGL	4	88	34	8218	64.0	71.8
619	BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	90	37	8216	70.5	74.1
659	NEPTUNE//BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	91	36	8209	66.5	71.2
541	CL162/3/TRNS//CCDR/JEFF	4	87	33	8181	64.5	74.7
665	NEPTUNE//BNGL/CL161/3/NEPTUNE	6	88	35	8180	62.8	72.1
487	TACAURI/4/9502008-A/DREW//CFX26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031	4	85	34	8166	62.6	74.9
588	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18	3	89	31	8156	66.6	72.9
696	NEPTUNE//BNGL/CL161/3/NEPTUNE	4	89	37	8154	63.7	74.8
410	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/ 9502008-A/…	4	87	34	8153	51.6	72.7
686	NEPTUNE//BNGL/CL161/3/RICO	4	90	35	8123	68.2	73.9
622	NEPTUNE//BNGL/CL161/3/NEPTUNE//BNGL/CL161	5	88	36	8120	63.7	72.8
538	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/CHENIERE	4	86	34	8117	64.1	75.1
644	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/BNGL//MERC/RICO/3/ MERC/…	4	88	34	8080	61.7	73.7
671	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/BNGL//MERC/RICO/3/ MERC/…	4	89	35	8068	52.1	74.6
656	9302065/3/RICO//PY 678/CL161	5	90	35	8066	69.4	73.0
567	WELLS/CFX-18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/6/LGRU/CLR 11/4/…	4	86	36	8064	64.9	73.0

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
651	9302065/3/RICO//PY 678/CL161	4	90	35	8047	68.7	72.5
700	NEPTUNE//BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	85	36	8035	56.4	73.7
613	NEPTUNE/3/NEPTUNE//BNGL/CL161	4	90	34	8032	68.1	72.6
734	JZMN/08CLR004//RU0802146/3/JZM2/4/ JZMN/08CLR004//RU0802146/3/JZM2	4	88	36	8022	73.4	77.9
680	NEPTUNE/3/NEPTUNE//BNGL/CL161	4	90	36	8022	63.3	72.0
592	BNGL/CL161/3/BNGL/SHORT RICO//MERC	4	89	36	8015	70.4	75.1
563	WELLS/CFX-18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/6/LGRU/CLR 11/4/…	4	86	35	8008	68.5	75.5
747	CLPYJ 027	4	88	34	8005	70.0	75.5
566	WELLS/CFX-18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/6/LGRU/CLR 11/4/…	3	84	35	7999	63.7	72.1
638	NEPTUNE//BNGL/CL161/3/NEPTUNE	6	92	37	7975	69.1	72.6
707	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18 /5/NEPTUNE//BNGL/CL161	4	87	37	7967	67.8	73.5
692	NEPTUNE//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO/BNGL/4/BNGL/CFX18	3	86	34	7955	58.5	71.8
698	NEPTUNE//BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	89	32	7952	64.8	72.9
602	NEPTUNE//BNGL/CL161/3/NEPTUNE//BNGL/CL161	4	90	37	7945	67.5	72.2
516	CL111//CATAHOULA/CL111	4	85	33	7940	63.1	71.8
518	CL111/6/CFX-18//CCDR/9770532 DH2/5/9502008/3/CPRS//82CAY21/TBNT/4/CFX-18	5	86	35	7929	67.6	73.1
609	RICO/3/NEPTUNE//BNGL/CL161	4	85	38	7916	55.7	73.1
736	JZMN/08CLR004//RU0802146/3/JZM2/4/ JZMN/08CLR004//RU0802146/3/JZM2	4	88	33	7909	71.9	77.4
738	JZMN/08CLR004//RU0802146/3/JZM2/4/ JZMN/08CLR004//RU0802146/3/JZM2	4	89	37	7907	70.0	77.9
415	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/CFX-18//…	4	86	34	7899	64.1	72.3
528	CATAHOULA/CL111	4	85	34	7895	65.4	72.5
573	CL111//CATAHOULA/CL111	4	87	35	7885	63.3	71.2
633	NEPTUNE/3/NEPTUNE//BNGL/CL161	5	90	34	7883	64.3	73.0
555	9502008//KATY/9902207x2/3/9502008/CPRS/4/9502008-A//AR 1188/CCDR/3/CFX-26/…	6	85	39	7876	63.3	70.1
584	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/TRNS//CCDR/9502008-A	5	85	32	7873	61.8	71.1
485	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/PRESIDIO	3	85	33	7872	62.4	73.3
556	CCDR/JEFF//CFX-26/9702128/3/CL151	4	89	33	7869	64.3	73.5
635	NEPTUNE//BNGL/CL161/3/NEPTUNE//BNGL/CL161	5	91	37	7861	68.1	70.7

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
735	JZMN/08CLR004//RU0802146/3/JZM2/4/ JZMN/08CLR004//RU0802146/3/JZM2	4	87	33	7856	66.6	77.6
673	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/BNGL//MERC/RICO/3/ MERC/…	3	87	34	7849	65.4	71.8
739	JZMN/08CLR004//RU0802146/3/JZM2/4/ JZMN/08CLR004//RU0802146/3/JZM2	3	87	35	7820	70.6	75.6
693	NEPTUNE//BNGL/CL161/3/RICO	4	87	37	7810	64.5	71.8
558	CCDR/3/CPRS/KBNT//WELLS CFX 18	4	86	34	7809	66.8	74.5
586	BNGL/CL161/4/BNGL//MERC/RICO/3/MERC/RICO//BNGL	4	89	32	7808	67.7	74.1
420	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/DREW// CLR 20	4	85	33	7806	65.8	72.2
733	JZMN/08CLR004//RU0802146/3/JZM2/4/ JZMN/08CLR004//RU0802146/3/JZM2	4	89	33	7802	71.9	76.6
657	9302065/3/RICO//PY 678/CL161	5	92	34	7798	68.2	72.0
655	NEPTUNE/3/NEPTUNE//BNGL/CL161	5	88	35	7797	56.1	73.7
597	CAFFEY/CL261	4	90	34	7787	65.5	70.0
666	NEPTUNE//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18	4	86	34	7786	50.7	71.2
674	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/BNGL//MERC/RICO/3/ MERC/…	4	89	34	7786	64.0	74.1
411	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/ 9502008-A/…	4	87	33	7783	59.5	73.5
604	NEPTUNE//BNGL/CL161/3/RICO	4	90	35	7781	66.3	72.5
562	CHENIERE/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX-18	5	86	35	7766	56.3	72.8
589	BNGL/CL161/4/9502065/3/MERC//MERC/4/9902028	4	89	34	7765	63.1	72.1
742	CL151	5	86	35	7763	61.6	72.0
658	NEPTUNE/3/NEPTUNE//BNGL/CL161	5	92	35	7762	68.7	72.0
381	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/CL161	3	88	36	7761	65.1	73.3
483	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/PRESIDIO	4	86	36	7759	59.7	70.8
691	NEPTUNE//BNGL/CL161/5/BNGL//MERC/RICO/3/MERC/RICO/BNGL/4/BNGL/CFX18	4	86	37	7753	48.9	72.2
379	TRNS/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	80	31	7750	65.8	73.3
676	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18 /5/NEPTUNE	4	89	32	7732	67.5	73.2
526	CL111/CCDR	5	86	33	7730	64.2	73.3
641	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/BNGL//MERC/RICO/3/ MERC…	4	88	35	7729	63.2	73.3
422	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/ KATY/..	4	86	34	7708	65.3	73.4

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
689	CL271/5/BNGL//MERC/RICO/3/MERC/RICO/BNGL/4/BNGL/CFX18	3	89	37	7704	65.4	72.4
416	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/CFX-18//…	5	87	33	7699	67.6	75.5
499	CFX-18//CCDR/9770532 DH2/5/9502008/3/CPRS//82CAY21/TBNT/4/CFX-18/6/ 9502008-A//…	4	85	36	7694	61.6	71.1
575	CFX-18(CL161)/RSMT/3/MARS/NWRX//TBNT/4/CL161/CPRS/KBNT//9502008-A	4	88	37	7689	62.3	74.0
471	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/TRNS//CCDR/9502008-A	5	85	36	7678	63.4	71.7
648	NEPTUNE//BNGL/CL161/3/NEPTUNE	5	89	35	7678	67.9	72.3
486	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/PRESIDIO	5	84	36	7675	64.7	73.1
618	BNGL/CL161/3/NEPTUNE//BNGL/CL161	5	89	34	7666	61.4	73.7
441	CL111/CL152	4	83	34	7640	64.7	71.2
462	CL131/CHENIERE/9/9602097/...//JAF4/…/6/CCDR/…/7/JAF4/8/FRANCIS/CLR 13	4	88	36	7638	55.0	73.0
459	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/NWBT/KATY//9902207x2/3/9502008-A/…	5	86	36	7624	66.2	74.5
672	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/BNGL//MERC/RICO/3/ MERC/…	4	87	35	7623	64.9	72.9
636	NEPTUNE//BNGL/CL161/3/NEPTUNE//BNGL/CL161	5	92	35	7610	68.1	71.0
679	RICO/3/NEPTUNE//BNGL/CL161	5	86	41	7609	60.4	72.3
578	9502008-A//AR1188/CCDR/3/CFX29//AR 1142/LA 2031/4/AR 1188/CCDR//9502008/ LGRU	4	86	33	7600	58.1	74.5
583	TACAURI/3/CPRS//82CAY21/TBNT/4/CFX-18/5/CL131/6/9502008-A/DREW// CLR 20/4/…	4	84	34	7597	58.7	72.5
552	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	87	34	7583	62.5	75.2
570	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/CFX-29/AR 1142/LA 2031	4	87	31	7538	64.7	73.4
402	CL131/TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS CFX 18	5	84	34	7501	59.6	71.0
408	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY /5/9502008-A/…	4	87	35	7492	62.7	72.3
729	RU1002146*4//JZMN/08CLR004	4	83	32	7475	72.0	77.1
568	WELLS/CFX-18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/6/LGRU/ CLR 11/ 4/…	5	89	34	7469	65.3	72.8
664	NEPTUNE//BNGL/CL161/3/NEPTUNE	6	90	33	7466	69.1	73.5
643	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/BNGL//MERC/RICO/3/ MERC/…	4	88	37	7445	56.5	71.1

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
712	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004// JZMN	4	90	35	7443	71.8	78.0
565	WELLS/CFX-18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/6/LGRU/ CLR 11/4/…	4	86	33	7441	64.7	72.1
533	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/ CCDR/ 3/…	5	84	34	7435	68.2	73.6
498	CFX-18//CCDR/9770532 DH2/5/9502008/3/CPRS//82CAY21/TBNT/4/CFX-18/6/ 9502008-A//…	5	87	35	7427	33.3	74.2
446	DREW//CHENIERE/LMNT/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT// 9502008-A	4	86	37	7421	65.8	72.9
539	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/…	4	84	33	7402	70.7	75.9
717	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004// JZMN	5	86	35	7393	68.7	77.0
419	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/DREW// CLR 20	4	86	33	7389	65.9	73.0
537	CATAHOULA/CL111	4	85	34	7376	65.2	72.8
731	JZMN/08CLR004//RU0802146/3/JZM2 /4/CL JAZZMAN	3	89	38	7361	54.7	77.4
580	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/6/TAGGART	4	85	32	7356	69.0	75.0
405	TACAURI/3/CPRS//82CAY21/TBNT/4/CFX-18/5/CL131/6/TRNS/CL131	4	85	34	7356	65.4	73.0
508	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/CFX-29/AR 1142/LA 2031	4	86	31	7353	64.7	71.8
540	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/…	5	85	35	7309	68.8	75.0
444	DREW//CHENIERE/LMNT/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	6	85	36	7300	62.6	70.8
661	NEPTUNE//BNGL/CL161/3/NEPTUNE	4	89	36	7298	46.0	73.4
737	JZMN/08CLR004//RU0802146/3/JZM2/4/ JZMN/08CLR004//RU0802146/3/JZM2	4	89	33	7297	68.0	74.9
716	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004//JZMN	4	85	34	7296	69.2	76.1
514	CL131/3/CPRS/KBNT//9502008-A /4/CATAHOULA/CL111	5	87	34	7283	61.7	72.2
517	CL111/6/CFX-18//CCDR/9770532 DH2/5/9502008/3/CPRS//82CAY21/TBNT/4/CFX-18	5	85	34	7256	64.6	71.9
593	BNGL/CL161/4/BNGL//MERC/RICO/3/EARL	5	90	36	7241	69.1	73.7
675	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18 /5/NEPTUNE	4	4	18	7239	67.7	72.8
741	CL111	4	82	34	7226	64.6	74.7
418	CL131/3/CPRS/KBNT//9502008-A /4/9502008-A/DREW//CLR 20/3/9502008-A/DREW// CLR 20	4	86	33	7222	63.9	71.3
470	CL152/3/DREW//CHENIERE/LMNT	6	85	38	7219	61.0	70.3
699	NEPTUNE//BNGL/CL161/3/NEPTUNE//BNGL/CL161	5	87	33	7218	50.9	72.4
694	NEPTUNE//BNGL/CL161/3/RICO	6	87	35	7217	64.4	70.8
687	CL271/5/BNGL//MERC/RICO/3/MERC/RICO/BNGL/4/BNGL/CFX18	4	90	36	7212	69.8	73.3

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
594	BNGL/CL161//CAFFEY	4	88	35	7211	56.1	71.7
414	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/3/ 9502008/4/…	4	86	33	7194	63.6	72.6
715	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004//JZMN	4	86	33	7182	68.7	76.0
466	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	85	36	7179	63.1	71.9
722	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004//JZMN	4	86	34	7160	71.0	77.3
505	WELLS/CFX-18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/6/CFX-18//CCDR/…	5	85	34	7154	66.3	72.6
532	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/CHENIERE	5	91	33	7146	63.1	74.2
730	RU1002146*4//JZMN/08CLR004	4	85	33	7143	70.4	76.0
590	NEPTUNE//BNGL/CL161	4	87	33	7124	65.7	74.5
740	JZMN/08CLR004//RU0802146/3/JZM2/4/ JZMN/08CLR004//RU0802146/3/JZM2	4	89	35	7112	68.0	73.3
637	NEPTUNE//BNGL/CL161/3/NEPTUNE	7	90	34	7111	63.0	69.5
711	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004//JZMN	5	87	35	7093	67.5	74.3
642	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/BNGL//MERC/RICO/3/ MERC/…	4	88	37	7090	60.8	70.1
718	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004//JZMN	5	87	34	7075	69.9	77.8
426	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/…/6/CATAHOULA	5	89	34	7075	61.9	72.9
708	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004//JZMN	5	87	33	7063	67.7	75.7
534	CPRS//82CAY21/TBNT/3/CFX 29//…/4/CATHOULA	5	84	32	7060	66.7	72.4
491	9502008-A/DREW//CLR 20/4/9502008/LGRU/3/CPRS//82CAY21/TBNT/5/MBLE	5	85	34	7060	61.9	71.6
560	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/9502008- A/…	4	87	34	7056	67.0	75.2
423	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/ KATY/..	4	87	37	7054	66.5	72.8
417	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/CFX- 18//…	5	87	36	7050	62.4	71.6
501	9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS CFX 18/4/CATAHOULA/CL111	4	85	34	7048	55.4	72.7
480	CL131//DREW/CLR 13/4/9502008-A/TACAURI//CLR 5/3/DREW/CFX-18	5	86	34	7048	66.2	73.0
607	BNGL/CL161/4/BNGL//MERC/RICO/3/EARL	4	90	36	7044	69.1	74.0
571	CL131/3/CPRS/KBNT//9502008-A/4/MBLE	4	87	32	7036	62.3	75.3
463	CL131/CHENIERE/9/9602097/...//JAF4/…/6/CCDR/…/7/JAF4/8/FRANCIS/CLR 13	4	88	35	7029	56.6	74.4
576	CFX-18(CL161)/RSMT/3/MARS/NWRX//TBNT/4/CL161/CPRS/KBNT//9502008-A	5	92	34	7020	54.7	72.2
595	BNGL/CL161//CAFFEY	4	89	31	7019	60.1	72.1

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
727	RU1002146/3/JZM2//07PY824/08CLR003	4	87	32	7008	66.1	77.1
513	CL131/3/CPRS/KBNT//9502008-A /4/CATAHOULA/CL111	4	86	33	7003	44.2	72.3
502	CATAHOULA/4/CFX-18/RSMT/3/MARS/NWRX//TBNT	5	86	35	6975	65.7	72.9
550	CL111/3/9502008-A/DREW//CLR 20	4	83	31	6975	59.4	71.0
409	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/5/ 9502008-A/…	4	87	32	6969	47.4	73.8
504	WELLS/CFX-18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/6/LGRU/CLR 11/4/ 9502065..	5	85	35	6958	64.1	72.5
569	WELLS/CFX-18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/6/LGRU/CLR 11/4/ 9302065..	5	86	33	6956	64.1	71.2
464	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	87	34	6947	64.4	73.5
546	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/TACAURI/3/CPRS//82CAY21/TBNT/4/…	5	84	31	6944	61.1	73.4
431	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	5	86	35	6944	64.8	74.6
596	CAFFEY/CL261	4	91	34	6929	67.9	71.3
553	CL152/DREW	4	86	34	6924	63.0	73.3
557	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/CFX-18//CCDR/9770532 DH2	4	85	34	6923	66.7	73.6
389	TACAURI/4/9502008-A/TACAURI//CLR 5/3/DREW/CFX-18	5	87	34	6915	60.8	70.4
481	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/PRESIDIO	5	86	35	6912	56.0	73.5
503	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/3/…	5	87	34	6910	60.7	70.9
582	TACAURI/3/CPRS//82CAY21/TBNT/4/CFX-18/5/CL131/6/9502008-A/DREW//CLR 20/ 4/…	5	85	32	6907	59.8	71.5
515	CL111//CATAHOULA/CL111	5	86	32	6906	63.1	73.9
403	CL131/TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS CFX 18	4	83	35	6899	62.5	70.6
412	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/3/ 9502008/4/…	4	86	33	6882	65.7	74.5
709	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004//JZMN	5	87	35	6882	65.4	74.9
404	CL131/TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS CFX 18	4	83	34	6881	62.4	73.9
476	TRNS//CCDR/9502008-A/5/9502008-A/DREW/3/NWBT/KATY//9902207x2/4/CFX-18// CCDR/…	6	87	35	6880	64.0	71.1
377	TRNS/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	5	85	35	6874	66.7	73.9
495	M-401/4/CFX-18/RSMT/3/MARS/NWRX//TBNT	4	86	34	6874	65.6	73.5
529	CCDR/CFX-18/3/9502008-A/DREW//CLR 20	5	87	35	6871	61.5	73.7
713	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004//JZMN	5	85	33	6863	68.7	75.3

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
732	JZMN/08CLR004//RU0802146/3/JZM2 /4/CL JAZZMAN	4	88	42	6859	69.2	74.2
723	JZMN/08CLR004//RU0802146/3/JZM2	4	85	35	6853	71.9	77.4
645	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/BNGL//MERC/RICO/3/ MERC/…	4	89	34	6838	68.2	72.7
714	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004//JZMN	5	90	34	6828	66.9	73.3
710	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/JZMN/08CLR004//JZMN	5	88	34	6822	69.5	76.0
525	CPRS/KBNT//WELLS CFX 18/4/CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031	5	86	34	6821	69.8	75.0
519	CFX-18(CL161)/RSMT/3/MARS/NWRX//TBNT/4/9502008-A/DREW//CLR 20/3/ CPRS/…	5	87	38	6815	62.1	70.5
467	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	5	87	34	6810	60.7	72.3
451	TRNS//CCDR/9502008-A/6/CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/ KATY/ 3/…	4	86	35	6807	61.0	71.9
484	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/PRESIDIO	4	83	33	6800	67.6	75.4
564	WELLS/CFX-18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/6/LGRU/CLR 11/ 4/…	4	85	34	6795	67.1	73.6
695	NEPTUNE//BNGL/CL161/3/RICO	6	86	39	6792	56.5	74.4
413	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/KATY/CPRS//NWBT/KATY/3/ 9502008/4/…	4	86	33	6790	63.6	72.1
465	CL152/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	87	34	6789	65.1	74.3
581	CL131/TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS CFX 18	4	83	32	6785	55.9	71.8
611	RICO/3/NEPTUNE//BNGL/CL161	6	87	35	6780	33.5	71.4
479	CL131//DREW/CLR 13/4/9502008-A/TACAURI//CLR 5/3/DREW/CFX-18	5	87	35	6778	66.4	73.2
497	CFX-18//CCDR/9770532 DH2/5/9502008/3/CPRS//82CAY21/…/4/CFX-18/6/CL111	4	84	32	6773	60.6	71.0
610	RICO/3/NEPTUNE//BNGL/CL161	6	86	31	6760	58.2	71.4
551	CL111/3/9502008-A/DREW//CLR 20	5	86	32	6760	57.6	70.6
384	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/DREW//CHENIERE/LMNT	4	86	35	6758	50.1	73.0
547	KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/5/TACAURI/3/CPRS//82CAY21/ TBNT…	4	85	33	6756	57.6	72.7
433	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	4	87	32	6737	59.4	73.2
721	JZMN/08CLR004//JZMN/4/DREW/CFX-18/3/CPRS/KBNT//CFX 18	5	87	33	6683	69.5	77.9
490	9502008-A/DREW//CLR 20/4/9502008/LGRU/3/CPRS//82CAY21/TBNT/5/MBLE	5	83	32	6682	64.0	72.1
458	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/NWBT/KATY//9902207x2/3/ 9502008-A/…	5	87	34	6678	60.0	73.3
720	JZMN/08CLR004//JZMN/4/DREW/CFX-18/3/CPRS/KBNT//CFX 18	4	89	37	6676	68.4	75.9

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
500	9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS CFX 18/4/CATAHOULA/CL111	4	85	32	6669	62.8	73.3
545	CCDR/JEFF/3/CFX-18//CCDR/9770532 DH2/4/9502008//KATY/9902207x2/3/ 9502008/CPRS	5	85	34	6666	65.4	72.6
743	CL152	5	86	33	6647	50.4	75.4
574	CFX-18(CL161)/RSMT/3/MARS/NWRX//TBNT/4/9502008-A/DREW//CLR 20/3/ CPRS/…	4	87	33	6637	64.0	72.4
521	CFX-18(CL161)/RSMT/3/MARS/NWRX//TBNT/4/9502008-A/DREW//CLR 20/3/ TAGGART	5	89	34	6630	53.6	74.8
445	DREW//CHENIERE/LMNT/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	6	86	35	6627	57.3	72.8
494	M-401/4/CFX-18/RSMT/3/MARS/NWRX//TBNT	4	87	34	6626	63.8	72.0
482	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/PRESIDIO	6	87	35	6608	63.3	73.3
399	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CATAHOULA	6	84	36	6606	60.7	69.6
725	JZMN/08CLR004//RU0802146/3/JZM2	5	89	33	6598	71.2	76.7
440	9502008-A/TACAURI//CLR 5/3/DREW/CFX-18/4/DREW//CHENIERE/LMNT	5	87	35	6582	67.7	74.0
449	DREW//CHENIERE/LMNT/3/CL131/CHENIERE	5	88	35	6569	62.9	73.2
430	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	4	86	34	6567	60.8	72.6
397	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CATAHOULA	5	86	35	6547	63.1	71.8
468	CL152/3/DREW//CHENIERE/LMNT	5	89	35	6520	63.5	72.5
473	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/TRNS//CCDR/9502008-A	6	86	34	6517	62.9	71.8
728	JZMN/08CLR004//RU1002146*2	4	84	31	6500	68.9	77.6
640	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL/CFX18/5/BNGL//MERC/RICO/3/ MERC/…	5	88	34	6496	63.7	73.1
530	9502008-A/DREW//CLR 20/3/TRNS//CCDR/JEFF	4	87	31	6493	67.9	74.6
559	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/9502008- A/…	5	91	33	6483	64.9	75.8
579	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/6/TAGGART	5	86	35	6461	66.0	72.8
378	TRNS/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	4	87	33	6425	63.5	72.9
488	TACAURI/4/9502008-A/DREW//CFX26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031	5	86	36	6403	56.2	73.1
432	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	4	86	35	6394	64.2	72.4
535	CL111/CL152	5	87	35	6367	68.6	75.5
544	CFX-18//CCDR/9770532 DH2/3/9502008-A//AR 1188/CCDR/4/9502008//KATY/ 9902207x2/3/…	5	86	32	6358	66.8	75.0
493	9502008-A/DREW//CLR 20/4/9502008/LGRU/3/CPRS//82CAY21/TBNT/5/MBLE	5	85	33	6354	65.4	74.3

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
469	CL152/3/DREW//CHENIERE/LMNT	6	91	35	6342	54.4	73.6
391	TACAURI/4/9502008-A/TACAURI//CLR 5/3/DREW/CFX-18	5	86	35	6321	58.4	68.5
509	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/CFX-29/AR 1142/LA 2031	6	86	35	6311	67.1	74.7
425	CL131/3/CPRS/KBNT//9502008-A /6/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/ 5/…	5	88	33	6305	64.8	72.5
461	CL131/CHENIERE/9/9602097/...//JAF4/…/6/CCDR/…/7/JAF4/8/FRANCIS/CLR 13	5	86	31	6291	66.1	72.8
407	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/DREW/CLR 13/5/CCDR	5	87	32	6270	62.3	71.0
507	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/CFX-29/AR 1142/LA 2031	5	85	29	6250	64.3	71.4
524	CFX-18(CL161)/RSMT/3/MARS/NWRX//TBNT/4/CL161/CPRS/KBNT//9502008-A	5	90	33	6238	64.3	71.1
682	NEPTUNE//BNGL/CL161/3/RICO	5	86	33	6222	58.8	72.0
549	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CCDR	6	85	34	6216	60.9	72.2
719	JZMN/08CLR004//JZMN/4/DREW/CFX-18/3/CPRS/KBNT//CFX 18	4	89	37	6212	68.0	76.7
429	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/5/9502008-A/DREW//CLR 20/4/…	5	86	33	6204	64.5	72.0
724	JZMN/08CLR004//RU0802146/3/JZM2	5	90	33	6175	70.3	75.8
438	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/4/CATAHOULA	5	85	35	6174	54.1	75.3
447	DREW//CHENIERE/LMNT/3/CL131/CHENIERE	6	88	33	6154	62.2	72.8
428	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/5/9502008-A/DREW//CLR 20/ 4/…	4	86	32	6140	66.5	73.2
543	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/TRNS//CCDR/JEFF	6	86	33	6130	68.7	72.9
385	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/DREW/CFX-18/3/CFX-18//CCDR/9770532 DH2	5	85	35	6106	65.2	72.2
475	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/TRNS//CCDR/9502008-A	6	86	30	6087	61.2	70.9
522	CFX-18(CL161)/RSMT/3/MARS/NWRX//TBNT/4/9502008-A/DREW//CLR 20/3/ TAGGART	5	90	33	6078	53.5	72.1
523	CFX-18(CL161)/RSMT/3/MARS/NWRX//TBNT/4/CL161/CPRS/KBNT//9502008-A	6	89	35	6059	64.2	71.7
492	9502008-A/DREW//CLR 20/4/9502008/LGRU/3/CPRS//82CAY21/TBNT/5/MBLE	5	85	32	6050	67.0	73.0
452	TRNS//CCDR/9502008-A/6/CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/…	6	85	33	6037	55.3	72.4
561	9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031/5/9502008-A/…	6	87	33	6037	63.8	71.6
380	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/CL161	6	87	35	6030	58.9	75.3

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
398	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CATAHOULA	6	81	32	6011	63.5	72.7
448	DREW//CHENIERE/LMNT/3/CL131/CHENIERE	6	86	35	5961	53.1	75.2
382	DREW/CFX-18/3/CPRS/KBNT//CFX 18/4/CL161	5	87	36	5957	59.5	69.3
401	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CATAHOULA	4	84	34	5939	61.9	71.4
496	M-401/4/CFX-18/RSMT/3/MARS/NWRX//TBNT	5	83	35	5898	66.9	74.4
726	JZMN/08CLR004//RU0802146/3/JZM2	5	90	31	5851	57.3	76.9
572	CL131/3/CPRS/KBNT//9502008-A /5/9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/…	5	85	35	5810	64.3	72.2
395	CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/3/95020084CLR9/6/CPRS	4	86	37	5759	63.3	72.9
474	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/TRNS//CCDR/9502008-A	5	85	35	5752	64.2	70.7
442	CPRS/KBNT//9502008-A/3/CCDR/4/CL131	4	86	36	5656	64.8	73.0
453	TRNS//CCDR/9502008-A/6/CPRS/KBNT//9502008-A/5/KATY/CPRS//NWBT/KATY/ 3/…	6	85	37	5638	59.2	71.7
427	CL131/CHENIERE/4/CPRS/KBNT//9502008-A /3/CCDR/JEFF	6	88	32	5636	64.9	73.7
511	CL131/3/CPRS/KBNT//9502008-A /4/LGRU/CLR 11/4/9302065/3/CGX-29/AR 1142/LA 2031	6	86	31	5525	64.1	72.2
386	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CATAHOULA	5	84	33	5519	64.1	71.9
527	9502008-A/DREW//CLR 20/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT//9502008-A	5	86	31	5294	64.6	75.4
439	CFX-18//CCDR/9770532 DH2/3/CPRS/KBNT//9502008-A/5/9502008-A/DREW/3/…	6	88	34	5273	64.7	74.6
506	WELLS/CFX-18/5/KATY/CPRS//NWBT/KATY/3/9502008/4/CLR 9/6/CFX-18//CCDR…	5	86	33	5064	65.9	71.6
489	9502008-A/DREW//CLR 20/4/9502008/LGRU/3/CPRS//82CAY21/TBNT/5/MBLE	5	85	32	5049	65.4	72.5
512	CL131/3/CPRS/KBNT//9502008-A /5/9502008-A/DREW//CFX 26/WELLS/4/.	5	88	33	4727	60.9	73.6
396	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A/5/CATAHOULA	6	85	32	4238	63.4	73.6

[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 no fungicides were applied) at the H. Rouse Caffey Rice Research Station at Crowley, LA. A randomized complete block design was applied to arrange trial entries. The plot size was 4.66 x 16 ft. Seeding rate was 90 lb/A. This trial was drill seeded on March 14 and harvested on Aug. 4. Data is presented in Table 1.

Table 1. Grain and milling yields and agronomic performance of entries in the 2017 Preliminary Yield Trial, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
875	TITAN	4	80	35	10040	55.8	67.6
830	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL	4	85	33	9892	56.1	68.0
873	CL272	3	84	34	9610	60.8	70.4
847	CAFFEY/3/BNGL/9502065//EARL	3	84	36	9572	58.4	67.9
846	CAFFEY/BNGL	4	85	34	9563	63.5	68.1
819	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MERC	4	83	35	9545	58.0	68.8
870	CAFFEY/3/BNGL/9502065//EARL	5	83	32	9422	58.3	66.1
818	MERC/4/BNGL//MERC/RICO/3/MERC/RICO//BNGL	4	81	36	9412	62.9	66.5
824	CAFFEY/3/BNGL/9502065//EARL	4	84	35	9410	57.6	64.8
845	CAFFEY/BNGL	4	84	35	9405	62.4	69.1
817	NEPTUNE/4/9502065/3/MERC//MERC/49902028	4	85	33	9380	68.4	71.6
853	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/NEPTUNE	5	84	35	9337	61.6	69.0
627	MERMENTAU/JPTR	4	85	35	9325	48.1	71.2
868	CAFFEY/3/BNGL/9502065//EARL	4	83	35	9317	60.3	68.4
811	NEPTUNE/4/9502065/3/MERC//MERC/4/9902028	4	84	34	9272	59.7	69.2
804	ROY J	3	86	40	9254	60.9	71.9
866	NEPTUNE/JPTR	4	85	38	9219	62.1	69.6
829	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL	5	87	34	9210	56.6	69.0
869	CAFFEY/3/BNGL/9502065//EARL	5	82	33	9203	60.0	69.6
844	CAFFEY/BNGL	4	83	36	9170	50.0	71.9
852	9502065/3/MERC//MERC/4/9902028/4/BNGL//MERC/RICO/3/EARL	4	81	36	9144	60.8	68.3
826	NEPTUNE/5/BNGL/SHORT RICO/4/9502065/3/MERC//MERC/4/9902028	3	86	32	9114	63.6	66.6
843	CAFFEY/3/BNGL/9502065//EARL	3	84	35	9101	60.6	67.4
836	LFTE/BNGL//MARS	4	81	33	9096	61.1	68.9
872	LFTE/BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	5	81	34	9081	57.6	70.3
813	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/4/9902028	4	83	34	9079	65.6	71.1
857	CAFFEY/3/BNGL/9502065//EARL	4	80	33	8953	50.5	71.5
832	BNGL//MERC/RICO/3/MERC/RICO//BNGL /4/BNGL/9502065//EARL	4	86	33	8952	46.5	73.0
821	BNGL//MERC/RICO/3/MERC/RICO//BNGL /4/BNGL/9502065//EARL	5	84	34	8927	55.5	68.6
858	NEPTUNE/JPTR	4	87	32	8901	64.5	71.3
831	BNGL//MERC/RICO/3/MERC/RICO//BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	4	85	34	8879	52.7	68.1

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
841	BNGL/SHORT RICO//MERC/3/BNGL/9502065//EARL	3	81	33	8870	63.6	67.5
822	BNGL//MERC/RICO/3/MERC/RICO//BNGL /4/BNGL/9502065//EARL	5	85	33	8865	58.9	69.0
874	JUPITER	5	86	35	8862	60.8	62.3
871	9502065/3/MERC//MERC/…/4/BNGL//MERC/RICO/3/EARL	5	80	35	8778	65.6	69.4
833	BNGL//MERC/RICO/3/MERC/RICO//BNGL /4/BNGL/9502065//EARL	5	85	32	8770	49.8	66.6
644	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	4	81	32	8756	54.8	71.7
859	NEPTUNE/JPTR	4	85	36	8742	68.2	70.5
867	LFTE/BNGL//CAFFEY	6	83	35	8684	56.6	70.2
849	9502065/3/MERC//MERC//4/9902028/4/BNGL//MERC/RICO/3/EARL	5	84	34	8622	64.0	71.4
628	MERMENTAU/JPTR	6	85	38	8616	63.4	66.5
863	NEPTUNE/9302065	4	83	34	8612	67.1	70.0
802	LAKAST	2	78	41	8594	49.6	71.6
827	NEPTUNE/5/BNGL/SHORT RICO/4/9502065/3/MERC//MERC/4/9902028	4	86	33	8591	65.0	68.1
835	LFTE/BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	5	82	35	8563	54.3	69.7
815	NEPTUNE/4/9502065/3/MERC//MERC/4/9902028	3	85	32	8506	66.9	69.4
809	NEPTUNE/4/ORIN/3/MERC/CAM9/MARS/4/BNGL	5	84	32	8481	62.3	71.3
814	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/4/9902028	5	83	33	8479	64.9	69.9
810	NEPTUNE/4/9502065/3/MERC//MERC/4/9902028	5	86	33	8466	68.6	72.5
786	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	5	83	34	8461	62.9	71.2
828	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/BNGL	5	87	34	8443	52.7	68.4
860	JPTR/9302065	5	81	36	8442	65.9	70.9
851	9502065/3/MERC//MERC/49902028/4/BNGL/9502065//EARL	5	83	35	8436	63.9	69.7
785	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	5	79	33	8395	50.0	75.3
799	CL151	4	80	33	8392	60.8	71.8
781	CHNR/11AY026	5	80	35	8389	53.7	76.2
850	9502065/3/MERC//MERC//4/9902028/4/BNGL//MERC/RICO/3/EARL	4	83	34	8389	55.6	70.2
862	JPTR/9302065	5	79	32	8361	53.7	70.5
629	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	5	81	34	8344	65.4	74.3
854	ORIN/3/MERC/CAM9/MARS/4/BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	5	84	33	8340	57.9	70.0
773	CHNR/RU0901121	4	83	34	8336	58.2	74.6
626	MERMENTAU/JPTR	5	86	39	8326	23.9	73.7
647	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	5	79	31	8304	51.6	73.7
640	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	7	81	34	8302	52.3	72.0
642	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	3	82	31	8301	59.1	73.9

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
864	NEPTUNE/9302065	4	79	34	8263	67.7	71.9
755	TRNS//CCDR/JEFF/3/AR 1188/CCDR//9502008/LGRU	5	80	33	8256	64.0	73.7
856	BNGL/SHORT RICO//MERC/3/BNGL/9502065//EARL	5	81	34	8218	61.2	71.2
610	TAGGART/3/TRNS//CCDR/JEFF	5	81	32	8211	64.5	73.0
834	LFTE/BNGL/3/BNGL/9502065//EARL	5	82	35	8205	56.9	71.7
800	CL153	3	82	34	8204	61.5	72.3
808	JPTR/4/9502065/3/MERC//MERC/4/9902028	3	82	31	8202	62.3	70.2
709	RU0902155/RU0802031	4	80	33	8187	65.3	73.7
837	BNGL/9502065//EARL/6/MARS//M201/MARS/5/STRN//MERC/RICO/4/M201	4	86	34	8171	64.0	67.3
820	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MERC	5	85	33	8163	59.9	67.5
806	9502065/3/MERC//MERC//MERC/4/9902028/5/ORIN/3/MERC/CAM9/MARS/4/BNGL	5	82	33	8136	65.7	69.7
633	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	4	81	34	8121	58.3	72.9
840	EARL/4/BNGL/3/SMARS/MARS//MARS/5/BNGL//MERC/RICO/3/MERC/RICO//BNGL	4	81	35	8115	62.0	70.0
807	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/9502065/3/MERC//MERC/4/9902028	4	81	32	8114	63.6	72.8
788	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	4	80	34	8109	59.8	74.1
772	CHNR/RU0901121	5	81	33	8095	66.2	72.7
530	RU0902028/CTHL	5	80	33	8064	54.6	73.0
865	NEPTUNE/9302065	5	78	41	8001	58.4	70.8
682	DREW//CHENIERE/LMNT/3/TAGGART	5	83	42	7998	45.2	71.2
690	CPRS/KBNT//9502008-A /3/CCDR/JEFF/4/MERMENTAU	5	81	35	7990	66.7	73.0
839	BNGL/9502065//EARL/4/BNGL//MERC/RICO/3/MERC/RICO//BNGL	5	82	35	7983	55.9	69.6
643	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	4	83	32	7971	58.5	74.2
746	CATAHOULA/3/AR 1188/CCDR//9502008/LGRU	4	83	33	7971	69.7	74.2
783	TAGGART/3/TRNS//CCDR/JEFF	6	82	39	7963	60.0	71.8
729	RU0902155/RU0802031	4	83	32	7954	67.6	73.3
529	RU0902028/CTHL	6	77	36	7948	65.4	74.9
693	CPRS/KBNT//9502008-A /3/CCDR/JEFF/4/MERMENTAU	5	81	33	7941	67.8	75.0
597	TRNS/3/CHENIERE//CCDR/JEFF	4	82	33	7934	52.8	70.3
790	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	4	80	32	7919	63.7	74.3
723	RU0401067/IRAT 13//STG03F5-04-062 /4/LGRU//KATY/STBN/3/LGRU	6	79	34	7899	54.7	75.0
777	CHNR/RU0902137	5	83	36	7898	66.9	74.6

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
855	MARS/6/MARS//M201/MARS/5/STRN//MERC/RICO/4/M201	4	82	34	7887	65.6	72.1
696	CPRS/KBNT//9502008-A /3/CCDR/JEFF/4/MERMENTAU	5	83	36	7884	67.8	75.0
528	RU0902028/CCDR	4	80	33	7877	63.6	74.9
812	NEPTUNE/4/BNGL//MERC/RICO/3/MERC/RICO//BNGL	4	82	33	7868	62.5	69.6
743	LMNT/CCDR	4	79	34	7854	64.5	74.6
503	CHNR/11AY024	4	83	31	7842	59.8	74.7
718	CATAHOULA/3/AR 1188/CCDR//9502008/LGRU	6	81	35	7841	61.8	73.1
728	RU0902155/RU0802031	5	82	31	7830	55.8	73.2
704	CATAHOULA/CHENIERE	5	82	32	7821	66.7	73.6
775	CHNR/RU0901121	5	78	34	7813	58.2	74.1
848	9502065/3/MERC//MERC//4/9902028/4/BNGL//MERC/RICO/3/EARL	5	85	34	7812	62.9	72.3
540	RU0902131/MRMT	5	81	33	7775	65.6	75.3
531	RU0902028/CTHL	4	78	34	7767	57.4	73.6
787	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	3	80	32	7763	63.1	73.7
683	DREW//CHENIERE/LMNT/3/TAGGART	5	84	34	7763	58.4	72.9
825	MARS/6/MARS//M201/MARS/5/STRN//MERC/RICO/4/M201	4	82	33	7761	63.3	69.5
798	CL111	4	79	34	7754	60.0	73.6
659	TRNS//CCDR/JEFF/3/MERMENTAU	6	80	33	7733	56.8	71.5
623	MERMENTAU/CPRS	3	84	33	7725	53.0	75.3
768	CHNR/CTHL	5	84	32	7678	63.5	73.2
774	CHNR/RU0901121	6	83	33	7677	62.7	73.7
816	NEPTUNE/4/9502065/3/MERC//MERC/4/9902028	5	86	33	7653	66.8	68.9
675	CCDR/JEFF/3/CPRS/KBNT//9502008-A /4/FRANCIS	6	80	35	7649	53.0	71.8
651	CHENIERE//CCDR/JEFF/3/TRNS//CCDR/JEFF	5	82	34	7640	39.0	74.6
708	CTHL/CPRS	4	83	31	7628	63.7	73.4
634	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	5	81	33	7623	56.0	72.2
689	TRNS//CCDR/9502008-A/3/CATAHOLA	4	82	32	7622	50.5	71.6
769	CHNR/CTHL	5	82	32	7621	62.8	73.0
745	CHENIERE/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT//9502008-A	5	82	33	7619	69.9	76.8
535	RU0902034/CCDR	6	78	32	7615	65.4	74.8
794	CCDR/3/TRNS//CCDR/JEFF	5	80	33	7609	61.0	71.4

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
791	CATAHOULA/3/AR 1188/CCDR//9502008/LGRU	5	81	34	7599	57.3	71.9
744	CHENIERE/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT//9502008-A	5	83	32	7595	66.0	75.0
861	JPTR/9302065	5	80	34	7591	60.8	70.6
686	TRNS//CCDR/9502008-A/3/CATAHOLA	5	81	35	7589	51.3	74.0
797	CHNR	5	84	34	7584	64.6	74.4
619	CHENIERE/TAGGART	5	83	39	7563	58.2	73.5
609	TAGGART/3/TRNS//CCDR/JEFF	6	79	34	7532	63.2	72.7
663	TACAURI/4/CPRS/KBNT//9502008-A /3/CCDR/JEFF	5	79	32	7531	63.2	72.0
691	CPRS/KBNT//9502008-A /3/CCDR/JEFF/4/MERMENTAU	5	82	34	7524	65.8	72.5
687	TRNS//CCDR/9502008-A/3/CATAHOLA	5	79	34	7516	55.2	74.4
695	CPRS/KBNT//9502008-A /3/CCDR/JEFF/4/MERMENTAU	5	83	36	7510	66.1	73.6
685	TRNS//CCDR/9502008-A/3/CATAHOLA	4	79	36	7497	55.6	72.1
622	MERMENTAU/CPRS	4	82	33	7486	24.0	76.2
639	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	6	83	34	7486	64.2	75.5
739	CCDR/3/TRNS//CCDR/JEFF	5	83	31	7480	63.9	72.3
760	CCDR/MRMT	5	81	34	7477	65.8	72.9
661	TRNS/CCDR	5	78	36	7473	56.8	70.1
678	CCDR/JEFF/3/CPRS/KBNT//9502008-A /4/CATAHOULA	6	81	33	7463	60.4	73.6
544	RU0902131/MRMT	6	81	32	7457	58.3	74.1
757	ROYJ/RU0902137	5	83	33	7454	62.7	71.5
732	RU0902125/10AY027	5	81	33	7427	43.5	75.4
771	CHNR/RU0901121	5	79	32	7427	64.9	73.5
710	CHNR/RU1002183	5	80	32	7425	66.9	73.4
582	11AY023/MRMT	4	82	34	7421	62.0	71.4
646	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	6	80	31	7416	59.8	75.7
536	RU0902034/CCDR	5	79	34	7411	54.9	71.7
782	RU1102034/MRMT	4	81	32	7410	56.6	72.5
596	TRNS/MBLE	4	77	31	7401	56.3	73.9
579	11AY022/CTHL	5	81	31	7374	57.1	72.2
759	TRNS/RU0803147	6	80	34	7371	51.9	71.4

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
823	LFTE/BNGL//MARS	5	80	34	7363	60.0	71.4
779	CHNR/RU1002125	5	88	32	7354	67.3	75.4
655	TRNS//CCDR/JEFF/3/MERMENTAU	7	81	35	7347	59.7	72.4
652	CHENIERE//CCDR/JEFF/3/TRNS//CCDR/JEFF	4	83	34	7324	64.8	71.4
754	TRNS//CCDR/JEFF/3/AR 1188/CCDR//9502008/LGRU	6	78	35	7322	66.3	73.5
501	CHNR/11AY024	5	83	35	7308	62.4	72.6
747	CATAHOULA/3/AR 1188/CCDR//9502008/LGRU	5	80	33	7292	59.0	74.3
620	MERMENTAU/CPRS	4	82	32	7278	58.8	70.0
789	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	5	80	32	7278	65.7	75.4
591	RU1102034/MRMT	6	82	33	7258	58.7	75.3
590	CHNR/RU0803147	5	81	34	7248	58.3	74.6
625	MERMENTAU/CPRS	4	78	32	7246	63.7	73.8
738	CCDR/3/TRNS//CCDR/JEFF	6	81	33	7243	61.4	74.2
637	TRNS//CCDR/JEFF/3/TAGGART	5	85	34	7237	63.2	71.5
694	CPRS/KBNT//9502008-A /3/CCDR/JEFF/4/MERMENTAU	5	82	35	7231	68.0	74.8
546	RU0902131/MRMT	4	78	34	7227	61.3	72.8
674	CCDR/JEFF/3/CPRS/KBNT//9502008-A /4/FRANCIS	5	79	33	7225	62.7	75.1
611	TAGGART/3/TRNS//CCDR/JEFF	7	79	41	7222	59.6	73.3
545	RU0902131/MRMT	6	78	33	7215	68.2	76.7
556	RU1102031/CCDR	6	81	32	7208	68.4	74.8
700	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/NWBT/KATY//9902207x2/3/9502008-A/…	4	82	37	7205	61.9	72.2
801	CLJ027	4	81	34	7189	68.7	73.1
780	CHNR/RU1002125	6	83	35	7183	62.4	74.4
842	BNGL/SHORT RICO/4/9502065/3/MERC//MERC/4/9902028/5/RICO	7	80	36	7179	63.0	68.5
706	MRMT/RU0602025	6	81	32	7162	68.3	75.2
684	DREW//CHENIERE/LMNT/3/TAGGART	4	84	32	7161	59.5	71.6
583	11AY023/MRMT	5	82	34	7160	60.3	71.8
719	CATAHOULA/3/AR 1188/CCDR//9502008/LGRU	5	82	34	7156	58.4	72.4
724	CHNR/RU0902137	4	84	34	7154	67.9	73.7

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
520	CTHL/RU1102134	5	83	34	7153	47.7	74.4
559	RU1102031/MRMT	6	82	32	7137	62.7	73.3
645	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	5	80	30	7120	60.0	73.2
748	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CCDR/JEFF	4	80	32	7115	64.2	75.1
727	RU0702085/RU0802134	5	85	32	7100	68.6	76.0
641	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	6	82	30	7098	60.7	74.8
803	MRMT	5	81	32	7096	61.2	72.3
688	TRNS//CCDR/9502008-A/3/CATAHOLA	5	80	34	7076	50.2	72.6
698	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/NWBT/KATY//9902207x2/3/9502008-A/…	4	40	33	7059	48.2	72.5
653	CHENIERE//CCDR/JEFF/3/TRNS//CCDR/JEFF	4	82	31	7059	60.7	72.3
749	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CCDR/JEFF	5	81	31	7056	67.8	74.7
606	DREW/CATAHOULA	6	79	32	7048	46.4	71.9
604	DREW/CATAHOULA	4	82	31	7047	54.6	71.5
770	CHNR/RU0803147	5	84	34	7034	62.5	72.9
705	CCDR/RU0902137	6	82	30	7029	69.5	75.8
612	TAGGART/3/TRNS//CCDR/JEFF	5	81	32	7029	59.2	70.5
550	RU0902137/MRMT	4	81	32	7012	60.0	75.5
522	CTHL/RU1102134	6	79	33	7001	64.9	74.7
734	MRMT/RU0802134	6	84	31	7001	60.3	72.9
527	RU0902028/CCDR	5	81	33	6999	51.6	74.2
572	RU1102137/CTHL	6	79	32	6995	60.2	71.1
554	RU0902137/WLLS	3	79	31	6989	62.9	73.5
526	RU0901121/RU1102134	5	77	32	6981	66.6	74.6
654	CHENIERE//CCDR/JEFF/3/9302065	5	83	35	6978	53.2	74.2
581	11AY023/MRMT	5	80	31	6975	62.6	71.7
720	TRNS//CCDR/JEFF/3/CPRS	5	82	32	6975	64.6	73.1
692	CPRS/KBNT//9502008-A /3/CCDR/JEFF/4/MERMENTAU	4	82	33	6972	64.5	71.1
793	TRNS/CATAHOULA	4	79	33	6960	53.1	73.3
658	TRNS//CCDR/JEFF/3/MERMENTAU	6	81	31	6948	59.4	72.8

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
758	ROYJ/RU0902137	6	83	34	6941	66.1	75.2
761	CCDR/RU0502068	6	80	32	6937	61.0	73.5
673	CATAHOULA/TAGGART	5	84	33	6936	61.2	74.5
601	CCDR/TAGGART	5	81	32	6934	62.7	74.1
541	RU0902131/MRMT	6	82	32	6905	59.9	73.7
677	CCDR/JEFF/3/CPRS/KBNT//9502008-A /4/CATAHOULA	5	80	33	6890	55.6	73.2
733	RU0802134/RU0902034	6	79	31	6886	53.6	73.6
648	CHENIERE//CCDR/JEFF/3/MBLE	4	80	31	6885	61.7	74.5
722	9502008-A//AR 1188/CCDR/3/CCDR/JEFF/4/9502008-A//AR1188/CCDR/3/CPRS/…	5	79	32	6881	65.8	73.1
711	MRMT/RU0902034	5	82	33	6871	62.8	71.3
699	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/NWBT/KATY//9902207x2/3/9502008-A/…	6	79	35	6859	60.5	72.6
557	RU1102031/MRMT	5	83	29	6836	64.5	73.1
600	TRNS/3/CHENIERE//CCDR/JEFF	6	80	33	6830	55.6	68.5
638	CHNR/3/NWBT/KATY//9902207X2/4/CATAHOULA	5	80	32	6825	49.8	74.0
792	TRNS/CATAHOULA	4	81	34	6807	56.2	73.5
784	MERMENTAU/CPRS	5	82	33	6803	63.0	72.2
750	TRNS//CCDR/JEFF/4/LGRU//KATY/STBN/3/LGRU	6	78	33	6798	60.1	72.6
778	CHNR/RU0902137	5	83	31	6796	66.3	73.1
598	TRNS/3/CHENIERE//CCDR/JEFF	5	80	34	6788	32.6	70.9
737	TRNS/CATAHOULA	5	78	32	6786	41.8	70.8
796	CCDR/MRMT	6	81	33	6769	62.1	73.8
838	BNGL/9502065//EARL/4/BNGL//MERC/RICO/3/MERC/RICO//BNGL	5	83	36	6766	55.5	69.7
551	RU0902137/MRMT	4	81	31	6751	64.9	76.4
561	RU1102031/MRMT	5	79	34	6750	58.4	73.6
701	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/NWBT/KATY//9902207x2/3/9502008-A/…	5	80	32	6743	59.5	75.2
605	DREW/CATAHOULA	4	82	29	6738	50.2	73.5
588	11AY033/WLLS	4	80	32	6734	63.4	74.5
558	RU1102031/MRMT	4	82	33	6730	66.1	72.9
703	CATAHOULA/3/AR 1188/CCDR//9502008/LGRU	6	80	34	6719	52.1	77.0

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
656	TRNS//CCDR/JEFF/3/MERMENTAU	7	123	33	6712	62.5	73.5
608	TAGGART/3/TRNS//CCDR/JEFF	6	80	31	6710	59.7	73.3
560	RU1102031/MRMT	6	80	33	6706	59.1	72.9
716	RU1002128/RU1002192	6	79	34	6695	66.7	75.0
671	CATAHOULA/4/CPRS/KBNT//9502008-A/3/CCDR	6	78	32	6686	61.8	75.3
713	RU0401182/CCDR	6	80	34	6685	65.3	72.6
679	CCDR/JEFF/3/CPRS/KBNT//9502008-A /4/CATAHOULA	6	84	33	6680	61.7	73.2
795	9502008-A//AR 1188/CCDR/3/CCDR/JEFF/4/9502008-A//AR1188/CCDR/3/ CPRS/…	5	84	33	6665	64.5	73.4
565	RU1102034/MRMT	5	81	31	6657	57.1	72.6
730	RU0902028/CYBT	5	85	32	6645	62.7	72.6
726	RU0702085/RU0802134	6	84	34	6635	66.0	72.6
547	RU0902137/MRMT	6	81	33	6623	66.3	75.8
669	CATAHOULA/4/CPRS/KBNT//9502008-A/3/CCDR	6	80	31	6620	59.4	74.7
562	RU1102034/MRMT	5	81	33	6592	52.3	72.3
589	CHNR/11AY001	5	81	34	6577	65.2	73.2
630	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	6	81	33	6571	58.1	73.0
534	RU0902034/CCDR	7	81	33	6570	59.9	71.2
576	11AY022/CTHL	4	81	29	6564	55.8	72.1
570	RU1102137/CTHL	6	79	30	6554	60.9	72.0
575	11AY016/CCDR	6	80	33	6546	66.6	74.0
539	RU0902131/MRMT	6	83	34	6544	66.5	74.5
586	RU0801093/MRMT	5	81	33	6527	63.0	72.6
603	CCDR/TAGGART	5	82	30	6518	63.6	75.9
756	9502008//AR 1188/CCDR/3/0302005/4/MBLE//TQNG/MBLE (MCR02YT-1534)	6	83	34	6514	60.7	73.3
805	BSMT	5	78	34	6511	53.5	74.0
740	CCDR/CPRS	5	83	33	6494	64.8	73.4
593	RU1102137/CTHL	6	82	35	6485	48.6	74.0
519	CTHL/RU1102134	5	81	31	6478	45.6	73.8

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
618	CHENIERE/TAGGART	6	81	35	6472	52.7	70.2
665	CATAHOULA/4/CPRS/KBNT//9502008-A/3/CCDR	5	79	33	6458	55.8	72.9
580	11AY023/MRMT	4	80	32	6453	64.2	74.0
635	TRNS//CCDR/JEFF/3/TAGGART	5	81	32	6452	60.9	70.5
660	TRNS/CCDR	4	78	34	6451	66.0	72.9
523	RU0901121/RU1102134	5	77	32	6449	60.3	73.9
631	TRNS//CCDR/JEFF/4/CHNR/3/NWBT/KATY//9902207X2	7	84	32	6442	n/a	n/a
563	RU1102034/MRMT	6	82	32	6436	62.1	73.8
632	TRNS//CCDR/JEFF/3/CCDR/JEFF//CPRS	6	81	29	6431	61.7	72.8
568	RU1102137/MRMT	6	80	33	6404	55.1	72.6
751	TRNS//CCDR/JEFF/3/CPRS	5	80	31	6397	61.8	73.7
521	CTHL/RU1102134	5	81	33	6387	61.5	75.9
569	RU1102137/MRMT	5	82	32	6384	62.0	74.5
578	11AY022/CTHL	6	80	32	6368	48.9	72.1
636	TRNS//CCDR/JEFF/3/TAGGART	6	81	31	6368	61.3	72.3
680	CCDR/JEFF/3/CPRS/KBNT//9502008-A /4/CATAHOULA	6	82	34	6304	48.3	71.7
502	CHNR/11AY024	6	82	32	6297	64.3	74.4
676	CCDR/JEFF/3/CPRS/KBNT//9502008-A /4/FRANCIS	6	83	32	6294	58.0	70.8
662	TACAURI/4/CPRS/KBNT//9502008-A /3/CCDR/JEFF	5	82	33	6294	55.6	73.2
613	TAGGART/3/TRNS//CCDR/JEFF	6	81	31	6293	58.5	72.5
505	CHNR/11AY026	6	82	32	6278	63.2	74.5
650	CHENIERE//CCDR/JEFF/3/MBLE	5	77	28	6278	61.0	74.3
566	RU1102137/MRMT	6	78	31	6277	59.4	74.6
752	9502008-A//AR 1188/CCDR/3/CCDR/JEFF/4/9502008-A//AR1188/CCDR/3/CPRS/KBNT//…	6	82	33	6272	67.9	75.3
577	11AY022/CTHL	5	80	30	6268	60.4	73.1
518	CTHL/RU1102134	5	82	32	6264	60.8	75.7
592	CCDR x JEFF (STOUT EARLY)	5	83	34	6260	59.2	71.7
649	CHENIERE//CCDR/JEFF/3/MBLE	5	82	29	6255	55.1	73.8
666	CATAHOULA/4/CPRS/KBNT//9502008-A/3/CCDR	6	79	32	6232	52.6	73.9
702	CATAHOULA/3/AR 1188/CCDR//9502008/LGRU	6	81	33	6232	60.6	74.2

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
766	CCDR/RU0502068	6	83	30	6230	67.2	74.1
517	MRMT/RU0801167	7	82	38	6228	57.0	71.9
767	CHNR/MRMT	6	83	32	6214	55.8	70.4
763	CCDR/RU0502068	7	82	32	6212	66.0	73.9
624	MERMENTAU/CPRS	5	79	31	6211	61.3	71.7
512	MRMT/RU0902137	5	80	33	6200	63.8	74.1
549	RU0902137/MRMT	4	80	30	6198	62.4	75.2
621	MERMENTAU/CPRS	6	80	31	6190	59.5	71.3
595	TRNS/MBLE	5	80	28	6177	57.3	73.7
707	MRMT/RU0602025	6	81	35	6172	50.8	74.3
506	MRMT/RU0902131	4	83	32	6170	64.4	73.8
742	CCDR/CPRS	6	82	28	6167	62.3	73.4
515	MRMT/RU1102128	5	80	33	6157	63.5	74.5
607	DREW/CATAHOULA	6	81	31	6151	41.7	72.2
548	RU0902137/MRMT	4	80	31	6127	62.3	75.4
509	MRMT/RU0902131	7	83	32	6119	60.2	74.2
764	CCDR/RU0502068	6	83	30	6119	69.3	75.5
614	CPRS/DREW	4	83	31	6117	61.2	71.4
615	CPRS/DREW	5	84	32	6112	61.2	71.2
571	RU1102137/CTHL	6	79	32	6100	59.2	72.1
602	CCDR/TAGGART	6	84	31	6094	57.6	71.8
555	RU1102031/CCDR	7	83	32	6087	66.4	74.3
776	CHNR/RU0901121	5	77	32	6077	61.7	74.0
538	RU0902131/MRMT	5	84	31	6071	59.5	73.2
584	11AY025/WLLS	5	80	34	6069	54.7	73.4
616	CPRS/DREW	4	83	31	6065	65.1	73.0
617	CPRS/DREW	5	84	31	6062	60.9	70.5
762	CCDR/RU0502068	7	82	30	6054	62.3	74.5
599	TRNS/3/CHENIERE//CCDR/JEFF	7	78	36	6048	57.5	70.6
731	RU0902125/10AY027	5	83	31	6034	65.4	74.5

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
587	11AY033/WLLS	5	80	31	5971	59.9	74.7
681	CCDR/JEFF/3/CPRS/KBNT//9502008-A /4/CATAHOULA	6	82	34	5970	n/a	n/a
510	MRMT/RU0902137	7	83	30	5957	55.9	72.5
573	11AY016/CCDR	6	79	32	5939	62.2	71.6
564	RU1102034/MRMT	6	80	31	5938	52.7	39.4
736	10AY002/10AY032	5	83	32	5933	65.0	73.5
668	CATAHOULA/4/CPRS/KBNT//9502008-A/3/CCDR	7	80	32	5929	62.5	75.5
525	RU0901121/RU1102134	5	76	33	5907	64.1	76.0
533	RU0902034/CCDR	7	79	35	5890	65.8	74.2
552	RU0902137/WLLS	5	83	28	5882	64.5	73.2
594	CCDR x JEFF (STOUT LATE)	6	82	32	5859	69.6	74.8
657	TRNS//CCDR/JEFF/3/MERMENTAU	5	82	35	5836	64.9	73.0
741	CCDR/CPRS	5	84	31	5809	64.1	72.6
725	CHNR/RU0902137	6	85	29	5807	62.9	72.8
553	RU0902137/WLLS	5	80	29	5807	55.4	72.7
508	MRMT/RU0902131	6	79	31	5764	60.8	75.1
585	RU0801093/MRMT	6	84	30	5763	61.6	73.7
537	RU0902034/SPRG	6	82	31	5715	63.3	73.7
511	MRMT/RU0902137	6	79	30	5714	48.9	76.6
735	10AY002/10AY032	5	82	31	5709	64.8	73.0
516	MRMT/RU1102128	6	82	32	5697	61.8	72.3
670	CATAHOULA/4/CPRS/KBNT//9502008-A/3/CCDR	7	80	33	5655	60.8	74.4
765	CCDR/RU0502068	6	83	31	5650	68.3	75.0
524	RU0901121/RU1102134	6	78	32	5607	61.0	71.7
542	RU0902131/MRMT	5	82	29	5600	60.7	74.6
753	9502008-A//AR 1188/CCDR/3/CCDR/JEFF/4/9502008-A//AR1188/CCDR/3/CPRS/ KBNT//…	6	83	31	5593	63.8	72.5
712	RU1002128/RU0902125	6	81	35	5524	67.3	74.2

Continued.

Table 1. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
513	MRMT/RU0902137	5	80	29	5516	63.4	73.9
514	MRMT/RU1102128	7	78	36	5488	61.7	73.5
667	CATAHOULA/4/CPRS/KBNT//9502008-A/3/CCDR	8	83	34	5488	62.0	73.3
504	CHNR/11AY026	6	84	32	5452	61.9	74.2
574	11AY016/CCDR	6	82	31	5431	68.2	74.2
721	9502008-A//AR 1188/CCDR/3/CCDR/JEFF/4/9502008-A//AR1188/CCDR/3/CPRS/ KBNT//9502008-A	6	83	34	5379	62.4	73.1
697	9502008-A/DREW/3/NWBT/KATY//9902207x2/4/NWBT/KATY//9902207x2/3/9502008- A/…	7	82	34	5377	59.4	73.2
543	RU0902131/MRMT	6	81	30	5152	58.1	75.8
717	DREW/MBLE	6	86	32	5037	64.6	75.8
672	CATAHOULA/TAGGART	8	84	34	4614	n/a	n/a
664	CATAHOULA/4/CPRS/KBNT//9502008-A/3/CCDR	7	80	35	4597	57.2	73.2
507	MRMT/RU0902131	7	83	31	4575	56.7	73.3
715	RU0401182/RU0902134	6	83	34	4503	69.9	74.3
532	RU0902034/CCDR	7	83	29	4450	64.4	74.8
714	RU0401182/RU0902134	6	82	31	4323	67.4	75.9
567	RU1102137/MRMT	7	77	30	4198	57.7	73.9

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

COOPERATIVE UNIFORM REGIONAL RICE NURSERY

The Uniform Regional Rice Nursery (URRN) 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 2017 URRN test included 200 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 5-7. Seeding rates were 90 lb/A for varieties.

The 2017 URRN results from the H. Rouse Caffey Rice Research Station will be reported. All plots were drill seeded on March 14. The test was harvested on Aug. 4. Tests were conducted using standard agronomic practices (except that no fungicides were applied). Tables 1-7 show grain and milling yield and agronomic performance (seedling vigor, days to 50% heading, and plant height) of entries in the 2017 URRN at the H. Rouse Caffey Rice Research Station.

Table 1. Grain and milling yields and agronomic performance of entries in the 2017 Uniform Regional Rice Nursery, Group 1, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
014	1604191	Cheniere/Banks	5	83	37	8210	64.1	75.8
016	1604197	CL151//COLUMBIA2/BENGAL	5	85	36	8147	59.1	70.1
013	1601133	RU1102192/4/WLLS/CFX-18/3/CFX-18//CCDR/9770532 DH2	5	83	36	8125	69.0	75.7
007	1701007	FRNS//WLLS/CL161/3/248DREW/CL161	4	82	37	7916	58.4	72.4
005	1602097	CL131/TRNS	5	81	35	7530	63.9	72.8
018	CL153	CL153	3	80	31	7245	55.7	73.7
004	1601004	FRNS/CL.WLLS/7/FRNS/6/LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/ DREW	5	85	37	7153	62.0	71.7
017	CL111	CL111	4	78	33	7048	59.0	74.1
019	PSDO	PRESIDIO	3	79	33	6947	58.6	74.0
015	1604193	Cheniere/Banks	6	84	37	6891	61.9	73.9
003	1703003	TH623	6	92	37	6816	56.4	69.4
001	1601081	FRNS/CL.WLLS/2/KBNT/Q36194	5	84	36	6764	56.0	72.6
008	1402091	CL131/3/CPRS/KBNT//9502008-A	5	79	29	6759	62.4	74.3
010	1601010	91642//KATY/NWBT/5/RU9201176/4/KATY/NWBT/3/LBNT/STBN// NWBT/6/CYBT/7/FRNS	5	79	36	6584	47.3	73.1
012	803147	LCSN/LGRU	5	82	32	6322	61.2	71.9
002	1602002	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	5	81	30	6139	61.8	72.4
011	1402174	9502008/3/MBLE//LMNT/20001-5/4/WELLS/CFX18/5/TAGGART	4	81	30	6132	60.0	74.0
020	MRMT	MERMENTAU	5	80	31	5961	58.7	74.9
006	1003123	CPRS/CCDR	5	83	33	5766	65.9	74.4
009	1503175	L202/LQ39a//SABR	5	82	31	5707	67.3	74.1

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

Table 2. Grain and milling yields and agronomic performance of entries in the 2017 Uniform Regional Rice Nursery, Group 2, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
040	DMND	DIAMOND	3	80	37	8092	54.2	72.2
036	1604198	CL151//COLUMBIA2/BENGAL	5	82	34	7852	58.0	73.9
030	1601030	RU1202168/JPTR	5	85	38	7790	65.6	72.8
037	JPTR	JUPITER	4	88	35	7502	51.6	67.0
039	LKST	LAKAST	3	81	38	7478	53.0	71.8
028	1602195	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	3	81	34	7470	62.5	73.3
033	1604155	Bowman//RSMT/KATY	4	81	36	7350	50.1	71.6
024	1501024	CL111/3/CCDR//9502008/LGRU	5	78	35	7274	58.9	72.2
035	1504083	CL131/PSCL	5	78	32	7274	56.7	72.2
022	1602112	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/4/CPRS/ KBNT//9502008-A	4	82	32	7040	61.1	74.4
026	1003098	CPRS/NWBT//KATY/3/CCDR	4	80	33	6988	64.6	75.0
032	1303138	IR64/IR 1321-12	5	81	35	6973	57.3	72.4
038	WLLS	WELLS	3	85	38	6887	56.9	72.0
031	1502094	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX 29AR 1142/LA 2031	3	83	34	6830	59.0	72.1
034	1602189	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/3/…	5	79	33	6672	66.6	75.4
025	1602131	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/CFX-18//CCDR/…	4	78	32	6164	61.5	73.7
029	803153	CPRS/CCDR	3	81	31	6020	64.4	73.5
021	1601111	RU1302048/RU1302045	6	82	33	5878	60.1	74.1
027	1601121	CTHL/RU1002192	5	79	32	5594	51.2	74.2
023	1403153	L202/LQ39a//SABR	5	82	33	5536	62.9	73.5

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

Table 3. Grain and milling yields and agronomic performance of entries in the 2017 Uniform Regional Rice Nursery, Group 3, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
060	CL272	CL272	3	83	35	8429	63.1	72.4
050	1701050	CL271/JPTR	5	82	35	8347	62.7	65.4
055	1704055	CL151/JSMN85//CL161	5	84	37	8343	48.6	69.7
041	1601041	FRNS/CL/WLLS/2/KBNT/Q36194	4	82	38	8177	45.6	75.2
057	Rex	Rex	3	84	39	8016	61.3	70.7
054	1504122	CL151//COLUMBIA2/BENGAL	4	81	33	7933	49.7	71.5
047	1401145	RU0801076/2/KBNT/Q36194	4	82	39	7929	60.7	71.9
053	1504114	Cheniere/Banks	5	85	41	7872	66.3	76.5
048	1502183	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS	5	85	35	7743	62.5	80.3
056	MM14	MM14	3	83	33	7543	65.4	70.4
046	1303153	IR64/IR 1321-12	5	80	36	7379	56.9	72.6
058	CHNR	CHENIERE	4	83	33	6857	63.3	73.7
045	1702045	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/9702128	4	77	34	6799	61.3	74.8
042	1702042	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT// 9502008-A	4	78	31	6739	61.6	73.3
049	1503147	CPRS/3/CPRS/NWBT/KATY/4/SPRING	5	81	34	6684	60.5	73.4
044	1601124	MRMT/RU0502068	5	83	32	6446	67.0	75.4
052	1403089	CPRS/9901081	5	81	32	6139	64.9	72.7
051	1602051	CATAHOULA/3/TRNS//9502008-A/DREW	5	82	33	5937	57.5	72.1
043	1403138	043752/0047277/CHEN	6	85	33	5924	64.1	76.1
059	CCDR	COCODRIE	5	82	32	5549	63.3	73.8

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

Table 4. Grain and milling yields and agronomic performance of entries in the 2017 Uniform Regional Rice 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	79	36	9022	61.8	68.8
079	ROYJ	ROY J	4	86	39	8428	56.9	74.0
071	1602071	CLH161 (HYBRID)	5	79	43	8260	57.6	72.3
067	1601139	CL142-AR//KBNT/Q36194/3/248WE16i-5/TGRT	5	83	38	7886	54.0	74.0
074	1704074	Cheniere/Banks	6	86	41	7886	60.4	71.5
061	1601167	RU1302045/CL111	5	81	35	7696	58.1	71.3
070	1601070	BRAZ/T489//MARS/3/M201/KATY/4/LMNT/RA73//KATY/5/TGRT	5	85	39	7461	48.1	70.5
072	1303181	043752/0047277/CHEN	5	84	35	7326	65.8	74.3
075	1603178	SABR/CCDR//PRESIDIO	4	87	38	7280	61.3	70.0
077	1704077	Texmont/TeQing(BF7-46)/Tranesse	5	81	37	7168	50.7	70.3
073	1704073	CL131/PSCL	5	84	30	6997	46.0	72.2
063	1603138	WAB 450-11-1-1-P31-HB (NERICA 5)/RSMT	6	84	34	6776	64.3	73.3
076	1601145	IRGA409/RXMT/5/BRAZ/TBNT/3/164986-4/NV66//NTAI/4/BNGL/6/ WLLS	6	83	37	6697	59.7	71.6
068	1702068	RU1102034/MRMT	4	81	31	6613	57.5	72.6
062	1702062	11AY022/CTHL	5	81	31	6492	60.2	75.2
065	1702065	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CCDR/JEFF	5	81	31	6444	62.7	74.0
064	1401105	JZMN/PI597046	5	84	37	6407	66.0	72.1
078	1603113	043752/0047277/CHEN	6	85	34	6398	62.9	72.5
069	1603144	WAB 450-11-1-1-P31-HB (NERICA 5)/RSMT	6	84	35	5986	64.6	74.8
066	1403141	AC110DH2/AC108DH2//CHEN	5	86	33	5127	63.7	74.2

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

Table 5. Grain and milling yields and agronomic performance of entries in the 2017 Uniform Regional Rice Nursery, Group 5, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
085	1702085	09A/RA604 (HYBRID)	5	84	50	8717	51.0	69.6
082	1602082	LA169 (HYBRID)	5	78	38	8322	54.8	73.6
103	1702103	CCDR/JEFF//CFX-26/9702128/3/WELLS/CFX-18//DREW/CFX-18	4	79	36	8095	57.0	73.6
090	1701090	WLLS/CL161//TGRT/3/DREW/CL161//CL142-AR	5	81	38	8018	54.4	73.8
096	1701096	CL172/RU1102192	5	79	36	7858	60.0	74.5
088	1702088	CL162/3/TRNS//CCDR/JEFF	3	79	32	7760	61.5	73.0
084	1701084	RU0801076/4/KATY/NWBT//L201/7402003/3/WLLS/4/L201/7402003//KATY/ NWBT/3/LGRU	5	86	36	7706	62.8	71.7
109	1702109	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/CHENIERE	6	81	35	7675	66.2	76.6
105	1701105	JZMN/PI560239//JES	5	78	37	7654	45.4	67.7
097	1702097	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/TRNS	4	76	34	7588	66.5	76.3
081	1701081	IRGA409/RXMT/5/NWBT/3/LBNT/9902//LBLE/4/MILL/6/LBNT/9902/3/DAWN /9695//STBN/..	5	85	37	7478	54.7	72.3
093	1701093	CL142-AR//KBNT/Q36194/7/248DREW16C-1-3/6/LGRU//KATY/STBN/5/ NWBT/KATY//…	5	81	37	7452	58.0	74.4
120	CL163	CL163	5	81	35	7390	52.3	71.7
094	1702094	CCDR/JEFF/3/CFX-18//CPRS/KBNT/4/TRNS//CCDR/JEFF	4	77	36	7354	63.4	75.3
112	1702112	CL162/CATAHOULA	5	81	32	7227	57.4	74.3
099	1601099	RU0502068/RU1202088	6	82	36	7222	61.1	74.1
087	1701087	19991516/19951166/7/LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/WLLS/6/RU 9201179	5	81	37	7194	53.0	72.0
095	1703095	TH613	7	85	39	7169	41.7	70.9
118	CL172	CL172	3	81	34	7140	60.7	74.8
091	1702091	CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031/4/CCDR//CFX-29/CCDR	3	80	33	7135	62.4	74.0
108	1701108	JZMN/RU0701124//JZMN2	5	82	36	7061	51.5	74.0
111	1701111	RU1002128/RU1202097	4	80	36	6988	65.2	75.5
114	1704114	Bowman//RSMT/KATY	5	79	34	6815	50.3	71.7
106	1702106	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/CCDR/3/ CPRS/…	4	77	35	6792	63.0	75.5
089	1603089	AC110DH2/AC108DH2//CYBT	6	82	32	6564	56.9	74.2

Continued.

Table 5. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
104	1703104	TH633	7	83	42	6538	42.6	67.3
098	1703098	CPRS/3/CPRS/NWBT/KATY	5	82	36	6339	57.2	72.7
110	1703110	CarolinaGoldSelect/Presidio	5	87	43	6120	57.9	72.1
102	1501102	JASM85//DREW/UA99-167	5	86	38	6098	67.8	74.0
107	1603126	LGRU/LCSN/CF4-85//Sierra	6	82	37	6089	62.6	75.3
086	1603086	CL161/CPRS	5	84	33	6080	64.8	75.3
100	1704100	BOWMAN/CYPRESS	6	87	40	5897	47.4	73.0
115	1702115	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/CATHOULA	5	78	33	5831	62.5	74.4
101	1503003	CF4-69/CCDR//Sierra	6	82	37	5496	62.1	75.6
117	JZMN2	JAZZMAN 2	4	84	31	5347	66.5	73.4
083	1704083	BOWMAN/CL131	5	85	31	5318	64.1	76.0
092	1703092	IR64/IR 1321-12	6	84	33	5121	63.6	73.6
116	1603116	L202/SABR//PACE	6	79	31	4920	49.3	72.8
119	M206	M206	6	73	33	4428	68.9	74.6
113	1703113	9302065/CPRS	6	86	34	4315	62.0	72.5

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

Table 6. Grain and milling yields and agronomic performance of entries in the 2017 Uniform Regional Rice Nursery, Group 6, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
124	1701124	JPTR/TITN	5	79	37	8944	61.8	66.3
154	1704154	Rex/CL151	3	81	33	8654	45.9	65.4
130	1701130	JPTR/TITN	5	81	35	8483	60.1	68.8
143	1702143	CAFFEY/3/BNGL/9502065//EARL	4	81	35	8315	61.7	69.8
160	Thad	THAD	5	79	34	8288	43.4	69.4
156	1704156	CL151//COLUMBIA2/BENGAL	4	81	32	8139	50.3	70.6
155	1704155	L201//TBNT/BLMT (PACE)/CL131	5	81	35	8089	39.9	69.4
127	1701127	JPTR/J062	5	87	38	8086	61.6	64.2
136	1701136	EARL/9902028//RU1202068	6	84	37	8070	57.3	70.7
145	1701145	LGRU//KATY/STBN/3/LGRU/7/248DREW16C-1-3/6/LGRU//KATY/STBN/5/NWBT/…	6	82	36	7971	53.7	69.5
151	1701151	FRNS//WLLS/CL161/7/FRNS/6/LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/DREW	4	82	37	7962	58.2	72.1
121	1701121	EARL/9902028//JPTR	6	82	36	7906	60.1	65.0
149	1702149	MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	5	81	35	7790	57.6	71.3
139	1701139	STG05-IMI-02-055/CL142-AR/7/IRGA409/RXMT/5/NWBT/3/LBNT/9902//LBLE/4/MILL/…	4	85	37	7766	51.4	69.8
125	1702125	LFTE/BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	5	81	36	7689	57.9	71.6
140	1702140	CHNR/MRMT	5	82	34	7483	57.3	70.2
157	1704157	Cheniere/Banks	5	83	37	7297	43.3	71.4
142	1701142	IRGA409/RXMT/5/NWBT/3/LBNT/9902//LBLE/4/MILL/6/LBNT/9902/3/DAWN/9695//…	4	79	39	7211	55.8	74.7
148	1701148	CYBT/TMPT/7/248DREW/CL161/6/LGRU//KATY/STBN/5/NWBT/KATY//RA73/LMNT/4/…	5	82	39	7201	50.9	69.8
131	1702131	RU0401182/RU0902134	5	81	34	7199	62.1	72.8
146	1702146	CCDR/JEFF/3/CFX-18//CCDR/9770532 DH2/4/AR 1188/CCDR//9502008/LGRU	5	78	34	7131	60.0	73.8
128	1702128	11AY023/MRMT	4	82	34	7002	57.8	70.3
133	1701133	RU1102034/RU1202155	6	81	36	6880	59.2	75.3
137	1702137	MRMT/RU0602025	5	82	33	6794	62.4	72.3

Continued.

Table 6. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
138	1703138	CL161/CPRS	5	83	33	6780	61.0	72.0
159	703144	ANTONIO	4	82	34	6759	58.1	71.8
122	1704122	CL151/JSMN85//CL161	5	82	35	6628	42.0	67.7
158	DLLA2	DELLA 2	3	85	38	6443	54.5	66.8
129	1703129	IR64/IR 1321-12	5	82	37	6438	58.3	71.8
132	1703132	CPRS/3/CPRS/NWBT/KATY	5	82	32	6299	61.9	72.6
123	1603123	CL161//Kaybonnet/Zhongyouzao3	5	84	35	6234	57.6	71.6
135	1703135	CL161//Kaybonnet/Zhongyouzao3	6	84	34	6227	62.5	73.4
150	1703150	Sabine//CF4-69/CCDR	6	85	37	6181	61.9	71.1
147	1703147	CPRS/NWBT//KATY/3/CCDR	5	82	33	6163	59.8	71.1
144	1703144	CL161/CPRS	5	84	33	6135	64.6	73.1
152	1702152	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A// AR1188/CCDR/3/CPRS/…	4	79	34	6125	58.1	69.0
134	1702134	RU1102137/CTHL	5	81	30	6085	50.4	74.3
126	1703126	CarolinaGoldSelect/Presidio	6	91	43	5935	58.8	69.8
153	1603153	CCDR/LQ275a//CCDR	5	88	37	5929	53.1	67.7
141	1703141	CL161/CPRS	6	82	34	5845	66.2	73.9

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

Table 7. Grain and milling yields and agronomic performance of entries in the 2017 Uniform Regional Rice Nursery, Group 7, H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
199	603075	RHONDO	4	84	38	9613	41.8	68.0
162	1702162	BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	4	83	36	8629	62.6	71.4
196	1704196	BOWMAN/CL131	5	79	35	8513	51.9	69.7
165	1702165	CAFFEY/CL261	3	80	35	8271	64.4	71.9
167	1701167	RU1202168/JPTR	5	83	38	8093	63.9	68.5
170	1701170	RU1102192/4/9502008-A//AR1188/CCDR/3/CFX-29/CCDR	4	76	34	8071	57.2	73.6
200	CL151	CL151	3	79	35	7931	56.5	70.6
192	1702192	CPRS/KBNT//9502008-A/3/CFX-18//CCDR/977532 DH2/4/TRNS//CCDR/ JEFF	4	79	35	7608	60.9	72.4
176	1701176	19991516/19951166/7/LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/WLLS/6/ RU9201179	5	82	37	7578	54.7	69.5
180	1702180	BNGL/CL161//CAFFEY/3/NEPTUNE//BNGL/CL161	4	85	36	7574	35.2	72.2
183	1702183	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	3	82	37	7567	56.5	70.7
195	1702195	CPRS/KBNT//9502008-A/3/CCDR/4/CL131	5	80	32	7546	59.9	71.2
172	1703172	AC110DH2/AC108DH2//CHEN	6	86	34	7499	64.3	71.9
198	1704198	BOWMAN/CL131	4	81	34	7308	49.0	71.1
164	1701164	RU1202094/RU0902088	5	80	37	7295	62.2	71.9
173	1701173	MRMT/RU1401044	5	82	34	7184	62.3	71.8
182	1701182	DREW/CL161/6/LGRU//LMNT/RA73/3/LGRU/4/WLLS/5/CYBT	5	84	37	7165	54.6	71.1
185	1701185	CHNR/CTHL	5	84	36	7101	60.1	70.5
168	1702168	CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/CFX-29/AR 1142/LA 2031	5	79	32	7053	57.6	69.7
194	1704194	Cheniere/Banks	5	85	33	6855	60.4	72.2
191	1704191	Cheniere/Banks	6	88	41	6794	56.1	70.2
174	1602088	JZMN/08CLR004//RU0802146/3/RU0802146	3	82	33	6690	66.7	74.5
179	1701179	LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/WLLS/6/RU9201179/7/IRGA40 9/RXMT/5/…	5	85	40	6669	53.4	70.8
163	1703163	Hayakogane/BALDO	5	82	33	6662	63.7	73.4
161	1401161	TGRT/6/LGRU//LMNT/RA73/3/LGRU/4/WLLS/5/CYBT	6	84	40	6629	46.7	67.5

Continued.

Table 7. Continued.

ENT	SOURCE	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
193	1704193	Cheniere/Banks	6	87	39	6523	57.8	69.2
169	1503169	Hayakogane/BALDO	5	82	33	6470	63.2	72.2
181	1703181	AC110DH2/AC108DH2//CYBT	5	81	33	6424	61.0	73.6
177	1702177	CCDR/JEFF/3/CFX-18//CCDR/9770532 DH2/4/CFX-18//CPRS/KBNT/3/ CFX-29/CCDR	5	78	32	6275	62.0	75.2
189	1702189	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/LGRU/LCSN/3/ CFX-18//.	3	80	33	6182	61.0	72.3
175	1703175	CPRS/CCDR	5	80	32	6129	60.6	72.9
186	1704186	Cheniere/Banks	6	88	35	6127	59.6	69.3
178	1703178	Hayakogane/BALDO	5	83	32	6105	58.5	72.5
184	1703184	CPRS/9901081//PACE	5	82	34	5727	58.3	72.8
188	1701188	JZMN/RU0701124//JZMN2	6	83	30	5563	58.8	70.6
166	1603166	CPRS/3/CPRS/NWBT/KATY	6	87	32	5544	61.2	72.7
197	1704197	BOWMAN/CL131	3	79	33	5459	58.0	72.3
190	1703190	9302065/CPRS//CPRS	5	86	33	5294	56.6	70.2
171	1702171	LAKAST/5/9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//AR 1142/LA 2031	5	78	37	5250	51.6	71.1
187	1603187	CPRS/3/CPRS/NWBT/KATY	6	86	31	4943	62.0	73.4

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

PROVISIA EXPERIMENTAL LINES

Two yield trials were conducted to evaluated new Provisia experimental lines. The tests included the PV and PVS test, 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.

Tests were conducted using standard agronomic practices (except that no fungicides were applied) at the H. Rouse Caffey Rice Research Station at Crowley, LA. Provisia herbicide was applied at 31 oz/A (2x rate) on May 9, 2017. 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. This test was drill seeded on March 28 and harvested on Aug. 8. Data is presented in Tables 1-2.

Table 1. Grain and milling yields and agronomic performance of entries in the 2017 Provisia Experimental Trial. H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
039	CHENIERE/BASF 1-6	4	84	38	7651	68.2	73.9
031	CCDR/JEFF//CPRS/3/BASF 1-3	4	88	40	7327	67.0	74.6
034	PVL01	3	90	36	6714	64.6	73.2
029	CHENIERE/BASF 1-6	4	77	40	6670	57.4	71.8
017	DREW/BASF 1-4	5	91	33	6535	60.1	72.2
025	PRESIDIO/BASF 1-12	4	82	37	6470	57.9	71.3
011	TRNS/BASF 1-14	4	81	39	6234	66.5	74.3
026	PRESIDIO/BASF 1-12	3	75	34	6227	63.4	73.9
035	CPRS/BASF 1-13	3	83	34	6202	66.1	72.7
037	CHENIERE/BASF 1-2	4	78	37	6116	69.1	75.5
008	CPRS/BASF 1-4	4	83	36	6099	67.7	76.2
014	TRNS/BASF 1-14	4	88	36	5993	65.2	73.4
036	TRNS/BASF 1-10	4	80	33	5963	67.3	72.9
019	CPRS/BASF 1-1	5	89	35	5749	63.3	73.0
024	PRESIDIO/BASF 1-12	4	87	35	5633	56.5	70.2
032	CHENIERE//CCDR/JEFF/3/BASF 2-22	5	82	35	5623	63.8	75.5
010	CPRS/BASF 1-4	4	83	38	5470	67.0	77.0
038	CHENIERE/BASF 1-2	3	91	38	5421	n/a	n/a
021	CPRS/BASF 2-26	5	89	37	5364	56.8	74.9
023	CPRS/BASF 2-26	6	86	37	5305	51.6	68.7
006	CHENIERE//CCDR/JEFF/3/BASF 2-26	4	88	35	5305	63.2	74.8
022	CPRS/BASF 2-26	5	83	38	5281	13.1	69.4
033	CHENIERE/BASF 1-8	5	77	35	5269	48.5	72.7
028	CHENIERE/BASF 1-5	5	91	39	5245	13.9	69.5
030	CCDR/JEFF//CPRS/3/BASF 1-6	3	84	36	5245	67.2	75.1
027	CHENIERE/BASF 1-7	4	80	32	5161	61.1	75.1
012	TRNS/BASF 1-14	4	80	36	5161	72.2	76.8
016	GFMT/BASF 1-1	4	85	35	5035	62.5	73.3
005	CCDR/JEFF//CPRS/3/BASF 1-6	4	89	36	5001	51.8	71.6
013	TRNS/BASF 1-14	5	84	36	4997	74.5	78.2
009	CPRS/BASF 1-4	5	81	37	4793	66.0	76.5
003	CHENIERE/BASF 1-6	6	90	35	4517	47.2	67.7
004	CCDR/JEFF//CPRS/3/BASF 1-6	5	88	32	4473	69.1	77.3
018	DREW/BASF 1-4	5	85	36	4101	59.5	72.7
007	CPRS/BASF 1-4	6	83	33	4057	70.0	77.7
015	9302065/BASF 1-6	5	93	36	3986	22.8	70.4
020	CPRS/BASF 1-4	6	88	31	3886	60.2	70.7
002	CHENIERE/BASF 1-2	7	87	33	3854	63.4	72.9
001	CPRS/BASF 1-13	5	85	34	3181	66.2	74.9

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

Table 2. Grain and milling yields and agronomic performance of entries in the 2017 Provisia Experimental Trial. H. Rouse Caffey Rice Research Station, Crowley, LA.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
066	CHENIERE/BASF 1-6	4	83	40	7526	72.1	76.4
007	CHNR/3/NWBT/KATY//9902207X2/4/BASF 2-21	3	78	36	7366	65.9	75.2
008	CHNR/3/NWBT/KATY//9902207X2/4/BASF 2-21	3	77	35	7264	34.3	68.2
055	CHENIERE/BASF 1-12	3	75	33	7106	61.9	73.1
036	CHENIERE//CCDR/JEFF/3/BASF 2-26	3	76	34	6979	n/a	n/a
047	CPRS/BASF 1-14	4	85	35	6973	64.8	73.9
064	CHENIERE/BASF 1-2	4	77	38	6936	67.7	76.7
013	CCDR/JEFF//CPRS/3/BASF 1-6	4	78	37	6912	38.1	70.6
039	CHENIERE//CCDR/JEFF/3/BASF 2-22	2	83	35	6905	66.2	72.3
063	TRNS/BASF 1-10	3	78	34	6894	66.1	71.9
005	CATAHOULA/BASF 2-22	3	82	30	6887	57.7	71.6
048	CPRS/BASF 1-14	4	86	36	6836	61.3	73.1
012	CCDR/JEFF//CPRS/3/BASF 1-6	3	76	37	6798	40.7	69.4
054	CHENIERE/BASF 1-12	3	88	38	6796	63.2	74.8
058	CHENIERE/BASF 2-31	3	75	32	6730	58.6	72.9
049	CPRS/BASF 1-14	4	84	35	6684	64.0	72.9
029	CATAHOULA/BASF 2-18	4	88	38	6665	63.4	74.4
017	9302065/BASF 1-6	4	80	36	6642	52.8	69.8
019	9302065/BASF 1-6	4	75	33	6618	48.5	69.7
061	PVL01	3	88	35	6564	64.7	75.4
053	CHENIERE/BASF 1-12	4	84	37	6564	63.9	74.5
016	9302065/BASF 1-6	4	78	37	6558	55.8	71.2
004	CATAHOULA/BASF 2-22	3	85	30	6529	34.6	67.2
057	CHENIERE/BASF 2-31	2	78	35	6504	53.2	70.1
018	9302065/BASF 1-6	4	83	35	6480	57.1	71.0
046	JODN/BASF 2-31	4	83	37	6409	37.2	67.8
024	PRESIDIO/BASF 1-12	3	74	37	6355	58.9	70.8
062	CPRS/BASF 1-13	3	82	35	6340	61.1	71.8
042	CHENIERE/BASF 1-14	3	79	39	6331	64.3	73.8
011	CPRS/BASF 1-4	3	83	38	6316	61.1	74.3
025	PRESIDIO/BASF 1-12	2	75	37	6287	53.0	69.7
034	CHNR/3/NWBT/KATY//9902207X2/4/BASF 2-21	4	78	34	6276	62.6	74.4
030	CATAHOULA/BASF 2-18	4	86	34	6264	51.5	71.1
037	CHENIERE//CCDR/JEFF/3/BASF 2-26	6	83	34	6176	62.5	72.1
056	CHENIERE/BASF 2-31	3	75	34	6120	57.6	74.7
035	CHNR/3/NWBT/KATY//9902207X2/4/BASF 2-21	4	77	34	6076	63.9	74.7
065	CHENIERE/BASF 1-2 (PVL 081)	3	90	38	5998	68.3	76.5
010	CPRS/BASF 1-4	5	88	36	5972	70.7	76.8

Continued.

Table 2. Continued.

ENT	PEDIGREE	VIG[1]	HDT	HTE	YIELD	WHOLE	TOTAL
052	CHENIERE/BASF 1-12	4	82	36	5963	65.5	74.8
033	CCDR/JEFF//CPRS/3/BASF 1-3	5	86	39	5951	60.7	71.0
027	CHENIERE/BASF 1-5	5	75	34	5872	64.1	74.3
022	CPRS/BASF 1-13	4	86	34	5831	59.3	71.7
015	TRNS/BASF 1-14	3	79	38	5802	60.0	73.7
041	CHENIERE/BASF 1-14	3	82	35	5792	62.9	73.2
045	JODN/BASF 2-31	4	86	35	5777	43.3	67.6
031	CATAHOULA/BASF 2-18	4	86	36	5770	60.1	69.8
051	CPRS/BASF 1-14	3	82	33	5737	68.8	75.5
028	CATAHOULA/BASF 2-22	3	78	36	5637	49.1	70.7
014	CCDR/JEFF//CPRS/3/BASF 1-3	4	85	36	5632	65.4	73.6
032	CCDR/JEFF//CPRS/3/BASF 1-3	4	76	37	5630	67.5	74.4
038	CHENIERE//CCDR/JEFF/3/BASF 2-22	3	82	33	5593	61.6	72.0
023	CPRS/BASF 1-13	4	86	33	5474	64.1	71.7
009	CPRS/BASF 1-4	5	90	39	5456	69.1	78.5
040	CPRS/BASF 1-12	3	75	36	5454	37.7	69.1
003	CPRS/BASF 2-26	4	76	33	5449	50.6	71.1
006	CCDR/JEFF//CPRS/3/BASF 1-6	3	89	38	5426	62.2	73.5
059	CHENIERE/BASF 1-8	3	77	32	5372	42.6	67.0
050	CPRS/BASF 1-14	4	82	31	5302	n/a	n/a
044	CHENIERE/BASF 1-8	4	79	32	5084	62.4	73.2
001	CPRS/BASF 2-26	2	83	32	5048	35.8	67.4
043	CHENIERE/BASF 1-8	4	82	33	5029	52.3	73.0
026	CHENIERE/BASF 1-7	5	82	34	4958	66.4	76.1
020	CPRS/BASF 1-1	5	84	33	4878	58.9	73.7
060	CHENIERE/BASF 1-8	4	81	33	4825	43.5	67.1
021	CPRS/BASF 1-13	5	86	38	4819	63.7	74.7
002	CPRS/BASF 2-26	3	80	32	4748	49.0	66.8

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

HIGH-THROUGHPUT DNA MARKER LAB FOR APPLIED BREEDING

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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 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.

In 2017, new SNP markers, associated with major rice traits, were discovered, developed into Kompetitive Allele Specific Polymerase Chain Reation (KASP) assays, and validated across U.S. breeding germplasm for major rice genes including blast resistance genes (PITA2, PIZ, Pi2, Pi9, and Pib) Cercospora resistance, aroma (BADH2), amylose, gel temperature, pubescence, grain size (GS3 and GL7), heading date, and plant height (SD1). New KASP assays were also developed to convert previously identified gel-based SNP assays for the Clearfield and Provisia herbicide resistance genes and the ALK grain quality gene. The genes which control these major traits have already been reported. We also discovered new SNP loci that were linked with these genes. To enable gene discovery and validation, a breeding germplasm panel of 400 lines was developed in 2016 and was phenotyped for heading date, plant height, pubescence, amylose, gel temperature, and grain size traits in 2017. Two recombinant inbred line (RIL) populations were also genotyped and phenotyped to determine the SNP performance in family structured populations.

The marker-assisted selection (MAS) approach was performed on a total of 46 rice breeding populations that included 13,056 individual plants (Table 1). DNA was extracted from these plants and appropriate trait SNP markers were run to select desired 100 or 50 plants from the each population. The selected plants were then transplanted either into a greenhouse or into the field. The following season (2018), the harvested panicles will be grown as panicle rows in the field. The MAS approach was integrated with our extensive and successful core breeding program, and it improved the speed, accuracy, and uniformity of the Variety Development Program. In addition to the MAS approach, a set of markers was also developed to identify the segregation and purity of the yield plots from all the different tests in order to improve the efficiency and accuracy of the program.

A set of genome-wide (GW) markers were identified, which along with the trait markers have ability to purify Louisiana rice varieties. This set has been successful in purifying foundation seed head rows of important Louisiana varieties in the Foundation Seed Program of the LSU AgCenter. In 2017, head rows of 10 rice varieties were purified using the defined molecular SNP markers set in the Foundation Seed Program (Table 2). Furthermore, efforts are in the pipeline to identify more GW markers, which would be utilized in trait mapping, germplasm characterization, and germplasm purity screening. A set of markers has also been deployed to test F_1 breeding crosses to identify and eliminate self-crosses.

Genomic selection (whole genome prediction) approach is under development for traits that are more quantitative and complex. Initial efforts in this course include predicting phenotypic data of 2007 using phenotype and genotype data of 2006 (115 markers) in the MY2 RIL population (286 lines) using the rrBLUP package of R programming language. Results showed a significant correlation between the predicted phenotype and the actual phenotype. These initial findings encouraged us to research further. A 96-sample panel was developed including advanced URN lines, hybrids, and some important rice varieties. A high-density SNP genotyping illumina array was used to genotype this panel in collaboration with Dr. Jovanny Zabaleta at the Department of Pediatrics and Stanley S. Scott Cancer Center, Louisiana State University Health Sciences Center, New Orleans.

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

Population	**Number of Plants**	**Selected Plants**	**Target Traits***
16 TA 018	384	100	Clearfield and PIZ
16 TA 020	384	100	Clearfield
16 TA 027	384	100	Clearfield
16 TA 053	384	100	PIZ
16 TA 09	384	100	PITA
16 TA 11	384	100	PITA
16 TA 64	384	100	PITA and Aromatic
16 TA 86	384	100	PITA and Aromatic, Amylose
16 TA 15	384	100	Provisia
16 TA 16	384	100	Provisia
16T 023	192	150	Clearfield
16T 037	192	100	Clearfield
16T 021	192	150	Clearfield
16T 026	192	150	PIZ and Clearfield
16T 025	192	100	PITA and Clearfield
16T 034	192	100	PITA and Clearfield
16T 035	192	100	PITA and Clearfield
16T 055	192	100	PITA
16TA 013A	384	200	PITA and PIZ
16T 030	192	100	PIZ
16TA 085	192	100	PIZ
16T 009	192	100	PITA
16T 012	192	100	PITA
16TA 015	192	100	PITA
16TA 016B	192	100	PITA
17 CLPY 135	192	100	Clearfield, PITA, PIZ, and Amylose
17 CLPY 136	96	100	Clearfield, PITA, PIZ, and Amylose
17 CLPY 201	96	100	Clearfield, PITA, PIZ, and Amylose
17 CLPY 262	96	100	Clearfield, PITA, PIZ, and Amylose
17 CLPY 263	96	100	Clearfield, PITA, PIZ, and Amylose
17 CLPY 267	96	100	Clearfield, PITA, PIZ, and Amylose
17 CLPY 685	96	100	Clearfield, PITA, PIZ, and Amylose
1502115	192	100	PITA and Clearfield
1402174	192	100	PITA and Clearfield
1402174	192	100	PITA and Clearfield
1402091	192	100	PITA and Clearfield
17TA74	192	100	Provisia and PITA
17TA75	192	100	Provisia and PIZ
17TA76	384	100	Provisia and PITA
16TA037	768	100	PITA, Gel Temperature, and Amylose
16TA045	768	100	PITA, Gel Temperature, and Amylose
16TA028	768	100	PIZ, Gel Temperature, and Amylose
16TA 086	384	100	PITA and Amylose
16TA 064	384	100	PITA and Aromatic
16TA 022	384	100	Aromatic
16TA 040	384	100	PITA and Amylose
Total	**13,056**	**4,850**	

*PITA and PIZ are rice blast resistance genes.

Table 2. Varieties screened in the H. Rouse Caffey Rice Research Station Foundation Seed Program.

Variety	Number of Plants	Number of Markers
Mermentau	640	26
CL111	640	26
CL153	640	26
CL272	640	26
PVL01	640	26
Caffey	80	26
Jazzman	80	26
CL-Jazzman	80	26
Cocodrie	80	26
Della-2	80	26

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

J.H. Oard, S.D. Linscombe, D.L. Harrell, D.E. Groth, L.N. Pavich, and J.P. Sarver

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) development of male-sterile lines (cytoplasmic A or environmental sensitive S), restorer (R), and maintainer (B) lines adapted to the southern U.S. environmental conditions; 2) identifying elite cross combinations through extensive test-crossing; and 3) exploring the feasibility of economical hybrid seed production.

Three Louisiana experimental hybrids in 2017 showed high yield potential and good milling performance in the Commercial Advanced Trials in Acadia, Evangeline, Jefferson Davis, HRCRRS, and St. Landry locations. These same hybrids in inoculated plots showed good to moderate levels of resistance against leaf blast, sheath blight, and bacterial panicle blight diseases in Evangeline and Jefferson Davis parishes. During the 2017 Observational Trials, four new hybrid combinations produced high grain and head rice yields and low chalk. Additional nurseries at the HRCRRS included 4,000 rows for male-sterile S line development and 1,000 rows for restorer R and maintainer B line development. A new DNA marker platform was used extensively to genotype early-generation and advanced lines for amylose content, gelatinization temperature, herbicide resistance, and other agronomic traits.

To complement the existing Clearfield herbicide technology, the HRCRRS is currently developing inbred and hybrid varieties that are resistant to the quizalofop-p-butyl (ProvisiaTM) herbicide for control of grassy weeds. Several new male-sterile, restorer, and maintainer lines in 2017 field trials showed high levels of resistance to Provisia along with improved agronomic characteristics. A new candidate Provisia hybrid showed high yield potential in the 2017 Observational Trial at the HRCRRS.

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 250 crosses for sheath blight resistance were made in 2017. In addition, 653 F_1 plants, 39 backcross populations, and 24 space-planted F_2 populations were evaluated. A total of 547 early and advanced lines were tested in inoculated field plots at the HRCRRS. DNA technology was used to identify and advance three elite lines with moderate to high levels of resistance to sheath blight.

Commercial Advanced Trials

The objective of the 2017 Commercial Advanced (CA) Trials was to evaluate three candidate hybrids vs. six commercial checks for grain and milling yields at five Louisiana locations. Material was planted at the seeding rate of ~ 35 lb/A for hybrids and ~ 70 lb/A for conventional varieties. As shown in Table 1, the five hybrids evaluated in the main crop showed good yield potential across locations. For example, the combined Louisiana and commercial hybrids produced a 37% yield advantage at 8,876 lb/A when compared to the combined average of 5,567 lb/A for the two Clearfield varieties and 40% if PVL01 is included. When considering only the Louisiana hybrids, a 32% yield advantage vs. the two Clearfield varieties was found across locations. Average yield of the two Louisiana hybrids was 87% compared to the average of the three commercial hybrids.

Table 1. Commercial Advanced Yield Trials in the H. Rouse Caffey Rice Research Station (HRCRRS), Acadia (AD), Evangeline (EV), Jefferson Davis (JD), and St. Landry (SL) locations, 2017.

	---------------- Yield (lb/A) - Main Crop ----------------					Yield (lb/A)
Hybrid/Variety	HRCRRS	AD	EV	JD	SL	Mean
XL753	10021	9395	8179	9235	11046	9563
CLXL745	9059	9772	7534	7985	10507	8971
CLXL729	9781	8688	7647	9138	12318	9514
LAH169	8269	7208	6796	7725	10481	8096
CLH161	8524	7703	7771	7865	9309	8234
CL153	6444	5670	5286	5391	5741	5706
CL111	6744	4294	4777	6229	5096	5428
PV01	5907	5514	4345	3965	4796	4905

Table 2 shows the head rice and total milling yields of the main crop at the HRCRRS, Acadia (AD), and Jefferson Davis (JD) locations. The average head rice yield across all entries and locations was 55%, while total milling yield was 72%. Average head rice across hybrids was 53% compared to 59% for the three check varieties. The total milling average for hybrids at 72% was nearly identical to the 73% for check varieties. Mean head rice yield of the two Louisiana hybrids at 54% was similar to the 52% yield for the three commercial hybrids.

Table 2. Commercial Advanced head rice and total milling yields, main crop, H. Rouse Caffey Rice Research Station (HRCRRS), Acadia (AD), and Jefferson Davis (JD) locations, 2017.

Hybrid/Variety	HRCRRS	AD	JD	Mean
XL753	48/75	47/71	57/73	51/73
CLXL745	51/74	50/70	59/72	53/72
CLXL729	44/76	53/69	58/70	52/72
LAH169	57/75	55/72	57/71	56/73
CLH161	51/74	50/70	59/72	53/72
CL153	53/77	66/74	64/73	61/73
CL111	61/76	63/71	59/69	61/72
PV01	57/75	55/72	57/71	56/73

Observational (Testcross) Trial

The objective of the Observational Trial is to identify new hybrid combinations with high grain yield, good milling yields, height, maturity, lodging percentage, and other agronomic characteristics. Planting date for the Observation Trial was March 20, 2017 at the HRCRRS. Two experimental long-grain Clearfield and Provisia hybrids, 17TC 5 and 17TC 41, were identified with high yield potential, early maturity, and comparable plant height vs. three commercial hybrids (Table 3). Both 17TC 5 and 17TC 41 produced grain yields comparable to CLXL745 and XP753 and had greater yields than CLXL729. The two experimental hybrids produced an average 22% yield advantage vs. CL111 and PVL01. Seed dimensions and head rice yields of the two experimental hybrids showed similar values to those of the commercial hybrids. Percent chalk of the two experimental hybrids (7.2-9.0%) was lower vs. the commercial hybrids CLXL745 and XP753 and the Clearfield variety CL111 that ranged from 11.28-12.2%.

Table 3. Heading date, height, grain yield, and grain quality traits of four candidate, three commercial hybrids, and two commercial varieties planted in the Observational Trial, H. Rouse Caffey Rice Research Station, 2017.

Hybrid/ Variety	Days to 50% Heading	Height (in)	Yield (lb/A)	Seed Length (mm)*	Seed Width (mm)*	Head/Total	Chalk %*	Notes
17TC 5	81	41	10750	7.4	2.3	62/69	9.0	CL Hybrid
17TC 41	76	43	10332	7.1	2.5	58/69	7.2	PV Hybrid
CLXL745	85	40	10091	7.1	2.5	58/70	12.2	CL Hybrid
XP753	86	40	10009	7.1	2.4	50/70	11.2	Conv. Hybrid
17TC 97	84	37	9910	7.0	2.5	55/69	6.1	PV Hybrid
CLXL729	86	41	8482	6.9	2.4	56/67	8.5	CL Hybrid
17TC 116	86	38	9070	7.6	2.3	61/69	7.2	CL Hybrid
CL111	79	36	7424	7.2	2.4	62/70	11.8	CL Variety
PVL01	89	40	6905	7.5	2.1	57/68	2.5	PV Variety

* Seed dimensions and % chalk by area determined by Seed Count platform.

The three Louisiana experimental hybrids and three varieties evaluated for leaf blast at the HRCRRS produced high to moderate levels of resistance (Table 4). Sheath blight resistance for the eight hybrids varied widely across the HRCRRS, JD, and SL locations. For example, 09A/R608 showed a high level of resistance with an average rating of 2.7, while commercial hybrid XL760 showed an average of 7.5 at the JD and SL locations. The average sheath blight rating for the three Louisiana experimental hybrids was 4.4 vs. an average 6.6 rating for the five commercial hybrids. The three commercial varieties were susceptible to sheath blight showing an average of 7.2 across all locations. The three Louisiana hybrids produced high to moderate levels of resistance to bacterial panicle blight, while the varieties showed moderate to low levels of resistance.

Table 4. Disease ratings for leaf blast, sheath blight, and bacterial panicle blight at the H. Rouse Caffey Rice Research Station (HRCRRS), Jefferson Davis (JD), and St. Landry (SL) locations, 2017.

	Leaf Blast*	---------- Sheath Blight*----------			Bacterial Panicle Blight*
Hybrid/Variety	HRCRRS	HRCRRS	JD	SL	HRCRRS
LAH169	2	7	5	5	4
CLH161	2	7	4	4	2
GEMINI 214 CL	nd†	nd	6	6	nd
XL753	nd	nd	4	6	nd
XL760	nd	nd	8	7	nd
CLXL745	nd	nd	6	7	nd
CLXL729	nd	nd	7	7	nd
09A/R608	3	3	2	3	2
CL111	2	7	7	8	7
CL153	2	7	6	7	4
CL151	2	8	7	8	3

*Disease ratings where 0 = most resistant, 9 = most susceptible.
† nd = no data taken.

Development of Clearfield and Provisia Parents and Experimental Hybrids

During the summer of 2017, a total of 39 F_4 and F_5 male-sterile lines derived from single crosses of Clearfield and indica germplasm were selected for further evaluation and advancement. During this season, 25 Clearfield and 11 conventional male-sterile lines were crossed with elite pollen parents in different combinations. A total of 236 Clearfield experimental hybrids were produced and will be evaluated during the summer of 2018.

During the summer of 2017, a total of 58 elite Provisia male-sterile lines were selected and crossed with 24 elite pollen parents in different combinations. A total of 258 Provisia experimental hybrids were produced and will be evaluated during the summer of 2018. In addition, four potential restorer and four maintainer lines were selected based on their phenotypic acceptability to facilitate the development of Provisia three-line hybrids.

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 inbred varieties showing high levels of resistance. The objective of our research is to develop sheath blight-resistant rice with desirable height and maturity from multiple sources by leveraging DNA marker technology with inoculated field trials at the HRCRRS. A total of 2,000 early generation and advanced lines were planted on April 25, 2017, and inoculated with the sheath blight fungus, *Rhizoctonia solani.* Three long-grain selected lines were identified with moderately resistant sheath blight ratings of 3.3 to 4.4 vs. 6.0 to 7.7 for susceptible Catahoula, CL151, CL111, and CL153 (Table 5). The selected lines were 10 to 18 days later and 5 to 12 inches taller than the four susceptible commercial varieties. Average grain yield of the three selected lines under inoculated conditions at 4,032 lb/A was 30% higher than the mean yield of 2,830 lb/A for the four susceptible varieties. Similarly, the average non-inoculated yield of the three resistant lines was 16% higher vs. the average of the four commercial varieties. The average 13% yield reduction of the three resistant lines was half that of the four susceptible varieties. Additional trials in 2019 will evaluate the selected lines and checks under inoculated and disease-free conditions.

Table 5. Days to heading, height, sheath blight rating, and grain yield of three selected lines, three Clearfield, and one conventional variety inoculated with *R. solani*, H. Rouse Caffey Rice Research Station, 2017.

Line/Variety	Days to 50% Heading	Height (in)	Sheath Blight Rating (0-9)	Yield (lb/A) Inoculated	Yield (lb/A) Non-inoculated	% Yield Reduction
CCDR//09DN/RUSH072	92	42	3.3	4087	4311	6
CTHL/SB2-3-A	87	44	4.3	4055	4631	13
CTHL/SB2-3-B	88	45	3.7	3953	4970	21
Catahoula	76	38	7.7	3416	4906	30
CL151	77	35	7.0	2782	3915	29
CL111	74	35	7.0	2706	3780	29
CL153	76	33	6.0	2417	2917	18

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

H.S. Utomo, D.E. Groth, and S.D. Linscombe

1. Yield Trials.

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. Main evaluation criteria were yield potential, vigor, plant height, heading date, and other agronomic traits in addition to marker-based selection for disease-resistant traits and grain quality components (Table 1).

Table 1. Performance of advanced marker-assisted breeding lines in the 2017 Preliminary Yield trials at the H. Rouse Caffey Rice Research Station, Crowley, LA.

Entry	Line ID	VIG[1]	HDT	HTE	YIELD	DNA Maker Analysis for Amylose Cont.	DNA Maker Analysis for Amylose ALK
17HUV 001	11MB194	4.1	94.4	100.7	9,091.3	High Amylose	High/Intermediate GT
17HUV 002	12MB012	4.1	95.5	99.0	8,913.6	High Amylose	High/Intermediate GT
17HUV 003	13MB108	4.6	93.1	92.9	7,890.9	High Amylose	High/Intermediate GT
17HUV 004	13MB309	4.2	91.2	101.7	9,197.3	High Amylose	High/Intermediate GT
17HUV 005	09MB202	4.6	91.8	91.8	9,470.1	High Amylose	High/Intermediate GT
17HUV 006	10MB144	4.1	95.1	109.0	9,041.2	High Amylose	High/Intermediate GT
17HUV 007	11MB145	4.4	97.5	90.4	10,080.0	High Amylose	High/Intermediate GT
17HUV 008	11MB210	4.7	99.6	89.5	8,625.7	High Amylose	High/Intermediate GT
17HUV 009	10MB111	4.4	100.4	93.1	7,904.6	High Amylose	High/Intermediate GT
17HUV 010	10MB989	4.0	96.1	108.6	9,973.2	High Amylose	High/Intermediate GT
17HUV 011	11MB145	5.0	97.1	89.7	8,072.4	High Amylose	High/Intermediate GT
17HUV 012	12MB765	5.0	69.7	98.4	8,746.2	High Amylose	High/Intermediate GT
17HUV 013	12MB289	4.4	84.3	85.1	9,526.0	High Amylose	High/Intermediate GT
17HUV 014	11MB099	4.1	91.1	88.5	8,473.3	High Amylose	High/Intermediate GT
17HUV 015	11MB652	4.2	91.8	89.1	8,865.9	High Amylose	High/Intermediate GT
17HUV 016	11MB899	4.4	97.3	92.7	7,793.0	High Amylose	High/Intermediate GT
17HUV 017	12MB124	3.9	81.2	105.5	7,856.8	High Amylose	High/Intermediate GT
17HUV 018	12MB564	4.5	98.7	103.3	8,957.3	High Amylose	High/Intermediate GT
17HUV 019	13MB193	4.1	94.1	99.6	8,213.8	High Amylose	High/Intermediate GT
17HUV 020	13MB098	4.8	96.3	92.8	7,907.5	High Amylose	High/Intermediate GT
17HUV 021	12MB299	4.0	91.5	99.6	8,808.5	High Amylose	High/Intermediate GT
17HUV 022	13MB387	4.2	95.4	102.8	8,402.7	High Amylose	High/Intermediate GT
17HUV 023	13MB674	4.2	97.5	98.6	8,977.1	High Amylose	High/Intermediate GT
17HUV 024	13MB462	4.1	93.2	99.0	8,889.4	High Amylose	High/Intermediate GT

[1] Subjective rating of seedling vigor 1 to 5, where 1 = poor, 5 = excellent.

2. Head-row Evaluations.

New entries were evaluated in head-row trials to select for lines with high yielding potential, excellent growth characteristics, and good disease resistance. Performance of some selected lines is presented in Table 2. In addition, marker-assisted breeding efforts continue including introgression of 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. genetic pool into adapted Louisiana cultivars and breeding lines. The resulting progeny lines were advanced through the breeding process.

Table 2. Agronomic performance of new selected lines from marker-assisted breeding in the 2017 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	14F056	Pi-ta^2,Pi-b	L	4.5	96.3	90.9	902	Int Am	Int Gel
2	14F176	Pi-ta^2,Pi-b	L	4.1	76.8	93.6	858	Int Am	Int Gel
3	14F106	Pi-ta^2,Pi-b	L	3.1	93.1	96.0	885	Int Am	Int Gel
4	14F374	Pi-ta^2,Pi-b	L	4.0	101.2	91.9	818	Int Am	Int Gel
5	14F541	Pi-ta^2,Pi-b	L	3.9	90.2	87.8	903	Int Am	Int Gel
6	14F726	Pi-ta^2,Pi-b	L	4.5	92.4	92.1	817	Int Am	Int Gel
7	14F413	Pi-ta^2,Pi-b	L	4.6	95.3	91.6	861	Int Am	Int Gel
8	14F211	Pi-ta^2,Pi-b	L	4.5	89.6	89.1	706	Int Am	Int Gel
9	14F381	Pi-ta^2,Pi-b	L	5.0	102.1	96.5	885	Int Am	Int Gel
10	14F256	Pi-ta^2,Pi-b	L	4.4	95.3	89.3	797	Int Am	Int Gel
11	14F543	Pi-ta^2,Pi-b	L	3.8	94.6	99.3	873	Int Am	Int Gel
12	14F185	Pi-ta^2,Pi-b	L	4.0	89.7	92.7	848	Int Am	Int Gel
13	14F148	Pi-ta^2,Pi-b	L	5.0	79.2	90.1	806	Int Am	Int Gel
14	14F673	Pi-ta^2,Pi-b	L	4.5	79.1	88.3	781	Int Am	Int Gel
15	14F901	Pi-ta^2,Pi-b	L	4.1	78.9	88.5	753	Int Am	Int Gel
16	14F715	Pi-ta^2,Pi-b	L	3.7	93.2	81.2	858	Int Am	Int Gel
17	14F620	Pi-ta^2,Pi-b	L	3.5	91.2	88.1	848	Int Am	Int Gel
18	14F631	Pi-ta^2,Pi-b	L	4.5	96.1	95.2	753	Int Am	Int Gel
19	14F801	Pi-ta^2,Pi-b	L	4.2	99.1	92.6	738	Int Am	Int Gel
20	14F163	Pi-ta^2,Pi-b	L	4.6	97.6	77.1	890	Int Am	Int Gel
21	14F218	Pi-ta^2,Pi-b	L	5.0	87.8	83.3	892	Int Am	Int Gel
22	14F323	Pi-ta^2,Pi-b	L	4.9	74.5	91.5	883	Int Am	Int Gel
23	14F311	Pi-ta^2,Pi-b	L	4.1	99.3	89.1	851	Int Am	Int Gel
24	14F843	Pi-ta^2,Pi-b	L	4.5	88.1	82.9	883	Int Am	Int Gel
25	14F342	Pi-ta^2,Pi-b	L	4.4	99.6	92.2	865	Int Am	Int Gel
26	13F132	Pi-ta^2,Pi-b	L	4.0	96.9	91.5	851	Int Am	Int Gel
27	13F814	Pi-ta^2,Pi-b	L	4.6	89.2	99.1	760	Int Am	Int Gel
28	13F393	Pi-ta^2,Pi-b	L	3.8	91.9	93.6	873	Int Am	Int Gel
29	13F852	Pi-ta^2,Pi-b	L	4.8	89.5	91.2	783	Int Am	Int Gel
30	13R753	Pi-ta^2,Pi-b	L	4.4	89.7	91.4	671	Int Am	Int Gel
31	13F557	Pi-ta^2,Pi-b	L	3.3	99.2	92.4	766	Int Am	Int Gel
32	13F460	Pi-ta^2,Pi-b	L	4.1	99.8	94.1	688	Int Am	Int Gel
33	13F663	Pi-ta^2,Pi-b	L	4.2	91.3	95.2	687	Int Am	Int Gel
34	13F281	Pi-ta^2,Pi-b	L	5.0	79.1	78.1	781	Int Am	Int Gel
35	13F298	Pi-ta^2,Pi-b	L	4.4	89.5	92.7	763	Int Am	Int Gel
36	13F190	Pi-ta^2,Pi-b	L	4.6	98.5	91.4	781	Int Am	Int Gel
37	13F471	Pi-ta^2,Pi-b	L	4.1	94.1	88.3	668	Int Am	Int Gel
38	13F254	Pi-ta^2,Pi-b	L	4.6	82.9	79.6	852	Int Am	Int Gel
39	13F418	Pi-ta^2,Pi-b	L	4.4	75.9	83.1	729	Int Am	Int Gel
40	13F350	Pi-ta^2,Pi-b	L	3.8	82.2	85.2	803	Int Am	Int Gel
41	13F514	Pi-ta^2,Pi-b	L	4.3	78.1	91.2	855	Int Am	Int Gel
42	13F378	Pi-ta^2,Pi-b	L	4.0	76.5	86.3	771	Int Am	Int Gel
43	13F219	Pi-ta^2,Pi-b	L	3.1	87.1	99.5	654	Int Am	Int Gel
44	13F594	Pi-ta^2,Pi-b	L	4.2	86.9	98.3	781	Int Am	Int Gel
45	13F490	Pi-ta^2,Pi-b	L	5.0	76.7	81.1	796	Int Am	Int Gel
46	13F611	Pi-ta^2,Pi-b	L	5.0	96.1	84.7	748	Int Am	Int Gel
47	13F479	Pi-ta^2,Pi-b	L	3.6	91.0	89.1	646	Int Am	Int Gel
48	13F701	Pi-ta^2,Pi-b	L	4.0	84.8	91.2	624	Int Am	Int Gel
49	13F789	Pi-ta^2,Pi-b	L	4.4	94.9	89.8	772	Int Am	Int Gel
50	13F888	Pi-ta^2,Pi-b	L	4.9	95.9	89.2	743	Int Am	Int Gel

§L= Long grain; ¶Subjective rating of seedling vigor 1 to 5, where 1 = poor, 5 = excellent.

3. Improving Grain Quality.

Improving consistency and homogeneity of grain size and appearance is one of our breeding goals. Selection efforts are being carried out with this specific objective in mind. In addition, selections were also conducted to reduce the percent of chalk among progeny lines. Selected lines (Table 3) will be advanced in the next growing season.

Table 3. Agronomic performance of lines selected for yield, grain homogeneity, and % chalk, H. Rouse Caffey Rice Research Station, Crowley, LA, 2017.

Lines	Grain Type§	Yield (row)	Grain Homogeneity¶	% Chalk	Amylose Content	Gel Temp	Blast
13R-193	L	962	9.0	7.6	High	Intermediate	Pita, Pib
13R-599	L	852	9.1	8.3	High	Intermediate	Pita, Pib
13R-622	L	713	8.9	7.1	High	Intermediate	Pib
13R-727	L	648	8.2	10.0	High	Intermediate	Pita, Pib
13R-728	L	701	8.7	4.9	High	Intermediate	Pib
13R-733	L	773	9.8	4.3	High	Intermediate	Pita, Pib
13R-749	L	767	9.4	4.8	High	Intermediate	Pita, Pib
13R-751	L	718	8.9	9.2	High	Intermediate	Pita, Pi-z
13R-793	L	691	8.1	5.5	High	Intermediate	Pita, Pib
13R-1185	L	789	9.3	10.5	High	Intermediate	Pita
13R-1214	L	751	9.6	5.4	Intermediate	Low	Pita
13R-1201	L	699	8.9	3.0	High	Intermediate	Pib, Piz
13R-1282	L	747	9.1	2.9	High	Intermediate	Pita, Pib
13R-1294	L	680	8.9	2.8	High	Intermediate	Pita, Pib
13R-1321	L	589	9.3	9.5	High	Intermediate	Pita
13R-1354	L	814	8.8	4.7	High	Intermediate	Pita
13R-1371	L	779	9.1	5.8	High	Intermediate	Pita, Pib
13R-1462	L	826	9.3	10.8	Intermediate	Low	Pita, Pib
13R-1464	L	709	8.0	4.5	High	Intermediate	Pita, Pib
12R-1910	L	749	8.8	1.4	High	Intermediate	Pib, Piz
12R-1928	L	569	9.5	9.0	High	Intermediate	Pita, Pib
12R-1933	L	727	9.3	2.8	High	Intermediate	Pib, Piz
12R-1951	L	810	9.2	9.1	High	Intermediate	Pita
12R-1955	L	632	9.1	10.6	Intermediate	Low	Pita
12R-1962	L	599	9.7	2.0	High	Intermediate	Pita, Pib
12R-1968	L	886	8.5	8.4	High	Intermediate	Pib, Piz
12R-1967	L	749	8.7	4.6	High	Intermediate	Pita, Pib
12R-2001	L	518	9.2	1.9	High	Intermediate	Pib, Piz
12R-2029	L	589	9.0	1.0	High	Intermediate	Pita, Pib
12R-2138	L	527	9.5	2.0	High	Intermediate	Pita
12R-2192	L	556	9.3	1.8	Intermediate	Low	Pita
12R-2194	L	589	9.4	4.5	High	Intermediate	Pib, Piz
12R-2197	L	658	9.1	2.8	High	Intermediate	Pita, Pib
12R-2242	L	689	8.5	5.7	High	Intermediate	Pib, Piz
12R-2264	L	799	9.2	4.2	High	Intermediate	Pita, Pib
12R-2297	L	728	9.2	10.5	High	Intermediate	Pita, Pib
12R-2035	L	665	9.3	2.3	Intermediate	Low	Pita
12R-2090	L	761	8.5	9.0	High	Intermediate	Pib, Piz
12R-2251	L	690	8.2	5.1	High	Intermediate	Pita
12R-2297	L	694	9.2	3.7	High	Intermediate	Pita, Pib
12R-2395	L	586	9.5	2.5	High	Intermediate	Pita
12R-2329	L	627	9.2	10.8	High	Intermediate	Pita, Pib
12R-2569	L	708	8.9	5.1	High	Intermediate	Pita
12R-2867	L	774	9.1	9.0	High	Intermediate	Pita

§ L= Long grain; ¶ Subjective rating 0 to 10, where 0 = poor, 10 = excellent.

4. DNA Analyses of High-Protein Rice Lines: Gene Sequencing of New High-Protein Lines.

Our project recently has developed a total of 68 new high-protein lines. The genetic property of two critical genes, dihydrodipicolinate syntase (DHDPS) and amino acid transporter OsAAP6, are being evaluated among these lines. The gene associated with the production of the DHDPS enzyme has been sequenced. The DHDPS enzyme catalyzes the first committed step in the lysine biosynthetic pathway, which involves the condensation reaction between (S)-aspartate β-semialdehyde ((S)-ASA) and its feedback inhibited by lysine. Because of its role in the lysine production pathway, functional changes in this key enzyme can lead to the accumulation and improvement of the amino acid composition and might increase the overall grain protein content (GPC). Another genetic property that was evaluated is the gene associated with amino acid transporters (AATs). Amino acid transporters mediate the transport of amino acids across cellular membranes in various processes of plant growth and development. Their functions include long distance AAT and providing responses to pathogens and abiotic stresses. There are 85 AAT genes identified in the rice genome. One gene of particular interest is OsAAP6 because it has a probable role in the accumulation of protein in the rice grain. Literature shows that the OsAAP6 gene functions as an important regulator of GPC and nutritional quality in rice. The gene is encoded by the quantitative trait locus (QTL) qPC1 that controls GPC as a positive regulator in the synthesis and accumulation of glutelins, prolamins, globulins, albumins, and starch. A genomic region of approximately 6 kb spanning the OsAAP6 gene and its 5'-untranslated region for 12 different rice lines has been sequenced.

A. Sequencing of OsAAP6.

A set of primers designed to cover the entire OsAAP6 gene of 1,143 base pairs (bp) was used to produce reverse transcription polymerase chain reaction (RT-PCR) products from 12 different high-protein rice line samples. Initial attempts to use OsAAP6 -F1 and OsAAP6 -R2 primers to generate sequencing templates were only partially successful (RT-PCR product of expected size was produced only for high-protein lines 8 and 10. The complete coding sequence (cds) of the remaining lines were identical; and therefore, there would be no meaningful sequence change expected among them). A total of eight sequencing reactions were performed to confirm it was indeed the OsAAP6 gene, but primer OsAAP6 -F1 was found to be a problem. Another set of primers was ordered, and a combination of OsAAP6 -F5 and OsAAP6 -R3 oligonucleotides was found to be optimal for RT-PCR amplification of the OsAAP6 gene intended for DNA sequencing. A total of four sequencing primers (F5, R1, F2, and F3) were used to generate the entire sequence of the OsAAP6 gene. A total of 48 more sequencing reactions were performed (12x4=48). Most of the RT-PCR products that appeared as single bands of the expected size on agarose gel were purified directly from the RT-PCR mix by using Agencourt AMPure XP-PCR purification magnetic beads (Bechman Coulter #A63880) while some were cut from the gel and purified by using Zymoclean Gel DNA Recovery Kit (Zymo Research #D4007) before sequencing on an ABI 3130 Genetic Analyzer. All sequencing files derived from each sample were assembled as 12 individual sequence contigs using Sequencer version 5.3 software. Sequence data obtained were used in comparison of the amino acid permeases (OsAAP6) gene sequence of the 12 high-protein rice lines with the reference *Oryza sativa* Japonica Group Os04g0254000 (Os04g0254000) mRNA and the complete cds (NCBI Reference Sequence: NM_001058857.1).

B. Primer Sets.

Polymerase chain reaction (PCR) condition was 96°C for 3 min as a denaturation step, followed by 33 cycles of 94°C for 15 sec, 62°C for 30 sec, and 72°C for 30 sec, then followed by 72°C for 7 min as the final extension. The expected PCR products were 335 bp long for both the forward primer 565G-F with the reverse primer and the forward primer 565A-F with the same reverse primer (Table 4).

Table 4. Primer set for polymerase chain reaction product.

Set	Forward	Reverse
1	565G-F (AATTTATTAGCAGGTACTACGTATTAAG)	Reverse (CCACCAGATTATATGCCTGTTAC)
2	565A-F (AATTTATTAGCAGGTACTACGTATTAAA	Reverse (CCACCAGATTATATGCCTGTTAC)

C. Regulatory DNA Sequence of High-Protein Rice.

GCCAAGGCGGAGCTGATCCACCGCAGCTGGAGCAACGCCTCGCTCTCCTACGCCTCGTACCGCTTCAC
CACCGCCAAGAACTGAAAACCGGTCGACGCGATGCACGCCGGCTCGCCGCATGCAACCACGTGTTTGC
TTGTAACATATTTGACTCGAACAATAATCCCCGTGGGCTCACGTAGACGTGTGTGCCGTGTTCGTGTTT
GTATTTCTCGGAGCCGTGGCTTGGGGTTGTTTACTTGTTTTTTTTTTTGTAAGATTGGGTTGGGCCTGGG
CCTGGGCCTGGGCCGTGGCACAGCCTTATGGCGTTAATTGGTGTTCTTATTTGGACCCAAACTGGCCCA
TACAGCCCAGCTTTAGGTGTTCAGCTTCGTCACTGAGGGTTGGTTTGGTTTGTGGCCTAAATAGGCCTT
ATCAAATTTTGTCAGTACCAAATTTTGGTAAGTTTTGGCATGACTAATTTTAGTAAGGCAAAGTTGCGT
TTGGATTGAAGCCAAAATAGCCTAAGTTCACTATTGAAATGGCCTATTTTTTTGGCATGCCAAAATTTG
GCTTCAAACCAAATAGACACTAATCACTATTGAAATTGTCAAATATTGGTAGGCCTAATTTAGGCCTC
AAACCAAACCAGCCCTGAATCTACTGTGTGTAGGGATATGACGACACGTGAGGCTGTTTGGCTGCGTT
GGCACGAGCTAGCAAAGACACGCTGTTGCACAGTTGCACACAGCACATATCCATAAATATAATCCATA
TATAGGCAGATTACAGGGTGTACATAATGTTGATGGTTTTGGAACCACGCAGCAAACTTTGATGGTTT
CCGGCCGTGAATTACGAGCCGTGTTTGATTTTCCAGTGAATCGCAAGAAACAATTTGTTGTTTCTGAAC
CTGAAATTCTTTTGGTGGCGTCAAGAGATGGACGATGATCTCACGATGATAGATGAGAGGAGAAGAG
CAGCAATCTCATGATTCATGCAGCTTTGTAGCAATGTGTGCTTCGTGGCGGCCGCATGATGAAGCAGA
AGATGGCTTTCCTTTTGGGTCAAGCCCTGAGCCCCTGAGAGGCTGAGATATGTCCAGCACTTCATTTTC
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TACAGTGGGAAACAGGTCAGGTGCAAAAGCTCGCCAGCTCTATATATAGCTGCAGCGCACAGGCTTCA
GAATTCGCTCAAAATCCTTTCCGCTCAGATAAGAGAGGCCGGAGACTGAGAGAGAGGGAAACTCGTA
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GTCAGAACAGGTAATTCTCAGGATCCTCTCTGTTTCCAGTTCGCGTTTGCACAGTCGTCGTCGTCGCCG
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ATGCTTCATGCAGAGTATTTAGCTGCTGTTTCCTCTGAAACTCTGTTCCGTTGTTCATCGTAGTTTAGCT
GCATGTTCATTGTCACCACATACCGTTGAGTGTGGTAGATCTGCGAGCCTCTGTCATTGCTGAATTTGG
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GCTAGCCAGATGTGTGCCCAGTGGAAAGACGCTTTCAGACTTCAGCGCGCTATGGAACATGCGGTTGT
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TCCACTTACATCACGCATCCTAATTCGACAAATAGCTTTCATGGTATTAAAGTAAAACATAGTGCATAT
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CAGCCGATGAGATTATGCATGTAGTACTACTCCTACTACTTTTGTTGCTGTACTCGTACTAGTTGCTGG
TGTAATTTGGCTGTCGTGTTA

D. OsAAP6 Sequence of High-Protein Rice.

ATGGACGTGGAGAAGGTGGAGAGGAAGGAGGTGGCCGTCGACGACGATGGCCGCGTCAGAACAGGA
ACGGTATGGACGGCGACGACGCACGCCATCACCGCCGTGATCGGGTCAGGCGTGCTGGCGCTGCCGTG
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ACACCGCCGTCCTCCTCTGCGACTGCTACCGCACGCCGGACCCCGTCCACGGCAAGCGGAACTACACC
TACATGGACGTCGTCCGCTCATGCCTCGGTCCTCGAGACGTGGTCGTGTGTGGCATTGCGCAGTACGC
GATTCTCTGGGGCGCAATGGTGGGTTACACCATCACGACCGCTACGAGCATCATGTCAGTGGTGCGCA
CGAACTGCCACCACTACAAGGGGCCGGACGCGACCTGCGGCTCGTCCGGGACGATGTACATGGTGCTG
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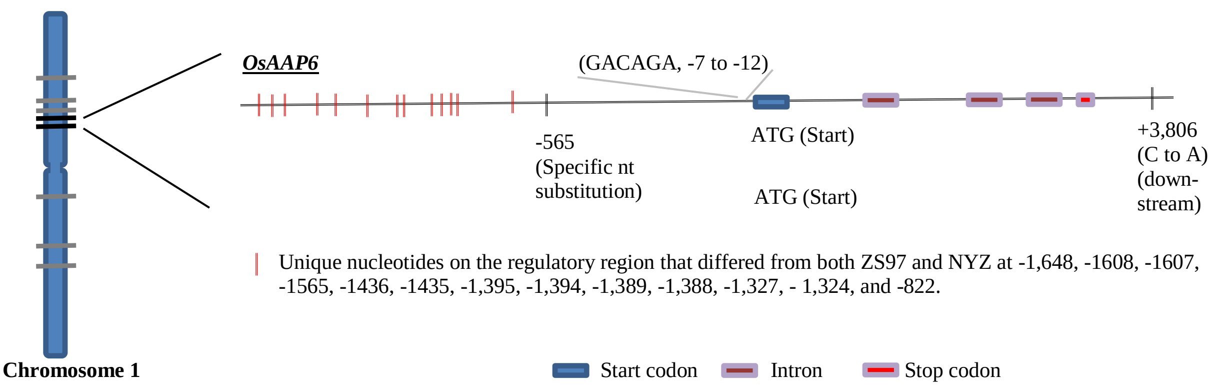
ATCCACCTGGTCGGAGCGTACCAGGTGTACGCGCAGCCGGTGTTCGCGTGCTACGAGAAGTGGCTGGC
GAGCCGTTGGCCGGAGTCGGCGTTCTTCCACCGGGAGTACGCGGTGCCGCTGGGCGGCGGGCGCGCG
GTGCGGTTCACGCTGTGCAAGCTGGTGCTGCGCACGGCGTTCGTGGCCGTGACGACGGTGGTGTCGCT
GGTGCTGCCGTTCTTCAACGCCGTGCTCGGGCTGCTCGGCGCCGTCGCGTTCTGGCCGCTCACGGTGTA
CTTCCCGGTGACCATGTACATGGCGCAGGCGAAGGTGCAGAGAGGCAGCCGGAAGTGGGTGGCGCTG

CAGGCGCTCAACGTCGGCGCGCTCGTCGTGTCGCTGCTCGCGGCGGTGGGCTCGGTGGCCGACATGGC
GCAGCGCCTGCGCCACGTCACCATCTTCCAAACGCAGCTCTGA

E. Amino Acid Sequence of High-Protein Rice.

Met D V E K V E R K E V A V D D D G R V R T G T V W T A T T H A I T A V I G S G V L A L P W S V A Q
Met G W V L G P I A L V V C A Y I T Y Y T A V L L C D C Y R T P D P V H G K R N Y T Y Met D V V R S C
L G P R D V V V C G I A Q Y A I L W G A Met V G Y T I T T A T S I Met S V V R T N C H H Y K G P D A T
C G S S G T Met Y Met V L F G L A E V V L S Q C P S L E G V T L I S V V A A V Met S F T Y S F V G L F L
S A A K V A S H G A A H G T L L G V R V G A G G V T A S T K A W H F L Q A L G N I A F A Y T Y S Met
L L I E I Q D T V K S P P S E N V T Met K R A S L Y G I G V T T V F Y V S I G C V G Y A A F G N A A P G
N V L T G F L E P F W L V D I A N V A V V I H L V G A Y Q V Y A Q P V F A C Y E K W L A S R W P E S A
F F H R E Y A V P L G G G R A V R F T L C K L V L R T A F V A V T T V V S L V L P F F N A V L G L L G
A V A F W P L T V Y F P V T Met Y Met A Q A K V Q R G S R K W V A L Q A L N V G A L V V S L L A A V
G S V A D Met A Q R L R H V T I F Q T Q L Stop

F. Physical Map of OsAAP6 of Rice (*Oryza sativa*) Cultivar Frontière.



ZS97¶	T	_	_	C	A	A	G	G	A	A	C	A	G	T	A	A	A	A	A	T	A	G	T	C	C	-	-	-	-	-	-
NYZ	T	_	_	G	A	G	G	A	A	G	C	A	A	C	G	G	G	G	T	T	A	G	C	T	G	C	A	C	A	G	A
1	C	T	T	A	G	T	A	G	G	C	-	T	A	C	G	G	G	G	T	A	T	**A**	C	T	G	C	A	C	A	G	A
2	C	T	T	A	G	T	A	G	G	C	-	T	A	C	G	G	G	G	T	A	T	**G**	C	T	G	C	A	C	A	G	A
	-1648	-1608	-1607	-1565	-1436	-1435	-1395	-1394	-1389	-1388	-1327	-1324	-1289	-1283	-1270	-1259	-1256	-922	-913	-870	-822	-565	-541	-405	-32	-12	-11	-10	-9	-8	-7

¶ ZS97 = Japonica cultivar Zhenshan 97; NYZ = Nagyangzhan: 1 = U.S. Rice *cv* Cypress, 2 = U.S. Rice *cv* Frontière.

G. Amino Acid Transporter OsAAP6.

Sequence analyses showed that the coding sequence of the OsAAP6 gene in four high-protein rice lines, the high-protein cultivar 'Frontière', and the control are identical. The regulatory region of the OsAAP6 gene in four high-protein rice lines and in Frontière more closely resembled Nanyangzhan (*Oryza sativa* L. ssp japonica) than Zhenshan 97 (*Oryza sativa* L. ssp indica). However, the U.S. rice lines are uniquely different from both Nanyangzhan and Zhenshan 97 due to a nucleotide substitution at position -1,645, -1,565, -1,436, -1,435, -1,395, -1,394, -1,389, -1,388, -1,324, -870, and -822, and a deletion at position -1,327. Within the U.S. high-protein rice lines and the control, the sequence of the regulatory region of the OsAAP6 gene are identical, except at position -565. The control line has adenine, while the four high-protein rice lines all have guanine. This single nucleotide difference separates the four high-protein lines from their control. The -565 position is adjacent to the putative regulatory binding site for the ARR1-

binding element (binding sequence of transcriptional activator ARR1). Most activators function by binding sequence-specific to a DNA site located in or near a promoter and making protein–protein interactions with the general transcription machinery (RNA polymerase and general transcription factors), thereby facilitating the binding of the general transcription machinery to the promoter. The DNA site bound by the activator is referred to as an "activator site." The part of the activator that makes protein–protein interactions with the general transcription machinery is referred to as an "activating region." The part of the general transcription machinery that makes protein–protein interactions with the activator is referred to as an "activation target." Diagnostic SNP markers were created. The SNP markers correlated well with high grain protein content among the progeny lines.

RICE NUTRITION ENHANCEMENT PROJECT:
HIGH-PROTEIN LINE DEVELOPMENT AND GRAIN NUTRITIONAL QUALITY

I. Wenefrida, H.S. Utomo, and S.D. Linscombe

1. Preliminary Yield (PY) Trials.

Yield potential and other important agronomic traits among new advanced high-protein lines were evaluated in the PY trials conducted in the field at the H. Rouse Caffey Rice Research Station, near Crowley, LA. Among important phenotypic traits evaluated were grain yield (main crop), plant vigor (VIG), heading date (HDT), and height (HTE). Table 1 is the summary of the mean performance of the new advanced high-protein rice lines together with three conventional cultivar checks that were evaluated. 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 2017 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)
17IDE 001	11P400071	4.1	87.1	40.3	8358.9	13.15
17IDE 002	11P400361	4.9	83.4	37.2	8639.8	13.14
17IDE 003	10P200104	3.5	84.9	41.0	8899.5	11.47
17IDE 004	10P210121	4.0	88.0	40.3	7873.1	14.30
17IDE 005	12P512105	3.5	82.4	39.2	8872.8	12.62
17IDE 006	11P400498	5.0	82.0	36.7	7581.7	11.80
17IDE 007	10P200099	4.1	87.5	34.1	8579.9	12.20
17IDE 008	11P400572	4.8	87.0	39.1	7966.9	13.30
17IDE 009	11P400696	3.4	85.1	38.2	8096.1	12.09
17IDE 010	12P500115	4.3	85.7	39.9	7686.8	12.80
17IDE 011	CPRS	4.5	86.3	41.5	8155.0	7.30
17IDE 012	CCDR	4.1	84.3	39.4	8728.8	7.00
17IDE 013	FRNS	4.8	83.7	38.0	8683.8	7.71

2. Grain Quality of High-Protein Rice Lines.

In addition to high yield, our breeding goal is to have grain quality characteristics that are better or at least comparable to that of the cultivar Frontière marketed as Cahokia, our first commercial high-protein rice. Milling quality, percent chalk, grain appearance, grain shape, and homogeneity of the grain size and dimension are important components of rice grain quality. Because of the importance of the grain quality components in the market, advanced promising high-protein rice lines were evaluated for their grain quality as well as cooking quality (Tables 2 and 3).

Table 2. Grain quality index among advanced promising high-protein rice lines.

Entry	Pedigree	Whole	Total	Grain Shape Homogeneity	% Chalk	Gel Temp	Amylose Content
17IDV 001	13P500221	66.1	73.3	9.2	10	Intermediate-high	23.90
17IDV 002	13P500342	64.8	72.8	9.1	4	Intermediate-high	24.12
17IDV 003	13P500726	62.8	71.0	8.2	5	Intermediate-high	23.03
17IDV 004	13P500877	59.0	69.0	9.3	11	Intermediate-high	22.45
17IDV 005	13P500979	66.2	73.6	9.0	9	Intermediate-high	23.45
17IDV 006	14P601081	65.9	74.1	9.6	3	Intermediate-high	24.70
17IDV 007	14P601097	63.0	70.0	8.3	6	Intermediate	20.87
17IDV 008	14P601570	59.1	66.8	8.5	8	Intermediate-high	23.52
17IDV 009	14P602227	61.6	71.8	9.0	11	Intermediate	20.09
17IDV 010	14P603009	58.8	72.0	9.0	6	Intermediate	20.13
17IDV 011	CPRS	65.0	71.8	8.1	11	Intermediate-high	21.02
17IDV 012	CCDR	61.7	70.4	7.9	10	Intermediate-high	24.29

Table 3. Alkali rating to estimate the gelling temperature of high-protein rice lines compared with the medium-grain Bengal and long grains Chenier, Cypress, HDLG, and Dixiebelle.

Cell	Sample #	Seed # (Alkali Ratings)*						Average	Gel Temp†
		1	2	3	4	5	6		
A1	BNGL	5	6	6	6	6	6	5.0	Low
A2	CHNR	3	3	4	4	3	3	3.3	Intermediate-high
A3	HDLG	2	3	2	2	2	2	2.2	High
A4	DXBL	3	3	3	3	3	3	3.0	Intermediate-high
A5	CPRS	4	4	3	4	4	3	3.7	Intermediate-high
B1	16-ID-03	3	3	3	3	2	3	3.0	Intermediate-high
B2	16-ID-44	5	6	5	7	6	7	6.0	Low
B3	16-ID-77	6	6	5	6	6	7	6.0	Low
B4	16-IL-HP-01	6	5	6	5	7	7	6.0	Low
B5	16-IL-HP-02	6	1	4	7	6	7	5.2	Low
B6	16-ID-011	2	3	4	3	3	3	3.0	Intermediate-high
B7	16-ID-023	3	3	3	3	3	3	3.0	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. Replicated Head-Row Trials to Determine the Performance of Selected High-Protein Rice Lines, H. Caffey Rice Research Station, Crowley, LA.

Promising high-protein lines were tested in replicated head-row 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 replicated head-row trials of these promising lines.

Table 4. Performance of 100 high-protein lines in the second year replicated head-row 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	12R -5115pan3	0.121	1.68	10.5	**19**	12R -5222pan6	0.113	1.34	8.4
2	12R -5202pan1	0.110	1.72	10.8	**20**	12R -5568pan1	0.108	1.65	10.3
3	12R -5242pan6	0.110	1.65	10.3	**21**	12R -5619PAN3	0.113	1.76	11.0
4	12R -5621-PAN3	0.103	1.67	10.4	**22**	12R -5084pan8	0.108	1.78	11.1
5	12R -5022pan2	0.110	1.66	10.4	**23**	12R -5188PAN7	0.101	1.72	10.8
6	12R -5070pan1	0.110	1.69	10.6	**24**	12R -5198pan4	0.113	1.54	9.6
7	12R -5113pan1	0.106	1.51	9.4	**25**	12R -5243pan7	0.113	1.67	10.4
8	12R -5162-PAN6	0.120	1.59	9.9	**26**	12R -5245pan11	0.115	1.55	9.7
9	12R -5183pan9	0.110	1.77	11.1	**27**	12R -5249pan5	0.115	1.89	11.8
10	12R -5193pan4	0.113	1.65	10.3	**28**	12R -5603pan11	0.118	1.67	10.4
11	12R -5196pan3	0.103	1.54	9.6	**29**	12R -5614pan2	0.114	1.72	10.8
12	12R -5551pan13	0.111	1.45	9.1	**30**	12R -5616pan3	0.100	1.73	10.8
13	12R -5024pan5	0.113	1.8	11.3	**31**	12R -7637pan9	0.089	2.1	13.1
14	12R -5088pan3	0.100	1.67	10.4	**32**	12R -7775pan1	0.100	1.92	12.0
15	12R -5195pan5	0.107	1.76	11.0	**33**	12R -7786pan2	0.108	1.71	10.7
16	12R -5197pan1	0.111	1.77	11.1	**34**	12R -7791pan3	0.109	1.64	10.3
17	12R -5218pan13	0.112	1.73	10.8	**35**	12R -7797pan4	0.109	1.64	10.3
18	12R -5218pan6	0.116	1.56	9.8	**36**	12R -7799pan10	0.111	1.59	9.9

Continued.

Table 4. Continued.

No.	Genotype	Mass	N-Cont.	Crude Protein Content	No.	Genotype	Mass	N-Cont.	Crude Protein Content
37	12R -8204pan1	0.100	1.45	9.1	**69**	13R -0411pan7	0.090	1.93	12.1
38	12R -8506pan4	0.112	1.79	11.2	**70**	13R -1127pan3	0.100	1.92	12.0
39	12R -8535pan1	0.100	1.45	9.1	**71**	13R -1175pan12	0.125	1.83	11.4
40	12R -8579pan14	0.111	6.25	11.1	**72**	13R -1189pan9	0.110	2.2	13.8
41	12R -8601pan2	0.100	1.92	12.0	**73**	13R -1181pan6	0.121	1.82	11.4
42	12R -8609PAN6	0.109	6.25	9.8	**74**	13R -3277pan1	0.095	1.99	12.4
43	12R -8614pan5	0.114	6.25	11.1	**75**	13R -3287pan1	0.110	1.87	11.7
44	12R -8701pan1	0.123	6.25	11.3	**76**	13R -3440pan1	0.100	1.67	10.4
45	12R -8742pan16	0.090	1.93	12.1	**77**	13R -3588pan12	0.113	1.76	11.0
46	12R -8743pan10	0.100	1.92	12.0	**78**	13R -3589pan1	0.090	1.93	12.1
47	12R -8794pan5	0.095	1.99	12.4	**79**	13R -3598pan14	0.120	1.88	11.8
48	12R -8822pan2	0.094	1.83	11.4	**80**	13R -3599pan9	0.111	1.78	11.1
49	12R -9041pan9	0.122	2.02	12.6	**81**	13R -4026pan8	0.122	2.02	12.6
50	12R -9061pan4	0.110	6.25	10.6	**82**	13R -4184pan7	0.109	1.88	11.8
51	12R -9170	0.117	1.77	11.1	**83**	13R -4275pan10	0.095	1.99	12.4
52	12R -9210pan5	0.119	1.7	10.6	**84**	13R -4279pan9	0.090	1.93	12.1
53	12R -9242pan9	0.118	1.82	11.4	**85**	13R -4287pan1	0.110	2.2	13.8
54	12R -9427pan6	0.104	1.76	11.0	**86**	13R -4298pan9	0.110	1.92	12.0
55	12R -9570pan1	0.167	1.76	11.0	**87**	13R -5102pan5	0.100	1.92	12.0
56	12R -9180pan4	0.126	1.78	11.1	**88**	13R -5174pan1	0.109	1.92	12.0
57	12R -9296pan1	0.110	2.2	13.8	**89**	13R -5199pan5	0.100	1.78	11.1
58	12R -9554pan1	0.117	1.79	11.2	**90**	13R -5201pan7	0.090	1.93	12.1
59	12R -9135pan3	0.122	2.02	12.6	**91**	13R -5209pan9	0.117	1.64	10.3
60	12R -9577pan3	0.094	1.83	11.4	**92**	13R -5215pan9	0.128	1.9	11.9
61	12R -9151pan7	0.094	1.83	11.4	**93**	13R -5219pan5	0.122	2.02	12.6
62	12R -9202pan6	0.091	1.84	11.5	**94**	13R -5232pan5	0.080	2	12.5
63	12R -9298pan2	0.109	1.67	10.4	**95**	13R -6554pan3	0.122	1.99	12.4
64	12R -9548pan2	0.099	1.87	11.7	**96**	13R -6076pan10	0.120	2.1	13.1
65	12R -9581pan4	0.095	1.99	12.4	**97**	13R -6087pan1	0.122	2.02	12.6
66	13R -0601pan10	0.100	1.92	12.0	**98**	13R -6114pan2	0.095	1.99	12.4
67	13R -0215pan1	0.110	2.2	13.8	**99**	13R -6589pan9	0.094	1.83	11.4
68	13R -0256pan1	0.095	1.99	12.4	**100**	13R -6678pan3	0.102	1.74	10.9

4. New High-Protein Rice Lines.

Series of mutational experiments continue to generate new lines. In the 2017 planting season, tests were carried out for 130 promising lines that were previously selected from 1,500 newly developed high-protein lines (Table 5). In addition to high protein content, selections were emphasized also on grain quality aspects. The 10 most promising lines that have stable protein content will be advanced to the replicated head-row 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	14R -1008pan1	0.09	2.34	14.6	**43**	14R -2183pan7	0.12	1.98	12.4
2	14R -1021pan3	0.10	2.10	13.1	**44**	14R -2183pan8	0.10	2.10	13.1
3	14R -1024pan9	0.09	2.34	14.6	**45**	14R -2885pan1	0.10	2.10	13.1
4	14R -1025pan5	0.11	1.67	10.4	**46**	14R -2193pan3	0.10	2.30	14.4
5	14R -1026pan5	0.13	1.76	11.0	**47**	14R -2193pan4	0.12	1.54	9.6
6	14R -1043pan7	0.14	1.88	11.8	**48**	14R -2196pan5	0.10	1.76	11.0
7	14R -1066pan1	0.12	1.76	11.0	**49**	14R -2196pan3	0.12	1.64	10.3
8	14R -1067pan1	0.10	2.10	13.1	**50**	14R -2197pan1	0.12	1.75	10.9
9	14R -1069pan4	0.12	2.46	15.4	**51**	14R -2197pan4	0.15	1.87	11.7
10	14R -1078pan5	0.10	2.11	13.2	**52**	14R -2200pan9	0.14	1.56	9.8
11	14R -1079pan4	0.09	2.34	14.6	**53**	14R -2202pan2	0.12	1.32	8.3
12	14R -1081pan10	0.12	2.40	15.0	**54**	14R -2202pan3	0.13	1.65	10.3
13	14R -1082pan2	0.10	2.10	13.1	**55**	14R -2202pan6	0.11	1.98	12.4
14	14R -2001pan1	0.13	1.56	9.80	**56**	14R -2204pan12	0.09	1.90	11.9
15	14R -2071pan3	0.13	1.89	11.8	**57**	14R -2204pan2	0.12	1.56	9.8
16	14R -2073pan4	0.09	1.76	11.0	**58**	14R -2210pan6	0.13	1.87	11.7
17	14R -2075pan5	0.09	2.20	13.8	**59**	14R -2210pan10	0.13	1.89	11.8
18	14R -2081pan5	0.12	2.10	13.1	**60**	14R -2212pan1	0.12	1.9	11.9
19	14R -2082pan6	0.11	2.30	14.4	**61**	14R -2213pan2	0.13	1.89	11.8
20	14R -2084pan8	0.13	1.71	10.7	**62**	14R -2218pan11	0.12	1.65	10.3
21	14R -2087pan2	0.12	1.82	11.4	**63**	14R -2218pan13	0.11	1.87	11.7
22	14R -2088pan3	0.13	1.89	11.8	**64**	14R -2218pan6	0.11	1.35	8.4
23	14R -2091pan3	0.12	2.22	13.9	**65**	14R -2218pan6	0.13	1.89	11.8
24	14R -2093pan7	0.09	2.12	13.3	**66**	14R -2223pan9	0.10	1.89	11.8
25	14R -2094pan3	0.10	2.08	13.0	**67**	14R -2229pan15	0.09	2.10	13.1
26	14R -2094pan7	0.11	2.29	14.3	**68**	14R -2231pan12	0.11	2.00	12.5
27	14R -2098pan10	0.10	2.23	13.9	**69**	14R -2231pan2	0.09	2.43	15.2
27	14R -2098pan9	0.09	2.10	13.1	**70**	14R -2231pan5	0.10	2.00	12.5
29	14R -2109pan2	0.13	1.89	11.8	**71**	14R -2232pan11	0.07	2.10	13.1
30	14R -2113pan1	0.13	1.89	11.8	**72**	14R -2232pan5	0.09	2.40	15.0
31	14R -2115pan3	0.11	1.68	10.5	**73**	14R -2232pan9	0.09	2.33	14.6
32	14R -2130pan2	0.09	2.42	15.1	**74**	14R -2237pan7	0.10	1.65	10.3
33	14R -2135pan3	0.13	1.89	11.8	**75**	14R -2242pan5	0.12	2.00	12.5
34	14R -2151pan7	0.13	1.89	11.8	**76**	14R -2242pan6	0.11	1.68	10.5
35	14R -2158-PAN5	0.14	1.34	8.4	**77**	14R -2242pan9	0.13	1.90	11.9
36	14R -2161-PAN1	0.13	1.89	11.8	**78**	14R -2243pan16	0.11	1.93	12.1
37	14R -2162pan7	0.10	2.10	13.1	**79**	14R -2243pan7	0.12	1.65	10.3
38	14R -2172	0.09	2.34	14.6	**80**	14R -2245pan11	0.12	1.32	8.3
39	14R -2177pan10	0.13	1.86	11.6	**81**	14R -2245pan12	0.10	1.45	9.1
40	14R -2180pan1	0.11	1.72	10.8	**82**	14R -2249pan5	0.12	1.87	11.7
41	14R -2182pan8	0.12	1.87	11.7	**83**	14R -2264pan1	0.14	1.65	10.3
42	14R -2182pan9	0.09	2.34	14.6	**84**	14R -2296pan10	0.13	1.90	11.9

Continued.

Table 5. Continued.

No.	Genotype	Mass	N-Cont.	Crude Protein Content	No.	Genotype	Mass	N-Cont.	Crude Protein Content
85	14R -2296pan6	0.12	1.98	12.4	**108**	14R -2558pan1	0.12	1.78	11.1
86	14R -2296pan7	0.13	1.87	11.7	**109**	14R -2566pan7	0.11	1.89	11.8
87	14R -2298pan1	0.12	2.00	12.5	**110**	14R -2568pan1	0.13	1.76	11.0
88	14R -2298pan2	0.12	1.85	11.6	**111**	14R -2571pan2	0.12	2.30	14.4
89	14R -2298pan3	0.12	1.76	11.0	**112**	14R -2571pan3	0.10	1.43	8.9
90	14R -2326pan3	0.14	1.76	11.0	**113**	14R -2574pan2	0.12	2.00	12.5
91	14R -2328pan1	0.13	1.56	9.8	**114**	14R -2577pan1	0.12	1.90	11.9
92	14R -2403pan2	0.12	1.89	11.8	**115**	14R -2577pan3	0.09	2.40	15.0
93	14R -2408pan4	0.09	2.40	15.0	**116**	14R -2981pan4	0.13	1.78	11.1
94	14R -2417pan2	0.09	2.10	13.1	**117**	14R -2603pan11	0.13	1.50	9.4
95	14R -2427pan3	0.11	1.89	11.8	**118**	14R -2609PAN2	0.13	1.70	10.6
96	14R -2434pan2	0.13	1.87	11.7	**119**	14R -2611pan3	0.12	1.40	8.8
97	14R -2436pan3	0.09	2.20	13.8	**120**	14R -2613pan10	0.12	2.00	12.5
98	14R -2442pan3	0.10	1.98	12.4	**121**	14R -2614pan2	0.14	1.78	11.1
99	14R -2444pan3	0.10	1.40	8.8	**122**	14R -2616pan3	0.11	1.76	11.0
100	14R -2506pan7	0.12	2.03	12.7	**123**	14R -2619PAN3	0.12	1.76	11.0
101	14R -2641pan7	0.13	1.87	11.7	**124**	14R -2621PAN3	0.13	1.54	9.6
102	14R -2514pan12	0.09	2.23	13.9	**125**	14R -2623PAN1	0.12	1.82	11.4
103	14R -2536pan1	0.09	2.02	12.6	**126**	14R -2637PAN1	0.12	1.76	11.0
104	14R -2548pan2	0.09	2.30	14.4	**127**	14R -2638pan13	0.15	1.56	9.8
105	14R -2551pan13	0.09	2.40	15.0	**128**	14R -2638pan14	0.12	1.54	9.6
106	14R -2554pan1	0.14	1.65	10.3	**129**	14R -2641pan7	0.13	1.87	11.7
107	14R -2554pan2	0.12	1.87	11.7	**130**	14R -2641pan7	0.09	2.40	15.0

5. Development of Glyphosate (Roundup) Herbicide-Resistant Rice.

New herbicide-resistant lines continue to be developed using a new class of herbicide (glyphosate or Roundup). Glyphosate [N-(phosphonomethyl) glycine)] is an organophosphorus compound, specifically a phosphonate. It is a broad-spectrum systemic herbicide used to kill weeds, including annual broadleaf weeds and grasses, that compete with crops. In last year's planting season, herbicide screening was conducted using seedlings of M_2 rice mutants sprayed with glyphosate at the rate of 0.75 X, followed by 1.5 X in a three-week interval. Two weeks after the spray, the field was inspected for any survivors. New surviving plants were identified and transplanted to the greenhouse to produce seeds for further tests.

Among plant survivors identified from the field spray in the previous year, two candidates for the glyphosate- or Roundup-tolerant plants showed consistency under rigorous greenhouse tests. Further tests continue to confirm the trait. With this new type of herbicide-resistant rice, weeds, including red rice and red rice that acquired resistance to either NewPath or ACCase herbicides, can be eradicated rapidly from the rice production system. The availability of glyphosate-resistant rice is important to help maintain an effective weed control technology in the rice production system.

6. Development of Dual Magnum (S-metolachlor) Herbicide-Resistant Rice.

Another new class of herbicide, S-metolachlor, was used to screen the M_2 rice mutants in the field last season using one and a half strength (1.5X) of the lethal dose of S-Metolachlor. S-Metolachlor is an organic compound, a derivative of aniline, and is a member of the chloroacetanilide family of herbicides. 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. In total, 19 surviving plants have been identified and are currently undergoing rigorous tests for verification. Seven of the tested plants showed promise. A nondisclosure statement is currently being filed.

S-metolachlor herbicide provides selective control of seedling grasses and some dicot weeds, including pigweed, black nightshade, and yellow nutsedge. The herbicide is used in corn, soybeans, potatoes, white beans (*Phaseolus* spp.), peanuts, cotton, sunflower, cabbage, tobacco, and sugarcane. Rice plants are sensitive to S-metolachlor herbicide. The herbicide is typically applied pre-emergence or incorporated pre-plant; however, it sometimes can be applied post-emergence in the field. Its toxic action is to inhibit protein synthesis (probably many proteins) in shoot meristems and root tips in susceptible species. This protein inhibition hinders cell development, cell division, and cell enlargement causing cessation of shoot and root growth. It also affects leaf elongation, lipid synthesis, and leaf cuticle formation. The mode of lethality from this inhibition and growth arrest of shoots and roots results in plant tissue dehydration and a dead or permanently stunted plant.

The herbicide is taken up rapidly from the soil, at a maximum of about 4-5 days after emergence. Absorbed mostly by seedling shoot organs (coleoptiles, hypocotyls, cotyledons), S-metolachlor is also secondarily absorbed by seedling root organs (roots, radicles, coleorhizas). The herbicide translocates in the xylem. Translocation is sped up by adequate soil moisture, higher temperatures, higher winds, and lower air humidity. S-metolachlor accumulates in vegetative plant parts, but has its toxic action in shoot meristems (growing points).

Studies on S-metolachlor-tolerant plant species indicate that these plants are capable of rapidly metabolizing S-metolachlor molecules by joining a small plant protein to the herbicide rendering it inactive. This degradative metabolism is very similar to the way atrazine is detoxified in tolerant plants. With these new types of herbicide-resistant rice varieties, weeds (including red rice) that acquire resistance to NewPath or ACCase herbicides can be eradicated rapidly from the rice production system.

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 studies were conducted in Acadia at the HRCRRS, Vermilion, St. Landry, Franklin, Richland, Morehouse, and Evangeline parishes. Cultural management studies were conducted at the HRCRRS north and south units.

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:

Lounsberry Farm – Vermilion Parish
Charlie Fontenot – St. Landry Parish
John Owen & Tony Amos– Franklin Parish
Woodsland Plantation and Ashley Dixon – Richland Parish
Vic Jordan – Morehouse Parish
LaHaye Farm – Evangeline 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^o angle) and 5 = lodged to ground (90^o 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	Dow AgroSciences, LLC
Command	clomazone	3ME	FMC Corp.
Duet	propanil + bensulfuron	4 lb + 0.48 oz	RiceCo LLC
Grandstand R	triclopyr	3 lb	Dow AgroSciences, LLC
Grasp	penoxsulam	SC2	Dow AgroSciences, LLC
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
Roundup Weatherman	glyphosate	4 lb	Monsanto
Stam M4	propanil	4 lb	Dow 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			
Dithane DF	mancozeb	75% DF	Dow AgroSciences, 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.

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

Experiment number	17-CM-01
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall 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	1.65
pH	7.40
Extractable nutrients ppm	Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5
Crop/Variety	Rice / see data sheet
Planting method/date	Drill seeded / March 13
Seeding rate/depth	33 seeds/ft^2 / .75 inch
Emergence date	March 26
Harvest date	Aug. 2
Ratoon Harvest date	Nov. 6
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15 90 lb N/A 46-0-0, Aug. 3
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	Oct. 24
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 1. Determine the 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	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle					
Rating Date						8/2/2017	8/2/2017	8/2/2017	11/6/2017	11/6/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	In	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	99.5 b	86.5 b	29.0 d	44.3 bcd	2464 f	41.2 a	1789 a	4254 f
2	UREA	30	4-5 leaf	99.8 b	86.8 b	30.8 cd	44.7 ab	4320 e	40.1 a	1789 a	6109 e
3	UREA	60	4-5 leaf	101.0 a	88.0 a	32.5 bc	44.9 a	4871 e	37.0 a	1453 a	6324 e
4	UREA	90	4-5 leaf	101.0 a	88.0 a	33.0 ab	44.7 ab	5934 d	39.9 a	1660 a	7594 cd
5	UREA	120	4-5 leaf	101.0 a	88.0 a	33.3 ab	44.4 bcd	6129 cd	39.3 a	1593 a	7722 cd
6	UREA	150	4-5 leaf	101.0 a	88.0 a	34.8 a	44.5 abc	7558 ab	40.7 a	1669 a	9227 ab
7	UREA	180	4-5 leaf	101.0 a	88.0 a	34.8 a	44.1 cd	7957 ab	42.6 a	1806 a	9763 ab
8	UREA	210	4-5 leaf	101.0 a	88.0 a	35.0 a	44.0 d	7996 a	41.9 a	1819 a	9814 a
9	UREA	96	4-5 leaf	101.0 a	88.0 a	34.8 a	44.1 cd	6195 cd	39.3 a	1550 a	7745 cd
	SBNR-UREA	0	PD								
10	UREA	75	4-5 leaf	101.0 a	88.0 a	32.3 bc	44.6 abc	5232 de	31.4 a	1603 a	6835 de
	UREA	45	PD								
11	UREA	105	4-5 leaf	101.0 a	88.0 a	34.8 a	44.5 a-d	7302 ab	42.0 a	1780 a	9082 ab
	UREA	45	PD								
12	UREA	135	4-5 leaf	101.0 a	88.0 a	34.0 ab	44.3 bcd	6998 bc	40.2 a	1619 a	8617 bc
	UREA	45	PD								
LSD P=.05				0.47	0.47	2.09	0.51	966.8	9.411	345.1	1157.7
Standard Deviation				0.33	0.33	1.45	0.35	672.0	6.542	239.9	804.7
CV				0.32	0.37	4.37	0.79	11.05	16.51	14.3	10.37
Replicate F				0.716	0.716	4.193	0.240	5.950	3.208	4.524	5.404
Replicate Prob(F)				0.5495	0.5495	0.0128	0.8675	0.0023	0.0356	0.0092	0.0039
Treatment F				10.846	10.846	6.639	2.292	24.240	0.845	0.980	17.314
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0324	0.0001	0.5985	0.4830	0.0001

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

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

Experiment number ....: 17-CM-02

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.40
- **Extractable nutrients** ppm ....: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 2
- **Ratoon Harvest date** ....: Nov. 6

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15
90 lb N/A 46-0-0, Aug. 3

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
2 qt/A glyphosate, March 10
1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
4 oz/A League + 3 oz/A propanil, May 2
20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 2. Determine the agronomic response of drill-seeded Thad 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						7/24/2017	8/2/2017	8/2/2017	11/6/2017	11/6/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	In	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	100.0 f	87.0 f	29.5 D	15.4 b	1766 f	45.3 a	2984 a	4749 e
2	UREA	30	4-5 leaf	100.3 f	87.3 f	30.0 D	33.9 a	3151 ef	45.6 a	3226 a	6377 d
3	UREA	60	4-5 leaf	101.5 de	88.5 de	32.5 C	46.1 a	4873 cd	45.6 a	3107 a	7980 c
4	UREA	90	4-5 leaf	101.5 de	88.5 de	33.5 Bc	45.4 a	5659 bc	45.4 a	2964 a	8623 bc
5	UREA	120	4-5 leaf	102.0 cd	89.0 cd	34.5 Ab	45.6 a	5652 bc	46.0 a	2838 a	8490 bc
6	UREA	150	4-5 leaf	102.3 bc	89.3 bc	33.8 Abc	45.4 a	7097 ab	45.7 a	2782 a	9879 ab
7	UREA	180	4-5 leaf	102.8 ab	89.8 ab	34.5 Ab	45.6 a	7494 a	45.3 a	2815 a	10308 a
8	UREA	210	4-5 leaf	103.0 a	90.0 a	35.3 A	45.4 a	8036 a	45.7 a	3101 a	11136 a
9	UREA	45	4-5 leaf	101.3 e	88.3 e	32.3 C	45.4 a	3967 de	45.5 a	3223 a	7190 cd
	UREA	45	PD								
10	UREA	75	4-5 leaf	101.8 cde	88.8 cde	33.8 Abc	45.5 a	5148 cd	45.6 a	2678 a	7826 cd
	UREA	45	PD								
11	UREA	105	4-5 leaf	102.0 cd	89.0 cd	34.8 Ab	45.2 a	5637 bc	45.8 a	3089 a	8726 bc
	UREA	45	PD								
12	UREA	135	4-5 leaf	101.8 cde	88.8 cde	35.0 Ab	45.3 a	5994 bc	43.1 a	2563 a	8557 bc
	UREA	45	PD								
LSD P=.05				0.70	0.70	1.66	13.10	1486.4	2.370	533.5	1565.3
Standard Deviation				0.49	0.49	1.15	9.08	1033.2	1.647	370.8	1088.1
CV				0.48	0.55	3.46	21.62	19.23	3.63	12.58	13.08
Replicate F				0.936	0.936	9.835	1.367	6.927	1.432	31.323	18.981
Replicate Prob(F)				0.4342	0.4342	0.0001	0.2711	0.0010	0.2512	0.0001	0.0001
Treatment F				13.085	13.085	10.763	3.940	12.058	0.841	1.324	10.080
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0013	0.0001	0.6027	0.2551	0.0001

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

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

Experiment number ....: 17-CM-03

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.40
- **Extractable nutrients** ppm ....: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 2
- **Ratoon Harvest date** ....: Nov. 6

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15
90 lb N/A 46-0-0, Aug. 3

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
  2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
  2 qt/A glyphosate, March 10
  1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
  3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
  3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
  4 oz/A League + 3 oz/A propanil, May 2
  20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 3. Determine the 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	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle					
Rating Date						7/31/2017	8/2/2017	8/2/2017	11/6/2017	11/6/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	100.0 d	87.0 d	27.8 e	45.6 abc	3599 h	43.8 d	2291 c-f	5890 h
2	UREA	30	4-5 leaf	100.8 c	87.8 c	30.8 d	45.9 ab	5661 g	44.0 cd	2644 ab	8305 g
3	UREA	60	4-5 leaf	100.8 c	87.8 c	32.0 cd	46.2 a	6585 f	44.3 bcd	2483 a-e	9068 f
4	UREA	90	4-5 leaf	101.5 b	88.5 b	33.8 bc	46.0 ab	7649 e	45.1 a	2732 a	10382 de
5	UREA	120	4-5 leaf	102.5 a	89.5 a	36.3 ab	45.5 bc	8970 abc	44.4 bc	2576 abc	11546 a
6	UREA	150	4-5 leaf	101.8 b	88.8 b	36.5 ab	45.3 c	8887 abc	44.8 ab	2262 def	11149 abc
7	UREA	180	4-5 leaf	102.5 a	89.5 a	37.0 a	45.2 c	9267 ab	44.8 ab	2212 ef	11479 ab
8	UREA	210	4-5 leaf	103.0 a	90.0 a	36.3 ab	45.1 c	9411 a	45.0 a	2086 f	11497 ab
9	UREA	96	4-5 leaf	101.8 b	88.8 b	33.8 bc	45.9 ab	7914 de	44.3 bcd	2525 a-d	10439 cde
	SBNR-UREA	0	PD								
10	UREA	75	4-5 leaf	101.8 b	88.8 b	34.5 abc	46.0 ab	7454 e	44.6 ab	2527 a-d	9981 e
	UREA	45	PD								
11	UREA	105	4-5 leaf	101.8 b	88.8 b	35.5 ab	45.2 c	8678 bc	44.7 ab	2634 ab	11312 ab
	UREA	45	PD								
12	UREA	135	4-5 leaf	102.5 a	89.5 a	34.8 abc	45.6 abc	8377 cd	44.6 ab	2392 b-e	10768 bcd
	UREA	45	PD								
LSD P=.05				0.74	0.74	2.90	0.58	605.8	0.562	299.8	737.5
Standard Deviation				0.51	0.51	2.02	0.40	421.1	0.390	208.4	512.6
CV				0.51	0.58	5.92	0.89	5.47	0.88	8.52	5.05
Replicate F				4.714	4.714	4.123	0.894	15.788	3.460	6.509	17.348
Replicate Prob(F)				0.0076	0.0076	0.0137	0.4547	0.0001	0.0273	0.0014	0.0001
Treatment F				11.457	11.457	7.355	3.403	65.912	4.045	3.627	43.101
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0031	0.0001	0.0009	0.0020	0.0001

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

Determine the Agronomic Response of Drill-Seeded CL272 to Nitrogen Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-04

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.40
- **Extractable nutrients** ppm ....: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 2
- **Ratoon Harvest date** ....: Nov. 6

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15
90 lb N/A 46-0-0, Aug. 3

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
  2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
  2 qt/A glyphosate, March 10
  1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
  3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
  3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
  4 oz/A League + 3 oz/A propanil, May 2
  20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 4. Determine the agronomic response of drill-seeded CL272 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						7/31/2017	8/2/2017	8/2/2017	11/6/2017	11/6/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	104.0 de	91.0 de	31.0 f	45.8 bcd	3617 g	44.4 cd	2820 a	6437 h
2	UREA	30	4-5 leaf	103.8 e	90.8 e	32.8 ef	46.0 abc	5240 f	44.5 bcd	2927 a	8168 g
3	UREA	60	4-5 leaf	104.0 de	91.0 de	33.5 de	46.1 ab	6442 e	44.7 bcd	2798 a	9240 f
4	UREA	90	4-5 leaf	104.3 cde	91.3 cde	34.5 cde	45.8 bcd	7259 cd	44.2 d	2815 a	10074 de
5	UREA	120	4-5 leaf	104.0 de	91.0 de	35.5 bcd	46.0 abc	7634 bc	45.0 ab	3036 a	10670 cd
6	UREA	150	4-5 leaf	105.0 ab	92.0 ab	36.0 bc	45.4 def	8618 a	45.5 a	2926 a	11545 ab
7	UREA	180	4-5 leaf	105.3 a	92.3 a	38.3 a	45.4 ef	8657 a	44.8 bc	3016 a	11673 ab
8	UREA	210	4-5 leaf	105.0 ab	92.0 ab	37.3 ab	45.3 f	8667 a	45.0 ab	3014 a	11681 a
9	UREA	45	4-5 leaf	104.0 de	91.0 de	33.0 ef	46.4 a	5623 f	44.6 bcd	2799 a	8422 g
	UREA	45	PD								
10	UREA	75	4-5 leaf	104.3 cde	91.3 cde	36.0 bc	46.0 bc	6890 de	44.7 bc	2781 a	9671 ef
	UREA	45	PD								
11	UREA	105	4-5 leaf	104.8 abc	91.8 abc	36.3 abc	45.8 b-e	7626 bc	44.8 bc	2826 a	10452 cde
	UREA	45	PD								
12	UREA	135	4-5 leaf	104.5 bcd	91.5 bcd	35.5 bcd	45.6 c-f	8020 ab	45.0 b	2862 a	10883 bc
	UREA	45	PD								
LSD P=.05				0.53	0.53	2.20	0.42	688.6	0.481	291.3	797.1
Standard Deviation				0.37	0.37	1.53	0.29	478.6	0.334	202.5	554.1
CV				0.35	0.4	4.38	0.63	6.81	0.75	7.02	5.59
Replicate F				10.290	10.290	0.249	1.337	2.676	5.519	3.572	3.117
Replicate Prob(F)				0.0001	0.0001	0.8613	0.2792	0.0632	0.0035	0.0242	0.0392
Treatment F				7.120	7.120	7.337	5.125	42.535	3.807	0.877	33.841
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	0.0014	0.5703	0.0001

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

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

Experiment number	17-CM-05
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall 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	1.65
pH	7.40
Extractable nutrients ppm	Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5
Crop/Variety	Rice / see data sheet
Planting method/date	Drill seeded / March 13
Seeding rate/depth	33 seeds/ft^2 / .75 inch
Emergence date	March 26
Harvest date	Aug. 2
Ratoon Harvest date	Nov. 6
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15 90 lb N/A 46-0-0, Aug. 3
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	Oct. 24
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 5. Determine the agronomic response of drill-seeded Diamond 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						8/2/2017	8/2/2017	8/2/2017	11/6/2017	11/6/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	98.0 f	85.0 f	28.5 g	33.9 a	2337 e	47.0 a	3234 a	5571 f
2	UREA	30	4-5 leaf	100.3 e	87.3 e	30.8 f	33.6 a	3510 d	46.0 a	3099 a	6608 ef
3	UREA	60	4-5 leaf	100.8 de	87.8 de	33.5 de	44.2 a	6248 c	46.0 a	2836 a	9085 cd
4	UREA	90	4-5 leaf	101.5 cd	88.5 cd	36.3 bc	44.1 a	7494 ab	46.3 a	2973 a	10467 ab
5	UREA	120	4-5 leaf	101.5 cd	88.5 cd	36.8 b	44.6 a	7372 ab	46.0 a	2631 a	10002 abc
6	UREA	150	4-5 leaf	102.3 bc	89.3 bc	37.3 b	44.1 a	7328 ab	45.2 a	2374 a	9701 a-d
7	UREA	180	4-5 leaf	103.3 a	90.3 a	37.8 ab	43.8 a	7524 ab	46.0 a	2931 a	10455 ab
8	UREA	210	4-5 leaf	103.0 ab	90.0 ab	39.3 a	44.2 a	8034 a	46.2 a	2755 a	10789 a
9	UREA	45	4-5 leaf	100.5 e	87.5 e	32.8 e	44.9 a	4359 d	46.3 a	2624 a	6983 e
	UREA	45	PD								
10	UREA	75	4-5 leaf	100.8 de	87.8 de	34.8 cd	43.8 a	6026 c	46.3 a	2497 a	8522 d
	UREA	45	PD								
11	UREA	105	4-5 leaf	101.8 c	88.8 c	37.0 b	43.9 a	7621 ab	45.5 a	2539 a	10160 abc
	UREA	45	PD								
12	UREA	135	4-5 leaf	102.0 c	89.0 c	36.8 b	44.3 a	6925 bc	45.4 a	2521 a	9445 bcd
	UREA	45	PD								
LSD P=.05				0.82	0.82	1.83	13.41	969.8	1.010	682.0	1213.1
Standard Deviation				0.57	0.57	1.27	9.32	674.1	0.702	474.0	843.3
CV				0.56	0.65	3.63	21.97	10.82	1.53	17.23	9.39
Replicate F				17.140	17.140	8.885	0.695	6.181	0.795	8.285	12.855
Replicate Prob(F)				0.0001	0.0001	0.0002	0.5617	0.0019	0.5057	0.0003	0.0001
Treatment F				24.116	24.116	24.648	0.763	30.047	1.869	1.260	16.512
Treatment Prob(F)				0.0001	0.0001	0.0001	0.6722	0.0001	0.0813	0.2897	0.0001

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

Determine the Agronomic Response of Drill-Seeded PLV01 to Nitrogen Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-06

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.40
- **Extractable nutrients** ppm ....: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 2
- **Ratoon Harvest date** ....: Nov. 6

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15
90 lb N/A 46-0-0, Aug. 3

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
2 qt/A glyphosate, March 10
1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
4 oz/A League + 3 oz/A propanil, May 2
20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 6. Determine the agronomic response of drill-seeded PLV01 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						7/31/2017	7/31/2017	7/31/2017	11/6/2017	11/6/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	107.8 cd	94.8 cd	29.8 f	45.0 ef	2950 f	37.83 e	1662 f	4613 f
2	UREA	30	4-5 leaf	107.3 d	94.3 d	32.0 e	45.4 b-e	4047 e	38.20 de	1767 ef	5813 e
3	UREA	60	4-5 leaf	107.0 d	94.0 d	33.5 de	45.6 a-d	4749 d	38.35 cde	1792 def	6542 d
4	UREA	90	4-5 leaf	107.5 cd	94.5 cd	33.8 de	45.7 ab	5834 c	39.40 abc	1910 b-e	7744 c
5	UREA	120	4-5 leaf	108.3 bc	95.3 bc	36.5 ab	45.3 cde	7010 b	40.23 a	2194 a	9203 ab
6	UREA	150	4-5 leaf	108.8 ab	95.8 ab	35.8 abc	44.7 fg	6987 b	39.93 ab	2104 ab	9091 ab
7	UREA	180	4-5 leaf	109.0 ab	96.0 ab	37.3 a	45.0 ef	7567 a	39.83 ab	2082 abc	9650 a
8	UREA	210	4-5 leaf	109.3 a	96.3 a	36.8 a	44.4 g	7516 a	39.58 ab	1980 bcd	9496 a
9	UREA	45	4-5 leaf	107.5 cd	94.5 cd	33.8 de	45.8 a	4412 de	38.20 de	1760 ef	6172 de
	UREA	45	PD								
10	UREA	75	4-5 leaf	107.8 cd	94.8 cd	34.3 cd	45.7 abc	5442 c	39.00 b-e	1962 b-e	7404 c
	UREA	45	PD								
11	UREA	105	4-5 leaf	108.3 bc	95.3 bc	34.8 bcd	45.2 de	5823 c	39.28 a-d	1875 cde	7698 c
	UREA	45	PD								
12	UREA	135	4-5 leaf	108.3 bc	95.3 bc	34.8 bcd	45.2 e	6785 b	39.55 ab	2047 abc	8831 b
	UREA	45	PD								
LSD P=.05				0.92	0.92	1.80	0.41	445.9	1.196	208.9	580.0
Standard Deviation				0.64	0.64	1.25	0.29	310.0	0.831	145.2	403.1
CV				0.59	0.68	3.64	0.63	5.38	2.13	7.53	5.24
Replicate F				6.816	6.816	1.887	2.335	4.325	1.798	4.003	4.876
Replicate Prob(F)				0.0011	0.0011	0.1510	0.0919	0.0112	0.1668	0.0155	0.0065
Treatment F				4.840	4.840	11.382	9.122	91.779	3.596	4.990	65.683
Treatment Prob(F)				0.0002	0.0002	0.0001	0.0001	0.0001	0.0021	0.0002	0.0001

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

Determine the Agronomic Response of Drill-Seeded Aura 115 to Nitrogen Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number	17-CM-09
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall 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	1.65
pH	7.40
Extractable nutrients ppm	Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5
Crop/Variety	Rice / see data sheet
Planting method/date	Drill seeded / March 13
Seeding rate/depth	33 seeds/ft^2 / .75 inch
Emergence date	March 26
Harvest date	Aug. 2
Ratoon Harvest date	Nov. 6
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15 90 lb N/A 46-0-0, Aug. 3
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	Oct. 24
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 7. Determine the agronomic response of drill-seeded Aura 115 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						7/31/2017	8/2/2017	8/2/2017	11/6/2017	11/6/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	97.0 d	84.0 d	31.8 d	46.7 abc	4969 h	41.3 e	2749 d	7718 g
2	UREA	30	4-5 leaf	97.0 d	84.0 d	34.0 c	47.3 a	6728 g	41.7 de	3047 bc	9775 f
3	UREA	60	4-5 leaf	97.5 d	84.5 d	36.0 abc	46.8 ab	7793 f	42.7 ab	3105 bc	10898 de
4	UREA	90	4-5 leaf	97.8 cd	84.8 cd	35.3 bc	45.9 b-e	8684 de	41.9 cde	3158 bc	11842 cd
5	UREA	120	4-5 leaf	98.8 b	85.8 b	37.5 a	46.1 bcd	9849 bc	42.5 abc	3256 abc	13105 ab
6	UREA	150	4-5 leaf	98.8 b	85.8 b	36.8 ab	45.8 cde	9978 abc	42.3 a-d	3177 bc	13155 ab
7	UREA	180	4-5 leaf	99.8 a	86.8 a	37.3 ab	44.9 e	10612 ab	42.9 a	3480 a	14093 a
8	UREA	210	4-5 leaf	99.8 a	86.8 a	37.0 ab	45.0 e	10725 a	41.9 cde	3309 ab	14034 a
9	UREA	45	4-5 leaf	97.3 d	84.3 d	35.3 bc	46.5 abc	7448 fg	42.0 cde	3001 cd	10449 ef
	UREA	45	PD								
10	UREA	75	4-5 leaf	97.5 d	84.5 d	36.0 abc	46.9 ab	8140 ef	42.0 bcd	3017 cd	11157 de
	UREA	45	PD								
11	UREA	105	4-5 leaf	98.5 bc	85.5 bc	35.8 abc	45.3 de	9477 cd	42.2 bcd	3039 bc	12516 bc
	UREA	45	PD								
12	UREA	135	4-5 leaf	98.5 bc	85.5 bc	37.3 ab	45.4 de	9718 c	42.4 abc	3150 bc	12868 b
	UREA	45	PD								
LSD P=.05				0.85	0.85	2.17	1.04	839.5	0.668	288.6	988.7
Standard Deviation				0.59	0.59	1.51	0.72	583.6	0.464	200.6	687.2
CV				0.6	0.69	4.21	1.57	6.73	1.1	6.42	5.82
Replicate F				2.870	2.870	0.155	2.727	2.843	1.177	53.667	12.733
Replicate Prob(F)				0.0512	0.0512	0.9254	0.0598	0.0527	0.3333	0.0001	0.0001
Treatment F				11.000	11.000	4.751	4.877	35.087	3.625	3.288	30.228
Treatment Prob(F)				0.0001	0.0001	0.0002	0.0002	0.0001	0.0020	0.0039	0.0001

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

Determine the Agronomic Response of Drill-Seeded CL172 to Nitrogen Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-10

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.40
- **Extractable nutrients** ppm ....: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 2
- **Ratoon Harvest date** ....: Nov. 6

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15
90 lb N/A 46-0-0, Aug. 3

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
  2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
  2 qt/A glyphosate, March 10
  1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
  3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
  3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
  4 oz/A League + 3 oz/A propanil, May 2
  20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 8. Determine the 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	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle					
Rating Date						8/2/2017	8/2/2017	8/2/2017	11/6/2017	11/6/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	In	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf								
2	UREA	30	4-5 leaf	101.0 d	88.0 d	29.0 a	45.5 a	4401 d	44.7 d	2666 c	7067 cd
3	UREA	60	4-5 leaf	101.3 d	88.3 d	31.0 a	45.7 a	5438 cd	44.8 cd	2712 c	8151 c
4	UREA	90	4-5 leaf	102.0 cd	89.0 cd	32.3 a	45.3 a	6959 ab	45.2 bcd	2787 bc	9746 b
5	UREA	120	4-5 leaf	103.0 abc	90.0 abc	34.8 a	45.6 a	7740 a	45.0 bcd	2816 bc	10556 ab
6	UREA	150	4-5 leaf	104.3 a	91.3 a	34.0 a	45.2 a	7761 a	45.4 ab	2998 ab	10758 ab
7	UREA	180	4-5 leaf	104.3 a	91.3 a	34.3 a	44.7 a	8165 a	45.4 ab	3152 a	11317 a
8	UREA	210	4-5 leaf	104.5 a	91.5 a	34.5 a	44.3 a	7940 a	45.8 a	3157 a	11096 ab
9	UREA	96	4-5 leaf	102.3 bcd	89.3 bcd	37.5 a	45.1 a	7165 a	45.1 bcd	2696 c	9862 b
	SBNR-UREA	0	PD								
10	UREA	75	4-5 leaf	102.3 bcd	89.3 bcd	41.0 a	44.6 a	5782 bc	45.0 bcd	2580 c	8362 c
	UREA	45	PD								
11	UREA	105	4-5 leaf	103.8 ab	90.8 ab	34.5 a	44.9 a	7095 a	45.3 abc	2717 c	9813 b
	UREA	45	PD								
12	UREA	135	4-5 leaf	103.3 abc	90.3 abc	34.8 a	45.2 a	8142 a	45.5 ab	2788 bc	10930 ab
	UREA	45	PD								
LSD P=.05				1.52	1.52	7.78	9.25	1262.4	0.570	257.3	1374.0
Standard Deviation				1.06	1.06	5.41	6.43	877.5	0.396	178.9	955.1
CV				1.03	1.18	16.02	14.58	13.21	0.88	6.36	10.1
Replicate F				8.412	8.412	0.603	1.078	0.263	3.325	11.420	1.117
Replicate Prob(F)				0.0003	0.0003	0.6178	0.3720	0.8515	0.0315	0.0001	0.3563
Treatment F				8.851	8.851	1.761	1.127	13.693	4.934	4.523	13.458
Treatment Prob(F)				0.0001	0.0001	0.1027	0.3730	0.0001	0.0002	0.0004	0.0001

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

Determine the Agronomic Response of Drill-Seeded XL760 to Nitrogen Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-07

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.40
- **Extractable nutrients** ppm ....: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 10 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 2
- **Ratoon Harvest date** ....: Nov. 6

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 15
90 lb N/A 46-0-0, Aug. 3

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
  2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
  2 qt/A glyphosate, March 10
  1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
  3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
  3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
  4 oz/A League + 3 oz/A propanil, May 2
  20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: No blanket applications
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 9. Determine the agronomic response of drill-seeded XL760 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						8/2/2017	8/2/2017	8/2/2017	11/6/2017	11/6/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC + RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	97.0 d	84.0 d	32.8 d	42.1 a	4845 d	43.1 a	3569 a	8414 d
2	UREA	60	4-5 leaf	100.5 c	87.5 c	37.3 bc	42.3 a	7833 c	42.8 a	2805 a	10639 c
3	UREA	90	4-5 leaf	101.5 bc	88.5 bc	39.3 abc	41.9 a	8995 bc	42.7 a	2909 a	11905 bc
4	UREA	120	4-5 leaf	102.8 ab	89.8 ab	38.8 bc	42.5 a	10318 a	41.8 a	2665 a	12983 ab
5	UREA	150	4-5 leaf	102.8 ab	89.8 ab	41.5 a	41.7 a	10271 a	42.7 a	2816 a	13086 ab
6	UREA	180	4-5 leaf	103.0 a	90.0 a	41.8 a	41.9 a	10388 a	42.9 a	3467 a	13855 a
7	UREA	75	4-5 leaf	100.8 c	87.8 c	36.8 c	42.3 a	8381 c	43.2 a	3639 a	12020 bc
	UREA	45	50% HD								
8	UREA	105	4-5 leaf	102.3 ab	89.3 ab	39.8 ab	42.1 a	10362 a	43.0 a	3175 a	13537 ab
	UREA	45	50% HD								
9	UREA	135	4-5 leaf	102.8 ab	89.8 ab	41.5 a	42.4 a	10140 ab	43.0 a	2969 a	13110 ab
	UREA	45	50% HD								
LSD P=.05				1.34	1.34	2.57	0.58	1186.3	0.821	1210.5	1666.6
Standard Deviation				0.92	0.92	1.76	0.40	812.9	0.563	829.4	1142.0
CV				0.9	1.03	4.54	0.95	8.97	1.32	26.64	9.38
Replicate F				3.039	3.039	2.658	1.052	4.760	1.895	0.535	4.151
Replicate Prob(F)				0.0485	0.0485	0.0712	0.3877	0.0096	0.1574	0.6624	0.0167
Treatment F				17.486	17.486	10.888	2.011	20.742	2.183	0.771	9.061
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0888	0.0001	0.0666	0.6318	0.0001

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

Determine the Agronomic Response of Drill-Seeded Gemini 214 CL to Nitrogen Fertilizer Rate and Time of Application – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-08

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.40
- **Extractable nutrients** ppm ....: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 10 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 2
- **Ratoon Harvest date** ....: Nov. 6

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 15
90 lb N/A 46-0-0, Aug. 3

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
2 qt/A glyphosate, March 10
1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
4 oz/A League + 3 oz/A propanil, May 2
20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: No blanket applications
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 10. Determine the agronomic response of drill-seeded Gemini 214 CL 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						8/2/2017	8/2/2017	8/2/2017	11/6/2017	11/6/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	In	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC + RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	97.0 d	84.0 d	34.5 D	42.7 a	3887 d	42.9 a	4133 a	8020 c
2	UREA	60	4-5 leaf	100.0 c	87.0 c	35.8 D	42.3 a	6944 c	42.8 a	3319 a	10262 b
3	UREA	90	4-5 leaf	100.8 bc	87.8 bc	37.8 Bcd	42.6 a	9370 b	43.3 a	3607 a	12977 a
4	UREA	120	4-5 leaf	101.5 ab	88.5 ab	40.0 Abc	42.6 a	10456 ab	43.2 a	3377 a	13833 a
5	UREA	150	4-5 leaf	102.5 a	89.5 a	41.0 Ab	42.5 a	10499 ab	42.8 a	3190 a	13689 a
6	UREA	180	4-5 leaf	102.0 a	89.0 a	42.5 A	42.6 a	11375 a	42.9 a	3082 a	14457 a
7	UREA	75	4-5 leaf	100.5 bc	87.5 bc	37.3 Cd	42.6 a	7171 c	42.9 a	3567 a	10738 b
	UREA	45	50% HD								
8	UREA	105	4-5 leaf	101.5 ab	88.5 ab	41.5 A	43.0 a	10716 ab	43.1 a	3617 a	14333 a
	UREA	45	50% HD								
9	UREA	135	4-5 leaf	102.0 a	89.0 a	41.3 A	42.9 a	10393 ab	42.8 a	3739 a	14131 a
	UREA	45	50% HD								
LSD P=.05				1.19	1.19	3.37	0.40	1462.5	0.438	800.8	1668.2
Standard Deviation				0.82	0.82	2.31	0.27	1002.2	0.300	548.7	1143.1
CV				0.81	0.93	5.92	0.64	11.16	0.7	15.61	9.15
Replicate F				3.375	3.375	0.977	0.768	2.231	3.269	6.076	5.915
Replicate Prob(F)				0.0349	0.0349	0.4201	0.5232	0.1106	0.0387	0.0032	0.0036
Treatment F				16.417	16.417	5.982	2.114	24.268	1.617	1.336	15.861
Treatment Prob(F)				0.0001	0.0001	0.0003	0.0748	0.0001	0.1723	0.2739	0.0001

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

Determine the Agronomic Response of Drill-Seeded Titan to Nitrogen Fertilizer Rate and Time of Application – Vermilion Parish

Experiment number ....: 17-VP-01

Site and design ....:
- **Location/Cooperator** ....: Vermilion Parish/Kent Lounsberry
- **Tillage type** ....: Conventional
- **Experimental design** ....: Randomized complete block
- **Number of reps** ....: 4
- **Plot size** ....: 4.66 x 16 ft
- **Row width/rows per plot** ....: 8 in / 7

Soil type ....: Kaplan silt loam
- **% organic matter** ....: 1.53
- **pH** ....: 5.1
- **Extractable nutrients** ppm ....: Ca-531; Cu-1.8; Mg-99; P-11; K-55.65; Na-45; S-4.0; Zn-3.6

Crop/Variety ....: Rice / See data sheet
- **Planting method/date** ....: Drill seeded / March 8
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .5 inch
- **Emergence date** ....: March 22
- **Harvest date** ....: July 27
- **Ratoon harvest date** ....: Oct. 31

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-20-30, March 16
90 lb N/A 46-0-0, Aug. 3

Water management ....:
- **Flush** ....: March 23
- **Flood** ....: April 22
- **Drain** ....: July 14
- **Ratoon flood** ....: Aug. 4
- **Ratoon drain** ....: Oct. 16

Pest management ....:
- **Herbicides** ....: 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
2 qt/A RiceBeaux + 1.5 qt/A propanil + .5 oz/A Permit + .75 oz/A Londax, April 21
- **Insecticides** ....: None
- **Fungicides** ....: 19 oz/A Stratego, June 9

Table 11. Determine the agronomic response of drill-seeded Titan to nitrogen fertilizer rate and time of application. Vermilion Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle					
Rating Date						7/27/2017	7/27/2017	7/27/2017	10/31/2017	10/31/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	99.0 f	85.0 f	30.5 e	47.9 bc	4999 e	42.80 a	2777 a	7776 f
2	UREA	30	4-5 leaf	99.0 f	85.0 f	33.0 d	48.6 a	6430 d	43.70 a	2686 a	9116 e
3	UREA	60	4-5 leaf	99.5 ef	85.5 ef	36.0 c	48.6 a	7852 c	43.03 a	2459 a	10311 d
4	UREA	90	4-5 leaf	100.3 de	86.3 de	36.5 bc	49.0 a	9226 ab	43.88 a	2620 a	11847 ab
5	UREA	120	4-5 leaf	101.3 bcd	87.3 bcd	38.5 a	48.4 ab	9509 ab	44.45 a	2836 a	12345 ab
6	UREA	150	4-5 leaf	101.5 bc	87.5 bc	39.0 a	48.7 a	9432 ab	43.70 a	2747 a	12179 ab
7	UREA	180	4-5 leaf	102.8 a	88.8 a	39.3 a	48.6 a	10180 a	44.40 a	2784 a	12964 a
8	UREA	210	4-5 leaf	103.0 a	89.0 a	39.0 a	47.4 c	10005 a	44.05 a	2594 a	12598 ab
9	UREA	45	4-5 leaf	99.0 f	85.0 f	35.8 c	48.8 a	7733 c	44.03 a	2783 a	10516 cd
	UREA	45	PD								
10	UREA	75	4-5 leaf	99.8 ef	85.8 ef	37.8 ab	48.8 a	8548 bc	44.13 a	2980 a	11528 bc
	UREA	45	PD								
11	UREA	105	4-5 leaf	100.5 cde	86.5 cde	38.5 a	48.6 a	9678 a	43.90 a	2744 a	12422 ab
	UREA	45	PD								
12	UREA	135	4-5 leaf	102.3 ab	88.3 ab	39.0 a	48.6 ab	9831 a	43.98 a	2888 a	12719 a
	UREA	45	PD								
LSD P=.05				1.11	1.11	1.66	0.73	1021.9	1.224	349.3	1188.7
Standard Deviation				0.77	0.77	1.15	0.51	710.3	0.851	242.8	826.3
CV				0.76	0.89	3.12	1.05	8.24	1.94	8.86	7.27
Replicate F				2.947	2.947	0.645	5.118	1.849	0.603	0.923	1.946
Replicate Prob(F)				0.0471	0.0471	0.5915	0.0051	0.1575	0.6177	0.4404	0.1414
Treatment F				14.789	14.789	22.814	3.129	20.211	1.332	1.305	15.272
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0055	0.0001	0.2514	0.2649	0.0001

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

Determine the Agronomic Response of Drill-Seeded Thad to Nitrogen Fertilizer Rate and Time of Application – Vermilion Parish

Experiment number ....: 17-VP-02

Site and design ....:
- **Location/Cooperator** ....: Vermilion Parish/Kent Lounsberry
- **Tillage type** ....: Conventional
- **Experimental design** ....: Randomized complete block
- **Number of reps** ....: 4
- **Plot size** ....: 4.66 x 16 ft
- **Row width/rows per plot** ....: 8 in / 7

Soil type ....: Kaplan silt loam
- **% organic matter** ....: 1.53
- **pH** ....: 5.1
- **Extractable nutrients** ppm ....: Ca-531; Cu-1.8; Mg-99; P-11; K-55.65; Na-45; S-4.0; Zn-3.6

Crop/Variety ....: Rice / See data sheet
- **Planting method/date** ....: Drill seeded / March 8
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .5 inch
- **Emergence date** ....: March 22
- **Harvest date** ....: July 27
- **Ratoon harvest date** ....: Oct. 31

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-20-30, March 16
90 lb N/A 46-0-0, Aug. 3

Water management ....:
- **Flush** ....: March 23
- **Flood** ....: April 22
- **Drain** ....: July 14
- **Ratoon flood** ....: Aug. 4
- **Ratoon drain** ....: Oct. 16

Pest management ....:
- **Herbicides** ....: 6 oz/A Command, March 16
  3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
  2 qt/A RiceBeaux + 1.5 qt/A propanil + .5 oz/A Permit + .75 oz/A Londax, April 21
- **Insecticides** ....: None
- **Fungicides** ....: 19 oz/A Stratego, June 9

Table 12. Determine the agronomic response of drill-seeded Thad to nitrogen fertilizer rate and time of application. Vermilion Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle					
Rating Date						7/27/2017	7/27/2017	7/27/2017	10/31/2017	10/31/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	91.0 g	77.0 g	27.8 f	46.0 a	3548 e	39.0 abc	2396 a	5944 d
2	UREA	30	4-5 leaf	92.3 fg	78.3 fg	29.8 e	45.8 ab	4860 d	39.3 a	2489 a	7349 c
3	UREA	60	4-5 leaf	92.8 ef	78.8 ef	30.5 de	46.0 a	6576 c	38.0 cd	2425 a	9001 b
4	UREA	90	4-5 leaf	93.8 de	79.8 de	32.3 bc	46.0 a	8079 ab	38.8 abc	2481 a	10560 a
5	UREA	120	4-5 leaf	95.3 abc	81.3 abc	32.5 bc	45.9 ab	8241 ab	39.0 abc	2372 a	10613 a
6	UREA	150	4-5 leaf	95.8 ab	81.8 ab	34.3 a	45.5 ab	8474 a	39.2 ab	2297 a	10770 a
7	UREA	180	4-5 leaf	96.3 a	82.3 a	33.3 ab	44.9 b	8319 a	38.6 abc	2330 a	10650 a
8	UREA	210	4-5 leaf	96.3 a	82.3 a	33.0 abc	43.3 c	7858 ab	37.2 d	2220 a	10078 a
9	UREA	45	4-5 leaf	92.8 ef	78.8 ef	31.5 cd	45.8 ab	5972 c	38.1 bcd	2489 a	8461 b
	UREA	45	PD								
10	UREA	75	4-5 leaf	94.3 cd	80.3 cd	32.8 abc	45.9 ab	7585 b	38.4 abc	2484 a	10069 a
	UREA	45	PD								
11	UREA	105	4-5 leaf	94.5 bcd	80.5 bcd	32.8 abc	46.1 a	8268 ab	38.5 abc	2404 a	10673 a
	UREA	45	PD								
12	UREA	135	4-5 leaf	95.0 a-d	81.0 a-d	33.3 ab	45.3 ab	8303 ab	38.2 a-d	2218 a	10520 a
	UREA	45	PD								
LSD P=.05				1.38	1.38	1.56	1.05	727.6	1.106	241.2	810.2
Standard Deviation				0.96	0.96	1.08	0.73	505.7	0.769	167.7	563.2
CV				1.02	1.19	3.38	1.61	7.05	2.0	7.03	5.89
Replicate F				4.942	4.942	1.259	0.144	5.647	9.897	16.688	5.198
Replicate Prob(F)				0.0061	0.0061	0.3043	0.9328	0.0031	0.0001	0.0001	0.0047
Treatment F				12.346	12.346	11.268	4.821	40.328	2.258	1.409	30.871
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0002	0.0001	0.0349	0.2151	0.0001

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

Determine the Agronomic Response of Drill-Seeded CL153 to Nitrogen Fertilizer Rate and Time of Application – Vermilion Parish

Experiment number ....: 17-VP-03

Site and design ....:
- **Location/Cooperator** ....: Vermilion Parish/Kent Lounsberry
- **Tillage type**.................................: Conventional
- **Experimental design**...................: Randomized complete block
- **Number of reps** ....: 4
- **Plot size**..: 4.66 x 16 ft
- **Row width/rows per plot**............: 8 in / 7

Soil type ....: Kaplan silt loam
- **% organic matter**........................: 1.53
- **pH**...: 5.1
- **Extractable nutrients** ppm ....: Ca-531; Cu-1.8; Mg-99; P-11; K-55.65; Na-45; S-4.0; Zn-3.6

Crop/Variety ....: Rice / See data sheet
- **Planting method/date** ....: Drill seeded / March 8
- **Seeding rate/depth**......................: 33 seeds/ft^2 / .5 inch
- **Emergence date**...........................: March 22
- **Harvest date** ....: July 27
- **Ratoon harvest date**....................: Oct. 31

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization..: 250 lb/A 0-20-30, March 16
90 lb N/A 46-0-0, Aug. 3

Water management ....:
- **Flush** ....: March 23
- **Flood** ....: April 22
- **Drain**..: July 14
- **Ratoon flood**................................: Aug. 4
- **Ratoon drain** ....: Oct. 16

Pest management ....:
- **Herbicides**....................................: 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
2 qt/A RiceBeaux + 1.5 qt/A propanil + .5 oz/A Permit + .75 oz/A Londax, April 21
- **Insecticides** ....: None
- **Fungicides**....................................: 19 oz/A Stratego, June 9

Table 13. Determine the agronomic response of drill-seeded CL153 to nitrogen fertilizer rate and time of application. Vermilion Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle					
Rating Date						7/27/2017	7/27/2017	7/27/2017	10/31/2017	10/31/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	97.3 f	83.3 f	27.3 e	45.3 a	5678 d	41.3 a	2144 a	7822 d
2	UREA	30	4-5 leaf	99.0 e	85.0 e	31.0 d	45.2 ab	7129 c	40.6 a	1981 a	9110 c
3	UREA	60	4-5 leaf	99.0 e	85.0 e	31.0 d	45.4 a	7649 abc	41.3 a	1932 a	9581 bc
4	UREA	90	4-5 leaf	100.8 cd	86.8 cd	33.3 c	45.1 ab	8200 ab	42.0 a	2022 a	10222 ab
5	UREA	120	4-5 leaf	101.8 abc	87.8 abc	35.3 ab	44.3 cd	8312 a	41.5 a	1972 a	10284 a
6	UREA	150	4-5 leaf	102.5 ab	88.5 ab	36.0 a	43.8 de	7889 ab	41.7 a	1941 a	9830 ab
7	UREA	180	4-5 leaf	103.0 ab	89.0 ab	36.0 a	43.9 de	8278 a	42.0 a	2016 a	10294 a
8	UREA	210	4-5 leaf	103.3 a	89.3 a	35.8 a	43.4 e	7946 ab	42.0 a	1898 a	9843 ab
9	UREA	45	4-5 leaf	98.3 ef	84.3 ef	30.8 d	45.2 ab	7560 bc	41.7 a	2115 a	9674 abc
	UREA	45	PD								
10	UREA	75	4-5 leaf	99.5 de	85.5 de	33.8 bc	45.0 abc	8178 ab	41.2 a	2062 a	10240 ab
	UREA	45	PD								
11	UREA	105	4-5 leaf	100.8 cd	86.8 cd	34.3 abc	44.5 bcd	7710 abc	41.3 a	1999 a	9709 abc
	UREA	45	PD								
12	UREA	135	4-5 leaf	101.5 bc	87.5 bc	35.3 ab	44.0 de	8206 ab	41.2 a	1949 a	10155 ab
	UREA	45	PD								
LSD P=.05				1.57	1.57	1.96	0.70	671.2	1.063	225.3	686.3
Standard Deviation				1.09	1.09	1.36	0.49	466.5	0.739	156.6	477.0
CV				1.08	1.26	4.09	1.09	6.04	1.78	7.82	4.9
Replicate F				1.806	1.806	1.246	14.916	1.851	15.158	14.091	0.103
Replicate Prob(F)				0.1653	0.1653	0.3090	0.0001	0.1573	0.0001	0.0001	0.9579
Treatment F				12.774	12.774	16.302	8.117	9.971	1.195	0.901	8.601
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	0.3281	0.5498	0.0001

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

Determine the Agronomic Response of Drill-Seeded CL272 to Nitrogen Fertilizer Rate and Time of Application – Vermilion Parish

Experiment number	17-VP-04
Site and design	
Location/Cooperator	Vermilion Parish/Kent Lounsberry
Tillage type	Conventional
Experimental design	Randomized complete block
Number of reps	4
Plot size	4.66 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Kaplan silt loam
% organic matter	1.53
pH	5.1
Extractable nutrients ppm	Ca-531; Cu-1.8; Mg-99; P-11; K-55.65; Na-45; S-4.0; Zn-3.6
Crop/Variety	Rice / See data sheet
Planting method/date	Drill seeded / March 8
Seeding rate/depth	33 seeds/ft^2 / .5 inch
Emergence date	March 22
Harvest date	July 27
Ratoon harvest date	Oct. 31
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-20-30, March 16 90 lb N/A 46-0-0, Aug. 3
Water management	
Flush	March 23
Flood	April 22
Drain	July 14
Ratoon flood	Aug. 4
Ratoon drain	Oct. 16
Pest management	
Herbicides	6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 2 qt/A RiceBeaux + 1.5 qt/A propanil + .5 oz/A Permit + .75 oz/A Londax, April 21
Insecticides	None
Fungicides	19 oz/A Stratego, June 9

Table 14. Determine the agronomic response of drill-seeded CL272 to nitrogen fertilizer rate and time of application. Vermilion Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle					
Rating Date						7/27/2017	7/27/2017	7/27/2017	10/31/2017	10/31/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	103.0 f	89.0 f	32.3 e	45.4 d	6107 e	31.8 a	2036 a	8142 d
2	UREA	30	4-5 leaf	103.5 ef	89.5 ef	34.5 d	46.6 a	7643 d	32.5 a	2096 a	9739 c
3	UREA	60	4-5 leaf	104.0 e	90.0 e	37.0 c	46.6 a	8209 ab	32.6 a	1992 a	10201 abc
4	UREA	90	4-5 leaf	105.0 cd	91.0 cd	38.3 bc	46.4 abc	8316 a	32.8 a	1987 a	10302 abc
5	UREA	120	4-5 leaf	105.5 c	91.5 c	39.5 ab	45.8 cd	8173 abc	32.1 a	1863 a	10036 bc
6	UREA	150	4-5 leaf	107.8 b	93.8 b	39.3 ab	46.0 a-d	8045 abc	40.7 a	2118 a	10163 abc
7	UREA	180	4-5 leaf	108.8 a	94.8 a	40.3 a	45.9 bcd	8189 abc	43.1 a	2207 a	10397 ab
8	UREA	210	4-5 leaf	109.0 a	95.0 a	40.5 a	44.7 e	7827 cd	41.6 a	2037 a	9864 bc
9	UREA	45	4-5 leaf	103.8 ef	89.8 ef	34.8 d	46.2 abc	7895 bcd	43.3 a	2341 a	10236 abc
	UREA	45	PD								
10	UREA	75	4-5 leaf	104.3 de	90.3 de	37.0 c	46.5 ab	8336 a	43.6 a	2383 a	10719 a
	UREA	45	PD								
11	UREA	105	4-5 leaf	105.8 c	91.8 c	39.3 ab	46.3 abc	8326 a	43.2 a	2334 a	10659 a
	UREA	45	PD								
12	UREA	135	4-5 leaf	107.8 b	93.8 b	39.3 ab	46.1 abc	8385 a	43.0 a	2300 a	10685 a
	UREA	45	PD								
LSD P=.05				0.99	0.99	1.73	0.66	367.3	15.061	403.8	567.9
Standard Deviation				0.69	0.69	1.20	0.46	255.3	10.469	280.7	394.8
CV				0.65	0.75	3.19	1.0	3.21	27.31	13.11	3.91
Replicate F				0.585	0.585	5.666	9.027	32.293	10.521	37.237	20.302
Replicate Prob(F)				0.6290	0.6290	0.0030	0.0002	0.0001	0.0001	0.0001	0.0001
Treatment F				38.330	38.330	18.793	5.758	24.024	1.041	1.446	12.188
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	0.4349	0.1995	0.0001

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

Determine the Agronomic Response of Drill-Seeded Diamond to Nitrogen Fertilizer Rate and Time of Application – Vermilion Parish

Experiment number	17-VP-05
Site and design	
Location/Cooperator	Vermilion Parish/Kent Lounsberry
Tillage type	Conventional
Experimental design	Randomized complete block
Number of reps	4
Plot size	4.66 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Kaplan silt loam
% organic matter	1.53
pH	5.1
Extractable nutrients ppm	Ca-531; Cu-1.8; Mg-99; P-11; K-55.65; Na-45; S-4.0; Zn-3.6
Crop/Variety	Rice / See data sheet
Planting method/date	Drill seeded / March 8
Seeding rate/depth	33 seeds/ft^2 / .5 inch
Emergence date	March 22
Harvest date	July 27
Ratoon harvest date	Oct. 31
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-20-30, March 16 90 lb N/A 46-0-0, Aug. 3
Water management	
Flush	March 23
Flood	April 22
Drain	July 14
Ratoon flood	Aug. 4
Ratoon drain	Oct. 16
Pest management	
Herbicides	6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 2 qt/A RiceBeaux + 1.5 qt/A propanil + .5 oz/A Permit + .75 oz/A Londax, April 21
Insecticides	None
Fungicides	19 oz/A Stratego, June 9

Table 15. Determine the agronomic response of drill-seeded Diamond to nitrogen fertilizer rate and time of application. Vermilion Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle											
Rating Date								7/27/2017		7/27/2017		7/27/2017		10/31/2017		10/31/2017			
Rating Type				50% HD		50% HD		Height		Test Wt.		Yield		Test Wt.		Yield		Total Yield	
Rating Unit				days		days		in		lb/bu		lb/A		lb/bu		lb/A		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Main		Ratoon		Ratoon		MC+RC	
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage																
1	UREA	0	4-5 leaf	91.0	g	77.0	g	32.3	d	44.3	a	5112	d	42.8	a	2931	a	8043	f
2	UREA	30	4-5 leaf	93.5	f	79.5	f	34.0	cd	44.1	a	5739	d	43.5	a	3300	a	9039	ef
3	UREA	60	4-5 leaf	95.3	e	81.3	e	34.5	cd	44.1	a	7180	c	42.9	a	3040	a	10220	de
4	UREA	90	4-5 leaf	97.0	cd	83.0	cd	36.0	bc	44.5	a	8162	abc	43.8	a	3247	a	11409	bcd
5	UREA	120	4-5 leaf	98.3	abc	84.3	abc	37.3	ab	44.6	a	9212	ab	43.0	a	3233	a	12445	ab
6	UREA	150	4-5 leaf	99.5	a	85.5	a	38.0	ab	43.7	a	8589	ab	42.7	a	3242	a	11831	abc
7	UREA	180	4-5 leaf	99.0	ab	85.0	ab	39.8	a	43.8	a	9292	a	44.0	a	3769	a	13062	a
8	UREA	210	4-5 leaf	99.3	a	85.3	a	38.5	ab	43.4	a	9052	ab	44.0	a	3684	a	12736	ab
9	UREA	45	4-5 leaf	95.3	e	81.3	e	34.3	cd	44.5	a	7107	c	43.8	a	3666	a	10773	cd
	UREA	45	PD																
10	UREA	75	4-5 leaf	95.8	de	81.8	de	36.5	bc	44.2	a	8098	bc	42.3	a	3555	a	11653	a-d
	UREA	45	PD																
11	UREA	105	4-5 leaf	97.0	cd	83.0	cd	37.5	ab	44.0	a	9233	ab	43.3	a	3498	a	12730	ab
	UREA	45	PD																
12	UREA	135	4-5 leaf	97.8	bc	83.8	bc	38.3	ab	43.9	a	8970	ab	42.7	a	3415	a	12384	ab
	UREA	45	PD																
LSD P=.05				1.40		1.40		2.68		0.86		1164.9		1.552		653.3		1456.2	
Standard Deviation				0.97		0.97		1.87		0.60		809.7		1.079		454.1		1012.2	
CV				1.01		1.18		5.13		1.36		10.15		2.5		13.43		8.91	
Replicate F				8.995		8.995		0.277		7.563		4.729		12.170		15.117		3.704	
Replicate Prob(F)				0.0002		0.0002		0.8413		0.0006		0.0075		0.0001		0.0001		0.0211	
Treatment F				27.354		27.354		5.739		1.399		12.205		1.137		1.329		9.666	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.2196		0.0001		0.3659		0.2529		0.0001	

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

Determine the Agronomic Response of Drill-Seeded PVL01 to Nitrogen Fertilizer Rate and Time of Application – Vermilion Parish

Experiment number	: 17-VP-06
Site and design	:
Location/Cooperator	: Vermilion Parish/Kent Lounsberry
Tillage type	: Conventional
Experimental design	: Randomized complete block
Number of reps	: 4
Plot size	: 4.66 x 16 ft
Row width/rows per plot	: 8 in / 7
Soil type	: Kaplan silt loam
% organic matter	: 1.53
pH	: 5.1
Extractable nutrients ppm	: Ca-531; Cu-1.8; Mg-99; P-11; K-55.65; Na-45; S-4.0; Zn-3.6
Crop/Variety	: Rice / See data sheet
Planting method/date	: Drill seeded / March 8
Seeding rate/depth	: 33 seeds/ft^2 / .5 inch
Emergence date	: March 22
Harvest date	: July 27
Ratoon harvest date	: Oct. 31
Seed treatment/cwt	: Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	: 250 lb/A 0-20-30, March 16 90 lb N/A 46-0-0, Aug. 3
Water management	:
Flush	: March 23
Flood	: April 22
Drain	: July 14
Ratoon flood	: Aug. 4
Ratoon drain	: Oct. 16
Pest management	:
Herbicides	: 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 2 qt/A RiceBeaux + 1.5 qt/A propanil + .5 oz/A Permit + .75 oz/A Londax, April 21
Insecticides	: None
Fungicides	: 19 oz/A Stratego, June 9

Table 16. Determine the agronomic response of drill-seeded PVL01 to nitrogen fertilizer rate and time of application. Vermilion Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle					
Rating Date						7/27/2017	7/27/2017	7/27/2017	10/31/2017	10/31/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	102.0 f	88.0 f	30.0 h	41.8 a	3670 g	38.0 a	2082 ab	5752 i
2	UREA	30	4-5 leaf	102.5 ef	88.5 ef	32.5 g	40.9 bc	4182 fg	38.4 a	2120 a	6301 hi
3	UREA	60	4-5 leaf	103.3 de	89.3 de	32.8 fg	40.0 cd	5171 de	37.8 a	1971 abc	7142 fg
4	UREA	90	4-5 leaf	105.0 c	91.0 c	34.5 de	40.5 bcd	6260 c	37.9 a	1870 bcd	8130 de
5	UREA	120	4-5 leaf	106.5 b	92.5 b	35.5 cd	40.9 ab	6885 bc	37.5 a	1849 cd	8734 bcd
6	UREA	150	4-5 leaf	108.0 a	94.0 a	37.3 ab	40.6 bc	7800 a	38.8 a	1892 bcd	9692 a
7	UREA	180	4-5 leaf	108.8 a	94.8 a	37.3 ab	40.7 bc	7398 ab	37.8 a	1695 d	9093 abc
8	UREA	210	4-5 leaf	108.5 a	94.5 a	38.3 a	40.2 bcd	7654 a	37.9 a	1736 d	9390 ab
9	UREA	45	4-5 leaf	102.3 ef	88.3 ef	32.5 g	40.4 bcd	4629 ef	37.7 a	2038 abc	6668 gh
	UREA	45	PD								
10	UREA	75	4-5 leaf	103.8 d	89.8 d	34.0 ef	39.6 d	5563 d	37.9 a	2015 abc	7578 ef
	UREA	45	PD								
11	UREA	105	4-5 leaf	105.8 bc	91.8 bc	35.3 cde	40.5 bc	6651 c	37.4 a	1826 cd	8477 cd
	UREA	45	PD								
12	UREA	135	4-5 leaf	108.0 a	94.0 a	36.0 bc	40.0 bcd	6875 bc	37.9 a	1909 a-d	8784 bcd
	UREA	45	PD								
LSD P=.05				1.00	1.00	1.35	0.89	689.4	1.709	222.1	723.7
Standard Deviation				0.70	0.70	0.94	0.62	479.2	1.188	154.4	503.1
CV				0.66	0.76	2.71	1.52	7.91	3.13	8.05	6.31
Replicate F				0.501	0.501	2.473	2.553	1.998	10.808	28.968	1.927
Replicate Prob(F)				0.6844	0.6844	0.0789	0.0722	0.1335	0.0001	0.0001	0.1444
Treatment F				54.722	54.722	26.439	3.227	33.916	0.430	2.952	25.876
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0045	0.0001	0.9311	0.0079	0.0001

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

Determine the Agronomic Response of Drill-Seeded Aura 115 to Nitrogen Fertilizer Rate and Time of Application – Vermilion Parish

Experiment number	: 17-VP-09
Site and design	:
Location/Cooperator	: Vermilion Parish/Kent Lounsberry
Tillage type	: Conventional
Experimental design	: Randomized complete block
Number of reps	: 4
Plot size	: 4.66 x 16 ft
Row width/rows per plot	: 8 in / 7
Soil type	: Kaplan silt loam
% organic matter	: 1.53
pH	: 5.1
Extractable nutrients ppm	: Ca-531; Cu-1.8; Mg-99; P-11; K-55.65; Na-45; S-4.0; Zn-3.6
Crop/Variety	: Rice / See data sheet
Planting method/date	: Drill seeded / March 8
Seeding rate/depth	: 33 seeds/ft^2 / .5 inch
Emergence date	: March 22
Harvest date	: July 27
Ratoon harvest date	: Oct. 31
Seed treatment/cwt	: Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	: 250 lb/A 0-20-30, March 16 90 lb N/A 46-0-0, Aug. 3
Water management	:
Flush	: March 23
Flood	: April 22
Drain	: July 14
Ratoon flood	: Aug. 4
Ratoon drain	: Oct. 16
Pest management	:
Herbicides	: 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 2 qt/A RiceBeaux + 1.5 qt/A propanil + .5 oz/A Permit + .75 oz/A Londax, April 21
Insecticides	: None
Fungicides	: 19 oz/A Stratego, June 9

Table 17. Determine the agronomic response of drill-seeded Aura 115 to nitrogen fertilizer rate and time of application. Vermilion Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle							
Rating Date						7/27/2017			7/27/2017	7/27/2017	10/31/2017	10/31/2017	
Rating Type				50% HD	50% HD	Height	Lodge		Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	% plot	rate	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
1	UREA	0	4-5 leaf	96.0 i	82.0 i	33.3 c	0.0 c	0.0 c	44.1 a	4973 d	40.6 b-e	2834 c	7806 d
2	UREA	30	4-5 leaf	98.0 h	84.0 h	34.8 b	0.0 c	0.0 c	43.4 bc	6810 bc	41.6 abc	3067 bc	9877 c
3	UREA	60	4-5 leaf	99.0 fg	85.0 fg	34.8 b	0.0 c	0.0 c	43.8 ab	7457 abc	40.3 de	2786 c	10243 bc
4	UREA	90	4-5 leaf	100.0 cde	86.0 cde	34.8 b	2.5 c	0.5 bc	43.6 abc	7785 ab	41.7 ab	3174 bc	10901 abc
5	UREA	120	4-5 leaf	100.5 cd	86.5 cd	36.0 ab	50.0 ab	1.8 ab	43.4 bc	7813 ab	41.6 abc	3443 ab	11256 ab
6	UREA	150	4-5 leaf	100.8 bc	86.8 bc	35.8 ab	82.5 a	2.0 ab	42.3 d	7589 abc	41.1 bcd	3315 abc	10904 abc
7	UREA	180	4-5 leaf	101.5 ab	87.5 ab	35.3 ab	67.5 ab	2.3 a	42.5 d	7522 abc	41.5 a-d	3740 a	11261 ab
8	UREA	210	4-5 leaf	101.8 a	87.8 a	34.8 b	37.5 bc	1.5 abc	42.3 d	6516 c	42.5 a	3743 a	10259 bc
9	UREA	45	4-5 leaf	98.5 gh	84.5 gh	34.8 b	0.0 c	0.5 bc	43.4 bc	7318 abc	41.4 a-d	3281 abc	10599 abc
	UREA	45	PD										
10	UREA	75	4-5 leaf	99.3 efg	85.3 efg	36.3 a	0.0 c	0.0 c	43.3 bc	8203 a	40.4 cde	3385 ab	11588 a
	UREA	45	PD										
11	UREA	105	4-5 leaf	99.8 def	85.8 def	36.5 a	25.0 bc	0.8 abc	43.4 bc	8289 a	39.7 e	3047 bc	11336 ab
	UREA	45	PD										
12	UREA	135	4-5 leaf	100.0 cde	86.0 cde	36.5 a	47.5 ab	1.3 abc	43.1 c	7257 abc	40.5 b-e	3405 ab	10662 abc
	UREA	45	PD										
LSD P=.05				0.82	0.82	1.37	44.52	1.66	0.61	1227.5	1.210	534.1	1262.8
Standard Deviation				0.57	0.57	0.95	30.95	1.15	0.42	852.2	0.841	371.3	876.7
CV				0.57	0.66	2.7	118.83	131.59	0.97	11.68	2.05	11.36	8.3
Replicate F				1.375	1.375	0.267	1.139	0.566	2.445	2.880	7.133	0.883	1.718
Replicate Prob(F)				0.2675	0.2675	0.8486	0.3476	0.6415	0.0819	0.0511	0.0008	0.4600	0.1830
Treatment F				31.406	31.406	4.070	3.804	2.143	7.797	4.366	3.359	2.723	5.261
Treatment Prob(F)				0.0001	0.0001	0.0008	0.0014	0.0449	0.0001	0.0005	0.0034	0.0128	0.0001

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

Determine the Agronomic Response of Drill-Seeded CL172 to Nitrogen Fertilizer Rate and Time of Application – Vermilion Parish

Experiment number	17-VP-10
Site and design	
Location/Cooperator	Vermilion Parish/Kent Lounsberry
Tillage type	Conventional
Experimental design	Randomized complete block
Number of reps	4
Plot size	4.66 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Kaplan silt loam
% organic matter	1.53
pH	5.1
Extractable nutrients ppm	Ca-531; Cu-1.8; Mg-99; P-11; K-55.65; Na-45; S-4.0; Zn-3.6
Crop/Variety	Rice / See data sheet
Planting method/date	Drill seeded / March 8
Seeding rate/depth	33 seeds/ft^2 / .5 inch
Emergence date	March 22
Harvest date	July 27
Ratoon harvest date	Oct. 31
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-20-30, March 16 90 lb N/A 46-0-0, Aug. 3
Water management	
Flush	March 23
Flood	April 22
Drain	July 14
Ratoon flood	Aug. 4
Ratoon drain	Oct. 16
Pest management	
Herbicides	6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 2 qt/A RiceBeaux + 1.5 qt/A propanil + .5 oz/A Permit + .75 oz/A Londax, April 21
Insecticides	None
Fungicides	19 oz/A Stratego, June 9

Table 18. Determine the agronomic response of drill-seeded CL172 to nitrogen fertilizer rate and time of application. Vermilion Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle					
Rating Date						7/27/2017	7/27/2017	7/27/2017	10/31/2017	10/31/2017	
Rating Type				50% HD	50% HD	Height	Test Wt.	Yield	Test Wt.	Yield	Total Yield
Rating Unit				days	days	in	lb/bu	lb/A	lb/bu	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	92.0 g	78.0 g	27.8 e	44.8 abc	5290 d	39.1 a	2336 a	7626 d
2	UREA	30	4-5 leaf	94.5 f	80.5 f	30.3 de	45.4 ab	6069 c	40.2 a	2224 a	8292 cd
3	UREA	60	4-5 leaf	96.8 de	82.8 de	31.3 cd	45.4 a	7108 ab	40.3 a	1976 a	9084 abc
4	UREA	90	4-5 leaf	99.3 c	85.3 c	32.5 a-d	44.7 bc	7713 a	41.6 a	2173 a	9886 a
5	UREA	120	4-5 leaf	100.0 bc	86.0 bc	33.5 abc	44.3 cd	7496 ab	40.4 a	1993 a	9488 ab
6	UREA	150	4-5 leaf	101.8 a	87.8 a	34.5 ab	43.6 e	7392 ab	41.0 a	2196 a	9588 ab
7	UREA	180	4-5 leaf	101.8 a	87.8 a	31.5 bcd	44.0 de	7564 ab	42.0 a	2180 a	9744 ab
8	UREA	210	4-5 leaf	102.0 a	88.0 a	35.5 a	43.4 e	7620 ab	42.2 a	2103 a	9722 ab
9	UREA	45	4-5 leaf	96.2 e	82.2 e	32.1 bcd	44.8 abc	6040 c	40.2 a	2012 a	8062 d
	UREA	45	PD								
10	UREA	75	4-5 leaf	97.8 d	83.8 d	31.8 bcd	44.7 bc	6977 b	41.2 a	2238 a	9215 ab
	UREA	45	PD								
11	UREA	105	4-5 leaf	100.3 bc	86.3 bc	31.0 cd	43.7 de	6997 ab	40.5 a	2032 a	9029 bc
	UREA	45	PD								
12	UREA	135	4-5 leaf	100.5 b	86.5 b	33.8 abc	43.6 e	7356 ab	41.1 a	2315 a	9671 ab
	UREA	45	PD								
LSD P=.05				1.16	1.16	3.01	0.68	724.4	1.756	316.8	809.6
Standard Deviation				0.80	0.80	2.09	0.47	502.9	1.221	220.2	562.1
CV				0.82	0.95	6.5	1.06	7.22	2.99	10.25	6.17
Replicate F				4.291	4.291	1.490	2.396	3.888	13.245	21.519	1.910
Replicate Prob(F)				0.0118	0.0118	0.2359	0.0864	0.0178	0.0001	0.0001	0.1478
Treatment F				62.185	62.185	3.919	9.071	9.275	1.988	1.264	6.966
Treatment Prob(F)				0.0001	0.0001	0.0012	0.0001	0.0001	0.0629	0.2871	0.0001

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

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

Experiment number ....: 17-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** ....: 4.66 x 16 ft
- **Row width/rows per plot** ....: 8 in / 7

Soil type ....: Dundee silty clay loam
- **% organic matter** ....: 1.70
- **pH** ....: 7.77
- **Extractable nutrients** ppm ....: Ca-3887; Cu-1.95; Mg-637; P-63; K-193; Na-63; S-2.5; Zn-1.7

Crop/Variety ....: Rice / See data sheet
- **Planting method/date** ....: Drill seeded / March 21
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: April 3
- **Harvest date** ....: Aug. 15

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: No blanket applications

Water management ....:
- **Flush** ....: NA
- **Flood** ....: May 12
- **Drain** ....: July 28

Pest management ....:
- **Herbicides** ....: 24 oz/A Roundup + 2 oz/A Sharpen, March 19
0.6 oz/A Regiment + 0.33 oz/A Permit, May 11
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: None

Table 19. Determine the agronomic response of drill-seeded Titan 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						8/15/2017	8/15/2017	8/15/2017	7/28/2017	8/15/2017	8/15/2017
Rating Type				50% HD	50% HD	Height	Lodge		Sheath Bt.	Test Wt.	Yield
Rating Unit				days	days	in	% plot	rate	0-9	lb/bu	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	94.0 e	81.0 e	33.5 e	0.0 c	0.0 c	5.3 f	46.0 bc	5809 f
2	UREA	30	4-5 leaf	94.3 e	81.3 e	37.3 d	0.0 c	0.0 c	6.3 e	47.0 a	7721 e
3	UREA	60	4-5 leaf	95.3 d	82.3 d	37.3 d	0.0 c	0.0 c	6.5 de	46.9 a	8260 de
4	UREA	90	4-5 leaf	96.5 c	83.5 c	37.8 cd	0.0 c	0.0 c	7.3 bc	46.9 a	8664 bcd
5	UREA	120	4-5 leaf	97.5 b	84.5 b	41.0 a	0.0 c	0.0 c	7.3 bc	47.0 a	8849 bcd
6	UREA	150	4-5 leaf	98.0 ab	85.0 ab	39.8 ab	17.5 b	1.5 b	7.3 bc	45.6 c	9311 abc
7	UREA	180	4-5 leaf	98.5 a	85.5 a	40.0 ab	87.5 a	4.0 a	8.0 a	44.8 d	9141 abc
8	UREA	210	4-5 leaf	98.8 a	85.8 a	39.3 abc	77.5 a	3.8 a	8.0 a	44.4 d	9738 a
9	UREA	96	4-5 leaf	96.5 c	83.5 c	39.5 abc	0.0 c	0.0 c	7.0 cd	46.7 ab	9077 a-d
	SBNR-UREA	0	PD								
10	UREA	75	4-5 leaf	95.8 cd	82.8 cd	38.8 bcd	0.0 c	0.0 c	7.3 bc	46.7 ab	8514 cde
	UREA	45	PD								
11	UREA	105	4-5 leaf	97.5 b	84.5 b	39.3 abc	5.0 bc	0.5 bc	7.3 bc	46.3 abc	8855 bcd
	UREA	45	PD								
12	UREA	135	4-5 leaf	98.0 ab	85.0 ab	40.0 ab	20.0 b	1.5 b	7.8 ab	45.7 c	9371 ab
	UREA	45	PD								
LSD P=.05				0.83	0.83	1.95	17.38	1.07	0.55	0.82	837.1
Standard Deviation				0.58	0.58	1.35	12.08	0.75	0.38	0.57	581.9
CV				0.6	0.69	3.51	69.88	79.55	5.4	1.23	6.76
Replicate F				2.895	2.895	4.495	3.438	3.234	4.931	0.740	0.715
Replicate Prob(F)				0.0498	0.0498	0.0094	0.0279	0.0346	0.0061	0.5359	0.5503
Treatment F				30.835	30.835	8.537	26.909	15.865	16.552	9.560	12.595
Treatment Prob(F)				0.0001	0.0001	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).

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

Experiment number	17-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	4.66 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Dundee silty clay loam
% organic matter	1.70
pH	7.77
Extractable nutrients ppm	Ca-3887; Cu-1.95; Mg-637; P-63; K-193; Na-63; S-2.5; Zn-1.7
Crop/Variety	Rice / See data sheet
Planting method/date	Drill seeded / March 21
Seeding rate/depth	33 seeds/ft^2 / .75 inch
Emergence date	April 3
Harvest date	Aug. 15
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	No blanket applications
Water management	
Flush	NA
Flood	May 12
Drain	July 28
Pest management	
Herbicides	24 oz/A Roundup + 2 oz/A Sharpen, March 19 0.6 oz/A Regiment + 0.33 oz/A Permit, May 11
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	None

Table 20. Determine the agronomic response of drill-seeded Thad 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						8/15/2017	8/15/2017	8/15/2017	7/28/2017	8/15/2017	8/15/2017
Rating Type				50% HD	50% HD	Height	Lodge		Sheath Bt.	Test Wt.	Yield
Rating Unit				days	days	in	% plot	rate	0-9	lb/bu	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main		Main	Main
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage	2	3	4	5	6	7	10	11
1	UREA	0	4-5 leaf	94.8 f	81.8 f	30.5 e	0.0 e	0.0 d	5.5 d	43.6 bcd	4432 d
2	UREA	30	4-5 leaf	95.3 f	82.3 f	36.0 bcd	0.0 e	0.0 d	6.8 c	45.1 a	7486 c
3	UREA	60	4-5 leaf	96.0 e	83.0 e	35.5 bcd	0.0 e	0.0 d	7.3 bc	45.0 a	7620 abc
4	UREA	90	4-5 leaf	96.5 de	83.5 de	35.0 d	7.5 de	0.8 cd	7.5 ab	44.3 abc	8623 a
5	UREA	120	4-5 leaf	97.0 cd	84.0 cd	37.5 a-d	32.5 bc	2.8 ab	8.0 a	43.9 abc	8177 abc
6	UREA	150	4-5 leaf	97.8 ab	84.8 ab	39.3 a	27.5 cd	3.0 ab	7.8 ab	43.2 cde	8566 ab
7	UREA	180	4-5 leaf	98.0 a	85.0 a	35.5 bcd	77.5 a	3.5 ab	8.0 a	42.2 e	7573 abc
8	UREA	210	4-5 leaf	97.8 ab	84.8 ab	35.3 cd	77.5 a	3.8 a	8.0 a	42.5 de	8364 abc
9	UREA	45	4-5 leaf	95.3 f	82.3 f	34.8 d	0.0 e	0.0 d	7.5 ab	45.0 a	7561 bc
	UREA	45	PD								
10	UREA	75	4-5 leaf	96.3 e	83.3 e	36.3 bcd	10.0 cde	1.3 c	7.5 ab	44.6 ab	8465 abc
	UREA	45	PD								
11	UREA	105	4-5 leaf	97.3 bc	84.3 bc	38.0 abc	20.0 cde	2.5 b	8.0 a	43.5 bcd	7829 abc
	UREA	45	PD								
12	UREA	135	4-5 leaf	97.8 ab	84.8 ab	38.3 ab	52.5 b	2.8 ab	8.0 a	43.3 cde	8048 abc
	UREA	45	PD								
LSD P=.05				0.61	0.61	2.86	22.50	1.11	0.62	1.20	1052.9
Standard Deviation				0.42	0.42	1.99	15.64	0.77	0.43	0.84	731.9
CV				0.44	0.51	5.52	61.55	45.77	5.79	1.91	9.47
Replicate F				2.014	2.014	0.808	0.783	1.152	0.111	4.073	0.860
Replicate Prob(F)				0.1310	0.1310	0.4985	0.5118	0.3426	0.9530	0.0145	0.4712
Treatment F				28.521	28.521	5.144	13.947	15.019	11.505	5.288	9.333
Treatment Prob(F)				0.0001	0.0001	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).

Determine the Agronomic Response of Drill-Seeded CL153 to Nitrogen Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number	: 17-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	: 4.66 x 16 ft
Row width/rows per plot	: 8 in / 7
Soil type	: Dundee silty clay loam
% organic matter	: 1.70
pH	: 7.77
Extractable nutrients ppm	: Ca-3887; Cu-1.95; Mg-637; P-63; K-193; Na-63; S-2.5; Zn-1.7
Crop/Variety	: Rice / See data sheet
Planting method/date	: Drill seeded / March 21
Seeding rate/depth	: 33 seeds/ft^2 / .75 inch
Emergence date	: April 3
Harvest date	: Aug. 15
Seed treatment/cwt	: Dithane (fungicide) – 114 g
	Release (gibberellic acid) – 10 g
	Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml
	AV-1011 (bird repellent) – 18.3 oz
Fertilization	: No blanket applications
Water management	:
Flush	: NA
Flood	: May 12
Drain	: July 28
Pest management	:
Herbicides	: 24 oz/A Roundup + 2 oz/A Sharpen, March 19
	0.6 oz/A Regiment + 0.33 oz/A Permit, May 11
Insecticides	: 0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	: None

Table 21. Determine the agronomic response of drill-seeded CL153 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						8/15/2017	8/15/2017	8/15/2017	7/28/2017	8/15/2017	8/15/2017
Rating Type				50% HD	50% HD	Height	Lodge		Sheath Bt.	Test Wt.	Yield
Rating Unit				days	days	in	% plot	rate	0-9	lb/bu	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	96.0 f	83.0 f	31.8 e	0.0 a	0.0 a	6.3 c	41.5 a	5242 g
2	UREA	30	4-5 leaf	98.8 e	85.8 e	32.8 e	0.0 a	0.0 a	8.0 a	42.9 a	6046 f
3	UREA	60	4-5 leaf	100.8 d	87.8 d	36.5 d	0.0 a	0.0 a	8.0 a	42.6 a	6452 ef
4	UREA	90	4-5 leaf	101.8 cd	88.8 cd	37.8 bcd	5.0 a	0.5 a	7.3 b	42.6 a	7004 bcd
5	UREA	120	4-5 leaf	101.8 cd	88.8 cd	38.0 a-d	0.0 a	0.0 a	7.8 ab	42.4 a	7148 a-d
6	UREA	150	4-5 leaf	103.5 ab	90.5 ab	39.0 ab	0.0 a	0.0 a	7.8 ab	42.2 a	7324 ab
7	UREA	180	4-5 leaf	103.8 a	90.8 a	39.8 a	0.0 a	0.0 a	7.8 ab	41.9 a	7483 a
8	UREA	210	4-5 leaf	103.8 a	90.8 a	39.0 ab	7.5 a	0.5 a	7.8 ab	41.8 a	7505 a
9	UREA	96	4-5 leaf	101.0 cd	88.0 cd	38.3 a-d	0.0 a	0.0 a	8.0 a	42.2 a	6859 cde
	SBNR-UREA	0	PD								
10	UREA	75	4-5 leaf	101.5 cd	88.5 cd	36.8 cd	0.0 a	0.0 a	8.0 a	42.1 a	6823 de
	UREA	45	PD								
11	UREA	105	4-5 leaf	102.3 bc	89.3 bc	39.0 ab	0.0 a	0.0 a	7.8 ab	41.9 a	7212 a-d
	UREA	45	PD								
12	UREA	135	4-5 leaf	103.3 ab	90.3 ab	38.5 abc	0.0 a	0.0 a	8.0 a	41.9 a	7263 abc
	UREA	45	PD								
LSD P=.05				1.43	1.43	1.83	7.59	0.60	0.65	0.87	438.1
Standard Deviation				1.00	1.00	1.27	5.28	0.41	0.45	0.61	304.5
CV				0.98	1.13	3.41	506.54	497.27	5.86	1.44	4.44
Replicate F				5.751	5.751	2.303	0.673	0.647	0.925	3.148	2.493
Replicate Prob(F)				0.0028	0.0028	0.0951	0.5744	0.5904	0.4394	0.0380	0.0772
Treatment F				20.650	20.650	15.778	0.891	0.882	4.963	1.762	19.050
Treatment Prob(F)				0.0001	0.0001	0.0001	0.5581	0.5658	0.0002	0.1024	0.0001

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

Determine the Agronomic Response of Drill-Seeded CL272 to Nitrogen Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number ....: 17-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** ....: 4.66 x 16 ft
- **Row width/rows per plot** ....: 8 in / 7

Soil type ....: Dundee silty clay loam
- **% organic matter** ....: 1.70
- **pH** ....: 7.77
- **Extractable nutrients** ppm ....: Ca-3887; Cu-1.95; Mg-637; P-63; K-193; Na-63; S-2.5; Zn-1.7

Crop/Variety ....: Rice / See data sheet
- **Planting method/date** ....: Drill seeded / March 21
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: April 3
- **Harvest date** ....: Aug. 15

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: No blanket applications

Water management ....:
- **Flush** ....: NA
- **Flood** ....: May 12
- **Drain** ....: July 28

Pest management ....:
- **Herbicides** ....: 24 oz/A Roundup + 2 oz/A Sharpen, March 19
0.6 oz/A Regiment + 0.33 oz/A Permit, May 11
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: None

Table 22. Determine the agronomic response of drill-seeded CL272 to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle			
Rating Date						8/15/2017		8/15/2017	8/15/2017
Rating Type				50% HD	50% HD	Height	Sheath Blt.	Test Wt.	Yield
Rating Unit				days	days	in	0-9	lb/bu	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage						
1	UREA	0	4-5 leaf	98.0 e	85.0 e	34.5 e	4.5 e	43.6 a	5581 e
2	UREA	30	4-5 leaf	98.0 e	85.0 e	37.5 d	6.5 d	43.3 a	7502 d
3	UREA	60	4-5 leaf	102.0 d	89.0 d	40.3 c	7.0 cd	43.6 a	7696 cd
4	UREA	90	4-5 leaf	102.3 cd	89.3 cd	41.0 bc	7.5 abc	43.7 a	8150 bcd
5	UREA	120	4-5 leaf	104.3 ab	91.3 ab	43.0 ab	7.3 bc	43.7 a	8329 abc
6	UREA	150	4-5 leaf	104.5 a	91.5 a	43.0 ab	7.3 bc	43.6 a	8527 ab
7	UREA	180	4-5 leaf	104.0 ab	91.0 ab	42.3 abc	7.8 ab	43.6 a	7937 bcd
8	UREA	210	4-5 leaf	103.8 abc	90.8 abc	43.8 a	8.0 a	43.7 a	8886 a
9	UREA	45	4-5 leaf	103.5 a-d	90.5 a-d	41.8 abc	7.3 bc	45.1 a	8396 ab
	UREA	45	PD						
10	UREA	75	4-5 leaf	102.8 bcd	89.8 bcd	42.3 abc	6.5 d	43.6 a	8196 bc
	UREA	45	PD						
11	UREA	105	4-5 leaf	103.3 a-d	90.3 a-d	42.3 abc	8.0 a	43.9 a	8483 ab
	UREA	45	PD						
12	UREA	135	4-5 leaf	103.8 abc	90.8 abc	43.5 a	7.0 cd	43.9 a	8315 abc
	UREA	45	PD						
LSD P=.05				1.60	1.60	2.32	0.63	1.55	650.8
Standard Deviation				1.11	1.11	1.61	0.44	1.07	452.4
CV				1.09	1.25	3.91	6.18	2.46	5.66
Replicate F				2.012	2.012	2.238	1.320	0.800	1.380
Replicate Prob(F)				0.1313	0.1313	0.1022	0.2844	0.5030	0.2660
Treatment F				16.061	16.061	11.355	18.680	0.656	14.068
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.7682	0.0001

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

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

Experiment number ....: 17-SLP-05

Site and design ....:
- **Location/Cooperator** ....: St. Landry Parish/Charlie Fontenot
- **Tillage type** ....: Conventional
- **Experimental design** ....: Randomized complete block
- **Number of reps** ....: 4
- **Plot size** ....: 4.66 x 16 ft
- **Row width/rows per plot** ....: 8 in / 7

Soil type ....: Dundee silty clay loam
- **% organic matter** ....: 1.70
- **pH** ....: 7.77
- **Extractable nutrients** ppm ....: Ca-3887; Cu-1.95; Mg-637; P-63; K-193; Na-63; S-2.5; Zn-1.7

Crop/Variety ....: Rice / See data sheet
- **Planting method/date** ....: Drill seeded / March 21
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: April 3
- **Harvest date** ....: Aug. 15

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: No blanket applications

Water management ....:
- **Flush** ....: NA
- **Flood** ....: May 12
- **Drain** ....: July 28

Pest management ....:
- **Herbicides** ....: 24 oz/A Roundup + 2 oz/A Sharpen, March 19
0.6 oz/A Regiment + 0.33 oz/A Permit, May 11
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: None

Table 23. Determine the agronomic response of drill-seeded Diamond to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle			
Rating Date						8/15/2017	7/28/2017	8/17/2017	8/17/2017
Rating Type				50% HD	50% HD	Height	Sheath Blt.	Test Wt.	Yield
Rating Unit				days	days	in	0-9	lb/bu	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name	Rate (lb ai/a)	Growth Stage						
1	UREA	0	4-5 leaf	94.0 h	81.0 h	34.0 b	5.0 b	44.5 abc	6431 e
2	UREA	30	4-5 leaf	96.0 g	83.0 g	36.8 b	6.0 a	43.8 b-e	7950 d
3	UREA	60	4-5 leaf	97.3 fg	84.3 fg	41.8 a	6.8 a	44.5 abc	8301 cd
4	UREA	90	4-5 leaf	99.3 de	86.3 de	42.8 a	6.3 a	43.8 b-e	9561 ab
5	UREA	120	4-5 leaf	101.5 bc	88.5 bc	41.3 a	6.0 a	45.5 a	9037 a-d
6	UREA	150	4-5 leaf	102.5 ab	89.5 ab	42.8 a	6.5 a	42.9 de	9686 a
7	UREA	180	4-5 leaf	103.5 a	90.5 a	43.5 a	6.3 a	44.2 a-d	9026 a-d
8	UREA	210	4-5 leaf	103.0 ab	90.0 ab	43.5 a	6.3 a	43.0 de	9523 ab
9	UREA	45	4-5 leaf	96.5 fg	83.5 fg	40.5 a	6.8 a	43.6 cde	8652 a-d
	UREA	45	PD						
10	UREA	75	4-5 leaf	98.0 ef	85.0 ef	42.8 a	6.8 a	45.1 ab	8489 bcd
	UREA	45	PD						
11	UREA	105	4-5 leaf	100.3 cd	87.3 cd	43.0 a	6.5 a	42.5 e	9703 a
	UREA	45	PD						
12	UREA	135	4-5 leaf	102.0 ab	89.0 ab	42.8 a	6.0 a	43.3 cde	9385 abc
	UREA	45	PD						
LSD P=.05				1.58	1.58	3.07	0.81	1.49	1139.2
Standard Deviation				1.10	1.10	2.14	0.56	1.04	791.9
CV				1.11	1.27	5.18	8.95	2.36	8.99
Replicate F				2.812	2.812	0.260	4.435	0.361	1.589
Replicate Prob(F)				0.0545	0.0545	0.8536	0.0100	0.7819	0.2107
Treatment F				32.063	32.063	7.630	3.048	3.198	5.713
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0064	0.0047	0.0001

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

Determine the Agronomic Response of Drill-Seeded PVL01 to Nitrogen Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number	17-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	4.66 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Dundee silty clay loam
% organic matter	1.70
pH	7.77
Extractable nutrients ppm	Ca-3887; Cu-1.95; Mg-637; P-63; K-193; Na-63; S-2.5; Zn-1.7
Crop/Variety	Rice / See data sheet
Planting method/date	Drill seeded / March 21
Seeding rate/depth	33 seeds/ft^2 / .75 inch
Emergence date	April 3
Harvest date	Aug. 15
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	No blanket applications
Water management	
Flush	NA
Flood	May 12
Drain	July 28
Pest management	
Herbicides	24 oz/A Roundup + 2 oz/A Sharpen, March 19 0.6 oz/A Regiment + 0.33 oz/A Permit, May 11
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	None

Table 24. Determine the agronomic response of drill-seeded PVL01 to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle			
Rating Date						8/15/2017	7/28/2017	8/17/2017	8/17/2017
Rating Type				50% HD	50% HD	Height	Sheath Blt.	Test Wt.	Yield
Rating Unit				days	days	in	0-9	lb/bu	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage						
1	UREA	0	4-5 leaf	102.8 c	89.8 c	30.8 d	7.3 a	40.6 a	3491 f
2	UREA	30	4-5 leaf	103.0 c	90.0 c	33.0 bcd	7.8 a	38.7 a	4070 e
3	UREA	60	4-5 leaf	104.0 bc	91.0 bc	32.5 cd	8.0 a	37.8 a	4241 de
4	UREA	90	4-5 leaf	105.3 ab	92.3 ab	34.3 abc	8.3 a	39.9 a	4526 cde
5	UREA	120	4-5 leaf	105.3 ab	92.3 ab	35.8 ab	7.8 a	39.0 a	4876 abc
6	UREA	150	4-5 leaf	105.8 a	92.8 a	37.0 a	7.5 a	39.4 a	4616 cd
7	UREA	180	4-5 leaf	106.8 a	93.8 a	34.5 abc	7.8 a	38.9 a	5217 ab
8	UREA	210	4-5 leaf	106.5 a	93.5 a	35.8 ab	7.8 a	39.9 a	5329 a
9	UREA	45	4-5 leaf	103.0 c	90.0 c	32.8 cd	8.3 a	39.7 a	4515 cde
	UREA	45	PD						
10	UREA	75	4-5 leaf	103.5 c	90.5 c	36.5 a	8.0 a	39.5 a	5112 ab
	UREA	45	PD						
11	UREA	105	4-5 leaf	105.3 ab	92.3 ab	34.5 abc	7.8 a	38.7 a	4761 bc
	UREA	45	PD						
12	UREA	135	4-5 leaf	106.5 a	93.5 a	35.8 ab	7.8 a	39.0 a	4872 abc
	UREA	45	PD						
LSD P=.05				1.57	1.57	2.85	0.67	1.71	463.9
Standard Deviation				1.09	1.09	1.98	0.47	1.19	322.5
CV				1.04	1.19	5.76	5.97	3.02	6.96
Replicate F				1.806	1.806	1.767	0.861	7.062	46.432
Replicate Prob(F)				0.1653	0.1653	0.1726	0.4711	0.0009	0.0001
Treatment F				7.401	7.401	3.544	1.487	1.477	10.442
Treatment Prob(F)				0.0001	0.0001	0.0023	0.1833	0.1870	0.0001

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

Determine the Agronomic Response of Drill-Seeded Aura 115 to Nitrogen Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number	17-SLP-09
Site and design	
Location/Cooperator	St. Landry Parish/Charlie Fontenot
Tillage type	Conventional
Experimental design	Randomized complete block
Number of reps	4
Plot size	4.66 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Dundee silty clay loam
% organic matter	1.70
pH	7.77
Extractable nutrients ppm	Ca-3887; Cu-1.95; Mg-637; P-63; K-193; Na-63; S-2.5; Zn-1.7
Crop/Variety	Rice / See data sheet
Planting method/date	Drill seeded / March 21
Seeding rate/depth	33 seeds/ft^2 / .75 inch
Emergence date	April 3
Harvest date	Aug. 15
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	No blanket applications
Water management	
Flush	NA
Flood	May 12
Drain	July 28
Pest management	
Herbicides	24 oz/A Roundup + 2 oz/A Sharpen, March 19 0.6 oz/A Regiment + 0.33 oz/A Permit, May 11
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	None

Table 25. Determine the agronomic response of drill-seeded Aura 115 to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/15/2017		7/28/2017		8/17/2017		8/17/2017	
Rating Type				50% HD		50% HD		Height		Sheath Blt.		Test Wt.		Yield	
Rating Unit				days		days		in		0-9		lb/bu		lb/A	
Crop Stage Majority				Main		Main		Main		Main		Main		Main	
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage												
1	UREA	0	4-5 leaf	78.0	d	68.0	d	34.3	d	5.0	c	42.8	abc	6404	f
2	UREA	30	4-5 leaf	78.8	c	68.8	c	38.3	c	7.0	b	43.6	a	7966	e
3	UREA	60	4-5 leaf	79.0	c	69.0	c	38.5	bc	7.3	ab	42.9	ab	8902	cde
4	UREA	90	4-5 leaf	79.0	c	69.0	c	40.0	abc	7.8	ab	42.7	bcd	9234	a-d
5	UREA	120	4-5 leaf	79.8	b	69.8	b	40.5	ab	7.5	ab	42.3	b-e	9524	abc
6	UREA	150	4-5 leaf	80.0	b	70.0	b	41.3	a	7.3	ab	41.7	e	10043	ab
7	UREA	180	4-5 leaf	80.8	a	70.8	a	39.5	abc	7.8	ab	41.9	cde	10114	a
8	UREA	210	4-5 leaf	80.8	a	70.8	a	39.3	abc	7.8	ab	41.8	de	9811	abc
9	UREA	45	4-5 leaf	79.0	c	69.0	c	39.5	abc	7.8	ab	42.4	b-e	9102	bcd
	UREA	45	PD												
10	UREA	75	4-5 leaf	79.0	c	69.0	c	39.5	abc	7.3	ab	43.1	ab	8425	de
	UREA	45	PD												
11	UREA	105	4-5 leaf	79.0	c	69.0	c	39.8	abc	8.0	a	42.6	b-e	9625	abc
	UREA	45	PD												
12	UREA	135	4-5 leaf	80.0	b	70.0	b	40.5	ab	7.3	ab	42.5	b-e	9255	a-d
	UREA	45	PD												
LSD P=.05				0.70		0.70		2.17		0.78		0.95		971.7	
Standard Deviation				0.49		0.49		1.51		0.54		0.66		675.5	
CV				0.61		0.7		3.84		7.39		1.55		7.48	
Replicate F				4.447		4.447		3.626		1.626		6.469		1.328	
Replicate Prob(F)				0.0099		0.0099		0.0229		0.2021		0.0014		0.2820	
Treatment F				11.745		11.745		5.548		8.426		2.821		9.498	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0104		0.0001	

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

Determine the Agronomic Response of Drill-Seeded CL172 to Nitrogen Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number ....: 17-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**..: 4.66 x 16 ft
- **Row width/rows per plot**............: 8 in / 7

Soil type ....: Dundee silty clay loam
- **% organic matter**........................: 1.70
- **pH**...: 7.77
- **Extractable nutrients** ppm ....: Ca-3887; Cu-1.95; Mg-637; P-63; K-193; Na-63; S-2.5; Zn-1.7

Crop/Variety ....: Rice / See data sheet
- **Planting method/date** ....: Drill seeded / March 21
- **Seeding rate/depth**......................: 33 seeds/ft^2 / .75 inch
- **Emergence date**...........................: April 3
- **Harvest date** ....: Aug. 15

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization.......................................: No blanket applications

Water management ....:
- **Flush** ....: NA
- **Flood**...: May 12
- **Drain**...: July 28

Pest management...............................:
- **Herbicides**....................................: 24 oz/A Roundup + 2 oz/A Sharpen, March 19
0.6 oz/A Regiment + 0.33 oz/A Permit, May 11
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides**....................................: None

Table 26. Determine the agronomic response of drill-seeded CL172 to nitrogen fertilizer rate and time of application. St. Landry Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle			
Rating Date						8/15/2017	7/28/2017	8/17/2017	8/17/2017
Rating Type				50% HD	50% HD	Height	Sheath Blt.	Test Wt.	Yield
Rating Unit				days	days	in	0-9	lb/bu	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage						
1	UREA	0	4-5 leaf	96.0 f	83.0 f	31.8 f	5.3 d	44.4 a	6136 e
2	UREA	30	4-5 leaf	97.5 ef	84.5 ef	36.3 de	7.0 ab	44.2 ab	7844 d
3	UREA	60	4-5 leaf	98.5 de	85.5 de	35.0 e	7.3 a	44.1 abc	7952 d
4	UREA	90	4-5 leaf	101.8 ab	88.8 ab	37.5 b-e	7.0 ab	43.9 cde	8679 bc
5	UREA	120	4-5 leaf	101.3 bc	88.3 bc	39.8 ab	6.8 abc	43.7 efg	8792 bc
6	UREA	150	4-5 leaf	103.0 ab	90.0 ab	38.8 a-d	6.8 abc	43.6 fg	8614 c
7	UREA	180	4-5 leaf	103.0 ab	90.0 ab	40.5 a	6.8 abc	43.8 d-g	8993 abc
8	UREA	210	4-5 leaf	103.5 a	90.5 a	40.8 a	6.3 c	43.5 g	9517 a
9	UREA	96	4-5 leaf	102.5 ab	89.5 ab	40.0 ab	6.5 bc	43.9 cde	8769 bc
	SBNR-UREA	0	PD						
10	UREA	75	4-5 leaf	99.8 cd	86.8 cd	37.0 cde	7.0 ab	43.8 def	8704 bc
	UREA	45	PD						
11	UREA	105	4-5 leaf	101.8 ab	88.8 ab	39.5 abc	7.3 a	44.0 bcd	8886 bc
	UREA	45	PD						
12	UREA	135	4-5 leaf	102.0 ab	89.0 ab	38.5 a-d	7.3 a	43.6 fg	9245 ab
	UREA	45	PD						
LSD P=.05				1.91	1.91	2.73	0.58	0.27	604.7
Standard Deviation				1.33	1.33	1.90	0.40	0.18	420.3
CV				1.32	1.51	5.01	5.96	0.42	4.94
Replicate F				1.652	1.652	0.992	3.438	2.236	14.182
Replicate Prob(F)				0.1962	0.1962	0.4088	0.0279	0.1024	0.0001
Treatment F				13.094	13.094	7.689	7.875	8.190	17.580
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).

Determine the Agronomic Response of Drill-Seeded XL760 to Nitrogen Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number	17-SLP-07
Site and design	
Location/Cooperator	St. Landry Parish/Charlie Fontenot
Tillage type	Conventional
Experimental design	Randomized complete block
Number of reps	4
Plot size	4.66 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Dundee silty clay loam
% organic matter	1.70
pH	7.77
Extractable nutrients ppm	Ca-3887; Cu-1.95; Mg-637; P-63; K-193; Na-63; S-2.5; Zn-1.7
Crop/Variety	Rice / See data sheet
Planting method/date	Drill seeded / March 21
Seeding rate/depth	10 seeds/ft^2 / .75 inch
Emergence date	April 3
Harvest date	Aug. 16
Seed treatment/cwt	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	
Flush	NA
Flood	May 12
Drain	July 28
Pest management	
Herbicides	24 oz/A Roundup + 2 oz/A Sharpen, March 19 0.6 oz/A Regiment + 0.33 oz/A Permit, May 11
Insecticides	None
Fungicides	None

Table 27. Determine the agronomic response of drill-seeded XL760 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						8/15/2017	8/16/2017	8/16/2017	7/28/2017	8/16/2017	8/16/2017
Rating Type				50% HD	50% HD	Height	Lodge		Sheath Blt.	Test Wt.	Yield
Rating Unit				days	days	in	% plot	rate	0-9	lb/bu	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	94.0 d	81.0 d	38.3 d	0.0 c	0.0 c	3.8 b	40.3 a	7279 c
2	UREA	60	4-5 leaf	100.0 c	87.0 c	46.8 bc	0.0 c	0.0 c	6.5 a	39.0 a	10341 a
3	UREA	90	4-5 leaf	102.8 ab	89.8 ab	45.5 c	0.0 c	0.0 c	7.0 a	41.0 a	9445 b
4	UREA	120	4-5 leaf	103.8 a	90.8 a	48.5 abc	0.0 c	0.0 c	6.8 a	40.3 a	10255 a
5	UREA	150	4-5 leaf	104.3 a	91.3 a	50.3 a	25.0 b	0.8 b	6.8 a	39.6 a	10411 a
6	UREA	180	4-5 leaf	104.8 a	91.8 a	48.5 abc	50.0 a	1.5 a	6.5 a	39.9 a	10321 a
7	UREA	75	4-5 leaf	100.8 bc	87.8 bc	48.3 abc	0.0 c	0.0 c	6.8 a	40.7 a	9999 ab
	UREA	45	50% HD								
8	UREA	105	4-5 leaf	103.0 ab	90.0 ab	49.0 ab	0.0 c	0.0 c	6.8 a	40.3 a	10231 a
	UREA	45	50% HD								
9	UREA	135	4-5 leaf	103.3 ab	90.3 ab	49.0 ab	22.5 b	0.5 b	6.5 a	39.9 a	10167 ab
	UREA	45	50% HD								
LSD P=.05				2.53	2.53	3.11	15.35	0.44	0.92	1.40	722.2
Standard Deviation				1.73	1.73	2.13	10.52	0.30	0.63	0.96	494.9
CV				1.7	1.95	4.53	97.1	99.59	9.92	2.39	5.04
Replicate F				3.620	3.620	1.971	1.565	1.900	1.000	0.036	1.156
Replicate Prob(F)				0.0275	0.0275	0.1452	0.2238	0.1566	0.4098	0.9905	0.3471
Treatment F				14.699	14.699	11.371	11.636	12.000	9.907	1.473	16.288
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.2189	0.0001

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

Determine the Agronomic Response of Drill-Seeded Gemini 214 CL to Nitrogen Fertilizer Rate and Time of Application – St. Landry Parish

Experiment number	17-SLP-08
Site and design	
Location/Cooperator	St. Landry Parish/Charlie Fontenot
Tillage type	Conventional
Experimental design	Randomized complete block
Number of reps	4
Plot size	4.66 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Dundee silty clay loam
% organic matter	1.70
pH	7.77
Extractable nutrients ppm	Ca-3887; Cu-1.95; Mg-637; P-63; K-193; Na-63; S-2.5; Zn-1.7
Crop/Variety	Rice / See data sheet
Planting method/date	Drill seeded / March 21
Seeding rate/depth	10 seeds/ft^2 / .75 inch
Emergence date	April 3
Harvest date	Aug. 16
Seed treatment/cwt	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	
Flush	NA
Flood	May 12
Drain	July 28
Pest management	
Herbicides	24 oz/A Roundup + 2 oz/A Sharpen, March 19 0.6 oz/A Regiment + 0.33 oz/A Permit, May 11
Insecticides	None
Fungicides	None

Table 28. Determine the agronomic response of drill-seeded Gemini 214 CL 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						8/15/2017	8/16/2017	8/16/2017	7/28/2017	8/16/2017	8/16/2017
Rating Type				50% HD	50% HD	Height	Lodge		Sheath Blt.	Test Wt.	Yield
Rating Unit				days	days	in	% plot	rate	0-9	lb/bu	lb/A
Crop Stage Majority				Main	Main	Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	UREA	0	4-5 leaf	94.0 c	81.0 c	36.8 d	0.0 a	0.0 a	4.0 c	40.9 a	7650 b
2	UREA	60	4-5 leaf	99.5 b	86.5 b	46.3 c	0.0 a	0.0 a	6.8 ab	39.9 a	10567 a
3	UREA	90	4-5 leaf	102.0 ab	89.0 ab	47.0 bc	0.0 a	0.0 a	7.3 a	40.9 a	10441 a
4	UREA	120	4-5 leaf	102.8 a	89.8 a	48.0 abc	0.0 a	0.0 a	6.5 ab	40.4 a	10256 a
5	UREA	150	4-5 leaf	102.0 ab	89.0 ab	48.3 abc	2.5 a	0.3 a	6.8 ab	40.4 a	10419 a
6	UREA	180	4-5 leaf	102.8 a	89.8 a	50.0 a	7.5 a	0.3 a	6.3 b	40.1 a	10894 a
7	UREA	75	4-5 leaf	100.5 ab	87.5 ab	47.8 abc	0.0 a	0.0 a	6.8 ab	39.6 a	10863 a
	UREA	45	50% HD								
8	UREA	105	4-5 leaf	100.3 ab	87.3 ab	47.3 bc	0.0 a	0.0 a	7.0 ab	40.5 a	10589 a
	UREA	45	50% HD								
9	UREA	135	4-5 leaf	102.3 ab	89.3 ab	49.3 ab	0.0 a	0.0 a	6.5 ab	40.3 a	10417 a
	UREA	45	50% HD								
LSD P=.05				2.90	2.90	2.27	7.40	0.32	0.89	1.30	891.8
Standard Deviation				1.99	1.99	1.55	5.07	0.22	0.61	0.89	611.1
CV				1.97	2.27	3.33	456.21	396.86	9.54	2.2	5.97
Replicate F				5.083	5.083	2.286	1.730	2.286	0.667	0.103	0.463
Replicate Prob(F)				0.0073	0.0073	0.1044	0.1876	0.1044	0.5807	0.9578	0.7106
Treatment F				7.692	7.692	25.303	1.000	1.000	9.667	0.871	10.521
Treatment Prob(F)				0.0001	0.0001	0.0001	0.4613	0.4613	0.0001	0.5537	0.0001

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

Determination of Optimum Plant Population and Seeding Rate in a Stale Seedbed Tillage System (CL172) – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-13

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.40
- **Extractable nutrients** ppm ....: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: See data sheet / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 3
- **Ratoon Harvest date** ....: Nov. 7

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15
150 lb N/A 46-0-0, May 2
90 lb N/A 46-0-0, Aug. 3

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
2 qt/A glyphosate, March 10
1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
4 oz/A League + 3 oz/A propanil, May 2
20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 29. Determination of optimum plant population and seeding rate in a stale seedbed tillage system (CL172). H. Rouse Caffey Rice Research Station.

Trt. No.	Trt. Name							
	Crop Name	Rice	Rice	Rice	Rice	Rice	Rice	Rice
	Description	Rice Density	Plant-hd	Emer-hd	Tip of panicle			
	Rating Date	4/24/2017			8/2/2017	8/2/2017	11/7/2017	
	Rating Type	Stand Count	50% HD	50% HD	Height	Yield	Yield	Total Yield
	Rating Unit	number	days	days	in	lb/A	lb/A	lb/A
	Sample Size, Unit	1 sq ft.						
	Crop Stage Majority	Main	Main	Main	Main	Main	Ratoon	MC+RC
	Crop Stage Scale	2-3 leaf						
1	5 seeds/ft^2 (11.6 lb/A)	2.3 e	111.3 a	98.3 a	35.0 a	4869 d	2461 c	7330 d
2	7.5 seeds/ft^2 (17.4 lb/A)	3.9 de	110.5 ab	97.5 ab	35.3 a	6337 bcd	2815 bc	9152 bc
3	10 seeds/ft^2 (22.3 lb/A)	4.7 de	110.0 ab	97.0 ab	35.5 a	6006 cd	2664 bc	8670 cd
4	15 seeds/ft^2 (34.9 lb/A)	5.8 de	110.3 ab	97.3 ab	34.0 a	6426 abc	2718 bc	9144 bc
5	20 seeds/ft^2 (46.6 lb/A)	7.7 cd	108.5 bc	95.5 bc	33.5 a	6683 abc	2843 b	9526 abc
6	25 seeds/ft^2 (58.2 lb/A)	11.4 bc	106.3 cd	93.3 cd	33.8 a	6621 abc	2893 ab	9514 abc
7	30 seeds/ft^2 (69.9 lb/A)	13.1 ab	106.3 cd	93.3 cd	33.5 a	7806 ab	2990 ab	10796 ab
8	35 seeds/ft^2 (81.5 lb/A)	16.8 a	105.3 d	92.3 d	34.0 a	7876 a	3224 a	11100 a
9	40 seeds/ft^2 (93.1 lb/A)	15.6 a	105.5 d	92.5 d	34.0 a	7171 abc	2915 ab	10087 abc
	LSD P=.05	3.78	2.74	2.74	2.82	1511.5	368.4	1734.1
	Standard Deviation	2.59	1.88	1.88	1.93	1035.7	252.4	1188.2
	CV	28.68	1.73	1.97	5.63	15.59	8.9	12.53
	Replicate F	0.527	16.324	16.324	0.804	1.410	3.408	1.512
	Replicate Prob(F)	0.6677	0.0001	0.0001	0.5037	0.2641	0.0338	0.2368
	Treatment F	17.021	6.497	6.497	0.628	3.192	2.891	3.622
	Treatment Prob(F)	0.0001	0.0002	0.0002	0.7466	0.0130	0.0209	0.0068

Continued.

Table 29. Continued.

Crop Name		Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description		Yield Components						
Rating Date								
Rating Type		WP dry wt.	Panicle #	Grain wt.	10 P gr wt.	10 P seed	Milling (g/100g)	
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.	Trt. Name							
1	5 seeds/ft^2 (11.6 lb/A)	605 a	104 a	261.7 a	34.7 a	1525 a	59.92 a	70.33 a
2	7.5 seeds/ft^2 (17.4 lb/A)	544 a	98 a	232.0 a	29.6 a	1282 ab	61.00 a	70.12 a
3	10 seeds/ft^2 (22.3 lb/A)	471 a	89 a	193.5 a	27.6 a	1193 abc	60.24 a	70.44 a
4	15 seeds/ft^2 (34.9 lb/A)	508 a	125 a	205.3 a	28.6 a	1194 abc	59.55 a	69.93 a
5	20 seeds/ft^2 (46.6 lb/A)	458 a	99 a	192.6 a	25.9 a	1083 bc	59.51 a	70.02 a
6	25 seeds/ft^2 (58.2 lb/A)	470 a	153 a	184.3 a	25.5 a	1081 bc	59.45 a	70.19 a
7	30 seeds/ft^2 (69.9 lb/A)	464 a	106 a	200.8 a	23.6 a	982 bc	61.32 a	71.23 a
8	35 seeds/ft^2 (81.5 lb/A)	487 a	113 a	209.8 a	24.8 a	1012 bc	59.07 a	70.62 a
9	40 seeds/ft^2 (93.1 lb/A)	479 a	116 a	189.7 a	22.9 a	942 c	57.40 a	70.27 a
LSD P=.05		126.31	64.3	57.82	7.466	335.8	3.683	1.666
Standard Deviation		86.55	44.0	39.62	5.115	230.1	2.524	1.142
CV		17.36	39.59	19.07	18.94	20.11	4.23	1.62
Replicate F		0.517	0.658	0.834	0.536	0.531	0.652	0.680
Replicate Prob(F)		0.6745	0.5858	0.4885	0.6619	0.6657	0.5896	0.5729
Treatment F		1.225	0.745	1.549	2.030	2.466	0.821	0.468
Treatment Prob(F)		0.3271	0.6523	0.1929	0.0861	0.0416	0.5921	0.8662

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

Determination of Optimum Plant Population and Seeding Rate in a Stale Seedbed Tillage System (CL163) – H. Rouse Caffey Rice Research Station

Experiment number	: 17-CM-14
Site and design	:
Location/Cooperator	: H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	: Fall 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	: 1.65
pH	: 7.40
Extractable nutrients ppm	: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5
Crop/Variety	: Rice / see data sheet
Planting method/date	: Drill seeded / March 13
Seeding rate/depth	: See data sheet / .75 inch
Emergence date	: March 26
Harvest date	: Aug. 3
Ratoon Harvest date	: Nov. 7
Seed treatment/cwt	: Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	: 250 lb/A 0-24-24-2.7, March 15 150 lb N/A 46-0-0, May 2 90 lb N/A 46-0-0, Aug. 3
Water management	:
Flush	: March 22
Flood	: May 3
Drain	: July 19
Ratoon flood	: Aug. 7
Ratoon drain	: Oct. 24
Pest management	:
Herbicides	: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	: 0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 30. Determination of optimum plant population and seeding rate in a stale seedbed tillage system (CL163). 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	4/24/2017			8/2/2017	8/3/2017	11/7/2017	
	Rating Type	Stand Count	50% HD	50% HD	Height	Yield	Yield	Total Yield
	Rating Unit	number	days	Days	in	lb/A	lb/A	lb/A
	Sample Size, Unit	1 sq ft.						
	Crop Stage Majority	Main	Main	Main	Main	Main	Ratoon	MC+RC
	Crop Stage Scale	2-3 leaf						
Trt. No.	Trt. Name							
1	5 seeds/ft^2 (11.6 lb/A)	2.2 d	106.3 a	93.3 a	38.3 a	4986 c	2419 c	7405 d
2	7.5 seeds/ft^2 (17.4 lb/A)	3.2 cd	106.0 a	93.0 a	38.0 a	7252 ab	2715 c	9966 bc
3	10 seeds/ft^2 (22.3 lb/A)	5.3 c	105.5 ab	92.5 ab	38.0 a	6571 b	2912 c	9483 c
4	15 seeds/ft^2 (34.9 lb/A)	5.7 c	105.8 a	92.8 a	37.5 a	7092 ab	2999 bc	10091 bc
5	20 seeds/ft^2 (46.6 lb/A)	8.5 b	106.5 a	93.5 a	38.8 a	7222 ab	3542 ab	10764 abc
6	25 seeds/ft^2 (58.2 lb/A)	10.9 ab	105.0 ab	92.0 ab	38.5 a	7222 ab	3645 a	10867 ab
7	30 seeds/ft^2 (69.9 lb/A)	12.3 a	103.5 b	90.5 b	37.3 a	7947 a	3671 a	11618 a
8	35 seeds/ft^2 (81.5 lb/A)	12.0 a	103.5 b	90.5 b	36.5 a	7041 ab	3619 a	10660 abc
9	40 seeds/ft^2 (93.1 lb/A)	13.2 a	103.5 b	90.5 b	36.5 a	7759 ab	3823 a	11582 a
	LSD P=.05	2.47	2.10	2.10	2.16	1205.6	599.4	1367.7
	Standard Deviation	1.70	1.44	1.44	1.48	826.1	410.7	937.2
	CV	20.85	1.37	1.56	3.93	11.78	12.6	9.12
	Replicate F	0.749	23.434	23.434	0.249	0.523	6.619	2.376
	Replicate Prob(F)	0.5337	0.0001	0.0001	0.8611	0.6703	0.0020	0.0951
	Treatment F	24.310	2.993	2.993	1.220	4.309	6.035	7.537
	Treatment Prob(F)	0.0001	0.0178	0.0178	0.3298	0.0025	0.0003	0.0001

Continued.

Table 30. 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 (g/100g)	
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.	Trt. Name							
1	5 seeds/ft^2 (11.6 lb/A)	605 a	93 a	269.5 a	39.11 a	1671 a	58.05 a	69.43 a
2	7.5 seeds/ft^2 (17.4 lb/A)	507 a	80 a	216.8 a	37.69 a	1589 a	58.24 a	69.63 a
3	10 seeds/ft^2 (22.3 lb/A)	502 a	91 a	220.6 a	37.03 a	1602 a	58.38 a	69.83 a
4	15 seeds/ft^2 (34.9 lb/A)	461 a	80 a	209.7 a	34.23 a	1433 a	56.92 a	69.05 a
5	20 seeds/ft^2 (46.6 lb/A)	527 a	101 a	231.2 a	32.19 a	1380 a	59.84 a	70.69 a
6	25 seeds/ft^2 (58.2 lb/A)	480 a	88 a	213.6 a	35.34 a	1492 a	59.20 a	70.11 a
7	30 seeds/ft^2 (69.9 lb/A)	477 a	95 a	226.0 a	33.76 a	1372 a	56.95 a	69.77 a
8	35 seeds/ft^2 (81.5 lb/A)	485 a	84 a	227.4 a	30.74 a	1262 a	58.67 a	70.14 a
9	40 seeds/ft^2 (93.1 lb/A)	458 a	90 a	203.6 a	29.47 a	1219 a	56.09 a	69.80 a
LSD P=.05		162.74	37.4	72.54	8.384	343.1	2.916	0.929
Standard Deviation		111.51	25.6	49.71	5.745	235.1	1.998	0.637
CV		22.28	28.81	22.16	16.7	16.25	3.44	0.91
Replicate F		0.506	0.517	0.266	0.810	0.579	4.527	2.132
Replicate Prob(F)		0.6821	0.6742	0.8489	0.5008	0.6347	0.0119	0.1226
Treatment F		0.657	0.292	0.592	1.270	1.742	1.427	2.135
Treatment Prob(F)		0.7233	0.9619	0.7750	0.3046	0.1396	0.2359	0.0722

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

Determination of Optimum Plant Population and Seeding Rate in a Stale Seedbed Tillage System (CL153) – H. Rouse Caffey Rice Research Station

Experiment number	17-CM-15
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall 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	1.65
pH	7.40
Extractable nutrients ppm	Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5
Crop/Variety	Rice / see data sheet
Planting method/date	Drill seeded / March 13
Seeding rate/depth	See data sheet / .75 inch
Emergence date	March 26
Harvest date	Aug. 3
Ratoon Harvest date	Nov. 7
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15 150 lb N/A 46-0-0, May 2 90 lb N/A 46-0-0, Aug. 3
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	Oct. 24
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 31. Determination of optimum plant population and seeding rate in a stale seedbed tillage system (CL153). 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		4/24/2017			8/2/2017	8/3/2017	11/7/2017	
Rating Type		Stand Count	50% HD	50% HD	Height	Yield	Yield	Total Yield
Rating Unit		number	days	days	in	lb/A	lb/A	lb/A
Sample Size, Unit		1 sq ft.						
Crop Stage Majority		Main	Main	Main	Main	Main	Ratoon	MC+RC
Crop Stage Scale		2-3 leaf						
Trt. No.	Trt. Name							
1	5 seeds/ft^2 (11.6 lb/A)	2.8 e	107.5 a	94.5 a	36.3 a	5242 c	1724 d	6966 c
2	7.5 seeds/ft^2 (17.4 lb/A)	3.2 e	107.0 ab	94.0 ab	36.8 a	7279 ab	2100 bc	9379 ab
3	10 seeds/ft^2 (22.3 lb/A)	5.0 de	106.3 abc	93.3 abc	35.3 a	6284 bc	1974 cd	8258 bc
4	15 seeds/ft^2 (34.9 lb/A)	7.0 cd	106.0 bc	93.0 bc	35.5 a	7177 ab	2211 abc	9389 ab
5	20 seeds/ft^2 (46.6 lb/A)	8.6 c	105.8 bcd	92.8 bcd	35.8 a	7633 ab	2405 ab	10038 a
6	25 seeds/ft^2 (58.2 lb/A)	9.6 c	105.3 cd	92.3 cd	36.0 a	7480 ab	2562 a	10042 a
7	30 seeds/ft^2 (69.9 lb/A)	13.2 b	103.8 e	90.8 e	35.0 a	6914 ab	2263 abc	9178 ab
8	35 seeds/ft^2 (81.5 lb/A)	15.8 ab	103.8 e	90.8 e	35.3 a	7526 ab	2513 a	10039 a
9	40 seeds/ft^2 (93.1 lb/A)	18.2 a	104.5 de	91.5 de	35.3 a	7987 a	2543 a	10530 a
LSD P=.05		2.87	1.34	1.34	1.65	1567.3	359.6	1744.1
Standard Deviation		1.97	0.92	0.92	1.13	1073.9	246.4	1195.1
CV		21.25	0.87	0.99	3.17	15.22	10.93	12.83
Replicate F		1.774	26.906	26.906	5.982	0.110	13.520	1.000
Replicate Prob(F)		0.1790	0.0001	0.0001	0.0034	0.9533	0.0001	0.4100
Treatment F		30.811	8.536	8.536	1.029	2.415	5.374	3.401
Treatment Prob(F)		0.0001	0.0001	0.0001	0.4420	0.0453	0.0006	0.0094

Continued.

Table 31. 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 (g/100g)	
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.	Trt. Name							
1	5 seeds/ft^2 (11.6 lb/A)	547.5 a	106 a	256.8 a	22.03 ab	970 abc	59.36 ab	68.21 a
2	7.5 seeds/ft^2 (17.4 lb/A)	576.1 a	121 a	277.3 a	25.03 a	1139 a	59.65 a	68.61 a
3	10 seeds/ft^2 (22.3 lb/A)	495.3 a	106 a	216.9 a	26.26 a	1137 a	58.93 ab	69.15 a
4	15 seeds/ft^2 (34.9 lb/A)	440.8 a	102 a	209.6 a	20.82 ab	903 bc	57.94 abc	69.09 a
5	20 seeds/ft^2 (46.6 lb/A)	486.9 a	110 a	230.7 a	24.37 a	1048 ab	58.72 ab	69.04 a
6	25 seeds/ft^2 (58.2 lb/A)	493.6 a	126 a	230.5 a	17.99 b	790 c	56.76 a-d	68.81 a
7	30 seeds/ft^2 (69.9 lb/A)	465.4 a	116 a	224.4 a	22.16 ab	924 abc	55.10 bcd	69.11 a
8	35 seeds/ft^2 (81.5 lb/A)	442.0 a	115 a	212.8 a	18.78 b	778 c	52.41 d	68.63 a
9	40 seeds/ft^2 (93.1 lb/A)	449.8 a	118 a	219.6 a	18.43 b	762 c	54.14 cd	68.65 a
LSD P=.05		94.04	24.2	57.58	5.590	232.1	4.499	1.912
Standard Deviation		64.44	16.6	39.45	3.831	159.0	3.083	1.310
CV		13.19	14.69	17.08	17.6	16.94	5.41	1.9
Replicate F		0.315	0.419	1.128	1.743	1.030	1.690	1.974
Replicate Prob(F)		0.8141	0.7407	0.3577	0.1850	0.3968	0.1958	0.1447
Treatment F		2.129	0.885	1.277	2.489	3.432	2.788	0.229
Treatment Prob(F)		0.0729	0.5432	0.3012	0.0401	0.0090	0.0246	0.9816

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

Determination of Optimum Plant Population and Seeding Rate in a Stale Seedbed Tillage System (CL272) – H. Rouse Caffey Rice Research Station

Experiment number	17-CM-16
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall 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	1.65
pH	7.40
Extractable nutrients ppm	Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5
Crop/Variety	Rice / see data sheet
Planting method/date	Drill seeded / March 13
Seeding rate/depth	See data sheet / .75 inch
Emergence date	March 26
Harvest date	Aug. 3
Ratoon Harvest date	Nov. 7
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15 150 lb N/A 46-0-0, May 2 90 lb N/A 46-0-0, Aug. 3
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	Oct. 24
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 32. Determination of optimum plant population and seeding rate in a stale seedbed tillage system (CL272). 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		4/24/2017			8/2/2017	8/3/2017	11/7/2017	
Rating Type		Stand Count	50% HD	50% HD	Height	Yield	Yield	Total Yield
Rating Unit		number	days	Days	in	lb/A	lb/A	lb/A
Sample Size, Unit		1 sq ft.						
Crop Stage Majority		Main	Main	Main	Main	Main	Ratoon	MC+RC
Crop Stage Scale		2-3 leaf						
Trt. No.	Trt. Name							
1	5 seeds/ft^2 (11.6 lb/A)	2.9 e	108.5 ab	95.5 ab	37.3 a	6144 c	2335 e	8858 c
2	7.5 seeds/ft^2 (17.4 lb/A)	4.4 de	108.8 a	95.8 A	37.3 a	6319 bc	2471 de	8791 c
3	10 seeds/ft^2 (22.3 lb/A)	4.9 de	107.5 bc	94.5 bc	38.8 a	6865 abc	2547 de	9412 bc
4	15 seeds/ft^2 (34.9 lb/A)	7.4 cd	107.0 cd	94.0 cd	38.0 a	7498 ab	2763 bcd	10261 ab
5	20 seeds/ft^2 (46.6 lb/A)	9.1 bc	106.3 de	93.3 de	34.8 a	7585 a	2707 cd	10292 ab
6	25 seeds/ft^2 (58.2 lb/A)	10.5 bc	106.0 de	93.0 de	37.0 a	7907 a	3061 a	10968 a
7	30 seeds/ft^2 (69.9 lb/A)	12.1 ab	105.3 e	92.3 E	37.3 a	7675 a	2870 abc	10545 ab
8	35 seeds/ft^2 (81.5 lb/A)	14.0 a	105.5 e	92.5 E	36.3 a	7746 a	3048 ab	10793 a
9	40 seeds/ft^2 (93.1 lb/A)	13.9 a	105.3 e	92.3 E	36.8 a	7873 a	3080 a	10953 a
LSD P=.05		3.22	1.25	1.25	2.80	1201.6	297.8	1304.5
Standard Deviation		2.21	0.86	0.86	1.92	823.4	203.6	891.8
CV		25.15	0.8	0.91	5.18	11.29	7.36	8.83
Replicate F		1.713	8.405	8.405	2.444	5.754	17.897	8.307
Replicate Prob(F)		0.1911	0.0005	0.0005	0.0886	0.0041	0.0001	0.0006
Treatment F		14.148	9.911	9.911	1.350	2.688	7.226	3.742
Treatment Prob(F)		0.0001	0.0001	0.0001	0.2677	0.0290	0.0001	0.0061

Continued.

Table 32. Continued.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Yield Components													
Rating Date															
Rating Type		WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed		Milling (g/100g)			
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.	Trt. Name														
1	5 seed/ft^2 (11.6 lb/A)	622	a	108	a	240.5	A	27.27	a	1177	a	59.43	a	67.44	a
2	7.5 seed/ft^2 (17.4 lb/A)	587	a	108	a	230.4	A	24.92	a	1075	a	59.54	a	68.15	a
3	10 seed/ft^2 (22.3 lb/A)	594	a	115	a	229.9	A	25.07	a	1081	a	58.87	a	67.78	a
4	15 seed/ft^2 (34.9 lb/A)	533	a	106	a	191.1	A	23.52	a	1016	a	53.80	a	67.59	a
5	20 seed/ft^2 (46.6 lb/A)	561	a	110	a	242.0	A	25.91	a	1055	a	58.91	a	68.86	a
6	25 seed/ft^2 (58.2 lb/A)	577	a	116	a	227.5	A	24.75	a	996	a	56.94	a	68.54	a
7	30 seed/ft^2 (69.9 lb/A)	529	a	113	a	206.0	A	24.99	a	994	a	55.56	a	67.70	a
8	35 seed/ft^2 (81.5 lb/A)	503	a	108	a	187.8	A	28.92	a	1101	a	52.97	a	67.73	a
9	40 seed/ft^2 (93.1 lb/A)	493	a	109	a	199.9	A	26.29	a	1050	a	52.38	a	68.02	a
LSD P=.05		95.52		21.4		49.01		6.895		283.3		8.608		1.774	
Standard Deviation		65.45		14.7		33.58		4.725		194.1		5.898		1.216	
CV		11.78		13.31		15.46		18.36		18.31		10.44		1.79	
Replicate F		6.026		4.373		3.566		1.417		1.966		3.998		1.017	
Replicate Prob(F)		0.0033		0.0136		0.0290		0.2621		0.1461		0.0193		0.4023	
Treatment F		1.788		0.229		1.582		0.457		0.353		0.964		0.592	
Treatment Prob(F)		0.1292		0.9818		0.1827		0.8741		0.9352		0.4859		0.7748	

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

Determination of Optimum Plant Population and Seeding Rate in a Stale Seedbed Tillage System (PVL01) – H. Rouse Caffey Rice Research Station

Experiment number	17-CM-16
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall 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	1.65
pH	7.40
Extractable nutrients ppm	Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5
Crop/Variety	Rice / see data sheet
Planting method/date	Drill seeded / March 13
Seeding rate/depth	See data sheet / .75 inch
Emergence date	March 26
Harvest date	Aug. 3
Ratoon Harvest date	Nov. 7
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15 150 lb N/A 46-0-0, May 2 90 lb N/A 46-0-0, Aug. 3
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	Oct. 24
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 33. Determination of optimum plant population and seeding rate in a stale seedbed tillage system (PVL01). 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		4/24/2017			8/2/2017	8/3/2017	11/7/2017	
Rating Type		Stand Count	50% HD	50% HD	Height	Yield	Yield	Total Yield
Rating Unit		number	days	Days	in	lb/A	lb/A	lb/A
Sample Size, Unit		1 sq ft.						
Crop Stage Majority		Main	Main	Main	Main	Main	Ratoon	MC+RC
Crop Stage Scale		2-3 leaf						
Trt. No.	Trt. Name							
1	5 seeds/ft^2 (11.6 lb/A)	2.2 e	115.5 a	102.5 A	39.3 a	6125 a	2013 a	8138 a
2	7.5 seeds/ft^2 (17.4 lb/A)	3.4 de	114.3 ab	101.3 Ab	37.0 b	5324 a	2189 a	7513 a
3	10 seeds/ft^2 (22.3 lb/A)	4.8 d	113.5 bc	100.5 Bc	37.5 ab	6119 a	2375 a	8494 a
4	15 seeds/ft^2 (34.9 lb/A)	5.2 d	112.8 bcd	99.8 bcd	35.5 bc	5482 a	2095 a	7577 a
5	20 seeds/ft^2 (46.6 lb/A)	8.0 c	113.0 bcd	100.0 bcd	36.5 b	6356 a	2227 a	8583 a
6	25 seeds/ft^2 (58.2 lb/A)	7.9 c	113.0 bcd	100.0 bcd	37.0 b	6321 a	2256 a	8577 a
7	30 seeds/ft^2 (69.9 lb/A)	12.2 a	111.5 d	98.5 D	34.0 c	6271 a	2009 a	8279 a
8	35 seeds/ft^2 (81.5 lb/A)	10.2 b	112.5 bcd	99.5 bcd	35.8 bc	7259 a	2150 a	9410 a
9	40 seeds/ft^2 (93.1 lb/A)	12.8 a	112.0 cd	99.0 Cd	34.3 c	5986 a	2093 a	8078 a
LSD P=.05		1.93	1.95	1.95	2.22	1426.6	284.0	1590.9
Standard Deviation		1.32	1.34	1.34	1.52	977.6	194.6	1090.1
CV		17.85	1.18	1.34	4.19	15.93	9.02	13.14
Replicate F		3.173	10.116	10.116	3.401	2.461	5.612	3.272
Replicate Prob(F)		0.0425	0.0002	0.0002	0.0340	0.0871	0.0046	0.0386
Treatment F		33.090	3.209	3.209	4.660	1.294	1.504	1.112
Treatment Prob(F)		0.0001	0.0127	0.0127	0.0016	0.2931	0.2078	0.3898

Continued.

Table 33. 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 (g/100g)			
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.	Trt. Name														
1	5 seeds/ft^2 (11.6 lb/A)	574	a	105.8	cd	186.7	a	29.00	a	1323.3	a	53.32	a	68.37	a
2	7.5 seeds/ft^2 (17.4 lb/A)	505	ab	105.8	cd	147.8	bc	23.75	a	1040.8	b	53.02	a	68.83	a
3	10 seeds/ft^2 (22.3 lb/A)	533	a	129.5	a	168.4	ab	23.38	a	1040.0	b	57.17	a	70.40	a
4	15 seeds/ft^2 (34.9 lb/A)	455	bc	108.3	bcd	135.7	c	20.63	a	909.8	b	52.74	a	69.22	a
5	20 seeds/ft^2 (46.6 lb/A)	525	a	122.5	abc	166.2	ab	22.75	a	968.3	b	56.40	a	70.36	a
6	25 seeds/ft^2 (58.2 lb/A)	531	a	127.8	a	169.7	ab	22.91	a	995.0	b	56.36	a	70.89	a
7	30 seeds/ft^2 (69.9 lb/A)	525	ab	125.5	ab	171.9	ab	20.76	a	870.0	b	55.48	a	69.76	a
8	35 seeds/ft^2 (81.5 lb/A)	506	ab	125.5	ab	169.9	ab	22.03	a	952.0	b	55.81	a	70.13	a
9	40 seeds/ft^2 (93.1 lb/A)	429	c	103.0	d	134.0	c	22.14	a	962.3	b	53.91	a	69.34	a
LSD P=.05		69.90		18.95		30.096		5.048		218.83		3.958		2.032	
Standard Deviation		47.89		12.98		20.622		3.459		149.94		2.712		1.392	
CV		9.41		11.09		12.8		15.01		14.89		4.94		2.0	
Replicate F		4.861		4.372		2.697		0.987		0.645		0.490		0.525	
Replicate Prob(F)		0.0088		0.0137		0.0684		0.4157		0.5934		0.6925		0.6692	
Treatment F		3.288		2.884		3.003		2.052		3.050		1.525		1.398	
Treatment Prob(F)		0.0112		0.0211		0.0175		0.0830		0.0163		0.2008		0.2477	

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

Determination of Optimum Plant Population and Seeding Rate in a Stale Seedbed Tillage System (Titan) – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-16

Site and design ....:
Location/Cooperator ....: H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type ....: Fall 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 ....: 1.65
pH ....: 7.40
Extractable nutrients ppm ....: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5

Crop/Variety ....: Rice / see data sheet
Planting method/date ....: Drill seeded / March 13
Seeding rate/depth ....: See data sheet / .75 inch
Emergence date ....: March 26
Harvest date ....: Aug. 3
Ratoon Harvest date ....: Nov. 7

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15
150 lb N/A 46-0-0, May 2
90 lb N/A 46-0-0, Aug. 3

Water management ....:
Flush ....: March 22
Flood ....: May 3
Drain ....: July 19
Ratoon flood ....: Aug. 7
Ratoon drain ....: Oct. 24

Pest management ....:
Herbicides ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
2 qt/A glyphosate, March 10
1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
4 oz/A League + 3 oz/A propanil, May 2
20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 34. Determination of optimum plant population and seeding rate in a stale seedbed tillage system (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		4/24/2017			8/2/2017	8/2/2017	11/7/2017	
Rating Type		Stand Count	50% HD	50% HD	Height	Yield	Yield	Total Yield
Rating Unit		number	days	days	in	lb/A	lb/A	lb/A
Sample Size, Unit		1 sq ft.						
Crop Stage Majority		Main	Main	Main	Main	Main	Ratoon	MC+RC
Crop Stage Scale		2-3 leaf						
Trt. No.	Treatment Name							
1	5 seeds/ft^2 (11.6 lb/A)	1.9 d	103.3 a	90.3 a	36.0 a	4835 c	1112 c	5947 e
2	7.5 seeds/ft^2 (17.4 lb/A)	2.6 d	102.3 ab	89.3 ab	37.8 a	6438 b	1142 c	7579 d
3	10 seeds/ft^2 (22.3 lb/A)	3.8 d	101.8 bc	88.8 bc	36.5 a	6901 ab	1469 b	8370 bcd
4	15 seeds/ft^2 (34.9 lb/A)	6.5 c	102.3 ab	89.3 ab	36.5 a	6590 b	1457 b	8047 cd
5	20 seeds/ft^2 (46.6 lb/A)	7.2 c	102.0 bc	89.0 bc	37.0 a	7876 ab	1775 a	9651 ab
6	25 seeds/ft^2 (58.2 lb/A)	9.0 bc	101.8 bc	88.8 bc	36.8 a	7403 ab	1762 a	9165 abc
7	30 seeds/ft^2 (69.9 lb/A)	10.8 ab	101.5 bc	88.5 bc	37.5 a	8173 a	1856 a	10028 a
8	35 seeds/ft^2 (81.5 lb/A)	11.7 a	101.0 c	88.0 c	36.0 a	8266 a	2015 a	10281 a
9	40 seeds/ft^2 (93.1 lb/A)	12.6 a	101.0 c	88.0 c	36.3 a	7772 ab	1898 a	9670 ab
LSD P=.05		2.66	1.01	1.01	2.26	1451.0	267.6	1510.0
Standard Deviation		1.82	0.69	0.69	1.55	994.3	183.3	1034.6
CV		24.86	0.68	0.78	4.22	13.93	11.39	11.83
Replicate F		1.130	4.981	4.981	6.338	4.618	0.696	4.742
Replicate Prob(F)		0.3567	0.0079	0.0079	0.0026	0.0109	0.5638	0.0098
Treatment F		19.252	4.038	4.038	0.645	4.810	12.910	7.320
Treatment Prob(F)		0.0001	0.0037	0.0037	0.7326	0.0013	0.0001	0.0001

Continued.

Table 34. 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 (g/100g)	
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 seeds/ft^2 (11.6 lb/A)	534 a	89.8 a	229.6 a	35.80 ab	1303 ab	66.32 a	70.61 a
2	7.5 seeds/ft^2 (17.4 lb/A)	477 a	89.0 a	202.4 a	34.28 bcd	1243 bcd	65.15 a	70.16 a
3	10 seeds/ft^2 (22.3 lb/A)	478 a	85.5 a	214.1 a	40.80 a	1445 a	66.56 a	70.94 a
4	15 seeds/ft^2 (34.9 lb/A)	477 a	95.3 a	202.0 a	29.57 cde	1097 cde	66.26 a	70.93 a
5	20 seeds/ft^2 (46.6 lb/A)	507 a	100.0 a	226.7 a	34.75 bc	1259 abc	66.16 a	70.36 a
6	25 seeds/ft^2 (58.2 lb/A)	516 a	106.3 a	212.2 a	30.79 b-e	1121 b-e	63.26 a	70.28 a
7	30 seeds/ft^2 (69.9 lb/A)	502 a	104.3 a	198.9 a	30.47 b-e	1142 b-e	64.36 a	70.83 a
8	35 seeds/ft^2 (81.5 lb/A)	485 a	102.5 a	204.4 a	28.71 de	1048 de	64.53 a	70.64 a
9	40 seeds/ft^2 (93.1 lb/A)	497 a	111.5 a	205.7 a	27.45 e	991 e	65.27 a	70.69 a
LSD P=.05		103.71	23.68	54.943	5.943	196.61	2.972	0.861
Standard Deviation		71.07	16.23	37.648	4.072	134.72	2.037	0.590
CV		14.3	16.52	17.87	12.53	11.39	3.12	0.84
Replicate F		6.379	1.801	8.863	2.478	4.156	3.715	1.251
Replicate Prob(F)		0.0025	0.1740	0.0004	0.0856	0.0166	0.0251	0.3133
Treatment F		0.305	1.189	0.343	4.324	4.421	1.196	0.925
Treatment Prob(F)		0.9566	0.3462	0.9397	0.0025	0.0022	0.3424	0.5136

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

Determination of Optimum Plant Population and Seeding Rate in a Stale Seedbed Tillage System (CL172) – Morehouse Parish

Experiment number	17-MP-13
Site and design	
Location/Cooperator	Morehouse Parish
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	Perry clay
% organic matter	2.11
pH	7.04
Extractable nutrients ppm	Ca-2823; Cu-2.1; Mg-598; P-28; K-214; Na-63; S-4.4; Zn-2.3
Crop/Variety	Rice / see data sheet
Planting method/date	Drill seeded / April 26
Seeding rate/depth	See data sheet / .75 inch
Emergence date	May 6
Harvest date	Sept. 11
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	More than 150 lb N/A 46-0-0 (excessive overlapping by plane), date not available
Water management	
Flush	NA
Flood	June 23
Drain	Aug. 23
Pest management	
Herbicides	21 oz/A Clincher + 16 oz/A COC, July 11
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	None

Comments: Because of excessive rainfall in May and June, proper weed management and fertilization were unable to be completed by ground rigs. Preflood fertilizer was applied by aerial applicator and extensive overlapping had occurred making it difficult to determine the amount of fertilizer applied to each plot.

Table 35. Determination of optimum plant population and seeding rate in a stale seedbed tillage system (CL172). Morehouse Parish.

Crop Name		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd		Tip of panicle									
Rating Date						9/11/2017		9/11/2017		9/11/2017		9/11/2017		9/11/2017	
Rating Type		50% HD		50% HD		Height		Lodge				Test Wt.		Yield	
Rating Unit		days		days		in		% plot		rate		lb/bu		lb/A	
Crop Stage Majority		Main		Main		Main		Main		Main		Main		Main	
Trt. No.	Trt. Name														
1	5 seeds/ft² (11.6 lb/A)	91.5	a	81.5	a	44.3	a	0.0	a	0.0	a	42.9	a	8145	a
2	7.5 seeds/ft² (17.4 lb/A)	91.0	ab	81.0	ab	45.3	a	0.0	a	0.0	a	42.1	abc	8559	a
3	10 seeds/ft² (22.3 lb/A)	90.3	bc	80.3	bc	43.5	a	0.0	a	0.0	a	42.4	ab	7830	a
4	15 seeds/ft² (34.9 lb/A)	90.0	c	80.0	c	45.0	a	0.0	a	0.0	a	42.1	bc	8288	a
5	20 seeds/ft² (46.6 lb/A)	90.0	c	80.0	c	44.3	a	0.0	a	0.0	a	41.7	bc	8105	a
6	25 seeds/ft² (58.2 lb/A)	90.3	bc	80.3	bc	44.3	a	0.0	a	0.0	a	41.9	bc	7950	a
7	30 seeds/ft² (69.9 lb/A)	90.3	bc	80.3	bc	44.5	a	0.0	a	0.0	a	41.3	cd	7882	a
8	35 seeds/ft² (81.5 lb/A)	90.0	c	80.0	c	43.8	a	0.0	a	0.0	a	40.6	d	7794	a
9	40 seeds/ft² (93.1 lb/A)	90.0	c	80.0	c	44.5	a	25.0	a	1.3	a	41.6	c	8094	a
LSD P=.05		0.99		0.99		2.01		24.32		1.22		0.81		745.5	
Standard Deviation		0.68		0.68		1.38		16.67		0.83		0.56		510.8	
CV		0.75		0.84		3.11		600.0		600.0		1.33		6.33	
Replicate F		4.609		4.609		0.561		1.000		1.000		2.366		3.692	
Replicate Prob(F)		0.0110		0.0110		0.6459		0.4098		0.4098		0.0961		0.0257	
Treatment F		2.482		2.482		0.629		1.000		1.000		5.757		0.915	
Treatment Prob(F)		0.0405		0.0405		0.7453		0.4613		0.4613		0.0004		0.5209	

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

Determination of Optimum Plant Population and Seeding Rate in a Stale Seedbed Tillage System (CL163) – Morehouse Parish

Experiment number ....: 17-MP-14

Site and design ....:
- **Location/Cooperator** ....: Morehouse Parish
- **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 ....: Perry clay
- **% organic matter**........................: 2.11
- **pH**...: 7.04
- **Extractable nutrients** ppm ....: Ca-2823; Cu-2.1; Mg-598; P-28; K-214; Na-63; S-4.4; Zn-2.3

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / April 26
- **Seeding rate/depth**......................: See data sheet / .75 inch
- **Emergence date**...........................: May 6
- **Harvest date** ....: Sept. 11

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization..: More than 150 lb N/A 46-0-0 (excessive overlapping by plane), date not available

Water management ....:
- **Flush** ....: NA
- **Flood** ....: June 23
- **Drain**..: Aug. 23

Pest management ....:
- **Herbicides**....................................: 21 oz/A Clincher + 16 oz/A COC, July 11
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides**....................................: None

Comments: Because of excessive rainfall in May and June, proper weed management and fertilization were unable to be completed by ground rigs. Preflood fertilizer was applied by aerial applicator and extensive overlapping had occurred making it difficult to determine the amount of fertilizer applied to each plot.

Table 36. Determination of optimum plant population and seeding rate in a stale seedbed tillage system (CL163). Morehouse Parish.

Crop Name		Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description		Plant-hd	Emer-hd	Tip of panicle				
Rating Date				9/11/2017	9/11/2017	9/11/2017	9/11/2017	9/11/2017
Rating Type		50% HD	50% HD	Height	Lodge		Test Wt.	Yield
Rating Unit		days	days	in	% plot	rate	lb/bu	lb/A
Crop Stage Majority		Main	Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name							
1	5 seeds/ft^2 (11.6 lb/A)	93.0 a	83.0 a	45.0 a	0.0 a	0.0 a	41.1 a	8016 ab
2	7.5 seeds/ft^2 (17.4 lb/A)	93.0 a	83.0 a	44.8 a	0.0 a	0.0 a	40.6 a	8444 a
3	10 seeds/ft^2 (22.3 lb/A)	93.0 a	83.0 a	45.8 a	0.0 a	0.0 a	41.1 a	7414 ab
4	15 seeds/ft^2 (34.9 lb/A)	93.0 a	83.0 a	45.8 a	12.5 a	1.0 a	40.1 ab	8386 a
5	20 seeds/ft^2 (46.6 lb/A)	93.0 a	83.0 a	45.8 a	30.0 a	2.3 a	39.2 bc	7007 ab
6	25 seeds/ft^2 (58.2 lb/A)	93.0 a	83.0 a	45.0 a	20.0 a	1.8 a	39.2 bc	7277 ab
7	30 seeds/ft^2 (69.9 lb/A)	93.0 a	83.0 a	45.5 a	30.0 a	2.3 a	39.2 bc	6810 b
8	35 seeds/ft^2 (81.5 lb/A)	93.0 a	83.0 a	44.5 a	42.5 a	3.5 a	38.2 c	5108 c
9	40 seeds/ft^2 (93.1 lb/A)	93.0 a	83.0 a	45.3 a	17.5 a	0.8 a	38.8 c	7463 ab
LSD P=.05		N/A	N/A	1.86	34.90	2.60	1.12	1481.7
Standard Deviation		0.00	0.00	1.27	23.92	1.78	0.77	1015.3
CV		0.0	0.0	2.82	141.15	139.37	1.94	13.86
Replicate F		0.000	0.000	4.667	3.204	1.880	1.445	3.955
Replicate Prob(F)		1.0000	1.0000	0.0105	0.0412	0.1599	0.2545	0.0200
Treatment F		0.000	0.000	0.538	1.648	1.940	7.119	3.961
Treatment Prob(F)		1.0000	1.0000	0.8159	0.1637	0.1001	0.0001	0.0041

N/A = Could not calculate LSD because of error mean square = 0.

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

Determination of Optimum Plant Population and Seeding Rate in a Stale Seedbed Tillage System (CL153) – Morehouse Parish

Experiment number ....: 17-MP-15

Site and design ....:
- **Location/Cooperator** ....: Morehouse Parish
- **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 ....: Perry clay
- **% organic matter**........................: 2.11
- **pH**...: 7.04
- **Extractable nutrients** ppm ....: Ca-2823; Cu-2.1; Mg-598; P-28; K-214; Na-63; S-4.4; Zn-2.3

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / April 26
- **Seeding rate/depth**......................: See data sheet / .75 inch
- **Emergence date**...........................: May 6
- **Harvest date** ....: Sept. 11

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization.......................................: More than 150 lb N/A 46-0-0 (excessive overlapping by plane), date not available

Water management ....:
- **Flush** ....: NA
- **Flood**..: June 23
- **Drain**..: Aug. 23

Pest management ....:
- **Herbicides**....................................: 21 oz/A Clincher + 16 oz/A COC, July 11
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides**....................................: None

Comments: Because of excessive rainfall in May and June, proper weed management and fertilization were unable to be completed by ground rigs. Preflood fertilizer was applied by aerial applicator and extensive overlapping had occurred making it difficult to determine the amount of fertilizer applied to each plot.

Table 37. Determination of optimum plant population and seeding rate in a stale seedbed tillage system (CL153). Morehouse Parish.

Crop Name		Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description		Plant-hd	Emer-hd	Tip of panicle				
Rating Date				9/11/2017	9/11/2017	9/11/2017	9/11/2017	9/11/2017
Rating Type		50% HD	50% HD	Height	Lodge		Test Wt.	Yield
Rating Unit		days	days	in	% plot	rate	lb/bu	lb/A
Crop Stage Majority		Main	Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name							
1	5 seeds/ft^2 (11.6 lb/A)	93.0 a	83.0 a	48.3 a	5.0 a	1.3 a	41.3 a	7804 a
2	7.5 seeds/ft^2 (17.4 lb/A)	93.0 a	83.0 a	46.8 a	0.0 a	0.0 a	40.0 abc	7705 ab
3	10 seeds/ft^2 (22.3 lb/A)	93.0 a	83.0 a	46.0 a	15.0 a	1.3 a	41.1 a	8504 a
4	15 seeds/ft^2 (34.9 lb/A)	93.0 a	83.0 a	47.5 a	20.0 a	2.5 a	40.7 ab	7715 ab
5	20 seeds/ft^2 (46.6 lb/A)	93.0 a	83.0 a	48.0 a	10.0 a	1.3 a	39.5 bcd	7210 abc
6	25 seeds/ft^2 (58.2 lb/A)	93.0 a	83.0 a	47.5 a	35.0 a	3.8 a	38.4 d	5147 d
7	30 seeds/ft^2 (69.9 lb/A)	93.0 a	83.0 a	47.5 a	32.5 a	2.5 a	38.7 cd	5666 cd
8	35 seeds/ft^2 (81.5 lb/A)	93.0 a	83.0 a	47.8 a	22.5 a	2.5 a	39.0 cd	6202 bcd
9	40 seeds/ft^2 (93.1 lb/A)	93.0 a	83.0 a	46.8 a	35.0 a	3.3 a	38.8 cd	5845 cd
LSD P=.05		N/A	N/A	1.73	31.91	3.18	1.57	1551.6
Standard Deviation		0.00	0.00	1.19	21.86	2.18	1.07	1063.2
CV		0.0	0.0	2.51	112.44	107.37	2.7	15.48
Replicate F		0.000	0.000	1.947	3.541	3.725	3.195	2.405
Replicate Prob(F)		1.0000	1.0000	0.1489	0.0297	0.0249	0.0416	0.0923
Treatment F		0.000	0.000	1.421	1.422	1.166	4.272	4.860
Treatment Prob(F)		1.0000	1.0000	0.2383	0.2378	0.3588	0.0026	0.0012

N/A = Could not calculate LSD because of error mean square = 0.

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

Determination of Optimum Plant Population and Seeding Rate in a Stale Seedbed Tillage System (CL272) – Morehouse Parish

Experiment number ....: 17-MP-16

Site and design ....:
- **Location/Cooperator** ....: Morehouse Parish
- **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 ....: Perry Clay
- **% organic matter** ....: 2.11
- **pH** ....: 7.04
- **Extractable nutrients** ppm ....: Ca-2823; Cu-2.1; Mg-598; P-28; K-214; Na-63; S-4.4; Zn-2.3

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / April 26
- **Seeding rate/depth** ....: See data sheet / .75 inch
- **Emergence date** ....: May 6
- **Harvest date** ....: Sept. 11

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: More than 150 lb N/A 46-0-0 (excessive overlapping by plane), date not available

Water management ....:
- **Flush** ....: NA
- **Flood** ....: June 23
- **Drain** ....: Aug. 23

Pest management ....:
- **Herbicides** ....: 21 oz/A Clincher + 16 oz/A COC, July 11
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: None

Comments: Because of excessive rainfall in May and June, proper weed management and fertilization were unable to be completed by ground rigs. Preflood fertilizer was applied by aerial applicator and extensive overlapping had occurred making it difficult to determine the amount of fertilizer applied to each plot.

Table 38. Determination of optimum plant population and seeding rate in a stale seedbed tillage system (CL272). Morehouse Parish.

Crop Name		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd		Tip of panicle					
Rating Date						9/11/2017		9/11/2017		9/11/2017	
Rating Type		50% HD		50% HD		Height		Test Wt.		Yield	
Rating Unit		days		days		in		lb/bu		lb/A	
Crop Stage Majority		Main		Main		Main		Main		Main	
Trt. No.	Trt. Name										
1	5 seeds/ft^2 (11.6 lb/A)	92.5	a	82.5	a	47.8	a	41.4	a	7604	a
2	7.5 seeds/ft^2 (17.4 lb/A)	92.5	a	82.5	a	47.0	a	41.7	a	8225	a
3	10 seeds/ft^2 (22.3 lb/A)	92.5	a	82.5	a	48.3	a	41.6	a	8325	a
4	15 seeds/ft^2 (34.9 lb/A)	92.8	a	82.8	a	49.3	a	41.5	a	8451	a
5	20 seeds/ft^2 (46.6 lb/A)	92.8	a	82.8	a	48.8	a	41.4	a	8357	a
6	25 seeds/ft^2 (58.2 lb/A)	92.8	a	82.8	a	50.0	a	40.4	a	7497	a
7	30 seeds/ft^2 (69.9 lb/A)	93.0	a	83.0	a	49.3	a	41.3	a	7712	a
8	35 seeds/ft^2 (81.5 lb/A)	93.0	a	83.0	a	49.8	a	40.4	a	7525	a
9	40 seeds/ft^2 (93.1 lb/A)	93.0	a	83.0	a	49.8	a	40.3	a	7470	a
LSD P=.05		0.63		0.63		2.80		1.24		953.8	
Standard Deviation		0.43		0.43		1.92		0.85		653.5	
CV		0.47		0.52		3.93		2.07		8.26	
Replicate F		12.000		12.000		6.432		7.997		3.786	
Replicate Prob(F)		0.0001		0.0001		0.0024		0.0007		0.0235	
Treatment F		1.000		1.000		1.123		1.850		1.649	
Treatment Prob(F)		0.4613		0.4613		0.3832		0.1164		0.1632	

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

Determination of Optimum Plant Population and Seeding Rate in a Stale Seedbed Tillage System (PVL01) – Morehouse Parish

Experiment number ....: 17-MP-17

Site and design ....:
- **Location/Cooperator** ....: Morehouse Parish
- **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 ....: Perry clay
- **% organic matter** ....: 2.11
- **pH** ....: 7.04
- **Extractable nutrients** ppm ....: Ca-2823; Cu-2.1; Mg-598; P-28; K-214; Na-63; S-4.4; Zn-2.3

Crop/Variety ....: Rice / see data sheet
- **Planting method/date** ....: Drill seeded / April 26
- **Seeding rate/depth** ....: See data sheet / .75 inch
- **Emergence date** ....: May 6
- **Harvest date** ....: Sept. 11

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: More than 150 lb N/A 46-0-0 (excessive overlapping by plane), date not available

Water management ....:
- **Flush** ....: NA
- **Flood** ....: June 23
- **Drain** ....: Aug. 23

Pest management ....:
- **Herbicides** ....: 21 oz/A Clincher + 16 oz/A COC, July 11
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: None

Comments: Because of excessive rainfall in May and June, proper weed management and fertilization were unable to be completed by ground rigs. Preflood fertilizer was applied by aerial applicator and extensive overlapping had occurred making it difficult to determine the amount of fertilizer applied to each plot.

Table 39. Determination of optimum plant population and seeding rate in a stale seedbed tillage system (PLV01). Morehouse Parish.

Crop Name		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd		Tip of panicle					
Rating Date						9/11/2017		9/11/2017		9/11/2017	
Rating Type		50% HD		50% HD		Height		Test Wt.		Yield	
Rating Unit		days		days		in		lb/bu		lb/A	
Crop Stage Majority		Main		Main		Main		Main		Main	
Trt. No.	Trt. Name										
1	5 seeds/ft^2 (11.6 lb/A)	99.8	a	89.8	a	47.0	a	38.9	a	7568	a
2	7.5 seeds/ft^2 (17.4 lb/A)	99.8	a	89.8	a	46.8	a	38.5	a	7528	a
3	10 seeds/ft^2 (22.3 lb/A)	99.8	a	89.8	a	47.5	a	39.2	a	7483	a
4	15 seeds/ft^2 (34.9 lb/A)	100.0	a	90.0	a	47.8	a	38.3	a	7374	a
5	20 seeds/ft^2 (46.6 lb/A)	100.0	a	90.0	a	47.0	a	38.5	a	7511	a
6	25 seeds/ft^2 (58.2 lb/A)	100.0	a	90.0	a	48.8	a	37.6	a	6743	a
7	30 seeds/ft^2 (69.9 lb/A)	100.0	a	90.0	a	48.0	a	38.4	a	7022	a
8	35 seeds/ft^2 (81.5 lb/A)	100.0	a	90.0	a	48.3	a	38.4	a	7080	a
9	40 seeds/ft^2 (93.1 lb/A)	100.0	a	90.0	a	47.0	a	38.5	a	7123	a
LSD P=.05		0.36		0.36		1.35		1.18		726.6	
Standard Deviation		0.25		0.25		0.92		0.81		497.9	
CV		0.25		0.28		1.94		2.11		6.85	
Replicate F		4.000		4.000		6.087		3.281		4.666	
Replicate Prob(F)		0.0192		0.0192		0.0031		0.0382		0.0105	
Treatment F		1.000		1.000		2.185		1.076		1.345	
Treatment Prob(F)		0.4613		0.4613		0.0664		0.4120		0.2697	

Means followed by the 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	17-CM-28
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall 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	1.65
pH	7.43
Extractable nutrients ppm	Ca-1428; Cu-2.9; Mg-221; P-16; K-63; Na-105; S-2.5; Zn-9.2
Crop/Variety	Rice / CL153
Planting method/date	Drill seeded / March 13
Seeding rate/depth	33 seeds/ft^2 / .75 inch
Emergence date	March 26
Harvest date	Aug. 3
Ratoon Harvest date	NA
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15 90 lb N/A 46-0-0, Aug. 4
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	NA
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 40. 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
Description				Plant-hd	Emer-hd	Tip of panicle			
Rating Date						8/1/2017	8/3/2017	11/9/2017	
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.	Trt. Name	Rate (lb ai/A)	Growth Stage						
1	UTC 0 N	0		98.8 b	85.8 b	26.5 c	3581 cd	2716 c	6297 cd
2	UREA SPF	138	1 DPF	104.0 a	91.0 a	34.8 a	10101 a	3223 a	13324 a
3	UREA SPostF	138	0 DpostF	99.3 b	86.3 b	27.0 bc	4067 bcd	2768 c	6835 bcd
4	UREA 2/3	92	0 DpostF	99.0 b	86.0 b	28.3 b	4204 bcd	2917 bc	7120 bc
	UREA 1/3	46	3 DpostF						
5	UREA 2/3	92	0 DpostF	98.8 b	85.8 b	27.8 bc	4141 bcd	2795 bc	6936 bcd
	UREA 1/3	46	5 DpostF						
6	UREA 2/3	92	0 DpostF	99.0 b	86.0 b	28.0 bc	4060 bcd	3034 ab	7095 bcd
	UREA 1/3	46	10 DpostF						
7	UREA 1/2	69	0 DpostF	99.0 b	86.0 b	28.0 bc	4748 b	2967 abc	7715 b
	UREA 1/2	69	3 DpostF						
8	UREA 1/2	69	0 DpostF	99.0 b	86.0 b	27.3 bc	4136 bcd	2788 bc	6925 bcd
	UREA 1/2	69	5 DpostF						
9	UREA 1/2	69	0 DpostF	99.0 b	86.0 b	27.8 bc	4209 bc	2921 bc	7130 bc
	UREA 1/2	69	10 DpostF						
10	UREA 1/3	46	0 DpostF	99.3 b	86.3 b	28.3 b	4324 bc	2819 bc	7144 bc
	UREA 2/3	92	3 DpostF						
11	UREA 1/3	46	0 DpostF	99.0 b	86.0 b	27.3 bc	3960 bcd	2846 bc	6806 bcd
	UREA 2/3	92	5 DpostF						
12	UREA 1/3	46	0 DpostF	99.0 b	86.0 b	27.8 bc	3170 d	2790 bc	5961 d
	UREA 2/3	92	10 DpostF						
LSD P=.05				0.53	0.53	1.70	1033.9	256.6	1135.3
Standard Deviation				0.37	0.37	1.18	718.7	178.4	789.1
CV				0.37	0.43	4.19	15.77	6.19	10.61
Replicate F				1.222	1.222	4.038	2.955	7.499	4.498
Replicate Prob(F)				0.3171	0.3171	0.0150	0.0467	0.0006	0.0094
Treatment F				61.778	61.778	12.949	24.737	2.513	23.287
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0201	0.0001

Continued.

Table 40. Continued.

Crop Name				Rice	Rice	Rice	Rice	Rice
Description				Tissue	Tissue N	N Uptake	N Fert. Eff.	N Fert. Eff.
Part Rated				Abvgrd -	Abvgrd -	Total -		
Rating Type				Biomass-dry				
Rating Unit				lb/A	% N	lb/A	%	%
Crop Stage Majority				Main	Main	Main	by block	by mean
Crop Stage Scale				50% HD	50% HD	50% HD	50% HD	50% HD
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage					
1	UTC 0 N	0		4396 e	0.84 bc	37 bc	0 b	0 b
2	UREA SPF	138	1 DPF	8139 a	1.35 a	111 a	54 a	54 a
3	UREA SPostF	138	0 DpostF	5071 b-e	1.00 b	51 b	11 b	11 b
4	UREA 2/3	92	0 DpostF	5128 b-e	0.86 bc	44 bc	5 b	6 b
	UREA 1/3	46	3 DpostF					
5	UREA 2/3	92	0 DpostF	5528 b	0.89 bc	49 bc	9 b	9 b
	UREA 1/3	46	5 DpostF					
6	UREA 2/3	92	0 DpostF	4628 cde	0.69 c	32 c	3 b	2 b
	UREA 1/3	46	10 DpostF					
7	UREA 1/2	69	0 DpostF	5332 bcd	0.83 bc	44 bc	7 b	6 b
	UREA 1/2	69	3 DpostF					
8	UREA 1/2	69	0 DpostF	5362 bc	0.82 bc	44 bc	5 b	5 b
	UREA 1/2	69	5 DpostF					
9	UREA 1/2	69	0 DpostF	4807 b-e	0.86 bc	42 bc	5 b	6 b
	UREA 1/2	69	10 DpostF					
10	UREA 1/3	46	0 DpostF	5633 b	0.85 bc	48 bc	8 b	8 b
	UREA 2/3	92	3 DpostF					
11	UREA 1/3	46	0 DpostF	4941 b-e	0.87 bc	43 bc	5 b	5 b
	UREA 2/3	92	5 DpostF					
12	UREA 1/3	46	0 DpostF	4458 de	0.79 bc	35 bc	0 b	0 b
	UREA 2/3	92	10 DpostF					
LSD P=.05				891.7	0.258	18.4	11.4	11.6
Standard Deviation				619.8	0.179	12.8	7.9	8.0
CV				11.73	20.19	26.46	84.86	85.67
Replicate F				10.237	0.660	2.174	1.010	2.030
Replicate Prob(F)				0.0001	0.5825	0.1097	0.4008	0.1287
Treatment F				10.084	3.291	10.401	13.420	12.977
Treatment Prob(F)				0.0001	0.0039	0.0001	0.0001	0.0001

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

Evaluation of ProGibb on Milk Stage of the Main Crop and Yield of Ratoon Crop at 16- and 8-inch Stubble Management – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-21

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.43
- **Extractable nutrients** ppm ....: Ca-1428; Cu-2.9; Mg-221; P-16; K-63; Na-105; S-2.5; Zn-9.2

Crop/Variety ....: Rice / CL153
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 4
- **Ratoon Harvest date** ....: NA

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15
120 lb N/A 46-0-0, May 2
90 lb N/A 46-0-0, Aug. 4

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
  2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
  2 qt/A glyphosate, March 10
  1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
  3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
  3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
  4 oz/A League + 3 oz/A propanil, May 2
  20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 41a. Evaluation of ProGibb application at milk stage of the main crop and yield of ratoon crop at 16- and 8-inch 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							8/1/2017	8/4/2017	11/10/2017	
Rating Type					50% HD	50% HD	Height	Yield	Yield	Yield
Rating Unit					days	days	in	lb/A	lb/A	lb/A
Crop Stage Majority					Main	Main	Main	Main	Ratoon	Ratoon
Trt. No.	Treatment Name	Rate	Rate Unit	Growth Stage						
1	Normal cut (16 in) Without ProGibb				101.0 a	88.0 a	36.3 a	9323 a	2548 b	11871 a
2	Normal cut (16 in) ProGibb 4 oz	4	oz/A	milk	101.0 a	88.0 a	35.5 a	9581 a	2820 ab	12401 a
3	Normal cut (16 in) ProGibb 6 oz	6	oz/A	milk	101.0 a	88.0 a	36.0 a	9335 a	2869 ab	12204 a
4	Bush hog (8 in) Without ProGibb				101.0 a	88.0 a	35.0 a	9171 a	2987 a	12158 a
5	Bush hog (8 in) ProGibb 4 oz	4	oz/A	milk	101.0 a	88.0 a	35.3 a	8929 a	3052 a	11981 a
6	Bush hog (8 in) ProGibb 6 oz	6	oz/A	milk	101.0 a	88.0 a	36.8 a	8958 a	3096 a	12054 a
LSD P=.05					.	.	2.34	674.8	332.9	820.4
Standard Deviation					0.00	0.00	1.55	447.8	220.9	544.3
CV					0.0	0.0	4.34	4.86	7.63	4.49
Replicate F					0.000	0.000	0.156	2.828	1.108	2.208
Replicate Prob(F)					1.0000	1.0000	0.9244	0.0740	0.3768	0.1294
Treatment F					0.000	0.000	0.723	1.236	3.281	0.467
Treatment Prob(F)					1.0000	1.0000	0.6164	0.3407	0.0336	0.7949

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

Table 41b. Two-way comparison of ProGibb rate of application and stubble management practices. H. Rouse Caffey Rice Research Station.

Crop Name					Rice	Rice	Rice	Rice	Rice	Rice
Description					Plant-hd	Emer-hd	Tip of panicle			
Rating Date							8/1/2017	8/4/2017	11/10/2017	
Rating Type					50% HD	50% HD	Height	Yield	Yield	Yield
Rating Unit					days	days	in	lb/A	lb/A	lb/A
Crop Stage Majority					Main	Main	Main	Main	Ratoon	Ratoon
Trt. No.	Trt. Name	Rate	Rate Unit	Growth Stage						
TABLE OF A (Stubble Height) MEANS										
1	Normal cut (16 in)				101.0 a	88.0 a	35.9 a	9413 a	2746 b	12159 a
2	Bush hog (8 in)				101.0 a	88.0 a	35.7 a	9020 b	3045 a	12064 a
P					1.0	1.0	0.7	0.0481	0.0047	0.6775
LSD P=.05					.	.	1.35	389.6	192.2	473.6
TABLE OF B (Pesticide) MEANS										
1	Without ProGibb				101.0 a	88.0 a	35.6 a	9247 a	2767 a	12014 a
2	ProGibb 4 oz	4	oz/A	milk	101.0 a	88.0 a	35.4 a	9255 a	2936 a	12191 a
3	ProGibb 6 oz	6	oz/A	milk	101.0 a	88.0 a	36.4 a	9147 a	2982 a	12129 a
P					1.0	1.0	0.4	0.8654	0.1568	0.8078
LSD P=.05					.	.	1.65	477.2	235.4	580.1
TABLE OF A (Stubble Height) and B (Pesticide) MEANS										
1	Normal cut (16 in)				101.0 a	88.0 a	36.3 a	9323 a	2548 a	11871 a
1	Without ProGibb									
2	Bush hog (8 in)				101.0 a	88.0 a	35.0 a	9171 a	2987 a	12158 a
1	Without ProGibb									
1	Normal cut (16 in)				101.0 a	88.0 a	35.5 a	9581 a	2820 a	12401 a
2	ProGibb 4 oz	4	oz/A	milk						
2	Bush hog (8 in)				101.0 a	88.0 a	35.3 a	8929 a	3052 a	11981 a
2	ProGibb 4 oz	4	oz/A	milk						
1	Normal cut (16 in)				101.0 a	88.0 a	36.0 a	9335 a	2869 a	12204 a
3	ProGibb 6 oz	6	oz/A	milk						
2	Bush hog (8 in)				101.0 a	88.0 a	36.8 a	8958 a	3096 a	12054 a
3	ProGibb 6 oz	6	oz/A	milk						
P					1	1	0.4549	0.5469	0.5623	0.4426
LSD P=.05					.	.	2.34	674.8	332.9	820.4
Standard Deviation					0.00	0.00	1.55	447.8	220.9	544.3
CV					0.00	0.00	4.34	4.9	7.6	4.5

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

Evaluation of ProGibb on Milk Stage of the Main Crop and Yield of Ratoon Crop at 16- and 8-inch Stubble Management –Vermilion Parish

Experiment number	17-VP-21
Site and design	
Location/Cooperator	Vermilion Parish/Kent Lounsberry
Tillage type	Conventional
Experimental design	Randomized complete block
Number of reps	4
Plot size	4.66 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Kaplan silt loam
% organic matter	1.53
pH	5.1
Extractable nutrients ppm	Ca-531; Cu-1.8; Mg-99; P-11; K-55.65; Na-45; S-4.0; Zn-3.6
Crop/Variety	Rice / CL153
Planting method/date	Drill seeded / March 8
Seeding rate/depth	33 seeds/ft^2 / .5 inch
Emergence date	March 22
Harvest date	July 27
Ratoon harvest date	Oct. 31
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml AV-1011 (bird repellant) – 18.3 oz
Fertilization	250 lb/A 0-20-30, March 16 120 lb N/A 46-0-0, April 21 90 lb N/A 46-0-0, Aug. 3
Water management	
Flush	March 23
Flood	April 22
Drain	July 14
Ratoon flood	Aug. 4
Ratoon drain	Oct. 16
Pest management	
Herbicides	6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 2 qt/A RiceBeaux + 1.5 qt/A propanil + .5 oz/A Permit + .75 oz/A Londax, April 21
Insecticides	None
Fungicides	19 oz/A Stratego, June 9

Table 42a. Evaluation of ProGibb application at milk stage of the main crop and yield of ratoon crop at 16- and 8-inch stubble management. Vermilion Parish.

Crop Name					Rice	Rice	Rice	Rice	Rice	Rice
Description					Plant-hd	Emer-hd	Tip of panicle			
Rating Date							7/27/2017	7/27/2017	10/31/2017	
Rating Type					50% HD	50% HD	Height	Yield	Yield	Yield
Rating Unit					days	days	in	lb/A	lb/A	lb/A
Crop Stage Majority					Main	Main	Main	Main	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate	Rate Unit	Growth Stage						
1	Normal cut (16 in) Without ProGibb				101.0 a	87.0 a	35.5 a	8501 a	2599 b	11101 ab
2	Normal cut (16 in) ProGibb 4 oz	4	oz/A	milk	101.0 a	87.0 a	36.5 a	8023 a	2401 b	10424 bc
3	Normal cut (16 in) ProGibb 6 oz	6	oz/A	milk	101.0 a	87.0 a	36.3 a	7416 a	2484 b	9899 c
4	Bush hog (8 in) Without ProGibb				101.0 a	87.0 a	36.0 a	8383 a	3170 a	11553 a
5	Bush hog (8 in) ProGibb 4 oz	4	oz/A	milk	101.0 a	87.0 a	36.5 a	8373 a	3084 a	11457 a
6	Bush hog (8 in) ProGibb 6 oz	6	oz/A	milk	101.0 a	87.0 a	35.3 a	8078 a	3105 a	11183 ab
LSD P=.05					.	.	1.52	828.2	305.9	832.6
Standard Deviation					0.00	0.00	1.01	549.5	203.0	552.4
CV					0.0	0.0	2.79	6.76	7.23	5.05
Replicate F					0.000	0.000	0.440	4.461	16.770	8.863
Replicate Prob(F)					1.0000	1.0000	0.7280	0.0198	0.0001	0.0013
Treatment F					0.000	0.000	1.088	2.080	11.845	5.445
Treatment Prob(F)					1.0000	1.0000	0.4065	0.1249	0.0001	0.0047

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

Table 42b. Two-way comparison of ProGibb rate of application and stubble management practices. Vermilion Parish.

Crop Name					Rice	Rice	Rice	Rice	Rice	Rice
Description					Plant-hd	Emer-hd	Tip of panicle			
Rating Date							7/27/2017	7/27/2017	10/31/2017	
Rating Type					50% HD	50% HD	Height	Yield	Yield	Yield
Rating Unit					days	days	in	lb/A	lb/A	lb/A
Crop Stage Majority					Main	Main	Main	Main	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate	Rate Unit	Growth Stage						
TABLE OF A (Stubble Height) MEANS										
1	Normal cut (16 in)				101.0 a	87.0 a	36.1 a	7980 a	2495 b	10474 b
2	Bush hog (8 in)				101.0 a	87.0 a	35.9 a	8278 a	3120 a	11398 a
P					1.00	1.00	0.69	0.2037	0.0001	0.001
LSD P=.05					.	.	0.87	478.1	176.6	480.7
TABLE OF B (Pesticide) MEANS										
1	Without ProGibb				101.0 a	87.0 a	35.8 a	8442 a	2885 a	11327 a
2	ProGibb 4 oz	4	oz/A	milk	101.0 a	87.0 a	36.5 a	8198 a	2742 a	10940 ab
3	ProGibb 6 oz	6	oz/A	milk	101.0 a	87.0 a	35.8 a	7747 a	2794 a	10541 b
P					1.00	1.00	0.26	0.0652	0.3862	0.0394
LSD P=.05					.	.	1.07	585.6	216.3	588.7
TABLE OF A (Stubble Height) and B (Pesticide) MEANS										
1	Normal cut (16 in)				101.0 a	87.0 a	35.5 a	8501 a	2599 a	11101 a
1	Without ProGibb									
2	Bush hog (8 in)				101.0 a	87.0 a	36.0 a	8383 a	3170 a	11553 a
1	Without ProGibb									
1	Normal cut (16 in)				101.0 a	87.0 a	36.5 a	8023 a	2401 a	10424 a
2	ProGibb 4 oz	4	oz/A	milk						
2	Bush hog (8 in)				101.0 a	87.0 a	36.5 a	8373 a	3084 a	11457 a
2	ProGibb 4 oz	4	oz/A	milk						
1	Normal cut (16 in)				101.0 a	87.0 a	36.3 a	7416 a	2484 a	9899 a
3	ProGibb 6 oz	6	oz/A	milk						
2	Bush hog (8 in)				101.0 a	87.0 a	35.3 a	8078 a	3105 a	11183 a
3	ProGibb 6 oz	6	oz/A	milk						
P					1.00	1.00	0.3419	0.3829	0.8593	0.3308
LSD P=.05					.	.	1.52	828.2	305.9	832.6
Standard Deviation					0.00	0.00	1.01	549.5	203.0	552.4
CV					0.00	0.00	2.79	6.8	7.2	5.1

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

Evaluation of ProGibb at Different Time of Applications on Rice Grain Yield– H. Rouse Caffey Rice Research Station

Experiment number	: 17-CM-22
Site and design	:
Location/Cooperator	: H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	: Fall 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	: 1.65
pH	: 7.43
Extractable nutrients ppm	: Ca-1428; Cu-2.9; Mg-221; P-16; K-63; Na-105; S-2.5; Zn-9.2
Crop/Variety	: Rice / CL153
Planting method/date	: Drill seeded / March 13
Seeding rate/depth	: 33 seeds/ft^2 / .75 inch
Emergence date	: March 26
Harvest date	: Aug. 4
Ratoon Harvest date	: NA
Seed treatment/cwt	: Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	: 250 lb/A 0-24-24-2.7, March 15 120 lb N/A 46-0-0, May 2 90 lb N/A 46-0-0, Aug. 4
Water management	:
Flush	: March 22
Flood	: May 3
Drain	: July 19
Ratoon flood	: Aug. 7
Ratoon drain	: Oct. 24
Pest management	:
Herbicides	: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	: 0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 43. Evaluation of ProGibb at different time of applications on rice grain 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						8/1/2017	8/4/2017	11/10/2017	
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.	Trt. Name	Rate (oz/A)	Growth Stage						
1	Without ProGibb			101.0 a	88.0 a	35.8 a	9728 a	2494 bc	12222 a
2	ProGibb 4 oz @ milk	4	Milk	101.0 a	88.0 a	35.8 a	9040 a	2835 a	11876 a
3	ProGibb 4 oz @ soft dough	4	Soft dough	101.0 a	88.0 a	36.5 a	9100 a	2823 a	11923 a
4	ProGibb 4 oz @ drain	4	Drain	101.0 a	88.0 a	35.0 a	8903 a	2627 ab	11531 a
5	ProGibb 4 oz @ after harvest	4	After harvest	101.0 a	88.0 a	35.3 a	9582 a	2327 c	11909 a
6	ProGibb 4 oz @ soft dough	4	Soft dough	101.0 a	88.0 a	35.5 a	9164 a	2786 a	11951 a
	Karate	2	Soft dough						
LSD P=.05				.	.	1.48	586.3	231.5	540.5
Standard Deviation				0.00	0.00	0.98	389.0	153.6	358.6
CV				0.0	0.0	2.76	4.2	5.8	3.01
Replicate F				0.000	0.000	0.620	4.733	3.418	6.964
Replicate Prob(F)				1.0000	1.0000	0.6131	0.0162	0.0448	0.0037
Treatment F				0.000	0.000	1.115	2.816	7.185	1.517
Treatment Prob(F)				1.0000	1.0000	0.3936	0.0548	0.0013	0.2433

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

Evaluation of ProGibb at Different Time of Applications on Rice Grain Yield – Vermilion Parish

Experiment number	17-VP-22
Site and design	
Location/Cooperator	Vermilion Parish/Kent Lounsberry
Tillage type	Conventional
Experimental design	Randomized complete block
Number of reps	4
Plot size	4.66 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Kaplan silt loam
% organic matter	1.53
pH	5.1
Extractable nutrients ppm	Ca-531; Cu-1.8; Mg-99; P-11; K-55.65; Na-45; S-4.0; Zn-3.6
Crop/Variety	Rice / CL153
Planting method/date	Drill seeded / March 8
Seeding rate/depth	33 seeds/ft^2 / .5 inch
Emergence date	March 22
Harvest date	July 27
Ratoon harvest date	Oct. 31
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml AV-1011 (bird repellant) – 18.3 oz
Fertilization	250 lb/A 0-20-30, March 16 120 lb N/A 46-0-0, April 21 90 lb N/A 46-0-0, Aug. 3
Water management	
Flush	March 23
Flood	April 22
Drain	July 14
Ratoon flood	Aug. 4
Ratoon drain	Oct. 16
Pest management	
Herbicides	6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 2 qt/A RiceBeaux + 1.5 qt/A propanil + .5 oz/A Permit + .75 oz/A Londax, April 21
Insecticides	None
Fungicides	19 oz/A Stratego, June 9

Table 44. Evaluation of ProGibb at different time of applications on rice grain yield. Vermilion Parish.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle			
Rating Date						7/27/2017	7/27/2017	10/31/2017	
Rating Type				50% HD	50% HD	Height	Yield	Yield	Yield
Rating Unit				days	days	in	lb/A	lb/A	lb/A
Crop Stage Majority				Main	Main	Main	Main	Ratoon	MC+RC
Trt. No.	Trt. Name	Rate (oz/A)	Growth Stage						
1	Without ProGibb			101.0 a	87.0 a	35.0 a	8477 a	2518 a	10995 a
2	ProGibb 4 oz @ milk	4	Milk	101.0 a	87.0 a	35.5 a	8092 bc	2201 a	10293 c
3	ProGibb 4 oz @ soft dough	4	Soft dough	101.0 a	87.0 a	35.0 a	8044 bc	2500 a	10544 bc
4	ProGibb 4 oz @ drain	4	Drain	101.0 a	87.0 a	35.8 a	8323 ab	2422 a	10745 ab
5	ProGibb 4 oz @ after harvest	4	After harvest	101.0 a	87.0 a	35.3 a	8461 a	2635 a	11097 a
6	ProGibb 4 oz @ soft dough	4	Soft dough	101.0 a	87.0 a	36.0 a	7930 c	2475 a	10405 bc
	Karate	2	Soft dough						
LSD P=.05				.	.	0.90	283.0	347.2	438.4
Standard Deviation				0.00	0.00	0.60	187.8	230.4	290.9
CV				0.0	0.0	1.68	2.28	9.37	2.72
Replicate F				0.000	0.000	2.969	9.474	7.267	12.702
Replicate Prob(F)				1.0000	1.0000	0.0655	0.0009	0.0031	0.0002
Treatment F				0.000	0.000	1.875	6.031	1.573	4.921
Treatment Prob(F)				1.0000	1.0000	0.1587	0.0030	0.2272	0.0073

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

Evaluation of the Effect of Water Management and Silica Slag on Arsenic Content in Rice Straw and Grain – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-41

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.35
- **pH** ....: 7.58
- **Extractable nutrients** ppm ....: Ca-1311; Cu-2.6; Mg-245; P-5; K-62; Na-111; S-0.7; Zn-6.3

Crop/Variety ....: Rice / CLXL729
- **Planting method/date** ....: Drill seeded / March 14
- **Seeding rate/depth** ....: 10 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 5
- **Ratoon Harvest date** ....: Nov. 9

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 15
120 lb N/A 46-0-0, May 2
90 lb N/A 46-0-0, Aug. 7

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 21
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
2 qt/A glyphosate, March 10
1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
4 oz/A League + 3 oz/A propanil, May 1
20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: No blanket applications
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 45a. Evaluation of the effect of water management and silica slag on arsenic content in rice straw and grain. Agronomic data. H. Rouse Caffey Rice Research Station.

Crop Name					Rice	Rice	Rice	Rice	Rice	Rice	Rice
Part Rated					Plant-hd	Emer-hd	Tip of panicle	Biomass			
Rating Date							8/2/2017	6/26/2017	8/5/2017	11/9/2017	
Rating Type					50% HD	50% HD	Height	50% HD	Yield	Yield	Total Yield
Rating Unit					days	days		lb/A	lb/A	lb/A	
Crop Stage Majority					Main	Main	Main	Main	Main	Ratoon	MC + RC
Trt. No.	Trt. Name	Form Type	Rate (ton/A)	Growth Stage							
1	Delayed Flood				102.3 d	89.3 d	38.5 a	11626 a	10225 b	4594 a	14818 bc
	No amendment										
2	Delayed Flood				103.5 b	90.5 b	36.8 a	10270 ab	11038 a	4610 a	15647 a
	Silica Slag @ 3 ton/A 60% ECCE	DU	3	ATPLAN							
3	Delayed Flood				103.0 bc	90.0 bc	38.5 a	10212 ab	11056 a	4366 a	15422 ab
	Lime @ Si lime rate 84% ECCE	DU	2.15	ATPLAN							
4	Alternate Wet and Dry				103.0 bc	90.0 bc	38.3 a	9977 b	10090 b	4064 b	14154 cd
	No amendment										
5	Alternate Wet and Dry				103.3 bc	90.3 bc	36.5 a	8292 c	10087 b	3784 bc	13871 d
	Silica Slag @ 3 ton/A 60% ECCE	DU	3	ATPLAN							
6	Alternate Wet and Dry				102.8 cd	89.8 cd	37.0 a	9403 bc	9754 b	3694 c	13448 d
	Lime @ Si lime rate 84% ECCE	DU	2.15	ATPLAN							
7	Semi-aerobic				106.0 a	93.0 a	28.5 c	5351 d	5077 c	331 d	5408 e
	No amendment										
8	Semi-aerobic				106.0 a	93.0 a	31.5 b	4250 d	5571 c	266 d	5837 e
	Silica Slag @ 3 ton/A 60% ECCE	DU	3	ATPLAN							
9	Semi-aerobic				106.0 a	93.0 a	30.3 bc	5485 d	5716 c	268 d	5984 e
	Lime @ Si lime rate 84% ECCE	DU	2.15	ATPLAN							
LSD P=.05					0.67	0.67	2.54	1643.1	742.1	291.5	744.4
Standard Deviation					0.45	0.45	1.71	1106.0	499.5	196.2	501.1
CV					0.43	0.5	4.87	13.3	5.72	6.8	4.31
Replicate F					1.591	1.591	2.143	1.028	6.128	7.235	2.436
Replicate Prob(F)					0.2264	0.2264	0.1304	0.4036	0.0047	0.0022	0.0981
Treatment F					47.693	47.693	20.807	22.747	100.440	404.743	317.654
Treatment Prob(F)					0.0001	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).

Table 45b. Evaluation of the effect of water management and silica slag on arsenic content in rice straw and grain. Plant analysis data. H. Rouse Caffey Rice Research Station.

Crop Name					Rice	Rice	Rice	Rice	Rice	Rice
Part Rated							Straw	Rough rice	Brown rice	Milled rice
Rating Type					N at 50% HD	N Uptake	Arsenic Concentration			
Rating Unit					%	lb/A	ppm			
Crop Stage Majority					Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name	Form Type	Rate (ton/A)	Growth Stage						
1	Delayed Flood No amendment				1.97 b	229 a	0.694 a	0.667 ab	0.605 ab	0.511 ab
2	Delayed Flood Silica Slag @ 3 ton/A 60% ECCE	DU	3	ATPLAN	1.92 bc	192 bc	0.552 ab	0.705 a	0.672 a	0.536 a
3	Delayed Flood Lime @ Si lime rate 84% ECCE	DU	2.15	ATPLAN	1.89 bc	193 b	0.572 ab	0.670 ab	0.605 ab	0.546 a
4	Alternate Wet and Dry No amendment				1.63 cd	162 cd	0.304 cd	0.571 c	0.487 cd	0.461 abc
5	Alternate Wet and Dry Silica Slag @ 3 ton/A 60% ECCE	DU	3	ATPLAN	1.47 d	122 ef	0.319 cd	0.568 c	0.536 bc	0.461 abc
6	Alternate Wet and Dry Lime @ Si lime rate 84% ECCE	DU	2.15	ATPLAN	1.62 cd	152 de	0.435 bc	0.606 bc	0.573 abc	0.431 bc
7	Semi-aerobic No amendment				2.52 a	132 def	0.180 d	0.451 d	0.349 e	0.320 d
8	Semi-aerobic Silica Slag @ 3 ton/A 60% ECCE	DU	3	ATPLAN	2.52 a	106 f	0.187 d	0.411 d	0.398 de	0.304 d
9	Semi-aerobic Lime @ Si lime rate 84% ECCE	DU	2.15	ATPLAN	2.37 a	130 ef	0.140 d	0.430 d	0.389 de	0.388 cd
LSD P=.05					0.3272	30.3	0.2070	0.0770	0.1122	0.0879
Standard Deviation					0.2202	20.4	0.1393	0.0519	0.0756	0.0589
CV					11.08	12.96	37.08	9.19	14.74	13.4
Replicate F					2.802	0.397	0.544	3.172	0.732	0.676
Replicate Prob(F)					0.0694	0.7568	0.6583	0.0494	0.5465	0.5789
Treatment F					12.930	15.561	8.043	18.160	8.928	8.945
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).

Table 45c. Evaluation of the effect of water management and silica slag on grain yield. H. Rouse Caffey Rice Research Station.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice
Part Rated				Plant-hd	Emer-hd	Tip of panicle	Biomass			
Rating Date						8/2/2017	6/26/2017	8/5/2017	11/9/2017	
Rating Type				50% HD	50% HD	Height	50% HD	Yield	Yield	Total Yield
Rating Unit				days	days		lb/A	lb/A	lb/A	
Crop Stage Majority				Main	Main	Main	Main	Main	Ratoon	MC + RC
Trt No.	Trt. Name	Rate (ton/A)	Growth Stage							
TABLE OF A (Water Management) MEANS										
1	Delayed Flood			102.9 b	89.9 b	37.9 a	10703 a	10773 a	4523 a	15296 a
2	Alternate Wet and Dry			103.0 b	90.0 b	37.3 a	9224 b	9977 a	3847 b	13824 a
3	Semi-aerobic			106.0 a	93.0 a	30.1 b	5029 c	5455 b	288 c	5743 b
P				0.0	0.0	0.0	0.0001	0.0001	0.0001	0.0001
LSD P=.05				0.32	0.32	3.00	681.5	1064.0	560.8	1473.8
TABLE OF B (Soil Amendment) MEANS										
1	No amendment			103.8 b	90.8 b	35.1 a	8985 a	8464 a	2996 a	11460 a
2	Silica Slag @ 3 ton/A 60% ECCE	3	ATPLAN	104.3 a	91.3 a	34.9 a	7604 b	8898 a	2886 ab	11785 a
3	Lime @ Si lime rate 84% ECCE	2.15	ATPLAN	103.9 ab	90.9 ab	35.3 a	8367 ab	8842 a	2776 b	11618 a
P				0.0	0.0	0.9	0.0104	0.2604	0.2771	0.6541
LSD P=.05				0.39	0.39	1.46	948.6	428.4	168.3	429.8
TABLE OF A (Water Management) and B (Soil Amendment) MEANS										
1	Delayed Flood			102.3 a	89.3 a	38.5 a	11626 a	10225 a	4594 a	14818 a
1	No amendment									
2	Alternate Wet and Dry			103.0 a	90.0 a	38.3 a	9977 a	10090 a	4064 a	14154 a
1	No amendment									
3	Semi-aerobic			106.0 a	93.0 a	28.5 a	5351 a	5077 a	331 a	5408 a
1	No amendment									
1	Delayed Flood			103.5 a	90.5 a	36.8 a	10270 a	11038 a	4610 a	15647 a
2	Silica Slag @ 3 ton/A 60% ECCE	3	ATPLAN							
2	Alternate Wet and Dry			103.3 a	90.3 a	36.5 a	8292 a	10087 a	3784 a	13871 a
2	Silica Slag @ 3 ton/A 60% ECCE	3	ATPLAN							
3	Semi-aerobic			106.0 a	93.0 a	31.5 a	4250 a	5571 a	266 a	5837 a
2	Silica Slag @ 3 ton/A 60% ECCE	3	ATPLAN							
1	Delayed Flood			103.0 a	90.0 a	38.5 a	10212 a	11056 a	4366 a	15422 a
3	Lime @ Si lime rate 84% ECCE	2.15	ATPLAN							
2	Alternate Wet and Dry			102.8 a	89.8 a	37.0 a	9403 a	9754 a	3694 a	13448 a
3	Lime @ Si lime rate 84% ECCE	2.15	ATPLAN							
3	Semi-aerobic			106.0 a	93.0 a	30.3 a	5485 a	5716 a	268 a	5984 a
3	Lime @ Si lime rate 84% ECCE	2.15	ATPLAN							
P				0.0403	0.0403	0.1594	0.555	0.4909	0.8156	0.4941
LSD P=.05				0.67	0.67	2.54	1643.1	742.1	291.5	744.4
Standard Deviation				0.45	0.45	1.71	1106.0	499.5	196.2	501.1
CV				0.43	0.50	4.87	13.3	5.7	6.8	4.3

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

Table 45d. Factorial analysis on the evaluation of the effect of water management and silica slag on arsenic in rice. H. Rouse Caffey Rice Research Station.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice
Part Rated						Straw	Rough rice	Brown rice	Milled rice
Rating Type				N at 50% HD	N Uptake	Arsenic Concentration			
Rating Unit				%	lb/A	ppm			
Crop Stage Majority				Main	Main	Main	Main	Main	Main
Trt. No.	Trt. Name	Rate (ton/A)	Growth Stage						
TABLE OF A (Water Management) MEANS									
1	Delayed Flood			1.923 b	205 a	0.606 a	0.680 a	0.627 a	0.531 a
2	Alternate Wet and Dry			1.572 c	145 b	0.353 b	0.582 b	0.532 b	0.451 b
3	Semi-aerobic			2.467 a	123 c	0.169 c	0.430 c	0.379 c	0.337 c
P				0.000	0.0001	0.0001	0.0001	0.0001	0.0001
LSD P=.05				0.1998	16.0	0.097	0.061	0.063	0.057
TABLE OF B (Soil Amendment) MEANS									
1	No amendment			2.038 a	174 a	0.392 a	0.563 a	0.480 a	0.431 a
2	Silica Slag @ 3 ton/A 60% ECCE	3	ATPLAN	1.968 a	140 b	0.353 a	0.561 a	0.535 a	0.434 a
3	Lime @ Si lime rate 84% ECCE	2.15	ATPLAN	1.956 a	158 a	0.382 a	0.568 a	0.522 a	0.455 a
P				0.604	0.0009	0.7430	0.9412	0.1738	0.5504
LSD P=.05				0.1889	17.5	0.120	0.044	0.065	0.051
TABLE OF A (Water Management) and B (Soil Amendment) MEANS									
1	Delayed Flood			1.968 a	229 a	0.694 a	0.667 a	0.605 a	0.511 a
1	No amendment								
2	Alternate Wet and Dry			1.630 a	162 a	0.304 a	0.571 a	0.487 a	0.461 a
1	No amendment								
3	Semi-aerobic			2.518 a	132 a	0.180 a	0.451 a	0.349 a	0.320 a
1	No amendment								
1	Delayed Flood			1.915 a	192 a	0.552 a	0.705 a	0.672 a	0.536 a
2	Silica Slag @ 3 ton/A 60% ECCE	3	ATPLAN						
2	Alternate Wet and Dry			1.470 a	122 a	0.319 a	0.568 a	0.536 a	0.461 a
2	Silica Slag @ 3 ton/A 60% ECCE	3	ATPLAN						
3	Semi-aerobic			2.518 a	106 a	0.187 a	0.411 a	0.398 a	0.304 a
2	Silica Slag @ 3 ton/A 60% ECCE	3	ATPLAN						
1	Delayed Flood			1.888 a	193 a	0.572 a	0.670 a	0.605 a	0.546 a
3	Lime @ Si lime rate 84% ECCE	2.15	ATPLAN						
2	Alternate Wet and Dry			1.615 a	152 a	0.435 a	0.606 a	0.573 a	0.431 a
3	Lime @ Si lime rate 84% ECCE	2.15	ATPLAN						
3	Semi-aerobic			2.365 a	130 a	0.140 a	0.430 a	0.389 a	0.388 a
3	Lime @ Si lime rate 84% ECCE	2.15	ATPLAN						
P				0.747	0.4271	0.3248	0.5092	0.6759	0.3244
LSD P=.05				0.3272	30.3	0.207	0.077	0.112	0.088
Standard Deviation				0.220	20.4	0.139	0.052	0.076	0.059
CV				11.08	13.00	37.08	9.19	14.74	13.40

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

Evaluation of Nitrogen Uptake, Nitrogen Use Efficiency, Yield, and Yield Components Under Different Water Management Practices – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-29

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.35
- **pH** ....: 7.58
- **Extractable nutrients** ppm ....: Ca-1311; Cu-2.6; Mg-245; P-5; K-62; Na-111; S-0.7; Zn-6.3

Crop/Variety ....: Rice / CL153 and CLXL729
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: Conventional 33 seeds/ft^2, Hybrid 10 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 5
- **Ratoon Harvest date** ....: Nov. 9

Seed treatment/cwt ....: Conventional seed:
- Dithane (fungicide) – 114 g
- Release (gibberellic acid) – 10 g
- Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
- Dermacor X-100 seed treatment – 0.137 lb ai/cwt
- AV-1011 (bird repellent) – 18.3 oz

Hybrid seed:
- 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 15
90 lb N/A 46-0-0, Aug. 7

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 21
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
  2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
  2 qt/A glyphosate, March 10
  1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
  3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
  3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
  4 oz/A League + 3 oz/A propanil, May 1
  20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: No blanket applications
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 46a. Evaluation of nitrogen uptake, nitrogen use efficiency, yield, and yield components under different water management practices. 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	N Fert. Eff.
Part Rated										Abvgrd -	Abvgrd -	Total -	
Rating Date						8/2/2017	8/5/2017	11/9/2017					
Rating Type				50% HD	50% HD	Height	Yield	Yield	Total Yield	Biomass-dry			
Rating Unit				days	days	in	lb/A	lb/A	lb/A	lb/A	% N	lb/A	%
Crop Stage Majority				Main	Main	Main	Main	Ratoon	MC + RC	Main	Main	Main	by mean
Crop Stage Scale										50% HD	50% HD	50% HD	50% HD
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
1	Conventional flood CL153 0 N/A	 0		99.5 ij	86.5 ij	25.0 i-l	3071 g	4047 b-e	7118 fgh	3016 f	0.83 k	25 e	0 d
2	Conventional flood CL153 150 lb N/A	 150	 PF	102.3 ef	89.3 ef	35.3 bcd	10565 bcd	3620 efg	14185 cd	8507 a	1.91 c-f	163 ab	87 a
3	Conventional flood CL153 150 lb N/A	 100 50	 PF PI	102.5 e	89.5 e	35.5 bcd	10428 bcd	3515 fgh	13943 cde	8653 a	1.63 ghi	141 bcd	77 ab
4	Conventional flood CL153 150 lb N/A	80 35 35	PF PI LB	102.5 e	89.5 e	33.5 def	10063 cde	3750 d-g	13813 cde	8411 a	1.59 i	133 bcd	72 abc
5	Conventional flood CLXL729 0 N/A	 0		97.3 k	84.3 k	27.0 hi	2853 g	5188 a	8091 f	3046 f	0.95 jk	29 e	0 d
6	Conventional flood CLXL729 150 lb N/A	 150	 PF	101.8 efg	88.8 efg	37.8 a	11340 ab	4444 bc	15784 ab	7877 a-d	1.89 d-g	149 abc	76 ab
7	Conventional flood CLXL729 150 lb N/A	 100 50	 PF PI	101.3 fgh	88.3 fgh	37.0 ab	11736 a	4488 b	16224 a	9412 a	1.62 hi	154 abc	83 ab
8	Conventional flood CLXL729 150 lb N/A	80 35 35	PF PI LB	101.0 gh	88.0 gh	35.8 abc	9611 de	4338 bc	13949 cde	9124 a	1.71 f-i	158 ab	80 ab
9	Alternate Wet and Dry CL153 0 N/A	 0		100.5 hi	87.5 hi	23.3 l	2847 g	3594 efg	6441 ghi	2010 f	0.81 k	16 e	0 d

Continued.

Table 46a. Continued.

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	N Fert. Eff.
Part Rated										Abvgrd -	Abvgrd -	Total -	
Rating Date						8/2/2017	8/5/2017	11/9/2017					
Rating Type				50% HD	50% HD	Height	Yield	Yield	Total Yield	Biomass-dry			
Rating Unit				days	days	in	lb/A	lb/A	lb/A	lb/A	% N	lb/A	%
Crop Stage Majority				Main	Main	Main	Main	Ratoon	MC + RC	Main	Main	Main	by mean
Crop Stage Scale										50% HD	50% HD	50% HD	50% HD
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
10	Alternate Wet and Dry CL153 150 lb N/A	 150	 PF	102.8 de	89.8 de	33.0 ef	10452 bcd	3105 h	13557 de	8551 a	1.65 f-i	142 bcd	82 ab
11	Alternate Wet and Dry CL153 150 lb N/A	 100 50	 PF PI	102.5 e	89.5 e	30.8 g	10174 cd	3435 gh	13609 cde	8033 abc	1.60 hi	127 bcd	74 ab
12	Alternate Wet and Dry CL153 150 lb N/A	80 35 35	PF PI LB	102.3 ef	89.3 ef	31.5 fg	9131 e	3704 d-g	12835 e	8076 ab	1.71 f-i	139 bcd	79 ab
13	Alternate Wet and Dry CLXL729 0 N/A	 0		97.0 k	84.0 k	26.5 hij	2825 g	4473 b	7298 fg	3077 f	0.92 jk	28 e	0 d
14	Alternate Wet and Dry CLXL729 150 lb N/A	 150	 PF	102.0 efg	89.0 efg	36.3 abc	10885 abc	3975 c-f	14860 bc	9418 a	1.89 d-g	179 a	91 a
15	Alternate Wet and Dry CLXL729 150 lb N/A	 100 50	 PF PI	102.3 ef	89.3 ef	35.5 bcd	9998 cde	3575 e-h	13573 de	8640 a	1.49 i	129 bcd	65 bc
16	Alternate Wet and Dry CLXL729 150 lb N/A	80 35 35	PF PI LB	102.0 efg	89.0 efg	34.5 cde	9930 cde	4138 bcd	13905 cde	8699 a	1.87 e-h	163 ab	87 a
17	Aerobic CL153 0 N/A	 0		100.5 hi	87.5 hi	18.5 m	2161 g	99 i	2260 j	2551 f	1.03 jk	26 e	0 d
18	Aerobic CL153 150 lb N/A	 150	 PF	105.3 ab	92.3 ab	25.5 h-k	5886 f	87 i	5973 hi	6433 b-e	2.23 ab	144 a-d	78 ab

Continued.

Table 46a. Continued.

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	N Fert. Eff.
Part Rated										Abvgrd -	Abvgrd -	Total -	
Rating Date						8/2/2017	8/5/2017	11/9/2017					
Rating Type				50% HD	50% HD	Height	Yield	Yield	Total Yield	Biomass-dry			
Rating Unit				days	days	in	lb/A	lb/A	lb/A	lb/A	% N	lb/A	%
Crop Stage Majority				Main	Main	Main	Main	Ratoon	MC + RC	Main	Main	Main	by mean
Crop Stage Scale										50% HD	50% HD	50% HD	50% HD
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
19	Aerobic			105.3 ab	92.3 ab	24.5 jkl	5740 f	81 i	5822 i	5972 e	2.02 b-e	120 cd	63 bc
	CL153	100	PF										
	150 lb N/A	50	PI										
20	Aerobic	80	PF	104.8 abc	91.8 abc	24.3 kl	5725 f	119 i	5844 i	6340 cde	2.14 a-d	136 bcd	73 ab
	CL153	35	PI										
	150 lb N/A	35	LB										
21	Aerobic			98.8 j	85.8 j	23.8 kl	2512 g	178 i	2690 j	2915 f	1.16 j	33 e	0 d
	CLXL729												
	0 N/A	0											
22	Aerobic			105.8 a	92.8 a	27.5 h	6142 f	265 i	6407 ghi	6180 de	2.33 a	144 a-d	74 ab
	CLXL729												
	150 lb N/A	150	PF										
23	Aerobic			104.5 bc	91.5 bc	26.8 hi	6231 f	252 i	6483 ghi	5225 e	2.17 abc	111 d	52 c
	CLXL729	100	PF										
	150 lb N/A	50	PI										
24	Aerobic	80	PF	103.8 cd	90.8 cd	26.5 hij	6339 f	247 i	6586 ghi	6102 e	2.30 a	140 bcd	71 abc
	CLXL729	35	PI										
	150 lb N/A	35	LB										
LSD P=.05				1.04	1.04	2.12	1019.5	480.0	1257.1	1702.7	0.269	36.5	20.5
Standard Deviation				0.74	0.74	1.50	722.5	340.2	890.7	1207.0	0.191	25.9	14.5
CV				0.72	0.83	5.03	9.82	12.61	8.86	18.54	11.63	22.77	25.51
Replicate F				3.126	3.126	1.264	2.172	5.355	0.712	1.598	2.977	2.537	2.840
Replicate Prob(F)				0.0313	0.0313	0.2935	0.0993	0.0023	0.5482	0.1979	0.0375	0.0637	0.0441
Treatment F				39.556	39.556	53.218	84.990	121.842	99.489	17.086	24.771	17.145	22.616
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	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).

Table 46b. Evaluation of water management on yield components. H. Rouse Caffey Rice Research Station.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Yield Components						
Rating Date				7/21/2017						
Rating Type				WP dry wt.	Panicle #	Grain wt.	10 P gr wt.	10 P seed	Milling (g/100 g)	
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
Crop Stage Scale										
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage	21	22	23	24	25	26	27
1	Conventional flood CL153 0 N/A	0		200.4 f	83 d	84.0 g	12.17 a	499 c-f	50.14 fgh	71.36 a-d
2	Conventional flood CL153 150 lb N/A	150	PF	509.0 d	142 c	235.2 e	17.86 a	784 ab	60.22 a	70.58 b-g
3	Conventional flood CL153 150 lb N/A	100 50	PF PI	584.2 bcd	169 ab	283.9 bcd	19.04 a	823 a	56.49 abc	70.50 b-g
4	Conventional flood CL153 150 lb N/A	80 35 35	PF PI LB	545.2 cd	148 abc	269.3 de	19.13 a	814 a	57.15 ab	70.91 b-f
5	Conventional flood CLXL729 0 N/A	0		192.2 f	59 d	90.2 g	9.72 a	345 fg	46.44 hi	69.96 c-h
6	Conventional flood CLXL729 150 lb N/A	150	PF	670.0 a	170 ab	348.6 a	15.72 a	675 abc	56.06 a-e	70.05 c-h
7	Conventional flood CLXL729 150 lb N/A	100 50	PF PI	580.3 bcd	156 abc	290.4 bcd	16.15 a	688 abc	53.48 b-f	69.53 c-h
8	Conventional flood CLXL729 150 lb N/A	80 35 35	PF PI LB	597.3 abc	152 abc	305.9 a-d	16.87 a	683 abc	53.27 b-f	69.42 c-h
9	Alternate Wet and Dry CL153 0 N/A	0		181.8 f	82 d	72.3 g	9.97 a	405 efg	45.97 hi	72.43 ab

Continued.

Table 46b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Yield Components													
Rating Date				7/21/2017													
Rating Type				WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed		Milling (g/100 g)			
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	
Crop Stage Scale																	
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage	21		22		23		24		25		26		27	
10	Alternate Wet and Dry			560.3	cd	155	abc	274.6	cde	18.19	a	783	ab	57.02	ab	70.98	b-e
	CL153																
	150 lb N/A	150	PF														
11	Alternate Wet and Dry			572.0	bcd	172	ab	272.2	cde	15.85	a	678	abc	56.40	a-d	70.84	b-f
	CL153	100	PF														
	150 lb N/A	50	PI														
12	Alternate Wet and Dry	80	PF	551.3	cd	145	bc	270.9	de	16.17	a	692	abc	57.57	ab	71.55	abc
	CL153	35	PI														
	150 lb N/A	35	LB														
13	Alternate Wet and Dry			193.3	f	64	d	89.4	g	8.78	a	345	fg	44.12	ij	68.77	f-i
	CLXL729																
	0 N/A	0															
14	Alternate Wet and Dry			610.6	abc	165	abc	315.7	abc	14.67	a	606	bcd	51.45	efg	66.72	i
	CLXL729																
	150 lb N/A	150	PF														
15	Alternate Wet and Dry			639.7	ab	175	a	320.7	ab	18.51	a	782	ab	48.96	f-i	68.56	ghi
	CLXL729	100	PF														
	150 lb N/A	50	PI														
16	Alternate Wet and Dry	80	PF	604.6	abc	165	abc	310.3	a-d	10.66	a	543	cde	51.54	d-g	69.22	d-h
	CLXL729	35	PI														
	150 lb N/A	35	LB														
17	Aerobic			140.4	f	83	d	50.5	g	7.85	a	346	fg	40.52	j	73.53	a
	CL153																
	0 N/A	0															
18	Aerobic			386.9	e	155	abc	169.3	f	36.81	a	467	d-g	45.83	hi	69.96	c-h
	CL153																
	150 lb N/A	150	PF														

Continued.

Table 46b. Continued.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Yield Components						
Rating Date				7/21/2017						
Rating Type				WP dry wt.	Panicle #	Grain wt.	10 P gr wt.	10 P seed	Milling (g/100 g)	
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
Crop Stage Scale										
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage							
19	Aerobic			370.0 e	154 abc	152.4 f	9.47 a	438 d-g	45.63 hi	70.97 b-e
	CL153	100	PF							
	150 lb N/A	50	PI							
20	Aerobic	80	PF	372.6 e	155 abc	161.5 f	11.99 a	539 c-f	44.84 ij	70.37 b-g
	CL153	35	PI							
	150 lb N/A	35	LB							
21	Aerobic			156.5 f	68 d	65.3 g	6.67 a	298 g	46.34 hi	72.32 ab
	CLXL729									
	0 N/A	0								
22	Aerobic			396.2 e	152 abc	180.9 f	10.12 a	462 d-g	51.91 c-g	69.80 c-h
	CLXL729									
	150 lb N/A	150	PF							
23	Aerobic			381.0 e	151 abc	179.6 f	9.09 a	420 d-g	46.29 hi	68.15 hi
	CLXL729	100	PF							
	150 lb N/A	50	PI							
24	Aerobic	80	PF	381.8 e	157 abc	178.5 f	8.76 a	401 efg	47.40 ghi	68.82 e-i
	CLXL729	35	PI							
	150 lb N/A	35	LB							
LSD P=.05				79.17	26.86	43.8262	16.6955	195.74	4.9351	2.1985
Standard Deviation				56.12	19.04	31.0683	11.8354	138.76	3.4976	1.5581
CV				12.98	13.95	15.0	83.49	24.64	6.91	2.22
Replicate F				0.592	1.341	1.086	0.715	1.020	0.234	1.197
Replicate Prob(F)				0.6226	0.2683	0.3610	0.5465	0.3894	0.8726	0.3176
Treatment F				39.229	16.470	37.788	1.127	6.094	9.308	3.676
Treatment Prob(F)				0.0001	0.0001	0.0001	0.3412	0.0001	0.0001	0.0001

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

Table 46c. Factorial analysis on the evaluation of water management on nitrogen uptake, nitrogen use efficiency, and rice 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	N Fert. Eff.
Part Rated										Abvgrd -	Abvgrd -	Total -	
Rating Date						8/2/2017	8/5/2017	11/9/2017					
Rating Type				50% HD	50% HD	Height	Yield	Yield	Total Yield	Biomass-dry			
Rating Unit				days	days	in	lb/A	lb/A	lb/A	lb/A	% N	lb/A	%
Crop Stage Majority				Main	Main	Main	Main	Ratoon	MC + RC	Main	Main	Main	by mean
Crop Stage Scale										50% HD	50% HD	50% HD	50% HD
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
TABLE OF A (Water Management) MEANS													
1	Conventional flood			101.0 c	88.0 c	33.3 a	8708 a	4174 a	12888 a	7256 a	1.51 b	119 a	59 a
2	Alternate Wet and Dry			101.4 b	88.4 b	31.4 b	8280 b	3750 b	12010 b	7063 a	1.49 b	115 a	60 a
3	Aerobic			103.6 a	90.6 a	24.7 c	5092 c	166 c	5258 c	5215 b	1.92 a	107 a	51 b
P				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.164	0.0391
LSD P=.05				0.37	0.37	0.75	360.4	169.7	444.5	602.0	0.095	12.9	7.2
TABLE OF B (Variety) MEANS													
1	CL153			102.5 a	89.5 a	28.4 b	7187 b	2430 b	9617 b	6379 a	1.59 b	109 a	57 a
2	CLXL729			101.4 b	88.4 b	31.2 a	7533 a	2963 a	10487 a	6643 a	1.69 a	118 a	57 a
P				0.0001	0.0001	0.0001	0.0218	0.0001	0.0001	0.2884	0.0172	0.1007	0.8533
LSD P=.05				0.30	0.30	0.61	294.3	138.6	362.9	491.5	0.078	10.5	5.9
TABLE OF C (Fertilizer) MEANS													
1	0 N/A	0		98.9 c	85.9 c	24.0 c	2711 c	2930 a	5650 c	2769 b	0.95 c	26 c	0 c
2	150 lb N/A	150	PF	103.3 a	90.3 a	32.5 a	9212 a	2583 b	11794 a	7828 a	1.98 a	153 a	81 a
3	150 lb N/A	100/50	PF/PI	103.0 ab	90.0 ab	31.7 b	9051 a	2558 b	11609 ab	7656 a	1.75 b	131 b	69 b
4	150 lb N/A	80/35/35	PF/PI/LB	102.7 b	89.7 b	31.0 b	8467 b	2716 b	11155 b	7792 a	1.89 a	145 ab	77 ab
P				0.0001	0.0001	0.0001	0.0001	0.0011	0.0001	0.0001	0.0001	0.0001	0.0001
LSD P=.05				0.43	0.43	0.86	416.2	195.9	513.2	695.1	0.110	14.9	8.4
TABLE OF A (Water Management) and B (Variety) MEANS													
1	Conventional flood			101.7 a	88.7 a	32.3 a	8532 a	3733 c	12265 a	7147 a	1.49 a	116 a	59 a
1	CL153												
2	Alternate Wet and Dry			102.0 a	89.0 a	29.6 a	8151 a	3460 d	11611 a	6668 a	1.44 a	106 a	59 a
1	CL153												

Continued.

Table 46c. Continued.

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	N Fert. Eff.
Part Rated										Abvgrd -	Abvgrd -	Total -	
Rating Date						8/2/2017	8/5/2017	11/9/2017					
Rating Type				50% HD	50% HD	Height	Yield	Yield	Total Yield	Biomass-dry			
Rating Unit				days	days	in	lb/A	lb/A	lb/A	lb/A	% N	lb/A	%
Crop Stage Majority				Main	Main	Main	Main	Ratoon	MC + RC	Main	Main	Main	by mean
Crop Stage Scale										50% HD	50% HD	50% HD	50% HD
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
TABLE OF A (Water Management) and B (Variety) MEANS (continued)													
3	Aerobic			103.9 a	90.9 a	23.2 a	4878 a	96 e	4975 a	5324 a	1.85 a	106 a	54 a
1	CL153												
1	Conventional flood			100.3 a	87.3 a	34.4 a	8885 a	4614 a	13512 a	7365 a	1.54 a	122 a	60 a
2	CLXL729												
2	Alternate Wet and Dry			100.8 a	87.8 a	33.2 a	8409 a	4040 b	12409 a	7458 a	1.54 a	125 a	61 a
2	CLXL729												
3	Aerobic			103.2 a	90.2 a	26.1 a	5306 a	236 e	5541 a	5106 a	1.99 a	107 a	49 a
2	CLXL729												
P				0.2284	0.2284	0.1406	0.8954	0.0002	0.3055	0.2522	0.6814	0.3744	0.6668
LSD P=.05				0.52	0.52	1.06	509.7	240.0	628.6	851.3	0.135	18.3	10.2
TABLE OF A (Water Management) and C (Fertilizer) MEANS													
1	Conventional flood			98.4 e	85.4 e	26.0 de	2962 e	4618 a	7604 c	3031 c	0.89 a	27 a	0 a
1	0 N/A	0											
2	Alternate Wet and Dry			98.8 e	85.8 e	24.9 e	2836 e	4034 b	6869 cd	2544 c	0.86 a	22 a	0 a
1	0 N/A	0											
3	Aerobic			99.6 d	86.6 d	21.1 f	2336 e	139 d	2475 e	2733 c	1.09 a	30 a	0 a
1	0 N/A	0											
1	Conventional flood			102.0 c	89.0 c	36.5 a	10952 a	4032 b	14984 a	8192 a	1.90 a	156 a	81 a
2	150 lb N/A	150	PF										
2	Alternate Wet and Dry			102.4 c	89.4 c	34.6 b	10668 ab	3540 c	14209 ab	8985 a	1.77 a	160 a	87 a
2	150 lb N/A	150	PF										
3	Aerobic			105.5 a	92.5 a	26.5 d	6014 d	176 d	6190 d	6307 b	2.28 a	144 a	76 a
2	150 lb N/A	150	PF										
1	Conventional flood			101.9 c	88.9 c	36.3 a	11082 a	4001 b	15084 a	9033 a	1.62 a	147 a	80 a
3	150 lb N/A	100/50	PF/PI										
2	Alternate Wet and Dry			102.4 c	89.4 c	33.1 c	10086 bc	3505 c	13591 b	8337 a	1.55 a	128 a	70 a
3	150 lb N/A	100/50	PF/PI										

Continued.

Table 46c. Continued.

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	N Fert. Eff.
Part Rated										Abvgrd -	Abvgrd -	Total -	
Rating Date						8/2/2017	8/5/2017	11/9/2017					
Rating Type				50% HD	50% HD	Height	Yield	Yield	Total Yield	Biomass-dry			
Rating Unit				days	days	in	lb/A	lb/A	lb/A	lb/A	% N	lb/A	%
Crop Stage Majority				Main	Main	Main	Main	Ratoon	MC + RC	Main	Main	Main	by mean
Crop Stage Scale										50% HD	50% HD	50% HD	50% HD
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
TABLE OF A (Water Management) and C (Fertilizer) MEANS (continued)													
3 3	Aerobic 150 lb N/A	100/50	PF/PI	104.9 ab	91.9 ab	25.6 de	5986 d	167 d	6152 d	5599 b	2.09 a	116 a	58 a
1 4	Conventional flood 150 lb N/A	80/35/35	PF/PI/LB	101.8 c	88.8 c	34.6 b	9837 c	4044 b	13881 b	8767 a	1.65 a	146 a	76 a
2 4	Alternate Wet and Dry 150 lb N/A	80/35/35	PF/PI/LB	102.1 c	89.1 c	33.0 c	9531 c	3921 b	13370 b	8387 a	1.79 a	151 a	83 a
3 4	Aerobic 150 lb N/A	80/35/35	PF/PI/LB	104.3 b	91.3 b	25.4 de	6032 d	183 d	6215 d	6221 b	2.22 a	138 a	72 a
P				0.0007	0.0007	0.0001	0.0001	0.0303	0.0001	0.0027	0.0605	0.5105	0.2958
LSD P=.05				0.74	0.74	1.50	720.9	339.4	888.9	1204.0	0.190	25.8	14.5
TABLE OF B (Variety) and C (Fertilizer) MEANS													
1 1	CL153 0 N/A	0		100.2 d	87.2 d	22.3 a	2693 a	2580 a	5273 a	2526 a	0.89 a	22 a	0 a
2 1	CLXL729 0 N/A	0		97.7 e	84.7 e	25.8 a	2730 a	3280 a	6026 a	3013 a	1.01 a	30 a	0 a
1 2	CL153 150 lb N/A	150	PF	103.4 a	90.4 a	31.3 a	8968 a	2271 a	11238 a	7830 a	1.93 a	150 a	82 a
2 2	CLXL729 150 lb N/A	150	PF	103.2 ab	90.2 ab	33.8 a	9456 a	2895 a	12350 a	7825 a	2.04 a	157 a	80 a
1 3	CL153 150 lb N/A	100/50	PF/PI	103.4 a	90.4 a	30.3 a	8781 a	2344 a	11125 a	7553 a	1.75 a	130 a	72 a
2 3	CLXL729 50 lb N/A	100/50	PF/PI	102.7 bc	89.7 bc	33.1 a	9321 a	2772 a	12093 a	7759 a	1.76 a	132 a	67 a
1 4	CL153 80 lb N/A	80/35/35	PF/PI/LB	103.2 ab	90.2 ab	29.8 a	8306 a	2524 a	10831 a	7609 a	1.81 a	136 a	75 a
2 4	CLXL729 80 lb N/A	80/35/35	PF/PI/LB	102.3 c	89.3 c	32.3 a	8627 a	2907 a	11480 a	7975 a	1.96 a	154 a	79 a
P				0.0001	0.0001	0.6152	0.6231	0.3164	0.8042	0.9051	0.6308	0.7574	0.7487
LSD P=.05				0.60	0.60	1.22	588.6	277.1	725.8	983.0	0.155	21.1	11.8

Continued.

Table 46c. Continued.

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	N Fert. Eff.
Part Rated										Abvgrd -	Abvgrd -	Total -	
Rating Date						8/2/2017	8/5/2017	11/9/2017					
Rating Type				50% HD	50% HD	Height	Yield	Yield	Total Yield	Biomass-dry			
Rating Unit				days	days	in	lb/A	lb/A	lb/A	lb/A	% N	lb/A	%
Crop Stage Majority				Main	Main	Main	Main	Ratoon	MC + RC	Main	Main	Main	by mean
Crop Stage Scale										50% HD	50% HD	50% HD	50% HD
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
TABLE OF A (Water Management), B (Variety), and C (Fertilizer) MEANS													
1	Conventional flood			99.5 a	86.5 a	25.0 a	3071 a	4047 a	7118 a	3016 a	0.83 a	25 a	0 a
1	CL153												
1	0 N/A	0											
2	Alternate Wet and Dry			100.5 a	87.5 a	23.3 a	2847 a	3594 a	6441 a	2010 a	0.81 a	16 a	0 a
1	CL153												
1	0 N/A	0											
3	Aerobic			100.5 a	87.5 a	18.5 a	2161 a	99 a	2260 a	2551 a	1.03 a	26 a	0 a
1	CL153												
1	0 N/A	0											
1	Conventional flood			97.3 a	84.3 a	27.0 a	2853 a	5188 a	8091 a	3046 a	0.95 a	29 a	0 a
2	CLXL729												
1	0 N/A	0											
2	Alternate Wet and Dry			97.0 a	84.0 a	26.5 a	2825 a	4473 a	7298 a	3077 a	0.92 a	28 a	0 a
2	CLXL729												
1	0 N/A	0											
3	Aerobic			98.8 a	85.8 a	23.8 a	2512 a	178 a	2690 a	2915 a	1.16 a	33 a	0 a
2	CLXL729												
1	0 N/A	0											
1	Conventional flood			102.3 a	89.3 a	35.3 a	10565 a	3620 a	14185 a	8507 a	1.91 a	163 a	87 a
1	CL153												
2	150 lb N/A	150	SPF										
2	Alternate Wet and Dry			102.8 a	89.8 a	33.0 a	10452 a	3105 a	13557 a	8551 a	1.65 a	142 a	82 a
1	CL153												
2	150 lb N/A	150	SPF										
3	Aerobic			105.3 a	92.3 a	25.5 a	5886 a	87 a	5973 a	6433 a	2.23 a	144 a	78 a
1	CL153												
2	150 lb N/A	150	SPF										

Continued.

Table 46c. Continued.

Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage	Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
	Description			Plant-hd	Emer-hd	Tip of panicle				Tissue	Tissue N	N Uptake	N Fert. Eff.
	Part Rated									Abvgrd -	Abvgrd -	Total -	
	Rating Date					8/2/2017	8/5/2017	11/9/2017					
	Rating Type			50% HD	50% HD	Height	Yield	Yield	Total Yield	Biomass-dry			
	Rating Unit			days	days	in	lb/A	lb/A	lb/A	lb/A	% N	lb/A	%
	Crop Stage Majority			Main	Main	Main	Main	Ratoon	MC + RC	Main	Main	Main	by mean
	Crop Stage Scale									50% HD	50% HD	50% HD	50% HD
	TABLE OF A (Water Management), B (Variety), and C (Fertilizer) MEANS (continued)												
1	Conventional flood			101.8 a	88.8 a	37.8 a	11340 a	4444 a	15784 a	7877 a	1.89 a	149 a	76 a
2	CLXL729												
2	150 lb N/A	150	SPF										
2	Alternate Wet and Dry			102.0 a	89.0 a	36.3 a	10885 a	3975 a	14860 a	9418 a	1.89 a	179 a	91 a
2	CLXL729												
2	150 lb N/A	150	SPF										
3	Aerobic			105.8 a	92.8 a	27.5 a	6142 a	265 a	6407 a	6180 a	2.33 a	144 a	74 a
2	CLXL729												
2	150 lb N/A	150	SPF										
1	Conventional flood			102.5 a	89.5 a	35.5 a	10428 a	3515 a	13943 a	8653 a	1.63 a	141 a	77 a
1	CL153												
3	150 lb N/A	100/50	PF/PI										
2	Alternate Wet and Dry			102.5 a	89.5 a	30.8 a	10174 a	3435 a	13609 a	8033 a	1.60 a	127 a	74 a
1	CL153												
3	150 lb N/A	100/50	PF/PI										
3	Aerobic			105.3 a	92.3 a	24.5 a	5740 a	81 a	5822 a	5972 a	2.02 a	120 a	63 a
1	CL153												
3	150 lb N/A	100/50	PF/PI										
1	Conventional flood			101.3 a	88.3 a	37.0 a	11736 a	4488 a	16224 a	9412 a	1.62 a	154 a	83 a
2	CLXL729												
3	150 lb N/A	100/50	PF/PI										
2	Alternate Wet and Dry			102.3 a	89.3 a	35.5 a	9998 a	3575 a	13573 a	8640 a	1.49 a	129 a	65 a
2	CLXL729												
3	150 lb N/A	100/50	PF/PI										
3	Aerobic			104.5 a	91.5 a	26.8 a	6231 a	252 a	6483 a	5225 a	2.17 a	111 a	52 a
2	CLXL729												
3	150 lb N/A	100/50	PF/PI										

Continued.

Table 46c. Continued.

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	N Fert. Eff.
Part Rated										Abvgrd -	Abvgrd -	Total -	
Rating Date						8/2/2017	8/5/2017	11/9/2017					
Rating Type				50% HD	50% HD	Height	Yield	Yield	Total Yield	Biomass-dry			
Rating Unit				days	days	in	lb/A	lb/A	lb/A	lb/A	% N	lb/A	%
Crop Stage Majority				Main	Main	Main	Main	Ratoon	MC + RC	Main	Main	Main	by mean
Crop Stage Scale										50% HD	50% HD	50% HD	50% HD
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
TABLE OF A (Water Management), B (Variety), and C (Fertilizer) MEANS (continued)													
1	Conventional flood			102.5 a	89.5 a	33.5 a	10063 a	3750 a	13813 a	8411 a	1.59 a	133 a	72 a
1	CL153												
4	150 lb N/A	80/35/35	PF/PI/LB										
2	Alternate Wet and Dry			102.3 a	89.3 a	31.5 a	9131 a	3704 a	12835 a	8076 a	1.71 a	139 a	79 a
1	CL153												
4	150 lb N/A	80/35/35	PF/PI/LB										
3	Aerobic			104.8 a	91.8 a	24.3 a	5725 a	119 a	5844 a	6340 a	2.14 a	136 a	73 a
1	CL153												
4	150 lb N/A	80/35/35	PF/PI/LB										
1	Conventional flood			101.0 a	88.0 a	35.8 a	9611 a	4338 a	13949 a	9124 a	1.71 a	158 a	80 a
2	CLXL729												
4	150 lb N/A	80/35/35	PF/PI/LB										
2	Alternate Wet and Dry			102.0 a	89.0 a	34.5 a	9930 a	4138 a	13905 a	8699 a	1.87 a	163 a	87 a
2	CLXL729												
4	150 lb N/A	80/35/35	PF/PI/LB										
3	Aerobic			103.8 a	90.8 a	26.5 a	6339 a	247 a	6586 a	6102 a	2.30 a	140 a	71 a
2	CLXL729												
4	150 lb N/A	80/35/35	PF/PI/LB										
P				0.109	0.109	0.341	0.210	0.424	0.247	0.891	0.793	0.696	0.770
LSD P=.05				1.04	1.04	2.12	1019.5	480.0	1257.1	1702.7	0.269	36.5	20.5
Standard Deviation				0.74	0.74	1.50	722.5	340.2	890.7	1207.0	0.191	25.9	14.5
CV				0.72	0.83	5.03	9.8	12.6	8.9	18.5	11.627	22.8	25.5

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

Table 46d. Factorial analysis on the evaluation of water management on yield components H. Rouse Caffey Rice Research Station.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Yield Components						
Rating Date				7/21/2017						
Rating Type				WP dry wt.	Panicle #	Grain wt.	10 P gr wt.	10 P seed	Milling (g/100g)	
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		
Trt No.	Trt. Name	Rate (lb ai/A)	Growth Stage							
TABLE OF A (Water Management) MEANS										
1	Conventional flood			484.8 a	135 a	238.4 a	15.83 a	664 a	54.16 a	70.29 a
2	Alternate Wet and Dry			489.2 a	140 a	240.7 a	14.10 a	604 a	51.63 b	69.88 a
3	Aerobic			323.2 b	134 a	142.2 b	12.59 a	421 b	46.10 c	70.49 a
P				0.0001	0.3981	0.0001	0.5521	0.0001	0.0001	0.2916
LSD P=.05				27.99	9.50	15.495	5.90	69.20	1.745	0.777
TABLE OF B (Variety) MEANS										
1	CL153			414.5 b	137 a	191.3 b	16.21 a	606 a	51.48 a	71.16 a
2	CLXL729			450.3 a	136 a	222.9 a	12.14 a	521 b	49.77 b	69.28 b
P				0.0026	0.8727	0.0001	0.0969	0.0037	0.0195	0.0001
LSD P=.05				22.85	7.75	12.652	4.82	56.50	1.425	0.635
TABLE OF C (Fertilizer) MEANS										
1	0 N/A	0		177.4 b	73 b	75.3 b	9.19 a	373 b	45.59 c	71.39 a
2	150 lb N/A	150	PF	522.2 a	156 a	254.0 a	18.90 a	629 a	53.75 a	69.68 b
3	150 lb N/A	100/50	PF/PI	521.2 a	163 a	249.9 a	14.69 a	638 a	51.21 b	69.76 b
4	150 lb N/A	80/35/35	PF/PI/LB	508.8 a	154 a	249.4 a	13.93 a	612 a	51.96 ab	70.05 b
P				0.0001	0.0001	0.0001	0.0518	0.0001	0.0001	0.0008
LSD P=.05				32.32	10.97	17.892	6.8159	79.91	2.015	0.898
TABLE OF A (Water Management) and B (Variety) MEANS										
1	Conventional flood			459.7 a	135 a	218.1 a	17.05 a	730 a	56.00 a	70.84 ab
1	CL153									
2	Alternate Wet and Dry			466.4 a	138 a	222.5 a	15.05 a	639 a	54.24 ab	71.45 a
1	CL153									

Continued.

Table 46d. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Yield Components													
Rating Date				7/21/2017													
Rating Type				WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed		Milling (g/100g)			
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					
Trt No.	Trt. Name	Rate (lb ai/A)	Growth Stage														
TABLE OF A (Water Management) and B (Variety) MEANS (continued)																	
3	Aerobic			317.5	a	137	a	133.4	a	16.53	a	448	a	44.21	d	71.20	a
1	CL153																
1	Conventional flood			510.0	a	134	a	258.7	a	14.61	a	598	a	52.31	b	69.74	c
2	CLXL729																
2	Alternate Wet and Dry			512.0	a	142	a	259.0	a	13.15	a	569	a	49.02	c	68.32	d
2	CLXL729																
3	Aerobic			328.9	a	132	a	151.1	a	8.66	a	395	a	47.99	c	69.77	bc
2	CLXL729																
P				0.3245		0.6746		0.2945		0.5389		0.4862		0.0001		0.0245	
LSD P=.05				39.58		13.43		21.9131		8.3477		97.87		2.4676		1.0993	
TABLE OF A (Water Management) and C (Fertilizer) MEANS																	
1	Conventional flood			196.3	c	71	a	87.1	c	10.94	a	422	a	48.29	a	70.66	b
1	0 N/A	0															
2	Alternate Wet and Dry			187.6	c	73	a	80.9	c	9.37	a	375	a	45.04	a	70.60	b
1	0 N/A	0															
3	Aerobic			148.4	c	75	a	57.9	c	7.26	a	322	a	43.43	a	72.92	a
1	0 N/A	0															
1	Conventional flood			589.5	a	156	a	291.9	a	16.79	a	729	a	58.14	a	70.32	bc
2	150 lb N/A	150	PF														
2	Alternate Wet and Dry			585.4	a	160	a	295.1	a	16.43	a	694	a	54.23	a	68.85	c
2	150 lb N/A	150	PF														
3	Aerobic			391.5	b	153	a	175.1	b	23.47	a	465	a	48.87	a	69.88	bc
2	150 lb N/A	150	PF														
1	Conventional flood			582.3	a	163	a	287.1	a	17.60	a	756	a	54.98	a	70.01	bc
3	150 lb N/A	100/50	PF/PI														
2	Alternate Wet and Dry			605.9	a	173	a	296.5	a	17.18	a	730	a	52.68	a	69.70	bc
3	150 lb N/A	100/50	PF/PI														

Continued.

Table 46d. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description				Yield Components													
Rating Date				7/21/2017													
Rating Type				WP dry wt.		Panicle #		Grain wt.		10 P gr wt.		10 P seed		Milling (g/100g)			
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					
Trt No.	Trt. Name	Rate (lb ai/A)	Growth Stage														
TABLE OF A (Water Management) and C (Fertilizer) MEANS (continued)																	
3	Aerobic			375.5	b	153	a	166.0	b	9.28	a	429	a	45.96	a	69.56	bc
3	150 lb N/A	100/50	PF/PI														
1	Conventional flood			571.2	a	150	a	287.6	a	18.00	a	748	a	55.21	a	70.17	bc
4	150 lb N/A	80/35/35	PF/PI/LB														
2	Alternate Wet and Dry			577.9	a	155	a	290.6	a	13.42	a	617	a	54.55	a	70.38	bc
4	150 lb N/A	80/35/35	PF/PI/LB														
3	Aerobic			377.2	b	156	a	170.0	b	10.38	a	470	a	46.12	a	69.59	bc
4	150 lb N/A	80/35/35	PF/PI/LB														
P				0.0001		0.6756		0.0001		0.5269		0.1537		0.1518		0.038	
LSD P=.05				55.98		18.99		30.990		11.8055		138.41		3.4897		1.5546	
TABLE OF B (Variety) and C (Fertilizer) MEANS																	
1	CL153			174.2	a	82	b	68.9	a	9.99	a	416	a	45.54	a	72.44	a
1	0 N/A	0															
2	CLXL729			180.7	a	64	c	81.6	a	8.39	a	329	a	45.63	a	70.35	a
1	0 N/A	0															
1	CL153			485.4	a	151	a	226.3	a	24.29	a	678	a	54.35	a	70.51	a
2	150 lb N/A	150	PF														
2	CLXL729			558.9	a	162	a	281.7	a	13.50	a	581	a	53.14	a	68.86	a
2	150 lb N/A	150	PF														
1	CL153			508.7	a	165	a	236.2	a	14.79	a	646	a	52.84	a	70.77	a
3	150 lb N/A	100/50	PF/PI														
2	CLXL729			533.7	a	161	a	263.6	a	14.58	a	630	a	49.58	a	68.74	a
3	50 lb N/A	100/50	PF/PI														
1	CL153			489.7	a	150	a	233.9	a	15.76	a	682	a	53.19	a	70.94	a
4	80 lb N/A	80/35/35	PF/PI/LB														
2	CLXL729			527.9	a	158	a	264.9	a	12.09	a	542	a	50.74	a	69.15	a
4	80 lb N/A	80/35/35	PF/PI/LB														
P				0.2153		0.0297		0.1295		0.4228		0.4892		0.3743		0.9583	
LSD P=.05				45.71		15.51		25.303		9.6391		113.01		2.8493		1.2693	

Continued.

Table 46d. Continued.

Trt No.	Trt. Name	Rate (lb ai/A)	Growth Stage	Rice	Rice	Rice	Rice	Rice	Rice	Rice
	Description			Yield Components						
	Rating Date			7/21/2017						
	Rating Type			WP dry wt.	Panicle #	Grain wt.	10 P gr wt.	10 P seed	Milling (g/100g)	
	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		
TABLE OF A (Water Management), B (Variety), and C (Fertilizer) MEANS										
1	Conventional flood			200.4 a	83 a	84.0 a	12.17 a	499 a	50.14 a	71.36 a
1	CL153									
1	0 N/A	0								
2	Alternate Wet and Dry			181.8 a	82 a	72.3 a	9.97 a	405 a	45.97 a	72.43 a
1	CL153									
1	0 N/A	0								
3	Aerobic			140.4 a	83 a	50.5 a	7.85 a	346 a	40.52 a	73.53 a
1	CL153									
1	0 N/A	0								
1	Conventional flood			192.2 a	59 a	90.2 a	9.72 a	345 a	46.44 a	69.96 a
2	CLXL729									
1	0 N/A	0								
2	Alternate Wet and Dry			193.3 a	64 a	89.4 a	8.78 a	345 a	44.12 a	68.77 a
2	CLXL729									
1	0 N/A	0								
3	Aerobic			156.5 a	68 a	65.3 a	6.67 a	298 a	46.34 a	72.32 a
2	CLXL729									
1	0 N/A	0								
1	Conventional flood			509.0 a	142 a	235.2 a	17.86 a	784 a	60.22 a	70.58 a
1	CL153									
2	150 lb N/A	150	SPF							
2	Alternate Wet and Dry			560.3 a	155 a	274.6 a	18.19 a	783 a	57.02 a	70.98 a
1	CL153									
2	150 lb N/A	150	SPF							
3	Aerobic			386.9 a	155 a	169.3 a	36.81 a	467 a	45.83 a	69.96 a
1	CL153									
2	150 lb N/A	150	SPF							

Continued.

Table 46d. Continued.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Yield Components						
Rating Date				7/21/2017						
Rating Type				WP dry wt.	Panicle #	Grain wt.	10 P gr wt.	10 P seed	Milling (g/100g)	
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		
Trt No.	Trt. Name	Rate (lb ai/A)	Growth Stage							
TABLE OF A (Water Management), B (Variety), and C (Fertilizer) MEANS (continued)										
1	Conventional flood			670.0 a	170 a	348.6 a	15.72 a	675 a	56.06 a	70.05 a
2	CLXL729									
2	150 lb N/A	150	SPF							
2	Alternate Wet and Dry			610.6 a	165 a	315.7 a	14.67 a	606 a	51.45 a	66.72 a
2	CLXL729									
2	150 lb N/A	150	SPF							
3	Aerobic			396.2 a	152 a	180.9 a	10.12 a	462 a	51.91 a	69.80 a
2	CLXL729									
2	150 lb N/A	150	SPF							
1	Conventional flood			584.2 a	169 a	283.9 a	19.04 a	823 a	56.49 a	70.50 a
1	CL153									
3	150 lb N/A	100/50	PF/PI							
2	Alternate Wet and Dry			572.0 a	172 a	272.2 a	15.85 a	678 a	56.40 a	70.84 a
1	CL153									
3	150 lb N/A	100/50	PF/PI							
3	Aerobic			370.0 a	154 a	152.4 a	9.47 a	438 a	45.63 a	70.97 a
1	CL153									
3	150 lb N/A	100/50	PF/PI							
1	Conventional flood			580.3 a	156 a	290.4 a	16.15 a	688 a	53.48 a	69.53 a
2	CLXL729									
3	150 lb N/A	100/50	PF/PI							
2	Alternate Wet and Dry			639.7 a	175 a	320.7 a	18.51 a	782 a	48.96 a	68.56 a
2	CLXL729									
3	150 lb N/A	100/50	PF/PI							
3	Aerobic			381.0 a	151 a	179.6 a	9.09 a	420 a	46.29 a	68.15 a
2	CLXL729									
3	150 lb N/A	100/50	PF/PI							

Continued.

Table 46d. Continued.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description				Yield Components						
Rating Date				7/21/2017						
Rating Type				WP dry wt.	Panicle #	Grain wt.	10 P gr wt.	10 P seed	Milling (g/100g)	
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		
Trt No.	Trt. Name	Rate (lb ai/A)	Growth Stage							
TABLE OF A (Water Management), B (Variety), and C (Fertilizer) MEANS (continued)										
1	Conventional flood			545.2 a	148 a	269.3 a	19.13 a	814 a	57.15 a	70.91 a
1	CL153									
4	150 lb N/A	80/35/35	PF/PI/LB							
2	Alternate Wet and Dry			551.3 a	145 a	270.9 a	16.17 a	692 a	57.57 a	71.55 a
1	CL153									
4	150 lb N/A	80/35/35	PF/PI/LB							
3	Aerobic			372.6 a	155 a	161.5 a	11.99 a	539 a	44.84 a	70.37 a
1	CL153									
4	150 lb N/A	80/35/35	PF/PI/LB							
1	Conventional flood			597.3 a	152 a	305.9 a	16.87 a	683 a	53.27 a	69.42 a
2	CLXL729									
4	150 lb N/A	80/35/35	PF/PI/LB							
2	Alternate Wet and Dry			604.6 a	165 a	310.3 a	10.66 a	543 a	51.54 a	69.22 a
2	CLXL729									
4	150 lb N/A	80/35/35	PF/PI/LB							
3	Aerobic			381.8 a	157 a	178.5 a	8.76 a	401 a	47.40 a	68.82 a
2	CLXL729									
4	150 lb N/A	80/35/35	PF/PI/LB							
P				0.2293	0.6707	0.0918	0.6115	0.6996	0.7924	0.4828
LSD P=.05				79.17	26.86	43.826	16.6955	195.74	4.9351	2.1985
Standard Deviation				56.12	19.04	31.068	11.8354	138.76	3.4976	1.5581
CV				12.98	13.95	14.999	83.4943	24.64	6.9088	2.2189

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

Evaluation of NBPT-Treated Urea on Rice Grain Yield – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-30

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type**.................................: Fall 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**........................: 1.65
- **pH**..: 7.43
- **Extractable nutrients** ppm ....: Ca-1428; Cu-2.9; Mg-221; P-16; K-63; Na-105; S-2.5; Zn-9.2

Crop/Variety ....: Rice / CL153
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth**......................: 33 seeds/ft^2 / .75 inch
- **Emergence date**...........................: March 26
- **Harvest date** ....: Aug. 3
- **Ratoon Harvest date**...................: NA

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization..: 250 lb/A 0-24-24-2.7, March 15

Water management ....:
- **Flush** ....: March 22
- **Flood**...: May 3
- **Drain**...: July 19
- **Ratoon flood**................................: NA
- **Ratoon drain** ....: NA

Pest management ....:
- **Herbicides**....................................: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
  2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
  2 qt/A glyphosate, March 10
  1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
  3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
  3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
  4 oz/A League + 3 oz/A propanil, May 2
  20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides**....................................: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 47. Evaluation of NBPT-treated urea on grain yield. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle					
Rating Date								8/1/2017		8/3/2017		8/3/2017	
Rating Type				50% HD		50% HD		Height		Test Wt.		Yield	
Rating Unit				days		days		in		lb/bu		lb/A	
Trt. No.	Treatment Name	Rate (lb ai/A)	Growth Stage										
1	Untreated Check			99.0	h	86.0	h	28.5	f	45.4	a	3456	h
2	UREA	100	10 DPF	100.0	g	87.0	g	31.5	def	46.2	a	5036	g
3	UREA	150	10 DPF	101.0	f	88.0	f	30.5	ef	45.8	a	5970	fg
4	UREA	200	10 DPF	101.8	ef	88.8	ef	35.0	abc	46.3	a	7728	cd
5	UREA + ContaiN	100	10 DPF	101.3	f	88.3	f	32.5	cde	45.7	a	6608	ef
6	UREA + ContaiN	150	10 DPF	102.3	de	89.3	de	34.0	bcd	46.3	a	8361	bc
7	UREA + ContaiN	200	10 DPF	103.5	ab	90.5	ab	37.5	a	45.4	a	9211	ab
8	UREA + Agrotain	100	10 DPF	101.8	ef	88.8	ef	30.3	ef	46.0	a	7165	de
9	UREA + Agrotain	150	10 DPF	102.8	bcd	89.8	bcd	35.5	abc	46.0	a	8731	abc
10	UREA + Agrotain	200	10 DPF	103.3	abc	90.3	abc	36.3	ab	45.3	a	9396	ab
11	UREA + N Fixx	100	10 DPF	101.8	ef	88.8	ef	31.5	def	46.0	a	6822	def
12	UREA + N Fixx	150	10 DPF	102.5	cde	89.5	cde	34.8	abc	44.4	a	8585	abc
13	UREA + N Fixx	200	10 DPF	104.0	a	91.0	a	35.8	ab	45.6	a	9448	a
LSD P=.05				0.77		0.77		3.16		1.59		1086.5	
Standard Deviation				0.54		0.54		2.20		1.11		757.6	
CV				0.53		0.61		6.6		2.42		10.2	
Replicate F				0.952		0.952		0.238		1.045		3.876	
Replicate Prob(F)				0.4258		0.4258		0.8693		0.3845		0.0169	
Treatment F				26.845		26.845		6.184		0.918		23.148	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.5398		0.0001	

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

Evaluation of SymTRX20S on Rice Yield and Nitrogen Uptake as Compared to Ammonium Sulfate – H. Rouse Caffey Rice Research Station

Experiment number	17-CM-19
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main) / Dan Froehlich
Tillage type	Fall 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	1.65
pH	7.40
Extractable nutrients ppm	Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5
Crop/Variety	Rice / CL153
Planting method/date	Drill seeded / March 13
Seeding rate/depth	33 seeds/ft^2 / .75 inch
Emergence date	March 26
Harvest date	Aug. 2
Ratoon Harvest date	NA
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	NA
Ratoon drain	NA
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 48. Evaluation of SymTRX20S on rice yield and nitrogen uptake as compare to ammonium sulfate. H. Rouse Caffey Rice Research Station.

Crop Name					Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description					Plant-hd	Emer-hd	Tip of panicle		Tissue	Tissue N	N Uptake
Part Rated									Abvgrd -	Abvgrd -	total -
Rating Date							7/31/2017				
Rating Type					50% HD	50% HD	Height	Yield	Biomass-dry		
Rating Unit					days	days	in	lb/A	lb/A	% N	lb/A
Crop Stage Scale									50% HD	50% HD	50% HD
Trt. No.	Treatment Name	Rate	Rate Unit	Growth Stage							
1	No N				101.3 b	88.3 b	27.3 d	3302 b	4127 b	0.86 c	36 b
2	No Starter	105	lb ai/A	1 DPF	104.5 a	91.5 a	37.0 a	7722 a	8685 a	1.24 ab	107 a
3	SymTRX20S 120 (24 lb S/A)	19.2	lb ai/A	2-3 leaf	104.3 a	91.3 a	36.3 ab	7998 a	8943 a	1.26 ab	112 a
	UREA	105	lb ai/A	1 DPF							
4	AMS 100 (24 lb S/A)	21	lb ai/A	2-3 leaf	104.3 a	91.3 a	35.3 bc	7789 a	8823 a	1.30 a	115 a
	UREA	105	lb ai/A	1 DPF							
5	SymTRX20S 100 (20 lb S/A)	16	lb ai/A	2-3 leaf	104.8 a	91.8 a	34.3 c	7343 a	8783 a	1.14 b	100 a
	UREA	105	lb ai/A	1 DPF							
6	AMS 75 (20 lb S/A)	15.75	lb ai/A	2-3 leaf	104.0 a	91.0 a	35.5 abc	7637 a	9016 a	1.23 ab	111 a
	UREA	105	lb ai/A	1 DPF							
LSD P=.05					1.17	1.17	1.70	1010.8	1150.2	0.14197	20.1
Standard Deviation					0.77	0.77	1.13	670.7	763.2	0.09420	13.3
CV					0.75	0.85	3.3	9.63	9.47	8.04	13.73
Replicate F					2.778	2.778	7.000	1.582	1.501	2.544	1.520
Replicate Prob(F)					0.0774	0.0774	0.0036	0.2354	0.2547	0.0952	0.2501
Treatment F					11.111	11.111	39.522	29.051	25.625	11.898	21.049
Treatment Prob(F)					0.0001	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).

Evaluation of SymTRX20S on Rice Yield and Nitrogen Uptake as Compared to Ammonium Sulfate – St. Landry Parish

Experiment number	17-SLP-19
Site and design	
Location/Cooperator	St. Landry Parish/Charlie Fontenot
Tillage type	Conventional
Experimental design	Randomized complete block
Number of reps	4
Plot size	4.66 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Dundee silty clay loam
% organic matter	1.70
pH	7.77
Extractable nutrients ppm	Ca-3887; Cu-1.95; Mg-637; P-63; K-193; Na-63; S-2.5; Zn-1.7
Crop/Variety	Rice / CL153
Planting method/date	Drill seeded / March 21
Seeding rate/depth	33seeds/ft^2 / .75 inch
Emergence date	April 3
Harvest date	Aug. 16
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn & 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	No blanket applications
Water management	
Flush	NA
Flood	May 12
Drain	July 28
Pest management	
Herbicides	24 oz/A Roundup + 2 oz/A Sharpen, March 19 0.6 oz/A Regiment + 0.33 oz/A Permit, May 11
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	None

Table 49. Evaluation of SymTRX20S on rice yield and nitrogen uptake as compare to ammonium sulfate. St. Landry Parish.

Crop Name					Rice	Rice	Rice	Rice	Rice	Rice	Rice
Description					Plant-hd	Emer-hd	Tip of panicle		Tissue	Tissue N	N Uptake
Part Rated									Abvgrd -	Abvgrd -	total -
Rating Date							8/15/2017	8/15/2017			
Rating Type					50% HD	50% HD	Height	Yield	Biomass-dry		
Rating Unit					Days	days	in	lb/A	lb/A	% N	lb/A
Crop Stage Scale									50% HD	50% HD	50% HD
Trt. No.	Treatment Name	Rate	Rate Unit	Growth Stage							
1	No N				97.3 b	84.3 b	33.8 b	6103 b	5252 b	0.89 b	46 b
2	No Starter	105	lb ai/A	1 DPF	103.3 a	90.3 a	39.8 a	8980 a	8929 a	1.62 a	141 a
3	SymTRX20S 120 (24 lb S/A)	19.2	lb ai/A	2-3 leaf	103.3 a	90.3 a	40.8 a	8791 a	8862 a	1.63 a	148 a
	UREA	105	lb ai/A	1 DPF							
4	AMS 100 (24 lb S/A)	21	lb ai/A	2-3 leaf	103.8 a	90.8 a	41.5 a	8753 a	8917 a	1.50 a	134 a
	UREA	105	lb ai/A	1 DPF							
5	SymTRX20S 100 (20 lb S/A)	16	lb ai/A	2-3 leaf	103.0 a	90.0 a	41.8 a	8839 a	9821 a	1.53 a	151 a
	UREA	105	lb ai/A	1 DPF							
6	AMS 75 (20 lb S/A)	15.75	lb ai/A	2-3 leaf	102.5 a	89.5 a	41.3 a	8465 a	10690 a	1.59 a	170 a
	UREA	105	lb ai/A	1 DPF							
LSD P=.05					2.80	2.80	2.34	752.9	3240.8	0.27573	59.8
Standard Deviation					1.86	1.86	1.56	499.5	2150.3	0.18295	39.7
CV					1.82	2.08	3.91	6.0	24.59	12.54	30.11
Replicate F					1.000	1.000	1.441	0.307	0.269	0.909	0.336
Replicate Prob(F)					0.4199	0.4199	0.2704	0.8196	0.8464	0.4598	0.7998
Treatment F					6.929	6.929	15.310	19.393	2.979	9.714	4.801
Treatment Prob(F)					0.0015	0.0015	0.0001	0.0001	0.0460	0.0003	0.0081

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

Evaluation of CPS Experimental Varieties and Hybrids
(17 Y3-11 and 17 Y3-22) – H. Rouse Caffey Rice Research Station

Experiment number	17-CM-36 and 17-CM-37
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall Stale
Experimental design	Randomized complete block
Number of reps	6
Plot size	4.67 x 16 ft
Row width/rows per plot	8 in / 7
Soil type	Crowley silt loam
% organic matter	1.65
pH	7.43
Extractable nutrients ppm	Ca-1428; Cu-2.9; Mg-221; P-16; K-63; Na-105; S-2.5; Zn-9.2
Crop/Variety	Rice / See data sheet
Planting method/date	Drill seeded / March 13
Seeding rate/depth	Conventional 33 seeds/ft^2, Hybrid 10 seeds/ft^2 / .75 inch
Emergence date	March 26
Harvest date	Aug. 4
Ratoon Harvest date	NA
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15 120 lb N/A 46-0-0, May 2 90 lb N/A 46-0-0, Aug. 4
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	Oct. 24
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A Propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 50. Evaluation of CPS experimental varieties and hybrids (17 Y3-11). 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				8/2/2017	8/2/2017		8/4/2017		
Rating Type		50% HD	50% HD	Height	Lodge		Yield	Milling (%)	
Rating Unit		days	days	in	% plot	rate	lb/A	head	total
Trt. No.	Treatment Name								
1	14R-T225-66	98.3 e	85.3 e	38.5 bc	0.0 b	0.0 b	7938 cd	60.64 b	68.98 bcd
2	14R-T222-107	105.0 ab	92.0 ab	38.8 bc	0.0 b	0.0 b	8929 abc	57.24 c	69.26 bc
3	14R-T225-15	97.0 f	84.0 f	39.5 b	0.0 b	0.0 b	6708 e	63.56 a	68.78 cd
4	14R-T233-97	104.8 ab	91.8 ab	42.3 a	0.0 b	0.0 b	8801 abc	54.87 c	68.05 d
5	14R-T222-112	103.0 c	90.0 c	39.3 b	0.0 b	0.0 b	9114 ab	63.94 a	69.45 bc
6	-67	105.5 a	92.5 a	37.8 bcd	0.0 b	0.0 b	8260 bcd	57.38 c	68.84 cd
7	CF USH15002	91.0 g	78.0 g	35.3 d	100.0 a	5.0 a	7242 de	56.99 c	69.85 b
8	Diamond	104.0 bc	91.0 bc	38.0 bc	0.0 b	0.0 b	6726 e	61.50 ab	71.77 a
9	CL153	103.5 c	90.5 c	37.0 bcd	0.0 b	0.0 b	8548 bc	63.14 ab	72.37 a
10	XL753	101.0 d	88.0 d	36.5 cd	0.0 b	0.0 b	9857 a	56.14 c	72.34 a
LSD P=.05		1.20	1.20	2.71	.	.	1099.5	2.733	0.975
Standard Deviation		0.83	0.83	1.86	0.00	0.00	756.5	1.883	0.672
CV		0.82	0.94	4.87	0.0	0.0	9.21	3.16	0.96
Replicate F		1.459	1.459	0.851	0.000	0.000	0.046	0.451	1.181
Replicate Prob(F)		0.2477	0.2477	0.4783	1.0000	1.0000	0.9867	0.7186	0.3353
Treatment F		124.69	124.69	4.194	0.000	0.000	7.752	12.954	22.348
Treatment Prob(F)		0.0001	0.0001	0.0018	1.0000	1.0000	0.0001	0.0001	0.0001

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

Table 51. Evaluation of CPS experimental varieties and hybrids (17 Y3-22). 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						8/2/2017		8/2/2017				8/4/2017					
Rating Type		50% HD		50% HD		Height		Lodge				Yield		Milling (%)			
Rating Unit		days		days		in		% plot		rate		lb/A		head		total	
Trt. No.	Treatment Name																
1	14R-T225-66	98.3	e	85.3	e	38.5	bc	0.0	b	0.0	b	7938	cd	60.64	b	68.98	bcd
2	14R-T222-107	105.0	ab	92.0	ab	38.8	bc	0.0	b	0.0	b	8929	abc	57.24	c	69.26	bc
3	14R-T225-15	97.0	f	84.0	f	39.5	b	0.0	b	0.0	b	6708	e	63.56	a	68.78	cd
4	14R-T233-97	104.8	ab	91.8	ab	42.3	a	0.0	b	0.0	b	8801	abc	54.87	c	68.05	d
5	14R-T222-112	103.0	c	90.0	c	39.3	b	0.0	b	0.0	b	9114	ab	63.94	a	69.45	bc
6	-67	105.5	a	92.5	a	37.8	bcd	0.0	b	0.0	b	8260	bcd	57.38	c	68.84	cd
7	CF USH15002	91.0	g	78.0	g	35.3	d	100.0	a	5.0	a	7242	de	56.99	c	69.85	b
8	Diamond	104.0	bc	91.0	bc	38.0	bc	0.0	b	0.0	b	6726	e	61.50	ab	71.77	a
9	CL153	103.5	c	90.5	c	37.0	bcd	0.0	b	0.0	b	8548	bc	63.14	ab	72.37	a
10	XL753	101.0	d	88.0	d	36.5	cd	0.0	b	0.0	b	9857	a	56.14	c	72.34	a
LSD P=.05		1.20		1.20		2.71		.		.		1099.5		2.733		0.975	
Standard Deviation		0.83		0.83		1.86		0.00		0.00		756.5		1.883		0.672	
CV		0.82		0.94		4.87		0.0		0.0		9.21		3.16		0.96	
Replicate F		1.459		1.459		0.851		0.000		0.000		0.046		0.451		1.181	
Replicate Prob(F)		0.2477		0.2477		0.4783		1.0000		1.0000		0.9867		0.7186		0.3353	
Treatment F		124.686		124.686		4.194		0.000		0.000		7.752		12.954		22.348	
Treatment Prob(F)		0.0001		0.0001		0.0018		1.0000		1.0000		0.0001		0.0001		0.0001	

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

Evaluation of Helena Foliar Fertilizers in Rice – H. Rouse Caffey Rice Research Station

Experiment number	17-CM-31
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main) / Paul Kennedy
Tillage type	Fall 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	1.65
pH	7.40
Extractable nutrients ppm	Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5
Crop/Variety	Rice / CL153
Planting method/date	Drill seeded / March 13
Seeding rate/depth	33 seeds/ft^2 / .75 inch
Emergence date	March 26
Harvest date	Aug. 2
Ratoon Harvest date	NA
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15 120 lb N/A 46-0-0, May 2
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	NA
Ratoon drain	NA
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 52. Evaluation of Helena foliar fertilizers in rice. H. Rouse Caffey Rice Research Station.

Crop Name						Rice	Rice	Rice	Rice	Rice
Description						Plant-hd	Emer-hd	Tip of panicle	Tip of panicle	
Rating Date								6/9/2017	7/31/2017	
Rating Type						50% HD	50% HD	Ht. 14DA	Ht. at harvest	Yield
Rating Unit						Days	days	in	in	lb/A
Trt No.	Treatment Name	Form Type	Rate	Rate Unit	Growth Stage					
1	UNTREATED					102.5 A	89.5 a	26.9 a	35.3 a	7485 bc
2	HM9310	L	2	gal/A	PI	102.8 A	89.8 a	26.3 a	35.0 a	7477 bc
3	HM9310	L	2	gal/A	PI	102.8 A	89.8 a	27.1 a	33.8 a	7429 c
	HM1707	L	2	oz/A	PI					
4	HM9310	L	2	gal/A	PI	102.8 A	89.8 a	27.2 a	36.5 a	7365 c
	HM1707	L	3	oz/A	PI					
5	HM9310	L	2	gal/A	PI	102.8 A	89.8 a	28.3 a	35.5 a	8131 ab
	HM1707	L	4	oz/A	PI					
6	HM9310	L	2	gal/A	PI	102.5 A	89.5 a	27.0 a	34.0 a	7465 c
	HM9310	L	2	gal/A	10% HD					
7	HM9310	L	2	gal/A	PI	102.8 A	89.8 a	27.8 a	35.8 a	7884 bc
	HM9310	L	2	gal/A	10% HD					
	HM1707	L	2	oz/A	PI					
	HM1707	L	2	oz/A	10% HD					
8	HM9310	L	2	gal/A	PI	103.0 A	90.0 a	27.5 a	35.5 a	8653 a
	HM9310	L	2	gal/A	10% HD					
	HM1707	L	3	oz/A	PI					
	HM1707	L	3	oz/A	10% HD					
9	HM9310	L	2	gal/A	PI	102.8 A	89.8 a	27.7 a	34.8 a	7784 bc
	HM9310	L	2	gal/A	10% HD					
	HM1707	L	4	oz/A	PI					
	HM1707	L	4	oz/A	10% HD					
LSD P=.05						0.44	0.44	1.47	1.75	660.5
Standard Deviation						0.30	0.30	1.01	1.20	452.6
CV						0.29	0.33	3.69	3.41	5.85
Replicate F						23.385	23.385	12.985	9.187	24.613
Replicate Prob(F)						0.0001	0.0001	0.0001	0.0003	0.0001
Treatment F						1.000	1.000	1.238	2.052	3.552
Treatment Prob(F)						0.4613	0.4613	0.3206	0.0830	0.0075

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

Evaluation of Liquid and Powdered Preserve N (nitrification inhibitor) and N-Vail (urease inhibitor) on Rice Grain Yield and Nitrogen Use Efficiency – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-40

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main) / Earl Garber
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.40
- **Extractable nutrients** ppm ....: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5

Crop/Variety ....: Rice / CL153
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 2
- **Ratoon Harvest date** ....: NA

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: NA
- **Ratoon drain** ....: NA

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
2 qt/A glyphosate, March 10
1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
4 oz/A League + 3 oz/A propanil, May 2
20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 53. Evaluation of liquid and powdered Preserve N (nitrification inhibitor) and N-Vail (urease inhibitor) on rice grain yield and nitrogen use efficiency. H. Rouse Caffey Rice Research Station.

Crop Name						Rice		Rice		Rice		Rice		Rice		Rice		Rice		Rice	
Description						Plant-hd		Emer-hd		Tip of panicle				Tissue		Tissue N		N Uptake		N Fert. Eff.	
Part Rated														Abvgrd -		Abvgrd -		Total -			
Rating Date										7/31/2017		8/2/2017		6/23/2017							
Rating Type						50% HD		50% HD		Height		Yield		Biomass-dry				N Uptake			
Rating Unit						days		days		in		lb/A		lb/A		% N		lb N/A		%	
Crop Stage Majority						Main		Main		Main		Main		Main		Main		Main		Main	
Crop Stage Scale														50% HD		50% HD		50% HD		50% HD	
Trt.	Treatment	Form		Rate	Growth																
No.	Name	Type	Rate	Unit	Stage																
1	Liquid Preserve N	L	26	fl oz/A	10 DPF	102.0	a	89.0	a	36.8	a	8793	a	8239	a	1.89	a	156	a	92	a
	Urea-treated N-Vail	GR	120	lb ai/A	10 DPF																
2	Powdered Preserve N	DU	3	lb/A	10 DPF	102.3	a	89.3	a	32.8	b	8393	a	8240	a	1.67	b	137	a	80	a
	Urea-treated N-Vail	GR	120	lb ai/A	10 DPF																
3	Urea	GR	120	lb ai/A	10 DPF	101.5	a	88.5	a	32.0	b	6953	b	7058	a	1.44	cd	103	b	52	bc
4	Urea-treated N-Vail	GR	120	lb ai/A	10 DPF	101.8	a	88.8	a	36.0	a	8496	a	8016	a	1.60	bc	128	ab	73	ab
5	Liquid Preserve N	L	26	fl oz/A	10 DPF	101.5	a	88.5	a	32.8	b	5969	b	7162	a	1.39	d	99	b	49	c
	Urea	GR	120	lb ai/A	10 DPF																
6	UTC (No N)					100.3	b	87.3	b	27.0	c	3278	c	3611	b	1.14	e	41	c	0	d
LSD P=.05						0.76		0.76		2.61		1130.5		1335.9		0.205		29.8		23.8	
Standard Deviation						0.50		0.50		1.73		750.1		886.4		0.136		19.8		15.8	
CV						0.5		0.57		5.28		10.75		12.56		8.97		17.87		27.47	
Replicate F						0.604		0.604		1.676		4.787		0.390		1.471		0.738		0.828	
Replicate Prob(F)						0.6222		0.6222		0.2147		0.0156		0.7623		0.2623		0.5455		0.4991	
Treatment F						7.681		7.681		15.981		31.721		15.890		14.388		16.429		17.131	
Treatment Prob(F)						0.0009		0.0009		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).

Evaluation of Protone in Hybrid Rice Production – H. Rouse Caffey Rice Research Station

Experiment number	: 17-CM-39
Site and design	:
Location/Cooperator	: H. Rouse Caffey Rice Research Station (Crowley Main) / Chris Meador
Tillage type	: Fall 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	: 1.65
pH	: 7.40
Extractable nutrients ppm	: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5
Crop/Variety	: Rice / CLXL745
Planting method/date	: Drill seeded / March 13
Seeding rate/depth	: 10 seeds/ft^2 / .75 inch
Emergence date	: March 26
Harvest date	: Aug. 2
Ratoon Harvest date	: NA
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 15 120 lb N/A 46-0-0, May 2
Water management	:
Flush	: March 22
Flood	: May 3
Drain	: July 19
Ratoon flood	: NA
Ratoon drain	: NA
Pest management	:
Herbicides	: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	:
Fungicides	: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 54. Evaluation of Protone in hybrid rice production. 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						4/24/2017			7/31/2017	8/2/2017	8/2/2017	
Rating Type						Stand Count	50% HD	50% HD	Height	Yield	Milling	
Rating Unit						No./ sq ft.	days	days		lb/A	head	total
Trt. No.	Treatment Name	Form Type	Rate	Rate Unit	Growth Stage							
1	UTC					4.3 a	98.0 a	85.0 a	38.7 a	8856 a	58.49 a	71.22 a
2	PROTONE	SG	10	ppm ai	10% milk	5.0 a	98.0 a	85.0 a	39.3 a	8308 a	59.22 a	71.32 a
	NIS	SL	0.05	% v/v	10% milk							
3	PROTONE	SG	30	ppm ai	10% milk	4.7 a	98.0 a	85.0 a	39.3 a	9017 a	59.36 a	71.28 a
	NIS	SL	0.05	% v/v	10% milk							
4	PROTONE	SG	10	ppm ai	10% milk + 7d	5.2 a	98.0 a	85.0 a	39.0 a	8656 a	58.08 a	71.19 a
	NIS	SL	0.05	% v/v	10% milk + 7d							
5	PROTONE	SG	30	ppm ai	10% milk + 7d	5.3 a	98.0 a	85.0 a	38.7 a	8819 a	59.98 a	71.52 a
	NIS	SL	0.05	% v/v	10% milk + 7d							
LSD P=.05						1.453	.	.	1.57	622.4	2.411	0.637
Standard Deviation						1.207	0.00	0.00	1.31	511.0	2.002	0.529
CV						24.65	0.0	0.0	3.35	5.85	3.39	0.74
Replicate F						0.544	0.000	0.000	3.422	14.373	24.442	15.238
Replicate Prob(F)						0.7406	1.0000	1.0000	0.0214	0.0001	0.0001	0.0001
Treatment F						0.651	0.000	0.000	0.391	1.664	0.836	0.353
Treatment Prob(F)						0.6330	1.0000	1.0000	0.8128	0.2046	0.5181	0.8387

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

Evaluation of Nitrogen Sources and Time of Applications on Rice Yield – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-34

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.40
- **Extractable nutrients** ppm ....: Ca-1396; Cu-2.9; Mg-228; P-16; K-64; Na-94; S-2.2; Zn-8.5

Crop/Variety ....: Rice / CL153
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 2
- **Ratoon Harvest date** ....: NA

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: NA
- **Ratoon drain** ....: NA

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
2 qt/A glyphosate, March 10
1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
4 oz/A League + 3 oz/A propanil, May 2
20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 55a. Evaluation of nitrogen sources and time of applications on rice yield. H. Rouse Caffey Rice Research Station.

Crop Name					Rice		Rice		Rice		Rice		Rice	
Description					Plant-hd		Emer-hd		Tip of panicle					
Rating Date									7/31/2017		8/2/2017		8/2/2017	
Rating Type					50% HD		50% HD		Height		Moist		Yield	
Rating Unit					days		days		in		%		lb/A	
Trt. No.	Treatment Name	Form Type	Rate (lb ai/A)	Growth Stage										
1	Urea	SG	120	15 DPF	100.3	c	87.3	c	27.8	e	15.6	cd	3469	d
2	Urea	SG	120	10 DPF	101.0	c	88.0	c	31.3	c	15.7	cd	5712	c
3	Urea	SG	120	5 DPF	102.8	ab	89.8	ab	36.5	a	16.2	ab	8507	ab
4	Urea	SG	120	1 DPF	102.5	ab	89.5	ab	35.3	ab	16.2	ab	8684	ab
5	Agrotain Advanced - Urea	SG	120	15 DPF	100.8	c	87.8	c	31.5	c	15.5	d	5975	c
6	Agrotain Advanced - Urea	SG	120	10 DPF	102.3	ab	89.3	ab	34.0	b	16.0	bc	8055	b
7	Agrotain Advanced - Urea	SG	120	5 DPF	103.0	a	90.0	a	36.8	a	16.6	a	8180	b
8	Agrotain Advanced - Urea	SG	120	1 DPF	102.8	ab	89.8	ab	35.0	ab	16.6	a	9655	a
9	New Agrotain - Urea	SG	120	15 DPF	100.8	c	87.8	c	30.0	cd	15.5	d	5800	c
10	New Agrotain - Urea	SG	120	10 DPF	102.0	b	89.0	b	35.8	ab	16.0	bc	8048	b
11	New Agrotain - Urea	SG	120	5 DPF	102.5	ab	89.5	ab	36.0	a	16.5	a	8710	ab
12	New Agrotain - Urea	SG	120	1 DPF	102.8	ab	89.8	ab	35.0	ab	16.5	a	9507	a
13	UTC 0 N				100.3	c	87.3	c	28.3	de	15.6	cd	3271	d
LSD P=.05					0.77		0.77		1.90		0.44		1161.8	
Standard Deviation					0.54		0.54		1.33		0.31		810.1	
CV					0.53		0.6		3.98		1.93		11.26	
Replicate F					1.867		1.867		2.130		3.609		0.689	
Replicate Prob(F)					0.1527		0.1527		0.1135		0.0224		0.5646	
Treatment F					15.044		15.044		22.787		7.643		27.922	
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).

Table 55b. Two-way comparison for evaluation of nitrogen sources and time of applications on rice yield. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle					
Rating Date								7/31/2017		8/2/2017		8/2/2017	
Rating Type				50% HD		50% HD		Height		Moist		Yield	
Rating Unit				days		days		in		%		lb/A	
Trt. No.	Treatment Name	Rate (lb ai/A)	Growth Stage										
TABLE OF A (N Source) MEANS													
1	Urea	120		101.6	b	88.6	b	32.7	b	15.9	a	6593	b
2	Agrotain Advanced - Urea	120		102.2	a	89.2	a	34.3	a	16.2	a	7967	a
3	New Agrotain - Urea	120		102.0	ab	89.0	ab	34.2	a	16.1	a	8016	a
P				0.0169		0.0169		0.0026		0.0933		0.0001	
LSD P=.05				0.38		0.38		0.97		0.23		599.9	
TABLE OF B (Application Timing) MEANS													
1	15 DPF		15 DPF	100.6	c	87.6	c	29.8	d	15.5	c	5081	d
2	10 DPF		10 DPF	101.8	b	88.8	b	33.7	c	15.9	b	7272	c
3	5 DPF		5 DPF	102.8	a	89.8	a	36.4	a	16.4	a	8466	b
4	1 DPF		1 DPF	102.7	a	89.7	a	35.1	b	16.4	a	9282	a
P				0.0001		0.0001		0.0001		0.0001		0.0001	
LSD P=.05				0.44		0.44		1.12		0.26		692.7	
TABLE OF A (N Source) and B (Application Timing) MEANS													
1	Urea	120	15 DPF	100.3	a	87.3	a	27.8	d	15.6	a	3469	d
2	Agrotain Advanced - Urea	120	15 DPF	100.8	a	87.8	a	31.5	c	15.5	a	5975	c
3	New Agrotain - Urea	120	15 DPF	100.8	a	87.8	a	30.0	c	15.5	a	5800	c
1	Urea	120	10 DPF	101.0	a	88.0	a	31.3	c	15.7	a	5712	c
2	Agrotain Advanced - Urea	120	10 DPF	102.3	a	89.3	a	34.0	b	16.0	a	8055	b
3	New Agrotain - Urea	120	10 DPF	102.0	a	89.0	a	35.8	ab	16.0	a	8048	b
1	Urea	120	5 DPF	102.8	a	89.8	a	36.5	a	16.2	a	8507	ab
2	Agrotain Advanced - Urea	120	5 DPF	103.0	a	90.0	a	36.8	a	16.6	a	8180	b
3	New Agrotain - Urea	120	5 DPF	102.5	a	89.5	a	36.0	a	16.5	a	8710	ab
1	Urea	120	1 DPF	102.5	a	89.5	a	35.3	ab	16.2	a	8684	ab
2	Agrotain Advanced - Urea	120	1 DPF	102.8	a	89.8	a	35.0	ab	16.6	a	9655	a
3	New Agrotain - Urea	120	1 DPF	102.8	a	89.8	a	35.0	ab	16.5	a	9507	a
P				0.2852		0.2852		0.0035		0.6374		0.0218	
LSD P=.05				0.77		0.77		1.94		0.46		1199.8	
Standard Deviation				0.53		0.53		1.35		0.32		834.0	
CV				0.52		0.60		4.00		1.97		11.1	

Means followed by the 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	17-CM-20
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall 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	1.65
pH	7.43
Extractable nutrients ppm	Ca-1428; Cu-2.9; Mg-221; P-16; K-63; Na-105; S-2.5; Zn-9.2
Crop/Variety	Rice / CL153
Planting method/date	Drill seeded / March 13
Seeding rate/depth	33 seeds/ft^2 / .75 inch
Emergence date	March 26
Harvest date	Aug. 4
Ratoon Harvest date	NA
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15 120 lb N/A 46-0-0, May 2
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	Oct. 24
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 56. Evaluation of nitrogen source and timing for ratoon nitrogen fertilization. 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				Tissue	Tissue N	N Uptake
Part Rated									Abvgrd -	Abvgrd -	Total
Rating Date					8/1/2017	8/4/2017	11/10/2017				
Rating Type			50% HD	50% HD	Height	Yield	Yield	Total Yield	Biomass-dry		
Rating Unit			days	days	in	lb/A	lb/A	lb/A	lb/A	% N	lb/A
Crop Stage Majority			Main	Main	Main	Main	Ratoon	MC + RC	Ratoon	Ratoon	Ratoon
Trt. No.	Treatment Name	Rate (lb ai/A)									
1	Urea all at harvest	92	101 a	88 a	35.5 a	9146 a	1928 b	11074 ab	4522 a	0.98 abc	44 c
2	Urea all post ratoon flood	92	101 a	88 a	34.8 a	8921 a	1790 bcd	10711 bc	5816 a	0.88 c	51 bc
3	Urea 1/2 dry ground before harvest	46	101 a	88 a	33.8 a	8796 a	1619 d	10415 c	5461 a	0.96 bc	52 abc
	Urea 1/2 at 7 d Postflood	46									
4	Urea 1/2 after harvest	46	101 a	88 a	34.5 a	8862 a	1882 bc	10744 bc	5947 a	0.94 bc	56 abc
	Urea 1/2 at 7 d Postflood	46									
5	Agrotain all at harvest	92	101 a	88 a	34.8 a	9164 a	2297 a	11461 a	6198 a	1.07 a	65 a
6	Agrotain all post ratoon flood	92	101 a	88 a	34.3 a	9210 a	1703 cd	10913 abc	5092 a	0.89 c	46 c
7	Agrotain 1/2 dry ground before harvest	46	101 a	88 a	34.5 a	8842 a	1761 bcd	10602 bc	6306 a	1.01 ab	62 ab
	Agrotain 1/2 at 7 d Postflood	46									
8	Agrotain 1/2 after harvest	46	101 a	88 a	34.0 a	9002 a	2150 a	11152 ab	5216 a	0.93 bc	49 c
	Agrotain 1/2 at 7 d Postflood	46									
LSD P=.05			N/A	N/A	1.47	488.5	203.5	608.0	1461.1	0.1028	13.5
Standard Deviation			0.00	0.00	1.00	332.2	138.4	413.5	993.6	0.0699	9.2
CV			0.0	0.0	2.9	3.69	7.32	3.8	17.84	7.3	17.21
Replicate F			0.000	0.000	1.000	11.549	15.486	14.053	2.617	5.091	1.885
Replicate Prob(F)			1.0000	1.0000	0.4123	0.0001	0.0001	0.0001	0.0778	0.0084	0.1631
Treatment F			0.000	0.000	1.143	0.954	11.027	2.643	1.506	3.203	2.769
Treatment Prob(F)			1.0000	1.0000	0.3751	0.4882	0.0001	0.0398	0.2191	0.0180	0.0332

N/A = Could not calculate LSD (% mean diff) because error mean square = 0.

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

Evaluation of Stubble Management and Nitrogen Rate for Ratoon Crop of Medium-Grain Rice Varieties CL272, Titan, and Jupiter – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-23

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.43
- **Extractable nutrients** ppm ....: Ca-1428; Cu-2.9; Mg-221; P-16; K-63; Na-105; S-2.5; Zn-9.2

Crop/Variety ....: Rice / CL272, Titan, and Jupiter
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 4
- **Ratoon Harvest date** ....: NA

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15
150 lb N/A 46-0-0, May 2

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
  2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
  2 qt/A glyphosate, March 10
  1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
  3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
  3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
  4 oz/A League + 3 oz/A propanil, May 2
  20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 57a. Evaluation of stubble management and nitrogen rate for ratoon crop of medium-grain rice varieties CL272, Titan, and Jupiter. H. Rouse Caffey Rice Research Station.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/2/2017		11/14/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
1	Normal cut CL272 UREA	0	RC-PF	104.0	b	91.0	b	36.0	d-h	9865	b-i	1352	h-k	11218	f-i
2	Normal cut CL272 UREA	30	RC-PF	104.0	b	91.0	b	37.5	a-e	10832	a	2085	efg	12917	a-d
3	Normal cut CL272 UREA	60	RC-PF	104.0	b	91.0	b	37.5	a-e	10333	a-e	2219	def	12552	a-e
4	Normal cut CL272 UREA	90	RC-PF	104.0	b	91.0	b	38.8	a	10618	abc	2493	b-f	13110	a-d
5	Normal cut CL272 UREA	120	RC-PF	104.0	b	91.0	b	38.5	ab	10553	a-d	2987	abc	13540	a
6	Normal cut CL272 UREA	150	RC-PF	104.0	b	91.0	b	38.0	a-d	10833	a	2417	c-f	13250	abc
7	Normal cut Titan UREA	0	RC-PF	99.0	c	86.0	c	34.5	gh	8237	lmn	1206	jk	9443	l
8	Normal cut Titan UREA	30	RC-PF	99.0	c	86.0	c	35.5	e-h	7940	mn	1949	f-i	9888	kl
9	Normal cut Titan UREA	60	RC-PF	99.0	c	86.0	c	36.0	d-h	7877	n	1936	f-i	9813	kl
10	Normal cut Titan UREA	90	RC-PF	99.0	c	86.0	c	36.0	d-h	9138	h-l	2239	def	11377	e-i
11	Normal cut Titan UREA	120	RC-PF	99.0	c	86.0	c	35.8	e-h	9751	c-i	2395	c-f	12146	c-g
12	Normal cut Titan UREA	150	RC-PF	99.0	c	86.0	c	37.5	a-e	9201	h-k	2364	c-f	11565	e-h
13	Normal cut Jupiter UREA	0	RC-PF	108.0	a	95.0	a	34.8	gh	8683	k-n	1226	jk	9909	jkl

Continued.

Table 57a. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/2/2017		11/14/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
14	Normal cut Jupiter UREA	30	RC-PF	108.0	a	95.0	a	35.5	e-h	8817	j-m	1065	jkl	9882	kl
15	Normal cut Jupiter UREA	60	RC-PF	108.0	a	95.0	a	35.3	fgh	9207	h-k	2229	def	11436	e-i
16	Normal cut Jupiter UREA	90	RC-PF	108.0	a	95.0	a	34.3	h	9285	g-k	2163	ef	11448	e-i
17	Normal cut Jupiter UREA	120	RC-PF	108.0	a	95.0	a	35.3	fgh	9027	i-l	2560	b-f	11587	e-h
18	Normal cut Jupiter UREA	150	RC-PF	108.0	a	95.0	a	35.3	fgh	9027	i-l	2205	def	11232	f-i
19	Bush hog 8" CL272 UREA	0	RC-PF	104.0	b	91.0	b	38.3	abc	10295	a-e	1374	h-k	11668	e-h
20	Bush hog 8" CL272 UREA	30	RC-PF	104.0	b	91.0	b	38.3	abc	10362	a-e	2739	a-e	13102	a-d
21	Bush hog 8" CL272 UREA	60	RC-PF	104.0	b	91.0	b	37.0	a-f	10708	ab	2219	def	12927	a-d
22	Bush hog 8" CL272 UREA	90	RC-PF	104.0	b	91.0	b	38.8	a	10250	a-f	2850	a-d	13101	a-d
23	Bush hog 8" CL272 UREA	120	RC-PF	104.0	b	91.0	b	38.5	ab	9974	a-h	3166	ab	13140	a-d
24	Bush hog 8" CL272 UREA	150	RC-PF	104.0	b	91.0	b	38.3	abc	10160	a-g	3248	a	13408	ab
25	Bush hog 8" Titan UREA	0	RC-PF	99.0	c	86.0	c	36.0	d-h	9181	h-k	1416	g-j	10596	h-l
26	Bush hog 8" Titan UREA	30	RC-PF	99.0	c	86.0	c	36.5	b-g	9676	d-j	2588	a-f	12264	b-f

Continued.

Table 57a. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/2/2017		11/14/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
27	Bush hog 8" Titan UREA	 60	 RC-PF	99.0	c	86.0	c	36.3	c-h	9553	e-k	2030	fgh	11583	e-h
28	Bush hog 8" Titan UREA	 90	 RC-PF	99.0	c	86.0	c	34.8	gh	9581	e-k	2463	c-f	12044	d-g
29	Bush hog 8" Titan UREA	 120	 RC-PF	99.0	c	86.0	c	36.5	b-g	9786	c-i	2476	c-f	12262	b-f
30	Bush hog 8" Titan UREA	 150	 RC-PF	99.0	c	86.0	c	36.5	b-g	8811	j-m	2264	def	11076	g-j
31	Bush hog 8" Jupiter UREA	 0	 RC-PF	108.0	a	95.0	a	35.8	e-h	9370	f-k	512	l	9882	kl
32	Bush hog 8" Jupiter UREA	 30	 RC-PF	108.0	a	95.0	a	34.5	gh	9354	f-k	967	jkl	10320	i-l
33	Bush hog 8" Jupiter UREA	 60	 RC-PF	108.0	a	95.0	a	35.3	fgh	9882	b-i	729	kl	10611	h-l
34	Bush hog 8" Jupiter UREA	 90	 RC-PF	108.0	a	95.0	a	36.5	b-g	9536	e-k	1271	ijk	10807	h-k
35	Bush hog 8" Jupiter UREA	 120	 RC-PF	108.0	a	95.0	a	35.5	e-h	9203	h-k	835	jkl	10038	jkl
36	Bush hog 8" Jupiter UREA	 150	 RC-PF	108.0	a	95.0	a	36.5	b-g	9591	e-k	1123	jkl	10714	h-k
LSD P=.05				N/A		N/A		2.04		909.0		685.3		1178.5	
Standard Deviation				0.00		0.00		1.45		648.3		488.7		840.5	
CV				0.0		0.0		3.99		6.77		24.66		7.28	
Replicate F				0.000		0.000		4.098		9.992		0.575		5.428	
Replicate Prob(F)				1.0000		1.0000		0.0086		0.0001		0.6327		0.0016	
Treatment F				0.000		0.000		3.414		5.509		8.672		8.458	
Treatment Prob(F)				1.0000		1.0000		0.0001		0.0001		0.0001		0.0001	

N/A = Could not calculate LSD (% mean diff) because error mean square = 0.

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

Table 57b. Two-way table for the evaluation of stubble management and nitrogen rate for ratoon crop of medium-grain rice varieties CL272, Titan, and Jupiter. H. Rouse Caffey Rice Research Station.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice
Description				Plant-hd	Emer-hd	Tip of panicle			
Rating Date						8/2/2017	8/5/2017	11/14/2017	
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.	Trt. Name	Rate (lb ai/A)	Growth Stage						
TABLE OF A (Cultural Practice) MEANS									
1	Normal cut			103.7 a	90.7 a	36.2 a	9401 b	2061 a	11462 a
2	Bush hog 8"			103.7 a	90.7 a	36.6 a	9737 a	1904 a	11641 a
P				1.0	1.0	0.8	0.0024	0.0573	0.203
LSD P=.05				N/A	N/A	0.48	214.2	161.5	277.8
TABLE OF B (Variety) MEANS									
1	CL272			104.0 b	91.0 b	37.9 a	10399 a	2429 a	12828 a
2	Titan			99.0 c	86.0 c	36.0 b	9061 b	2110 b	11172 b
3	Jupiter			108.0 a	95.0 a	35.4 c	9249 b	1407 c	10656 c
P				1.0	1.0	0.0	0.0001	0.0001	0.0001
LSD P=.05				N/A	N/A	0.59	262.4	197.8	340.2
TABLE OF C (Fertility) MEANS									
1	UREA	0	Ratoon	103.7 a	90.7 a	35.9 a	9272 a	1181 c	10453 c
2	UREA	30	Ratoon	103.7 a	90.7 a	36.3 a	9497 a	1899 b	11396 b
3	UREA	60	Ratoon	103.7 a	90.7 a	36.2 a	9594 a	1894 b	11487 b
4	UREA	90	Ratoon	103.7 a	90.7 a	36.5 a	9735 a	2247 a	11981 a
5	UREA	120	Ratoon	103.7 a	90.7 a	36.7 a	9716 a	2403 a	12119 a
6	UREA	150	Ratoon	103.7 a	90.7 a	37.0 a	9604 a	2270 a	11874 ab
P				1.0	1.0	0.1	0.1537	0.0001	0.0001
LSD P=.05				N/A	N/A	0.83	371.1	279.8	481.1
TABLE OF A (Cultural Practice) and B (Variety) MEANS									
1 1	Normal cut CL272			104.0 b	91.0 b	37.7 a	10506 a	2259 b	12765 a
2 1	Bush hog 8" CL272			104.0 b	91.0 b	38.2 a	10292 a	2599 a	12891 a
1 2	Normal cut Titan			99.0 c	86.0 c	35.9 a	8691 c	2015 bc	10706 cd
2 2	Bush hog 8" Titan			99.0 c	86.0 c	36.1 a	9431 b	2206 b	11638 b
1 3	Normal cut Jupiter			108.0 a	95.0 a	35.0 a	9008 c	1908 c	10916 c
2 3	Bush hog 8" Jupiter			108.0 a	95.0 a	35.7 a	9489 b	906 d	10396 d
P				1	1	0.7789	0.0015	0.0001	0.0002
LSD P=.05				N/A	N/A	0.83	371.1	279.8	481.1

Continued.

Table 57b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/5/2017		11/14/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF A (Cultural Practice) and C (Fertility) MEANS															
1	Normal cut			103.7	a	90.7	a	35.1	a	8929	e	1261	d	10190	e
1	UREA	0	Ratoon												
2	Bush hog 8"			103.7	a	90.7	a	36.7	a	9615	a-d	1101	d	10716	de
1	UREA	0	Ratoon												
1	Normal cut			103.7	a	90.7	a	36.2	a	9196	cde	1700	c	10896	d
2	UREA	30	Ratoon												
2	Bush hog 8"			103.7	a	90.7	a	36.4	a	9797	ab	2098	b	11895	abc
2	UREA	30	Ratoon												
1	Normal cut			103.7	a	90.7	a	36.3	a	9139	de	2128	b	11267	cd
3	UREA	60	Ratoon												
2	Bush hog 8"			103.7	a	90.7	a	36.2	a	10048	a	1660	c	11707	bc
3	UREA	60	Ratoon												
1	Normal cut			103.7	a	90.7	a	36.3	a	9680	abc	2298	ab	11978	ab
4	UREA	90	Ratoon												
2	Bush hog 8"			103.7	a	90.7	a	36.7	a	9789	ab	2195	b	11984	ab
4	UREA	90	Ratoon												
1	Normal cut			103.7	a	90.7	a	36.5	a	9777	ab	2647	a	12424	a
5	UREA	120	Ratoon												
2	Bush hog 8"			103.7	a	90.7	a	36.8	a	9654	a-d	2159	b	11814	abc
5	UREA	120	Ratoon												
1	Normal cut			103.7	a	90.7	a	36.9	a	9687	abc	2329	ab	12016	ab
6	UREA	150	Ratoon												
2	Bush hog 8"			103.7	a	90.7	a	37.1	a	9521	bcd	2212	b	11733	bc
6	UREA	150	Ratoon												
P				1		1		0.4386		0.0155		0.0289		0.016	
LSD P=.05				N/A		N/A		1.18		524.8		395.6		680.4	
TABLE OF B (Variety) and C (Fertility) MEANS															
1	CL272			104.0	b	91.0	b	37.1	a	10080	a	1363	a	11443	a
1	UREA	0	Ratoon												
2	Titan			99.0	c	86.0	c	35.3	a	8709	a	1311	a	10020	a
1	UREA	0	Ratoon												
3	Jupiter			108.0	a	95.0	a	35.3	a	9027	a	869	a	9895	a
1	UREA	0	Ratoon												
1	CL272			104.0	b	91.0	b	37.9	a	10597	a	2412	a	13009	a
2	UREA	30	Ratoon												
2	Titan			99.0	c	86.0	c	36.0	a	8808	a	2268	a	11076	a
2	UREA	30	Ratoon												
3	Jupiter			108.0	a	95.0	a	35.0	a	9085	a	1016	a	10101	a
2	UREA	30	Ratoon												

Continued.

Table 57b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/5/2017		11/14/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF B (Variety) and C (Fertility) MEANS (continued)															
1	CL272			104.0	b	91.0	b	37.3	a	10521	a	2219	a	12740	a
3	UREA	60	Ratoon												
2	Titan			99.0	c	86.0	c	36.1	a	8715	a	1983	a	10698	a
3	UREA	60	Ratoon												
3	Jupiter			108.0	a	95.0	a	35.3	a	9545	a	1479	a	11024	a
3	UREA	60	Ratoon												
1	CL272			104.0	b	91.0	b	38.8	a	10434	a	2671	a	13106	a
4	UREA	90	Ratoon												
2	Titan			99.0	c	86.0	c	35.4	a	9360	a	2351	a	11711	a
4	UREA	90	Ratoon												
3	Jupiter			108.0	a	95.0	a	35.4	a	9410	a	1717	a	11127	a
4	UREA	90	Ratoon												
1	CL272			104.0	b	91.0	b	38.5	a	10263	a	3077	a	13340	a
5	UREA	120	Ratoon												
2	Titan			99.0	c	86.0	c	36.1	a	9769	a	2435	a	12204	a
5	UREA	120	Ratoon												
3	Jupiter			108.0	a	95.0	a	35.4	a	9115	a	1698	a	10813	a
5	UREA	120	Ratoon												
1	CL272			104.0	b	91.0	b	38.1	a	10496	a	2833	a	13329	a
6	UREA	150	Ratoon												
2	Titan			99.0	c	86.0	c	37.0	a	9006	a	2314	a	11320	a
6	UREA	150	Ratoon												
3	Jupiter			108.0	a	95.0	a	35.9	a	9309	a	1664	a	10973	a
6	UREA	150	Ratoon												
P				1		1		0.5767		0.104		0.1583		0.1527	
LSD P=.05				N/A		N/A		1.44		642.7		484.5		833.3	
TABLE OF A (Cultural Practice), B (Variety), and C (Fertility) MEANS															
1	Normal cut			104.0	b	91.0	b	36.0	a	9865	a	1352	a	11218	a
1	CL272														
1	UREA	0	Ratoon												
2	Bush hog 8"			104.0	b	91.0	b	38.3	a	10295	a	1374	a	11668	a
1	CL272														
1	UREA	0	Ratoon												
1	Normal cut			99.0	c	86.0	c	34.5	a	8237	a	1206	a	9443	a
2	Titan														
1	UREA	0	Ratoon												

Continued.

Table 57b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/5/2017		11/14/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF A (Cultural Practice), B (Variety), and C (Fertility) MEANS (continued)															
2	Bush hog 8"			99.0	c	86.0	c	36.0	a	9181	a	1416	a	10596	a
2	Titan														
1	UREA	0	Ratoon												
1	Normal cut			108.0	a	95.0	a	34.8	a	8683	a	1226	a	9909	a
3	Jupiter														
1	UREA	0	Ratoon												
2	Bush hog 8"			108.0	a	95.0	a	35.8	a	9370	a	512	a	9882	a
3	Jupiter														
1	UREA	0	Ratoon												
1	Normal cut			104.0	b	91.0	b	37.5	a	10832	a	2085	a	12917	a
1	CL272														
2	UREA	30	Ratoon												
2	Bush hog 8"			104.0	b	91.0	b	38.3	a	10362	a	2739	a	13102	a
1	CL272														
2	UREA	30	Ratoon												
1	Normal cut			99.0	c	86.0	c	35.5	a	7940	a	1949	a	9888	a
2	Titan														
2	UREA	30	Ratoon												
2	Bush hog 8"			99.0	c	86.0	c	36.5	a	9676	a	2588	a	12264	a
2	Titan														
2	UREA	30	Ratoon												
1	Normal cut			108.0	a	95.0	a	35.5	a	8817	a	1065	a	9882	a
3	Jupiter														
2	UREA	30	Ratoon												
2	Bush hog 8"			108.0	a	95.0	a	34.5	a	9354	a	967	a	10320	a
3	Jupiter														
2	UREA	30	Ratoon												
1	Normal cut			104.0	b	91.0	b	37.5	a	10333	a	2219	a	12552	a
1	CL272														
3	UREA	60	Ratoon												
2	Bush hog 8"			104.0	b	91.0	b	37.0	a	10708	a	2219	a	12927	a
1	CL272														
3	UREA	60	Ratoon												
1	Normal cut			99.0	c	86.0	c	36.0	a	7877	a	1936	a	9813	a
2	Titan														
3	UREA	60	Ratoon												

Continued.

Table 57b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/5/2017		11/14/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF A (Cultural Practice), B (Variety), and C (Fertility) MEANS (continued)															
2	Bush hog 8"			99.0	c	86.0	c	36.3	a	9553	a	2030	a	11583	a
2	Titan														
3	UREA	60	Ratoon												
1	Normal cut			108.0	a	95.0	a	35.3	a	9207	a	2229	a	11436	a
3	Jupiter														
3	UREA	60	Ratoon												
2	Bush hog 8"			108.0	a	95.0	a	35.3	a	9882	a	729	a	10611	a
3	Jupiter														
3	UREA	60	Ratoon												
1	Normal cut			104.0	b	91.0	b	38.8	a	10618	a	2493	a	13110	a
1	CL272														
4	UREA	90	Ratoon												
2	Bush hog 8"			104.0	b	91.0	b	38.8	a	10250	a	2850	a	13101	a
1	CL272														
4	UREA	90	Ratoon												
1	Normal cut			99.0	c	86.0	c	36.0	a	9138	a	2239	a	11377	a
2	Titan														
4	UREA	90	Ratoon												
2	Bush hog 8"			99.0	c	86.0	c	34.8	a	9581	a	2463	a	12044	a
2	Titan														
4	UREA	90	Ratoon												
1	Normal cut			108.0	a	95.0	a	34.3	a	9285	a	2163	a	11448	a
3	Jupiter														
4	UREA	90	Ratoon												
2	Bush hog 8"			108.0	a	95.0	a	36.5	a	9536	a	1271	a	10807	a
3	Jupiter														
4	UREA	90	Ratoon												
1	Normal cut			104.0	b	91.0	b	38.5	a	10553	a	2987	a	13540	a
1	CL272														
5	UREA	120	Ratoon												
2	Bush hog 8"			104.0	b	91.0	b	38.5	a	9974	a	3166	a	13140	a
1	CL272														
5	UREA	120	Ratoon												
1	Normal cut			99.0	c	86.0	c	35.8	a	9751	a	2395	a	12146	a
2	Titan														
5	UREA	120	Ratoon												

Continued.

Table 57b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/5/2017		11/14/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF A (Cultural Practice), B (Variety), and C (Fertility) MEANS (continued)															
2	Bush hog 8"			99.0	c	86.0	c	36.5	a	9786	a	2476	a	12262	a
2	Titan														
5	UREA	120	Ratoon												
1	Normal cut			108.0	a	95.0	a	35.3	a	9027	a	2560	a	11587	a
3	Jupiter														
5	UREA	120	Ratoon												
2	Bush hog 8"			108.0	a	95.0	a	35.5	a	9203	a	835	a	10038	a
3	Jupiter														
5	UREA	120	Ratoon												
1	Normal cut			104.0	b	91.0	b	38.0	a	10833	a	2417	a	13250	a
1	CL272														
6	UREA	150	Ratoon												
2	Bush hog 8"			104.0	b	91.0	b	38.3	a	10160	a	3248	a	13408	a
1	CL272														
6	UREA	150	Ratoon												
1	Normal cut			99.0	c	86.0	c	37.5	a	9201	a	2364	a	11565	a
2	Titan														
6	UREA	150	Ratoon												
2	Bush hog 8"			99.0	c	86.0	c	36.5	a	8811	a	2264	a	11076	a
2	Titan														
6	UREA	150	Ratoon												
1	Normal cut			108.0	a	95.0	a	35.3	a	9027	a	2205	a	11232	a
3	Jupiter														
6	UREA	150	Ratoon												
2	Bush hog 8"			108.0	a	95.0	a	36.5	a	9591	a	1123	a	10714	a
3	Jupiter														
6	UREA	150	Ratoon												
P				1		1		0.3406		0.451		0.578		0.5308	
LSD P=.05				N/A		N/A		2.04		909.0		685.3		1178.5	
Standard Deviation				0.00		0.00		1.45		648.3		488.7		840.5	
CV				0.00		0.00		3.99		6.8		24.7		7.3	

N/A = Could not calculate LSD (% mean diff) because error mean square = 0.
Means followed by the 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, CLXL729, and Mermentau – H. Rouse Caffey Rice Research Station

Experiment number	17-CM-24
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall 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	1.65
pH	7.43
Extractable nutrients ppm	Ca-1428; Cu-2.9; Mg-221; P-16; K-63; Na-105; S-2.5; Zn-9.2
Crop/Variety	Rice / CL153, CLXL729, and Mermentau
Planting method/date	Drill seeded / March 13
Seeding rate/depth	Conventional 33 seeds/ft^2, Hybrid 10 seeds/ft^2 / .75 inch
Emergence date	March 26
Harvest date	Aug. 4
Ratoon Harvest date	NA
Seed treatment/cwt	Conventional seed: Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml Dermacor X-100 seed treatment – 0.137 lb ai/cwt AV-1011 (bird repellent) – 18.3 oz Hybrid seed: 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 15 150 lb N/A 46-0-0, May 2
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	Oct. 24
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	No blanket applications
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 58a. Evaluation of stubble management and nitrogen rate for ratoon crop of long-grain rice varieties CL153, CLXL729, 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								8/2/2017		8/4/2017		11/10/2017			
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		Main		Main	
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage												
1	Normal cut CL153 UREA	0	RC-PF	103.0	a	90.0	a	37.0	e-h	10411	cd	1609	n	12020	j-m
2	Normal cut CL153 UREA	30	RC-PF	103.0	a	90.0	a	37.3	d-g	10381	cd	2469	h-l	12850	e-i
3	Normal cut CL153 UREA	60	RC-PF	103.0	a	90.0	a	38.3	a-g	10167	def	2695	g-j	12862	e-i
4	Normal cut CL153 UREA	90	RC-PF	103.0	a	90.0	a	38.5	a-f	10396	cd	2680	g-k	13076	e-h
5	Normal cut CL153 UREA	120	RC-PF	103.0	a	90.0	a	37.0	e-h	10169	def	2873	fgh	13042	e-h
6	Normal cut CL153 UREA	150	RC-PF	103.0	a	90.0	a	36.8	fgh	10534	bcd	2739	ghi	13272	ef
7	Normal cut CLXL729 UREA	0	RC-PF	101.0	b	88.0	b	39.5	ab	11243	ab	2254	kl	13497	de
8	Normal cut CLXL729 UREA	30	RC-PF	101.0	b	88.0	b	39.3	abc	10842	a-d	3421	de	14264	cd
9	Normal cut CLXL729 UREA	60	RC-PF	101.0	b	88.0	b	39.0	a-d	11156	ab	3805	bcd	14961	abc
10	Normal cut CLXL729 UREA	90	RC-PF	101.0	b	88.0	b	39.5	ab	11188	ab	4117	ab	15305	ab
11	Normal cut CLXL729 UREA	120	RC-PF	101.0	b	88.0	b	39.8	a	11183	ab	4120	ab	15304	ab
12	Normal cut CLXL729 UREA	150	RC-PF	101.0	b	88.0	b	39.0	a-d	11295	a	4039	ab	15334	ab
13	Normal cut Mermentau UREA	0	RC-PF	99.0	c	86.0	c	34.0	j	8899	ghi	1643	mn	10542	o

Continued.

Table 58a. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/4/2017		11/10/2017			
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		Main		Main	
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage												
14	Normal cut Mermentau UREA	30	RC-PF	99.0	c	86.0	c	37.0	e-h	8751	hi	2485	h-l	11236	mno
15	Normal cut Mermentau UREA	60	RC-PF	99.0	c	86.0	c	34.8	ij	8957	ghi	2793	f-i	11749	k-n
16	Normal cut Mermentau UREA	90	RC-PF	99.0	c	86.0	c	34.3	j	9488	fg	2886	fgh	12374	h-l
17	Normal cut Mermentau UREA	120	RC-PF	99.0	c	86.0	c	33.8	j	8558	hi	2780	f-i	11338	mno
18	Normal cut Mermentau UREA	150	RC-PF	99.0	c	86.0	c	34.3	j	8358	i	2939	fg	11296	mno
19	Bush hog 8" CL153 UREA	0	RC-PF	103.0	a	90.0	a	36.8	fgh	10134	def	1439	n	11573	lmn
20	Bush hog 8" CL153 UREA	30	RC-PF	103.0	a	90.0	a	38.5	a-f	10250	de	2271	jkl	12521	f-k
21	Bush hog 8" CL153 UREA	60	RC-PF	103.0	a	90.0	a	36.5	ghi	10142	def	2617	g-k	12759	e-j
22	Bush hog 8" CL153 UREA	90	RC-PF	103.0	a	90.0	a	37.5	c-g	9541	efg	2890	fgh	12431	g-k
23	Bush hog 8" CL153 UREA	120	RC-PF	103.0	a	90.0	a	38.8	a-e	10210	de	2720	ghi	12930	e-h
24	Bush hog 8" CL153 UREA	150	RC-PF	103.0	a	90.0	a	37.8	b-g	10386	cd	2575	g-k	12962	e-h
25	Bush hog 8" CLXL729 UREA	0	RC-PF	101.0	b	88.0	b	38.3	a-g	11183	ab	2063	lm	13246	efg
26	Bush hog 8" CLXL729 UREA	30	RC-PF	101.0	b	88.0	b	39.8	a	11240	ab	3552	cde	14792	bc

Continued.

Table 58a. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/4/2017		11/10/2017			
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		Main		Main	
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage												
27	Bush hog 8" CLXL729 UREA	 60	 RC-PF	101.0	b	88.0	b	39.3	abc	11280	a	3885	bc	15166	ab
28	Bush hog 8" CLXL729 UREA	 90	 RC-PF	101.0	b	88.0	b	39.5	ab	11435	a	4096	ab	15532	ab
29	Bush hog 8" CLXL729 UREA	 120	 RC-PF	101.0	b	88.0	b	38.5	a-f	11039	abc	4182	ab	15221	ab
30	Bush hog 8" CLXL729 UREA	 150	 RC-PF	101.0	b	88.0	b	39.3	abc	11278	a	4418	a	15696	a
31	Bush hog 8" Mermentau UREA	 0	 RC-PF	99.0	c	86.0	c	35.3	hij	9028	ghi	1711	mn	10739	o
32	Bush hog 8" Mermentau UREA	 30	 RC-PF	99.0	c	86.0	c	34.8	ij	8700	hi	2417	i-l	11117	no
33	Bush hog 8" Mermentau UREA	 60	 RC-PF	99.0	c	86.0	c	34.5	j	8851	ghi	3200	ef	12051	i-m
34	Bush hog 8" Mermentau UREA	 90	 RC-PF	99.0	c	86.0	c	36.5	ghi	9206	gh	3190	ef	12396	h-k
35	Bush hog 8" Mermentau UREA	 120	 RC-PF	99.0	c	86.0	c	34.8	ij	9107	gh	3400	de	12507	f-k
36	Bush hog 8" Mermentau UREA	 150	 RC-PF	99.0	c	86.0	c	34.8	ij	9071	ghi	3528	cde	12599	f-j
LSD P=.05				N/A		N/A		1.87		716.9		438.3		819.7	
Standard Deviation				0.00		0.00		1.33		511.3		312.6		584.7	
CV				0.0		0.0		3.58		5.06		10.57		4.47	
Replicate F				0.000		0.000		6.167		8.789		10.839		17.504	
Replicate Prob(F)				1.0000		1.0000		0.0007		0.0001		0.0001		0.0001	
Treatment F				0.000		0.000		8.648		14.615		25.829		26.408	
Treatment Prob(F)				1.0000		1.0000		0.0001		0.0001		0.0001		0.0001	

N/A = Could not calculate LSD (% mean diff) because error mean square = 0.

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

Table 58b. Two-way table for the evaluation of stubble management and nitrogen rate for ratoon crop of long-grain rice varieties CL153, CLXL729, 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								8/2/2017		8/4/2017		11/10/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF A (Cultural Practice) MEANS															
1	Normal cut			101.0	a	88.0	a	37.2	a	10110	a	2908	a	13018	a
2	Bush hog 8"			101.0	a	88.0	a	37.3	a	10116	a	3009	a	13124	a
P				1.0		1.0		0.6		0.9449		0.0565		0.2775	
LSD P=.05				N/A		N/A		0.44		169.0		103.3		193.2	
TABLE OF B (Variety) MEANS															
1	CL153			103.0	a	90.0	a	37.5	b	10227	b	2465	c	12691	b
2	CLXL729			101.0	b	88.0	b	39.2	a	11197	a	3663	a	14860	a
3	Mermentau			99.0	c	86.0	c	34.9	c	8914	c	2748	b	11662	c
P				1.0		1.0		0.0		0.0001		0.0001		0.0001	
LSD P=.05				N/A		N/A		0.54		207.0		126.5		236.6	
TABLE OF C (Fertility) MEANS															
1	UREA	0	Ratoon	101.0	a	88.0	a	36.8	a	10150	a	1786	d	11936	c
2	UREA	30	Ratoon	101.0	a	88.0	a	37.8	a	10027	a	2769	c	12797	b
3	UREA	60	Ratoon	101.0	a	88.0	a	37.0	a	10092	a	3166	b	13258	a
4	UREA	90	Ratoon	101.0	a	88.0	a	37.6	a	10209	a	3310	ab	13519	a
5	UREA	120	Ratoon	101.0	a	88.0	a	37.1	a	10045	a	3346	a	13390	a
6	UREA	150	Ratoon	101.0	a	88.0	a	37.0	a	10154	a	3373	a	13527	a
P				1.0		1.0		0.1		0.81		0.0001		0.0001	
LSD P=.05				N/A		N/A		0.76		.		179.0		334.7	
TABLE OF A (Cultural Practice) and B (Variety) MEANS															
1	Normal cut			103.0	a	90.0	a	37.5	a	10343	a	2511	c	12854	b
1	CL153														
2	Bush hog 8"			103.0	a	90.0	a	37.6	a	10110	a	2419	c	12529	b
1	CL153														
1	Normal cut			101.0	b	88.0	b	39.3	a	11151	a	3626	a	14777	a
2	CLXL729														
2	Bush hog 8"			101.0	b	88.0	b	39.1	a	11243	a	3699	a	14942	a
2	CLXL729														
1	Normal cut			99.0	c	86.0	c	34.7	a	8835	a	2587	c	11423	d
3	Mermentau														
2	Bush hog 8"			99.0	c	86.0	c	35.1	a	8994	a	2908	b	11902	c
3	Mermentau														
P				1		1		0.4667		0.1395		0.0065		0.0042	
LSD P=.05				N/A		N/A		0.76		292.7		179.0		334.7	

Continued.

Table 58b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/4/2017		11/10/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF A (Cultural Practice) and C (Fertility) MEANS															
1	Normal cut			101.0	a	88.0	a	36.8	a	10184	a	1835	a	12020	a
1	UREA	0	Ratoon												
2	Bush hog 8"			101.0	a	88.0	a	36.8	a	10115	a	1738	a	11853	a
1	UREA	0	Ratoon												
1	Normal cut			101.0	a	88.0	a	37.8	a	9991	a	2792	a	12783	a
2	UREA	30	Ratoon												
2	Bush hog 8"			101.0	a	88.0	a	37.7	a	10063	a	2747	a	12810	a
2	UREA	30	Ratoon												
1	Normal cut			101.0	a	88.0	a	37.3	a	10093	a	3098	a	13191	a
3	UREA	60	Ratoon												
2	Bush hog 8"			101.0	a	88.0	a	36.8	a	10091	a	3234	a	13325	a
3	UREA	60	Ratoon												
1	Normal cut			101.0	a	88.0	a	37.4	a	10357	a	3227	a	13585	a
4	UREA	90	Ratoon												
2	Bush hog 8"			101.0	a	88.0	a	37.8	a	10061	a	3392	a	13453	a
4	UREA	90	Ratoon												
1	Normal cut			101.0	a	88.0	a	36.8	a	9970	a	3258	a	13228	a
5	UREA	120	Ratoon												
2	Bush hog 8"			101.0	a	88.0	a	37.3	a	10119	a	3434	a	13553	a
5	UREA	120	Ratoon												
1	Normal cut			101.0	a	88.0	a	36.7	a	10062	a	3239	a	13301	a
6	UREA	150	Ratoon												
2	Bush hog 8"			101.0	a	88.0	a	37.3	a	10245	a	3507	a	13752	a
6	UREA	150	Ratoon												
P				1		1		0.6094		0.6221		0.303		0.3804	
LSD P=.05				N/A		N/A		1.08		413.9		253.1		473.3	
TABLE OF B (Variety) and C (Fertility) MEANS															
1	CL153			103.0	a	90.0	a	36.9	a	10272	a	1524	i	11796	a
1	UREA	0	Ratoon												
2	CLXL729			101.0	b	88.0	b	38.9	a	11213	a	2158	h	13372	a
1	UREA	0	Ratoon												
3	Mermentau			99.0	c	86.0	c	34.6	a	8963	a	1677	i	10641	a
1	UREA	0	Ratoon												
1	CL153			103.0	a	90.0	a	37.9	a	10315	a	2370	gh	12685	a
2	UREA	30	Ratoon												
2	CLXL729			101.0	b	88.0	b	39.5	a	11041	a	3487	c	14528	a
2	UREA	30	Ratoon												
3	Mermentau			99.0	c	86.0	c	35.9	a	8725	a	2451	gh	11176	a
2	UREA	30	Ratoon												

Continued.

Table 58b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/4/2017		11/10/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF B (Variety) and C (Fertility) MEANS (continued)															
1	CL153			103.0	a	90.0	a	37.4	a	10154	a	2656	fg	12810	a
3	UREA	60	Ratoon												
2	CLXL729			101.0	b	88.0	b	39.1	a	11218	a	3845	b	15064	a
3	UREA	60	Ratoon												
3	Mermentau			99.0	c	86.0	c	34.6	a	8904	a	2996	de	11900	a
3	UREA	60	Ratoon												
1	CL153			103.0	a	90.0	a	38.0	a	9969	a	2785	ef	12753	a
4	UREA	90	Ratoon												
2	CLXL729			101.0	b	88.0	b	39.5	a	11312	a	4107	ab	15418	a
4	UREA	90	Ratoon												
3	Mermentau			99.0	c	86.0	c	35.4	a	9347	a	3038	de	12385	a
4	UREA	90	Ratoon												
1	CL153			103.0	a	90.0	a	37.9	a	10190	a	2796	ef	12986	a
5	UREA	120	Ratoon												
2	CLXL729			101.0	b	88.0	b	39.1	a	11111	a	4151	ab	15262	a
5	UREA	120	Ratoon												
3	Mermentau			99.0	c	86.0	c	34.3	a	8833	a	3090	de	11923	a
5	UREA	120	Ratoon												
1	CL153			103.0	a	90.0	a	37.3	a	10460	a	2657	fg	13117	a
6	UREA	150	Ratoon												
2	CLXL729			101.0	b	88.0	b	39.1	a	11287	a	4228	a	15515	a
6	UREA	150	Ratoon												
3	Mermentau			99.0	c	86.0	c	34.5	a	8715	a	3233	cd	11948	a
6	UREA	150	Ratoon												
P				1		1		0.9277		0.3061		0.0103		0.1504	
LSD P=.05				N/A		N/A		1.32		506.9		310.0		579.6	
TABLE OF A (Cultural Practice), B (Variety), and C (Fertility) MEANS															
1	Normal cut			103.0	a	90.0	a	37.0	e-h	10411	a	1609	a	12020	a
1	CL153														
1	UREA	0	Ratoon												
2	Bush hog 8"			103.0	a	90.0	a	36.8	fgh	10134	a	1439	a	11573	a
1	CL153														
1	UREA	0	Ratoon												
1	Normal cut			101.0	b	88.0	b	39.5	ab	11243	a	2254	a	13497	a
2	CLXL729														
1	UREA	0	Ratoon												

Continued.

Table 58b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/4/2017		11/10/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF A (Cultural Practice), B (Variety), and C (Fertility) MEANS (continued)															
2	Bush hog 8"			101.0	b	88.0	b	38.3	a-g	11183	a	2063	a	13246	a
2	CLXL729														
1	UREA	0	Ratoon												
1	Normal cut			99.0	c	86.0	c	34.0	j	8899	a	1643	a	10542	a
3	Mermentau														
1	UREA	0	Ratoon												
2	Bush hog 8"			99.0	c	86.0	c	35.3	hij	9028	a	1711	a	10739	a
3	Mermentau														
1	UREA	0	Ratoon												
1	Normal cut			103.0	a	90.0	a	37.3	d-g	10381	a	2469	a	12850	a
1	CL153														
2	UREA	30	Ratoon												
2	Bush hog 8"			103.0	a	90.0	a	38.5	a-f	10250	a	2271	a	12521	a
1	CL153														
2	UREA	30	Ratoon												
1	Normal cut			101.0	b	88.0	b	39.3	abc	10842	a	3421	a	14264	a
2	CLXL729														
2	UREA	30	Ratoon												
2	Bush hog 8"			101.0	b	88.0	b	39.8	a	11240	a	3552	a	14792	a
2	CLXL729														
2	UREA	30	Ratoon												
1	Normal cut			99.0	c	86.0	c	37.0	e-h	8751	a	2485	a	11236	a
3	Mermentau														
2	UREA	30	Ratoon												
2	Bush hog 8"			99.0	c	86.0	c	34.8	ij	8700	a	2417	a	11117	a
3	Mermentau														
2	UREA	30	Ratoon												
1	Normal cut			103.0	a	90.0	a	38.3	a-g	10167	a	2695	a	12862	a
1	CL153														
3	UREA	60	Ratoon												
2	Bush hog 8"			103.0	a	90.0	a	36.5	ghi	10142	a	2617	a	12759	a
1	CL153														
3	UREA	60	Ratoon												
1	Normal cut			101.0	b	88.0	b	39.0	a-d	11156	a	3805	a	14961	a
2	CLXL729														
3	UREA	60	Ratoon												

Continued.

Table 58b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/4/2017		11/10/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF A (Cultural Practice), B (Variety), and C (Fertility) MEANS (continued)															
2	Bush hog 8"			101.0	b	88.0	b	39.3	abc	11280	a	3885	a	15166	a
2	CLXL729														
3	UREA	60	Ratoon												
1	Normal cut			99.0	c	86.0	c	34.8	ij	8957	a	2793	a	11749	a
3	Mermentau														
3	UREA	60	Ratoon												
2	Bush hog 8"			99.0	c	86.0	c	34.5	j	8851	a	3200	a	12051	a
3	Mermentau														
3	UREA	60	Ratoon												
1	Normal cut			103.0	a	90.0	a	38.5	a-f	10396	a	2680	a	13076	a
1	CL153														
4	UREA	90	Ratoon												
2	Bush hog 8"			103.0	a	90.0	a	37.5	c-g	9541	a	2890	a	12431	a
1	CL153														
4	UREA	90	Ratoon												
1	Normal cut			101.0	b	88.0	b	39.5	ab	11188	a	4117	a	15305	a
2	CLXL729														
4	UREA	90	Ratoon												
2	Bush hog 8"			101.0	b	88.0	b	39.5	ab	11435	a	4096	a	15532	a
2	CLXL729														
4	UREA	90	Ratoon												
1	Normal cut			99.0	c	86.0	c	34.3	j	9488	a	2886	a	12374	a
3	Mermentau														
4	UREA	90	Ratoon												
2	Bush hog 8"			99.0	c	86.0	c	36.5	ghi	9206	a	3190	a	12396	a
3	Mermentau														
4	UREA	90	Ratoon												
1	Normal cut			103.0	a	90.0	a	37.0	e-h	10169	a	2873	a	13042	a
1	CL153														
5	UREA	120	Ratoon												
2	Bush hog 8"			103.0	a	90.0	a	38.8	a-e	10210	a	2720	a	12930	a
1	CL153														
5	UREA	120	Ratoon												
1	Normal cut			101.0	b	88.0	b	39.8	a	11183	a	4120	a	15304	a
2	CLXL729														
5	UREA	120	Ratoon												

Continued.

Table 58b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/4/2017		11/10/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF A (Cultural Practice), B (Variety), and C (Fertility) MEANS (continued)															
2	Bush hog 8"			101.0	b	88.0	b	38.5	a-f	11039	a	4182	a	15221	a
2	CLXL729														
5	UREA	120	Ratoon												
1	Normal cut			99.0	c	86.0	c	33.8	j	8558	a	2780	a	11338	a
3	Mermentau														
5	UREA	120	Ratoon												
2	Bush hog 8"			99.0	c	86.0	c	34.8	ij	9107	a	3400	a	12507	a
3	Mermentau														
5	UREA	120	Ratoon												
1	Normal cut			103.0	a	90.0	a	36.8	fgh	10534	a	2739	a	13272	a
1	CL153														
6	UREA	150	Ratoon												
2	Bush hog 8"			103.0	a	90.0	a	37.8	b-g	10386	a	2575	a	12962	a
1	CL153														
6	UREA	150	Ratoon												
1	Normal cut			101.0	b	88.0	b	39.0	a-d	11295	a	4039	a	15334	a
2	CLXL729														
6	UREA	150	Ratoon												
2	Bush hog 8"			101.0	b	88.0	b	39.3	abc	11278	a	4418	a	15696	a
2	CLXL729														
6	UREA	150	Ratoon												
1	Normal cut			99.0	c	86.0	c	34.3	j	8358	a	2939	a	11296	a
3	Mermentau														
6	UREA	150	Ratoon												
2	Bush hog 8"			99.0	c	86.0	c	34.8	ij	9071	a	3528	a	12599	a
3	Mermentau														
6	UREA	150	Ratoon												
P				1		1		0.0123		0.631		0.6537		0.5361	
LSD P=.05				N/A		N/A		1.87		716.9		438.3		819.7	
Standard Deviation				0.00		0.00		1.33		511.3		312.6		584.7	
CV				0.00		0.00		3.58		5.1		10.6		4.5	

N/A = Could not calculate LSD (% mean diff) because error mean square = 0.

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

Evaluation of Desiccant Timing, Stubble Management, and Milling Quality on CLXL729 and CL111 – H. Rouse Caffey Rice Research Station

Experiment number	17-CM-25
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall 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	1.65
pH	7.43
Extractable nutrients ppm	Ca-1428; Cu-2.9; Mg-221; P-16; K-63; Na-105; S-2.5; Zn-9.2
Crop/Variety	Rice / CL111 and CLXL729
Planting method/date	Drill seeded / March 13
Seeding rate/depth	Conventional 33 seeds/ft^2, Hybrid 10 seeds/ft^2 / .75 inch
Emergence date	March 26
Harvest date	Aug. 3
Ratoon Harvest date	N/A
Seed treatment/cwt	Conventional seed: Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml Dermacor X-100 seed treatment – 0.137 lb ai/cwt AV-1011 (bird repellent) – 18.3 oz Hybrid seed: 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 15 120 lb N/A 46-0-0, May 2 90 lb N/A 46-0-0, Aug. 4
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	Oct. 24
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	No blanket applications
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 59a. Evaluation of desiccant timing, stubble management, and milling quality for CLXL729 and CL111. H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd							
Rating Date						8/3/2017		11/10/2017			
Rating Type		50% HD		50% HD		Yield		Yield		Yield	
Rating Unit		days		days		lb/A		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Ratoon		MC + RC	
Trt. No.	Treatment Name										
1	CLXL729 14 days pre harvest Normal cut	101.5	a	88.5	a	9798	ab	2684	cde	12482	bcd
2	CLXL729 14 days pre harvest Bush hog 8"	101.5	a	88.5	a	9811	ab	2420	def	12231	cde
3	CLXL729 7 days pre harvest Normal cut	101.5	a	88.5	a	10591	a	2754	cd	13345	abc
4	CLXL729 7 days pre harvest Bush hog 8"	101.3	a	88.3	a	10510	a	3168	bc	13679	ab
5	CLXL729 1 day pre harvest Normal cut	101.5	a	88.5	a	9653	b	3530	ab	13183	abc
6	CLXL729 1 day pre harvest Bush hog 8"	101.8	a	88.8	a	9946	ab	3839	a	13785	a
7	CL111 14 days pre harvest Normal cut	99.3	b	86.3	b	8203	d	2259	ef	10463	f
8	CL111 14 days pre harvest Bush hog 8"	98.8	bc	85.8	bc	8283	d	2433	def	10717	f
9	CL111 7 days pre harvest Normal cut	98.0	c	85.0	c	9542	bc	2133	f	11675	def
10	CL111 7 days pre harvest Bush hog 8"	99.3	b	86.3	b	8525	d	2280	def	10805	f
11	CL111 1 day pre harvest Normal cut	99.3	b	86.3	b	8747	cd	2053	f	10800	f
12	CL111 1 day pre harvest Bush hog 8"	99.3	b	86.3	b	8615	d	2625	de	11240	ef
LSD P=.05		0.87		0.87		827.7		490.4		1224.0	
Standard Deviation		0.60		0.60		575.3		340.9		850.8	
CV		0.6		0.69		6.15		12.71		7.07	
Replicate F		4.785		4.785		4.753		12.443		8.285	
Replicate Prob(F)		0.0071		0.0071		0.0073		0.0001		0.0003	
Treatment F		20.771		20.771		8.591		10.855		8.562	
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).

Table 59b. Two-way table for the evaluation of desiccant timing, stubble management, and milling quality on CLXL729 and CL111. H. Rouse Caffey Rice Research Station.

Crop Name		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd							
Rating Date						8/3/2017		11/10/2017			
Rating Type		50% HD		50% HD		Yield		Yield		Yield	
Rating Unit		days		days		lb/A		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Ratoon		MC + RC	
Trt. No.	Trt. Name										
TABLE OF A (Variety) MEANS											
1	CLXL729	101.5	a	88.5	a	10052	a	3066	a	13117	a
2	CL111	99.0	b	86.0	b	8653	b	2297	b	10950	b
P		0.0		0.0		0.0001		0.0001		0.0001	
LSD P=.05		0.35		0.35		337.9		200.2		499.7	
TABLE OF B (Timing of Application) MEANS											
1	14 days pre harvest	100.3	a	87.3	a	9024	b	2449	b	11473	b
2	7 days pre harvest	100.0	a	87.0	a	9792	a	2584	b	12376	a
3	1 day pre harvest	100.4	a	87.4	a	9240	b	3012	a	12252	a
P		0.1		0.0		0.002		0.0001		0.0101	
LSD P=.05		0.43		0.43		413.9		245.2		612	
TABLE OF C (Cultural Practice) MEANS											
1	Normal cut	100.2	a	87.2	a	9422	a	2569	b	11991	a
2	Bush hog 8"	100.3	a	87.3	a	9282	a	2794	a	12076	a
P		0.5		0.5		0.4031		0.0285		0.7324	
LSD P=.05		0.35		0.35		337.9		200.2		499.7	
TABLE OF A (Variety) and B (Timing of Application) MEANS											
1 1	CLXL729 14 days pre harvest	101.5	a	88.5	a	9805	a	2552	c	12357	a
2 1	CL111 14 days pre harvest	99.0	a	86.0	a	8243	a	2346	c	10590	a
1 2	CLXL729 7 days pre harvest	101.4	a	88.4	a	10551	a	2961	b	13512	a
2 2	CL111 7 days pre harvest	98.6	a	85.6	a	9033	a	2207	c	11240	a
1 3	CLXL729 1 day pre harvest	101.6	a	88.6	a	9800	a	3684	a	13484	a
2 3	CL111 1 day pre harvest	99.3	a	86.3	a	8681	a	2339	c	11020	a
P		0.6733		0.6733		0.4947		0.0002		0.4966	
LSD P=.05		0.61		0.61		585.3		346.7		865.5	

Continued.

Table 59b. Continued.

Crop Name		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd							
Rating Date						8/3/2017		11/10/2017			
Rating Type		50% HD		50% HD		Yield		Yield		Yield	
Rating Unit		days		days		lb/A		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Ratoon		MC + RC	
Trt. No.	Trt. Name										
TABLE OF A (Variety) and C (Cultural Practice) MEANS											
1	CLXL729	101.5	a	88.5	a	10014	a	2989	a	13003	a
1	Normal cut										
2	CL111	98.8	a	85.8	a	8831	a	2149	a	10979	a
1	Normal cut										
1	CLXL729	101.5	a	88.5	a	10089	a	3142	a	13232	a
2	Bush hog 8"										
2	CL111	99.1	a	86.1	a	8474	a	2446	a	10921	a
2	Bush hog 8"										
P		0.4781		0.4781		0.2032		0.4692		0.5629	
LSD P=.05		0.50		0.50		477.9		283.1		706.7	
TABLE OF B (Timing of Application) and C (Cultural Practice) MEANS											
1	14 days pre harvest	100.4	a	87.4	a	9001	a	2471	a	11472	a
1	Normal cut										
2	7 days pre harvest	99.8	a	86.8	a	10066	a	2444	a	12510	a
1	Normal cut										
3	1 day pre harvest	100.4	a	87.4	a	9200	a	2792	a	11992	a
1	Normal cut										
1	14 days pre harvest	100.1	a	87.1	a	9047	a	2427	a	11474	a
2	Bush hog 8"										
2	7 days pre harvest	100.3	a	87.3	a	9518	a	2724	a	12242	a
2	Bush hog 8"										
3	1 day pre harvest	100.5	a	87.5	a	9281	a	3232	a	12513	a
2	Bush hog 8"										
P		0.2285		0.2285		0.2354		0.1381		0.4206	
LSD P=.05		0.61		0.61		3.0		346.7		865.5	

Continued.

Table 59b. Continued.

Crop Name		Rice		Rice		Rice		Rice		Rice	
Description		Plant-hd		Emer-hd							
Rating Date						8/3/2017		11/10/2017			
Rating Type		50% HD		50% HD		Yield		Yield		Yield	
Rating Unit		days		days		lb/A		lb/A		lb/A	
Crop Stage Majority		Main		Main		Main		Ratoon		MC + RC	
Trt. No.	Trt. Name										
TABLE OF A (Variety), B (Timing of Application), and C (Cultural Practice) MEANS											
1	CLXL729	101.5	a	88.5	a	9798	a	2684	a	12482	a
1	14 days pre harvest										
1	Normal cut										
2	CL111	99.3	a	86.3	a	8203	a	2259	a	10463	a
1	14 days pre harvest										
1	Normal cut										
1	CLXL729	101.5	a	88.5	a	10591	a	2754	a	13345	a
2	7 days pre harvest										
1	Normal cut										
2	CL111	98.0	a	85.0	a	9542	a	2133	a	11675	a
2	7 days pre harvest										
1	Normal cut										
1	CLXL729	101.5	a	88.5	a	9653	a	3530	a	13183	a
3	1 day pre harvest										
1	Normal cut										
2	CL111	99.3	a	86.3	a	8747	a	2053	a	10800	a
3	1 day pre harvest										
1	Normal cut										
1	CLXL729	101.5	a	88.5	a	9811	a	2420	a	12231	a
1	14 days pre harvest										
2	Bush hog 8"										
2	CL111	98.8	a	85.8	a	8283	a	2433	a	10717	a
1	14 days pre harvest										
2	Bush hog 8"										
1	CLXL729	101.3	a	88.3	a	10510	a	3168	a	13679	a
2	7 days pre harvest										
2	Bush hog 8"										
2	CL111	99.3	a	86.3	a	8525	a	2280	a	10805	a
2	7 days pre harvest										
2	Bush hog 8"										
1	CLXL729	101.8	a	88.8	a	9946	a	3839	a	13785	a
3	1 day pre harvest										
2	Bush hog 8"										
2	CL111	99.3	a	86.3	a	8615	a	2625	a	11240	a
3	1 day pre harvest										
2	Bush hog 8"										
P		0.0511		0.0511		0.4754		0.3248		0.3697	
LSD P=.05		0.87		0.87		827.7		490.4		1224.0	
Standard Deviation		0.60		0.60		575.3		340.9		850.8	
CV		0.60		0.69		6.2		12.7		7.1	

Means followed by the 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 ....: 17-CM-26

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.65
- **pH** ....: 7.43
- **Extractable nutrients** ppm ....: Ca-1428; Cu-2.9; Mg-221; P-16; K-63; Na-105; S-2.5; Zn-9.2

Crop/Variety ....: Rice / CL153
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 4
- **Ratoon Harvest date** ....: NA

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15
90 lb N/A 46-0-0, Aug. 4

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 19
- **Ratoon flood** ....: Aug. 7
- **Ratoon drain** ....: Oct. 24

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
2 qt/A glyphosate, March 10
1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
4 oz/A League + 3 oz/A propanil, May 2
20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 60a. Evaluation of nitrogen 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	
Rating Date								8/1/2017		8/4/2017		11/9/2017			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in							
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage												
1	Normal cut UTC	0	Ratoon	99.0	f	86.0	f	26.0	i	3562	g	2747	cde	6309	h
2	Normal cut UREA 30	30	Ratoon	99.5	f	86.5	f	29.3	gh	5125	f	2744	de	7869	g
3	Normal cut UREA 60	60	Ratoon	101.0	e	88.0	e	31.5	ef	6827	e	2799	cde	9625	e
4	Normal cut UREA 90	90	Ratoon	101.3	de	88.3	de	33.3	de	8388	d	2866	cd	11254	bcd
5	Normal cut UREA 120	120	Ratoon	101.8	cde	88.8	cde	35.5	bc	8740	cd	2810	cde	11550	abc
6	Normal cut UREA 150	150	Ratoon	102.0	bcd	89.0	bcd	35.5	bc	8491	d	2679	def	11170	bcd
7	Normal cut UREA 180	180	Ratoon	103.0	a	90.0	a	37.5	ab	9575	ab	2589	efg	12164	a
8	Normal cut UREA 210	210	Ratoon	102.8	ab	89.8	ab	38.8	a	9550	ab	2416	g	11967	ab
9	Normal cut UREA 240	240	Ratoon	102.8	ab	89.8	ab	37.5	ab	9771	a	2476	fg	12247	a
10	Bush hog UTC	0	Ratoon	99.0	f	86.0	f	27.3	hi	3474	g	3203	ab	6677	h
11	Bush hog UREA 30	30	Ratoon	99.8	f	86.8	f	30.0	fg	5557	f	3212	ab	8770	f
12	Bush hog UREA 60	60	Ratoon	101.3	de	88.3	de	32.5	de	7322	e	3357	a	10679	d
13	Bush hog UREA 90	90	Ratoon	102.0	bcd	89.0	bcd	34.0	cd	8611	d	3310	a	11921	abc
14	Bush hog UREA 120	120	Ratoon	102.3	abc	89.3	abc	35.5	bc	8868	bcd	2998	bc	11866	abc
15	Bush hog UREA 150	150	Ratoon	102.5	abc	89.5	abc	37.5	ab	9495	ab	2762	cde	12257	a
16	Bush hog UREA 180	180	Ratoon	102.5	abc	89.5	abc	39.0	a	9463	abc	2395	g	11858	abc
17	Bush hog UREA 210	210	Ratoon	103.0	a	90.0	a	37.5	ab	9449	abc	1863	h	11312	bcd
18	Bush hog UREA 240	240	Ratoon	103.0	a	90.0	a	39.0	a	9673	a	1472	i	11145	cd
LSD P=.05				0.81		0.81		2.12		746.8		253.0		813.3	
Standard Deviation				0.57		0.57		1.49		526.1		178.2		572.9	
CV				0.56		0.65		4.35		6.67		6.59		5.41	
Replicate F				1.507		1.507		2.781		12.818		18.982		20.740	
Replicate Prob(F)				0.2238		0.2238		0.0503		0.0001		0.0001		0.0001	
Treatment F				23.515		23.515		30.053		64.090		28.967		44.969	
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).

Table 60b. Two-way comparison of the evaluation of nitrogen rate and stubble management on yield of main and ratoon crop for CL153. H. Rouse Caffey Rice Research Station.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice
Rating Date						8/1/2017	8/4/2017	11/9/2017	
Rating Type				50% HD	50% HD	Height	Yield	Yield	Total Yield
Rating Unit				days	days	in			
Crop Stage Majority				Main	Main	Main	Main	Ratoon	MC + RC
Trt No.	Trt. Name	Rate (lb ai/A)	Growth Stage						
TABLE OF A (Stubble Management) MEANS									
1	Normal cut			101.4 a	88.4 a	33.9 b	7781 a	2681 a	10462 a
2	Bush hog			101.7 a	88.7 a	34.7 a	7990 a	2730 a	10720 a
P				0.1	0.1	0.0	0.0977	0.244	0.061
LSD P=.05				0.27	0.27	0.71	248.9	84.3	271.1
TABLE OF B (N Rates) MEANS									
1	UTC	0	Ratoon	99.0 g	86.0 g	26.6 f	3518 f	2975 ab	6493 d
2	UREA 30	30	Ratoon	99.6 f	86.6 f	29.6 e	5341 e	2978 ab	8319 c
3	UREA 60	60	Ratoon	101.1 e	88.1 e	32.0 d	7074 d	3078 ab	10152 b
4	UREA 90	90	Ratoon	101.6 de	88.6 de	33.6 c	8499 c	3088 a	11587 a
5	UREA 120	120	Ratoon	102.0 cd	89.0 cd	35.5 b	8804 c	2904 b	11708 a
6	UREA 150	150	Ratoon	102.3 bc	89.3 bc	36.5 b	8993 bc	2721 c	11713 a
7	UREA 180	180	Ratoon	102.8 ab	89.8 ab	38.3 a	9519 ab	2492 d	12011 a
8	UREA 210	210	Ratoon	102.9 a	89.9 a	38.1 a	9500 ab	2140 e	11639 a
9	UREA 240	240	Ratoon	102.9 a	89.9 a	38.3 a	9722 a	1974 e	11696 a
P				0.0	0.0	0.0	0.0001	1E-04	1E-04
LSD P=.05				0.58	0.58	1.50	528.0	178.9	575.1
TABLE OF A (Stubble Management) and B (N Rates) MEANS									
1	Normal cut			99.0 a	86.0 a	26.0 a	3562 a	2747 cde	6309 h
1	UTC	0	Ratoon						
2	Bush hog			99.0 a	86.0 a	27.3 a	3474 a	3203 ab	6677 h
1	UTC	0	Ratoon						
1	Normal cut			99.5 a	86.5 a	29.3 a	5125 a	2744 de	7869 g
2	UREA	30	Ratoon						
2	Bush hog			99.8 a	86.8 a	30.0 a	5557 a	3212 ab	8770 f
2	UREA	30	Ratoon						

Continued.

Table 60b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Rating Date								8/1/2017		8/4/2017		11/9/2017			
Rating Type				50% HD		50% HD		Height		Yield		Yield		Total Yield	
Rating Unit				days		days		in							
Crop Stage Majority				Main		Main		Main		Main		Ratoon		MC + RC	
Trt No.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF A (Stubble Management) and B (N Rates) MEANS (continued)															
1	Normal cut			101.0	a	88.0	a	31.5	a	6827	a	2799	cde	9625	e
3	UREA	60	Ratoon												
2	Bush hog			101.3	a	88.3	a	32.5	a	7322	a	3357	a	10679	d
3	UREA	60	Ratoon												
1	Normal cut			101.3	a	88.3	a	33.3	a	8388	a	2866	cd	11254	bcd
4	UREA	90	Ratoon												
2	Bush hog			102.0	a	89.0	a	34.0	a	8611	a	3310	a	11921	abc
4	UREA	90	Ratoon												
1	Normal cut			101.8	a	88.8	a	35.5	a	8740	a	2810	cde	11550	abc
5	UREA	120	Ratoon												
2	Bush hog			102.3	a	89.3	a	35.5	a	8868	a	2998	bc	11866	abc
5	UREA	120	Ratoon												
1	Normal cut			102.0	a	89.0	a	35.5	a	8491	a	2679	def	11170	bcd
6	UREA	150	Ratoon												
2	Bush hog			102.5	a	89.5	a	37.5	a	9495	a	2762	cde	12257	a
6	UREA	150	Ratoon												
1	Normal cut			103.0	a	90.0	a	37.5	a	9575	a	2589	efg	12164	a
7	UREA	180	Ratoon												
2	Bush hog			102.5	a	89.5	a	39.0	a	9463	a	2395	g	11858	abc
7	UREA	180	Ratoon												
1	Normal cut			102.8	a	89.8	a	38.8	a	9550	a	2416	g	11967	ab
8	UREA	210	Ratoon												
2	Bush hog			103.0	a	90.0	a	37.5	a	9449	a	1863	h	11312	bcd
8	UREA	210	Ratoon												
1	Normal cut			102.8	a	89.8	a	37.5	a	9771	a	2476	fg	12247	a
9	UREA	240	Ratoon												
2	Bush hog			103.0	a	90.0	a	39.0	a	9673	a	1472	i	11145	cd
9	UREA	240	Ratoon												
P				0.6385		0.6385		0.5697		0.4186		0.0001		0.002	
LSD P=.05				0.81		0.81		2.12		746.8		253.0		813.3	
Standard Deviation				0.57		0.57		1.49		526.1		178.2		572.9	
CV				0.56		0.65		4.35		6.7		6.6		5.4	

Means followed by the 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 Titan – H. Rouse Caffey Rice Research Station

Experiment number	17-CM-27
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (Crowley Main)
Tillage type	Fall 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	1.65
pH	7.43
Extractable nutrients ppm	Ca-1428; Cu-2.9; Mg-221; P-16; K-63; Na-105; S-2.5; Zn-9.2
Crop/Variety	Rice / Titan
Planting method/date	Drill seeded / March 13
Seeding rate/depth	33 seeds/ft^2 / .75 inch
Emergence date	March 26
Harvest date	Aug. 4
Ratoon Harvest date	NA
Seed treatment/cwt	Dithane (fungicide) – 114 g Release (gibberellic acid) – 10 g Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml AV-1011 (bird repellent) – 18.3 oz
Fertilization	250 lb/A 0-24-24-2.7, March 15 90 lb N/A 46-0-0, Aug. 4
Water management	
Flush	March 22
Flood	May 3
Drain	July 19
Ratoon flood	Aug. 7
Ratoon drain	Oct. 24
Pest management	
Herbicides	1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown) 2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6 2 qt/A glyphosate, March 10 1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16 3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7 3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20 4 oz/A League + 3 oz/A propanil, May 2 20 oz/A Clincher + 1 qt/A COC, May 25
Insecticides	0.137 lb ai/cwt Dermacor X-100 seed treatment
Fungicides	6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 61a. Evaluation of nitrogen rate and stubble management on yield of main and ratoon crops for Titan. H. Rouse Caffey Rice Research Station.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Rating Date						8/1/2017	8/1/2017	8/1/2017	8/4/2017	11/10/2017	
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.	Trt. Name	Rate (lb ai/A)	Growth Stage								
1	Normal cut UTC	0	Ratoon	97.3 de	84.3 de	34.0 a	0.0 a	0.0 b	2110 e	2088 bc	4199 h
2	Normal cut UREA	30	Ratoon	97.3 de	84.3 de	34.0 a	0.0 a	0.0 b	5085 d	2221 bc	7306 fg
3	Normal cut UREA	60	Ratoon	97.5 de	84.5 de	32.3 a	0.0 a	0.0 b	4961 d	2162 bc	7123 g
4	Normal cut UREA	90	Ratoon	97.5 de	84.5 de	34.5 a	0.0 a	0.0 b	7591 c	2281 bc	9871 de
5	Normal cut UREA	120	Ratoon	98.3 bc	85.3 bc	36.3 a	0.0 a	0.0 b	8509 bc	2106 bc	10615 bcd
6	Normal cut UREA	150	Ratoon	98.8 ab	85.8 ab	33.3 a	0.0 a	0.0 b	8943 abc	2019 c	10962 a-d
7	Normal cut UREA	180	Ratoon	98.8 ab	85.8 ab	36.8 a	0.0 a	0.0 b	9331 ab	2012 c	11343 a-d
8	Normal cut UREA	210	Ratoon	99.0 a	86.0 a	35.5 a	0.0 a	0.0 b	9122 abc	2055 c	11177 a-d
9	Normal cut UREA	240	Ratoon	99.0 a	86.0 a	34.5 a	0.0 a	0.0 b	10139 a	2214 bc	12353 a
10	Bush hog UTC	0	Ratoon	97.5 de	84.5 de	33.3 a	0.0 a	0.0 b	2005 e	2977 a	4982 h

Continued.

Table 61a. Continued.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Rating Date						8/1/2017	8/1/2017	8/1/2017	8/4/2017	11/10/2017	
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.	Trt. Name	Rate (lb ai/A)	Growth Stage								
11	Bush hog			97.0 e	84.0 e	32.3 a	0.0 a	0.0 b	5482 d	2834 a	8316 fg
	UREA	30	Ratoon								
12	Bush hog			97.8 cd	84.8 cd	32.5 a	0.0 a	0.0 b	5965 d	2885 a	8850 ef
	UREA	60	Ratoon								
13	Bush hog			98.3 bc	85.3 bc	34.0 a	0.0 a	0.0 b	7601 c	2451 b	10052 cde
	UREA	90	Ratoon								
14	Bush hog			98.8 ab	85.8 ab	32.3 a	0.0 a	0.0 b	8352 bc	2124 bc	10475 bcd
	UREA	120	Ratoon								
15	Bush hog			99.0 a	86.0 a	32.0 a	0.0 a	0.0 b	8521 bc	2097 bc	10618 bcd
	UREA	150	Ratoon								
16	Bush hog			99.0 a	86.0 a	35.8 a	17.5 a	0.3 b	9545 ab	1447 d	10992 a-d
	UREA	180	Ratoon								
17	Bush hog			99.0 a	86.0 a	35.3 a	5.0 a	0.5 b	9911 ab	1638 d	11549 abc
	UREA	210	Ratoon								
18	Bush hog			99.3 a	86.3 a	35.3 a	27.5 a	2.0 a	10256 a	1462 d	11718 ab
	UREA	240	Ratoon								
LSD P=.05				0.62	0.62	3.78	17.20	0.86	1569.1	365.8	1551.5
Standard Deviation				0.44	0.44	2.66	12.11	0.61	1105.3	257.7	1092.9
CV				0.44	0.51	7.81	436.08	398.78	14.91	11.87	11.4
Replicate F				3.575	3.575	0.656	1.742	0.736	7.915	6.260	11.490
Replicate Prob(F)				0.0201	0.0201	0.5831	0.1702	0.5355	0.0002	0.0011	0.0001
Treatment F				12.433	12.433	1.261	1.521	2.467	21.807	10.934	18.199
Treatment Prob(F)				0.0001	0.0001	0.2552	0.1248	0.0067	0.0001	0.0001	0.0001

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

Table 61b. Two-way comparison of the evaluation of nitrogen rate and stubble management on yield of main and ratoon crops for Titan. H. Rouse Caffey Rice Research Station.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Rating Date						8/1/2017			8/4/2017	11/10/2017	
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.	Trt. Name	Rate (lb ai/A)	Growth Stage								
TABLE OF A (Stubble Management) MEANS											
1	Normal cut			98.1 b	85.1 b	34.6 a	0.0 a	0.0 b	7310 a	2129 a	9439 a
2	Bush hog			98.4 a	85.4 a	33.6 a	5.6 a	0.3 a	7515 a	2213 a	9728 a
P				0.0	0.0	0.1	0.1	0.0	0.4345	0.1734	0.267
LSD P=.05				0.21	0.21	1.26	5.73	0.29	523.0	121.9	517.2
TABLE OF B (N Rates) MEANS											
1	UTC	0	Ratoon	97.4 de	84.4 de	33.6 a	0.0 a	0.0 b	2058 e	2533 a	4590 e
2	UREA 30	30	Ratoon	97.1 e	84.1 e	33.1 a	0.0 a	0.0 b	5284 d	2528 a	7811 d
3	UREA 60	60	Ratoon	97.6 cd	84.6 cd	32.4 a	0.0 a	0.0 b	5463 d	2524 a	7987 d
4	UREA 90	90	Ratoon	97.9 c	84.9 c	34.3 a	0.0 a	0.0 b	7596 c	2366 ab	9961 c
5	UREA 120	120	Ratoon	98.5 b	85.5 b	34.3 a	0.0 a	0.0 b	8431 bc	2115 bc	10545 bc
6	UREA 150	150	Ratoon	98.9 ab	85.9 ab	32.6 a	0.0 a	0.0 b	8732 b	2058 cd	10790 bc
7	UREA 180	180	Ratoon	98.9 ab	85.9 ab	36.3 a	8.8 a	0.1 b	9438 ab	1729 e	11167 ab
8	UREA 210	210	Ratoon	99.0 a	86.0 a	35.4 a	2.5 a	0.3 b	9517 ab	1846 de	11363 ab
9	UREA 240	240	Ratoon	99.1 a	86.1 a	34.9 a	13.8 a	1.0 a	10197 a	1838 de	12035 a
P				0.0	0.0	0.1	0.2	0.0	0.0001	0.0001	0.0001
LSD P=.05				0.44	0.44	2.67	12.16	0.61	1109.5	258.7	1097.1

Continued.

Table 61b. Continued.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Rating Date						8/1/2017			8/4/2017	11/10/2017	
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.	Trt. Name	Rate (lb ai/A)	Growth Stage								
TABLE OF A (Stubble Management) and B (N Rates) MEANS											
1	Normal cut			97.3 a	84.3 a	34.0 a	0.0 a	0.0 b	2110 a	2088 bc	4199 a
1	UTC	0	Ratoon								
2	Bush hog			97.5 a	84.5 a	33.3 a	0.0 a	0.0 b	2005 a	2977 a	4982 a
1	UTC	0	Ratoon								
1	Normal cut			97.3 a	84.3 a	34.0 a	0.0 a	0.0 b	5085 a	2221 bc	7306 a
2	UREA	30	Ratoon								
2	Bush hog			97.0 a	84.0 a	32.3 a	0.0 a	0.0 b	5482 a	2834 a	8316 a
2	UREA	30	Ratoon								
1	Normal cut			97.5 a	84.5 a	32.3 a	0.0 a	0.0 b	4961 a	2162 bc	7123 a
3	UREA	60	Ratoon								
2	Bush hog			97.8 a	84.8 a	32.5 a	0.0 a	0.0 b	5965 a	2885 a	8850 a
3	UREA	60	Ratoon								
1	Normal cut			97.5 a	84.5 a	34.5 a	0.0 a	0.0 b	7591 a	2281 bc	9871 a
4	UREA	90	Ratoon								
2	Bush hog			98.3 a	85.3 a	34.0 a	0.0 a	0.0 b	7601 a	2451 b	10052 a
4	UREA	90	Ratoon								
1	Normal cut			98.3 a	85.3 a	36.3 a	0.0 a	0.0 b	8509 a	2106 bc	10615 a
5	UREA	120	Ratoon								
2	Bush hog			98.8 a	85.8 a	32.3 a	0.0 a	0.0 b	8352 a	2124 bc	10475 a
5	UREA	120	Ratoon								

Continued.

Table 61b. Continued.

Crop Name				Rice	Rice	Rice	Rice	Rice	Rice	Rice	Rice
Rating Date						8/1/2017			8/4/2017	11/10/2017	
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.	Trt. Name	Rate (lb ai/A)	Growth Stage								
TABLE OF A (Stubble Management) and B (N Rates) MEANS (continued)											
1	Normal cut			98.8 a	85.8 a	33.3 a	0.0 a	0.0 b	8943 a	2019 c	10962 a
6	UREA	150	Ratoon								
2	Bush hog			99.0 a	86.0 a	32.0 a	0.0 a	0.0 b	8521 a	2097 bc	10618 a
6	UREA	150	Ratoon								
1	Normal cut			98.8 a	85.8 a	36.8 a	0.0 a	0.0 b	9331 a	2012 c	11343 a
7	UREA	180	Ratoon								
2	Bush hog			99.0 a	86.0 a	35.8 a	17.5 a	0.3 b	9545 a	1447 d	10992 a
7	UREA	180	Ratoon								
1	Normal cut			99.0 a	86.0 a	35.5 a	0.0 a	0.0 b	9122 a	2055 c	11177 a
8	UREA	210	Ratoon								
2	Bush hog			99.0 a	86.0 a	35.3 a	5.0 a	0.5 b	9911 a	1638 d	11549 a
8	UREA	210	Ratoon								
1	Normal cut			99.0 a	86.0 a	34.5 a	0.0 a	0.0 b	10139 a	2214 bc	12353 a
9	UREA	240	Ratoon								
2	Bush hog			99.3 a	86.3 a	35.3 a	27.5 a	2.0 a	10256 a	1462 d	11718 a
9	UREA	240	Ratoon								
P				0.588	0.588	0.8266	0.2279	0.0319	0.9442	0.0001	0.46
LSD P=.05				0.62	0.62	3.78	17.20	0.86	1569.1	365.8	1551.5
Standard Deviation				0.44	0.44	2.66	12.11	0.61	1105.3	257.7	1092.9
CV				0.44	0.51	7.81	436.08	398.78	14.9	11.9	11.4

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

Evaluation of Late Ratoon Stubble Management and Nitrogen Rate on CL153 Grain Yield – H. Rouse Caffey Rice Research Station

Experiment number ....: 17-CM-35

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (Crowley Main)
- **Tillage type** ....: Fall 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** ....: 1.35
- **pH** ....: 7.58
- **Extractable nutrients** ppm ....: Ca-1311; Cu-2.6; Mg-245; P-5; K-62; Na-111; S-0.7; Zn-6.3

Crop/Variety ....: Rice / CL153
- **Planting method/date** ....: Drill seeded / March 13
- **Seeding rate/depth** ....: 33 seeds/ft^2 / .75 inch
- **Emergence date** ....: March 26
- **Harvest date** ....: Aug. 4
- **Ratoon Harvest date** ....: NA

Seed treatment/cwt ....: Dithane (fungicide) – 114 g
Release (gibberellic acid) – 10 g
Zinc Plus (10% Zn and 4.9% combined sulfur) – 296 ml
AV-1011 (bird repellent) – 18.3 oz

Fertilization ....: 250 lb/A 0-24-24-2.7, March 15
120 lb N/A 46-0-0, May 2

Water management ....:
- **Flush** ....: March 22
- **Flood** ....: May 3
- **Drain** ....: July 21
- **Ratoon flood** ....: Aug. 28
- **Ratoon drain** ....: Nov. 2

Pest management ....:
- **Herbicides** ....: 1.5 qt/A glyphosate + 1 pt/A 2,4-D + 2 oz/A Leadoff + 1 pt/A Command, Nov. 16, 2016 (Fall burndown)
2.25 qt/A glyphosate + 1 pt/A 2,4-D + 1% NIS, Feb. 6
2 qt/A glyphosate, March 10
1 qt/A glyphosate + 2 oz/A Sharpen + 6 oz/A Command, March 16
3.5 qt/A propanil + 2 pt/A Prowl H_2O + .75 oz/A Permit + 1 oz/A Londax, April 7
3 qt/A propanil + .5 oz/A Permit + .5 oz/A Londax, April 20
4 oz/A League + 3 oz/A propanil, May 1
20 oz/A Clincher + 1 qt/A COC, May 25
- **Insecticides** ....: 0.137 lb ai/cwt Dermacor X-100 seed treatment
- **Fungicides** ....: 6.8 oz/A Sercadis + 9 oz/A Vigil, June 19

Table 62a. Evaluation of late ratoon stubble management and nitrogen rate on CL153 grain 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								8/2/2017		8/5/2017		11/14/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
1	Normal cut			104	a	91	a	38.3	a	9751	a	1845	bc	11596	a
	UREA	60	Ratoon												
2	Normal cut			104	a	91	a	37.3	a	9176	a	1603	c	10779	a
	UREA	90	Ratoon												
3	Bush hog 8" 1 d PH			104	a	91	a	38.8	a	9583	a	1950	bc	11533	a
	UREA	60	Ratoon												
4	Bush hog 8" 1 d PH			104	a	91	a	36.8	a	8984	a	2306	a	11290	a
	UREA	90	Ratoon												
5	Bush hog 8" 14 d PH			104	a	91	a	37.3	a	9743	a	1753	bc	11496	a
	UREA	60	Ratoon												
6	Bush hog 8" 14 d PH			104	a	91	a	38.3	a	9482	a	2075	ab	11557	a
	UREA	90	Ratoon												
LSD P=.05				.		.		1.78		729.2		347.5		694.0	
Standard Deviation				0.00		0.00		1.18		483.8		230.6		460.5	
CV				0.0		0.0		3.13		5.12		12.0		4.05	
Replicate F				0.000		0.000		0.357		1.536		5.204		0.433	
Replicate Prob(F)				1.0000		1.0000		0.7847		0.2461		0.0116		0.7323	
Treatment F				0.000		0.000		1.714		1.665		4.632		1.826	
Treatment Prob(F)				1.0000		1.0000		0.1920		0.2037		0.0093		0.1680	

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

Table 62b. Two-way comparison the evaluation of late ratoon stubble management and N rate on CL153 grain 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						8/2/2017	8/5/2017	11/14/2017	
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.	Trt. Name	Rate (lb ai/A)	Growth Stage						
TABLE OF A (Cultural Practice) MEANS									
1	Normal cut			104.0 a	91.0 a	37.8 a	9464 a	1724 b	11188 a
2	Bush hog 8" 1d PH			104.0 a	91.0 a	37.8 a	9284 a	2128 a	11412 a
3	Bush hog 8" 14 d PH			104.0 a	91.0 a	37.8 a	9613 a	1914 ab	11527 a
P				1.0	1.0	1.0	0.4173	0.0113	0.3521
LSD P=.05				.	.	1.26	515.6	245.7	490.7
TABLE OF B (Fertility) MEANS									
1	UREA	60	Ratoon	104.0 a	91.0 a	38.1 a	9692 a	1850 a	11542 a
2	UREA	90	Ratoon	104.0 a	91.0 a	37.4 a	9214 b	1995 a	11209 a
P				1.0	1.0	0.2	0.0286	0.144	0.0968
LSD P=.05				.	.	1.03	421.0	200.6	400.7

Continued.

Table 62b. Continued.

Crop Name				Rice		Rice		Rice		Rice		Rice		Rice	
Description				Plant-hd		Emer-hd		Tip of panicle							
Rating Date								8/2/2017		8/5/2017		11/14/2017			
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.	Trt. Name	Rate (lb ai/A)	Growth Stage												
TABLE OF A (Cultural Practice) and B (Fertility) MEANS															
1	Normal cut			104.0	a	91.0	a	38.3	a	9751	a	1845	bc	11596	a
1	UREA	60	Ratoon												
2	Bush hog 8" 1 d PH			104.0	a	91.0	a	38.8	a	9583	a	1950	bc	11533	a
1	UREA	60	Ratoon												
3	Bush hog 8" 14 d PH			104.0	a	91.0	a	37.3	a	9743	a	1753	bc	11496	a
1	UREA	60	Ratoon												
1	Normal cut			104.0	a	91.0	a	37.3	a	9176	a	1603	c	10779	a
2	UREA	90	Ratoon												
2	Bush hog 8" 1 d PH			104.0	a	91.0	a	36.8	a	8984	a	2306	a	11290	a
2	UREA	90	Ratoon												
3	Bush hog 8" 14 d PH			104.0	a	91.0	a	38.3	a	9482	a	2075	ab	11557	a
2	UREA	90	Ratoon												
P				1		1		0.0634		0.7419		0.0345		0.1873	
LSD P=.05				.		.		1.78		729.2		347.5		694.0	
Standard Deviation				0.00		0.00		1.18		483.8		230.6		460.5	
CV				0.00		0.00		3.13		5.1		12.0		4.0	

Means followed by the 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 the Response of Soybeans to Different Potassium Sources and Boron Rates – H. Rouse Caffey Rice Research Station (South Unit)

Experiment number ....: 17-CS-Soybean_Mosaic

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (South Unit)
- **Tillage type** ....: Spring Stale
- **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 silt loam
- **% organic matter** ....: 2.02
- **pH** ....: 6.14
- **Extractable nutrients** ppm ....: Ca-1,421; Cu-2.1; Mg-151; P-20; K-79; Na-46; S-2.5; Zn-7.0

Crop/Variety ....: Soybeans / Dyna-Gro S43RY95
- **Planting method/date** ....: Drill seeded / April 27
- **Seeding rate/depth** ....: 130,000 seeds/A / 1 inch
- **Emergence date** ....: May 5
- **Harvest date** ....: Sept. 7

Seed treatment/cwt ....: NA

Fertilization ....: No blanket applications

Water management ....:
- **Flush** ....: None

Pest management ....:
- **Herbicides** ....: 2 qt/A glyphosate + 1.33 pt/A Dual Magnum, April 29
  1.4 pt/A Charger Max + 2.25 pt/A Poast Plus + 2.4 pt/A Basagran + 0.5% Crop oil, May 25
  2.25 pt/A Poast Plus + 2.4 pt/A Basagran + 0.5% Crop oil, July 3
- **Insecticides** ....: 1 lb ai/A Livid 90 + 1% NIS, June 9 and 15, July 5, 14, 21, and 28
- **Fungicides** ....: 7 oz/A Quadris Top SBX + 1% NIS, June 9 and 15, July 5, 14, 21, and 28

Table 1. Evaluation of the response of soybeans to different potassium sources and boron rates. H. Rouse Caffey Rice Research Station (South Unit).

Crop Code				GLXMA		GLXMA		GLXMA		GLXMA		GLXMA	
BBCH Scale				BSOY		BSOY		BSOY		BSOY		BSOY	
Crop Scientific Name				Glycine max		Glycine max		Glycine max		Glycine max		Glycine max	
Crop Name				Soybean		Soybean		Soybean		Soybean		Soybean	
Part Rated				PLANT -		PLANT -		PLANT -		GRAIN -		GRAIN -	
Rating Date				9/7/2017		9/7/2017		9/7/2017		9/7/2017		9/7/2017	
Rating Type				Population		Height		Lodging		Test Weight		Yield	
Rating Unit				plant/A		in		0-5		lb/bu		bu/A	
Trt No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
1	MAP	40	ATPLAN	135665	A	30.5	a	1.0	a	41.83	a	52.6	a
2	MAP	40	ATPLAN	132396	A	32.5	a	1.8	a	45.60	a	54.9	a
	MOP	60	ATPLAN										
3	MAP	40	ATPLAN	118503	A	31.8	a	2.0	a	44.70	a	58.4	a
	Aspire	60	ATPLAN										
4	MAP	40	ATPLAN	138934	A	30.8	a	2.3	a	45.25	a	58.9	a
	MOP	60	ATPLAN										
	Granubor preplant	0.5	ATPLAN										
5	MAP	40	ATPLAN	138117	A	31.3	a	2.3	a	44.93	a	59.0	a
	MOP	60	ATPLAN										
	Granubor preplant	1	ATPLAN										
6	MAP	40	ATPLAN	134031	A	33.0	a	2.0	a	45.78	a	59.9	a
	MOP	60	ATPLAN										
	Granubor preplant	2	ATPLAN										
7	MAP	40	ATPLAN	133214	A	34.3	a	1.5	a	45.03	a	61.6	a
	EXPCMT1	60	ATPLAN										
8	Check (no fertilizer)			132396	A	32.8	a	1.8	a	43.43	a	53.9	a
LSD P=.05				14446.5		2.61		0.84		3.017		6.28	
Standard Deviation				9824.1		1.77		0.57		2.052		4.27	
CV				7.39		5.53		31.57		4.6		7.44	
Replicate F				7.182		5.671		41.873		0.960		43.424	
Replicate Prob(F)				0.0017		0.0052		0.0001		0.4297		0.0001	
Treatment F				1.660		2.039		2.127		1.652		2.218	
Treatment Prob(F)				0.1735		0.0976		0.0855		0.1757		0.0746	

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

Evaluation of Date of Planting on Non-Irrigated Soybeans in Southwest Louisiana – H. Rouse Caffey Rice Research Station (South Unit)

Experiment number ....: 17-CS-Soybean_DOP

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (South Unit)
- **Tillage type** ....: Spring Stale
- **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 silt loam
- **% organic matter** ....: 2.02
- **pH** ....: 6.14
- **Extractable nutrients** ppm ....: Ca-1,421; Cu-2.1; Mg-151; P-20; K-79; Na-46; S-2.5; Zn-7.0

Crop/Variety ....: Soybeans / See data sheet
- **Planting method** ....: Drill seeded
- **Planting date/depth** ....: DOP 1 – March 29 / .75 inch
  DOP 2 – April 10 / 1 inch
  DOP 3 – April 25 / 1.5 inch
  DOP 4 – May 17 / 1.5 inch
  DOP 5 – May 29 / 1 inch
  DOP 6 – June 14 / 1 inch
- **Seeding rate** ....: 130,000 seeds/A
- **Emergence date** ....: DOP 1 – April 4
  DOP 2 – April 17
  DOP 3 – May 1
  DOP 4 – May 17
  DOP 5 – June 5
  DOP 6 – June 19
- **Harvest date** ....: DOP 1 – Sept. 5
  DOP 2 – MG3-Sept. 5, MG4 & MG5-Sept. 18
  DOP 3 – MG3 & MG4-Sept. 19, MG5-Sept. 21
  DOP 4 – Sept. 21
  DOP 5 – MG3-Sept. 21, MG4 & MG5- Sept. 29
  DOP 6 – Sept. 29

Seed treatment/cwt ....: NA

Fertilization ....: 250 lb/A 0-24-24-2.7, May 16

Water management ....:
- **Flush** ....: None

Pest management ....:
- **Herbicides** ....: See 2017 Soybean DOP Pest Management Application Sheet on page 299
- **Insecticides** ....: See 2017 Soybean DOP Pest Management Application Sheet on page 299
- **Fungicides** ....: See 2017 Soybean DOP Pest Management Application Sheet on page 299

2017 Soybean DOP Pest Management Application Sheet

Date	Field or Test #	Herbicide/Insecticide/Fungicide	Rate/A
4/10/2017	DOP 1 and 2	Roundup Dual Magnum II	1.5 qt 1.33 pt
4/29/2017	DOP 3, 4, 5, 6	Roundup Dual Magnum II	2 qt 1.33 pt
5/18/2017	DOP 1 and 2	Quadris Top SBX Mustang Max NIS	7 oz 4 oz 1%
5/25/2017	DOP 1, 2, 3, 4, 4, 5, 6	Poast Plus Basagran Crop oil	2.25 pt 2.4 pt 0.5%
5/29/2017	DOP 1, 2, 3	Quadris Top SBX Mustang Max NIS	7 oz 4 oz 1%
6/9/2017	DOP 1, 2, 3, 4, 5	Quadris Top SBX Livid 90 NIS	7 oz 1 lb ai 1%
6/15/2017	DOP 1, 2, 3, 4, 5	Quadris Top SBX Livid 90 NIS	7 oz 1 lb ai 1%
6/16/2017	DOP 4, 5, 6	Roundup Charger Max	1.5 pt 1.4 pt
7/3/2017	DOP 1-6	Roundup	1.5 pt
7/5/2017	DOP 1-6	Quadris Top SBX Livid 90 NIS	7 oz 1 lb ai 1%
7/14/2017	DOP 1-6	Quadris Top SBX Livid 90 NIS	7 oz 1 lb ai 1%
7/21/2017	DOP 1-6	Quadris Top SBX Livid 90 NIS	7 oz 1 lb ai 1%
7/28/2017	DOP 1-6	Quadris Top SBX Livid 90 NIS	7 oz 1 lb ai 1%
8/14/2017	DOP 1-6	Belt SC Quadris Top SBX NIS	2 oz 7 oz 1%
9/19/2017	DOP 5 and 6	Livid 90 NIS	1 lb ai 1%
	Harvest Desiccant Application		
8/22/2017	DOP 1, DOP 2 (row 1-2)	Devour NIS	10 oz 1%
9/8/2017	DOP 2 (row 3-6), DOP 3 (row 1-4)	Devour NIS	10 oz 1%
9/15/2017	DOP 3 (row 5-6), DOP 4, DOP 5 (row 1-2)	Devour NIS	10 oz 1%
9/21/2017	DOP 5 (row 3-6), DOP 6	Devour NIS	10 oz 1%

Table 2. Evaluation of date of planting on non-irrigated soybeans in southwest Louisiana. H. Rouse Caffey Rice Research Station (South Unit).

Crop Name			Soybean		Soybean		Soybean		Soybean		Soybean	
Rating Date					9/5/2017		9/5/2017		9/5/2017		9/5/2017	
Rating Type			Maturity		Height		Lodging		Test Weight		Yield	
Rating Unit			days		In		0-5		lb/bu		bu/A	
Trt. No.	Trt. Name	Planting Code										
TABLE OF A (Date of Planting) MEANS												
1	DOP-1 (3/29)	A	131.6	b	21.2	d	0.8	b	35.1	e	37.6	d
2	DOP-2 (4/10)	B	132.9	a	29.1	c	1.4	a	44.7	d	58.5	b
3	DOP-3 (4/25)	C	129.5	c	32.9	b	0.8	b	51.5	c	65.6	a
4	DOP-4 (5/17)	D	118.1	d	34.9	a	1.5	a	55.8	a	64.4	a
5	DOP-5 (5/29)	E	111.1	e	33.7	b	0.9	b	56.1	a	50.2	c
6	DOP-6 (6/14)	F	99.1	f	35.8	a	1.0	b	53.4	b	39.3	d
P			0.0001		0.0001		0.0001		0.0001		0.0001	
LSD (0.05)			1.07		0.87		0.24		0.647		1.97	
TABLE OF B (Group/Variety) MEANS												
1	Credenz CZ4181RY		115.8	f	35.5	b	1.5	bc	48.2	d	50.6	e
2	Asgrow AG38X8		110.8	h	28.0	f	0.5	e	42.0	e	43.2	g
3	RJS41009R-DBLX		113.5	g	33.5	c	1.4	cd	48.2	d	51.6	de
4	Dyna-Gro S43RY95		118.0	e	36.2	b	2.0	a	49.1	d	55.9	bc
5	Asgrow AG46X6		122.2	c	32.5	cd	1.8	ab	50.7	bc	54.2	cd
6	Dyna-Gro S48XT56		122.8	bc	31.8	de	0.4	e	50.4	c	58.3	ab
7	Asgrow AG47X6		120.3	d	38.3	a	1.1	d	48.9	d	52.3	de
8	REV 47R34		120.1	d	37.6	a	1.5	bc	50.7	bc	58.9	a
9	Credenz CZ5375RY		127.5	a	24.3	g	0.3	e	50.4	c	50.8	e
10	REV 56R63		127.6	a	30.9	e	1.3	cd	51.6	ab	59.0	a
11	Dyna-Gro S52RY75		124.2	b	24.1	g	0.3	e	51.3	abc	50.0	e
12	Asgrow AG53X6		121.8	c	22.8	h	0.4	e	52.0	a	46.6	f
P			0.0001		0.0001		0.0001		0.0001		0.0001	
LSD (0.05)			1.51		1.22		0.34		0.915		2.78	

Continued.

Table 2. Continued.

Crop Name			Soybean		Soybean		Soybean		Soybean		Soybean	
Rating Date					9/5/2017		9/5/2017		9/5/2017		9/5/2017	
Rating Type			Maturity		Height		Lodging		Test Weight		Yield	
Rating Unit			days		in		0-5		lb/bu		bu/A	
Trt. No.	Trt. Name	Planting Code										
TABLE OF A (Date of Planting) and B (Group/Variety) MEANS												
1 1	DOP-1 (3/29) Credenz CZ4181RY	A	124.0	mn	25.3	z-D	1.0	f-i	34.7	y	28.3	HI
2 1	DOP-2 (4/10) Credenz CZ4181RY	B	122.8	mno	32.0	o-s	2.0	b-e	39.7	uvw	52.3	p-t
3 1	DOP-3 (4/25) Credenz CZ4181RY	C	123.0	mno	39.8	a-f	1.0	f-i	47.8	lmn	57.9	k-q
4 1	DOP-4 (5/17) Credenz CZ4181RY	D	117.0	q-t	40.0	a-e	2.3	a-d	55.7	bcd	68.1	c-g
5 1	DOP-5 (5/29) Credenz CZ4181RY	E	109.0	xyz	37.3	e-j	1.8	c-f	55.9	a-d	51.8	p-v
6 1	DOP-6 (6/14) Credenz CZ4181RY	F	98.8	ABC	38.5	b-h	1.3	e-h	55.3	cde	45.1	v-z
1 2	DOP-1 (3/29) Asgrow AG38X8	A	116.8	q-t	19.0	F	0.3	ij	0.0	z	12.5	J
2 2	DOP-2 (4/10) Asgrow AG38X8	B	119.5	o-r	27.8	w-A	1.8	c-f	39.4	vw	39.7	z-D
3 2	DOP-3 (4/25) Asgrow AG38X8	C	115.5	s-v	28.5	u-y	0.0	j	46.8	mno	45.4	u-z
4 2	DOP-4 (5/17) Asgrow AG38X8	D	111.5	wxy	32.0	o-s	0.8	g-j	54.6	c-g	63.1	f-l
5 2	DOP-5 (5/29) Asgrow AG38X8	E	105.5	z	28.3	v-y	0.0	j	55.3	cde	47.1	s-y
6 2	DOP-6 (6/14) Asgrow AG38X8	F	95.8	C	32.5	n-r	0.3	ij	55.8	a-d	51.2	q-w
1 3	DOP-1 (3/29) RJS41009R-DBLX	A	125.5	lm	27.3	w-B	1.3	e-h	35.2	y	37.5	B-F
2 3	DOP-2 (4/10) RJS41009R-DBLX	B	120.0	opq	32.0	o-s	2.5	abc	39.3	vw	53.8	o-s
3 3	DOP-3 (4/25) RJS41009R-DBLX	C	116.0	r-u	37.0	f-j	1.3	e-h	46.7	m-p	52.0	p-u
4 3	DOP-4 (5/17) RJS41009R-DBLX	D	114.0	t-w	36.0	h-l	1.3	e-h	55.7	bcd	63.3	f-k
5 3	DOP-5 (5/29) RJS41009R-DBLX	E	108.0	yz	33.8	l-q	1.5	d-g	56.2	abc	55.9	m-q
6 3	DOP-6 (6/14) RJS41009R-DBLX	F	97.3	BC	35.3	i-n	0.8	g-j	56.3	abc	46.8	t-y

Continued.

Table 2. Continued.

Crop Name			Soybean		Soybean		Soybean		Soybean		Soybean	
Rating Date					9/5/2017		9/5/2017		9/5/2017		9/5/2017	
Rating Type			Maturity		Height		Lodging		Test Weight		Yield	
Rating Unit			days		in		0-5		lb/bu		bu/A	
Trt. No.	Trt. Name	Planting Code										
TABLE OF A (Date of Planting) and B (Group/Variety) MEANS												
1 4	DOP-1 (3/29) Dyna-Gro S43RY95	A	128.0	jkl	25.0	A-D	1.5	d-g	36.4	xy	38.8	z-E
2 4	DOP-2 (4/10) Dyna-Gro S43RY95	B	128.3	jkl	34.5	j-o	2.3	a-d	41.5	s-v	60.8	i-n
3 4	DOP-3 (4/25) Dyna-Gro S43RY95	C	126.3	klm	39.5	b-g	2.5	abc	50.6	ijk	71.2	bcd
4 4	DOP-4 (5/17) Dyna-Gro S43RY95	D	118.0	p-s	39.3	b-g	2.8	ab	55.4	cde	67.9	c-h
5 4	DOP-5 (5/29) Dyna-Gro S43RY95	E	109.0	xyz	40.8	abc	2.0	b-e	55.6	bcd	56.2	m-q
6 4	DOP-6 (6/14) Dyna-Gro S43RY95	F	98.5	ABC	38.0	c-i	1.0	f-i	55.1	cde	40.3	y-D
1 5	DOP-1 (3/29) Asgrow AG46X6	A	131.0	g-j	23.0	DE	2.3	a-d	38.8	w	40.9	y-D
2 5	DOP-2 (4/10) Asgrow AG46X6	B	137.0	def	31.5	p-t	3.0	a	46.4	nop	63.9	e-k
3 5	DOP-3 (4/25) Asgrow AG46X6	C	133.0	ghi	33.5	l-q	1.3	e-h	52.7	f-i	70.6	b-e
4 5	DOP-4 (5/17) Asgrow AG46X6	D	120.0	opq	35.5	i-m	1.8	c-f	55.7	bcd	63.2	f-l
5 5	DOP-5 (5/29) Asgrow AG46X6	E	112.8	uvw	33.8	l-q	1.8	c-f	56.0	a-d	44.8	w-A
6 5	DOP-6 (6/14) Asgrow AG46X6	F	99.3	ABC	37.5	d-i	1.0	f-i	54.6	c-g	42.0	x-C
1 6	DOP-1 (3/29) Dyna-Gro S48XT56	A	134.0	fgh	24.5	B-E	0.0	j	38.3	wx	44.1	x-B
2 6	DOP-2 (4/10) Dyna-Gro S48XT56	B	138.0	cde	31.3	p-u	0.5	hij	46.0	nop	62.3	f-m
3 6	DOP-3 (4/25) Dyna-Gro S48XT56	C	134.5	efg	34.0	k-p	0.3	ij	51.0	hij	71.1	bcd
4 6	DOP-4 (5/17) Dyna-Gro S48XT56	D	119.0	p-s	34.0	k-p	1.5	d-g	55.8	a-d	67.6	c-h
5 6	DOP-5 (5/29) Dyna-Gro S48XT56	E	112.3	vwx	32.8	m-q	0.0	j	56.3	abc	60.4	i-o
6 6	DOP-6 (6/14) Dyna-Gro S48XT56	F	99.3	ABC	34.0	k-p	0.0	j	54.8	c-f	44.3	x-B

Continued.

Table 2. Continued.

Crop Name			Soybean		Soybean		Soybean		Soybean		Soybean	
Rating Date					9/5/2017		9/5/2017		9/5/2017		9/5/2017	
Rating Type			Maturity		Height		Lodging		Test Weight		Yield	
Rating Unit			days		in		0-5		lb/bu		bu/A	
Trt. No.	Trt. Name	Planting Code										
TABLE OF A (Date of Planting) and B (Group/Variety) MEANS												
1 7	DOP-1 (3/29) Asgrow AG47X6	A	132.0	ghi	29.0	t-x	1.3	e-h	35.0	y	38.2	A-E
2 7	DOP-2 (4/10) Asgrow AG47X6	B	132.5	ghi	36.8	g-k	1.3	e-h	43.5	qrs	55.8	m-q
3 7	DOP-3 (4/25) Asgrow AG47X6	C	128.0	jkl	40.8	abc	0.8	g-j	50.0	jkl	65.1	d-j
4 7	DOP-4 (5/17) Asgrow AG47X6	D	118.0	p-s	42.5	a	1.5	d-g	56.1	a-d	69.1	c-f
5 7	DOP-5 (5/29) Asgrow AG47X6	E	112.0	vwx	39.3	b-g	0.8	g-j	56.5	abc	51.7	p-v
6 7	DOP-6 (6/14) Asgrow AG47X6	F	99.3	ABC	41.3	ab	1.0	f-i	52.5	ghi	34.2	D-H
1 8	DOP-1 (3/29) REV 47R34	A	131.0	g-j	28.0	w-z	2.0	b-e	38.1	wx	43.0	x-B
2 8	DOP-2 (4/10) REV 47R34	B	130.8	hij	37.8	d-i	2.8	ab	45.1	opq	61.2	h-n
3 8	DOP-3 (4/25) REV 47R34	C	129.5	ijk	40.0	a-e	1.5	d-g	53.2	e-h	76.2	ab
4 8	DOP-4 (5/17) REV 47R34	D	118.5	p-s	40.8	abc	1.8	c-f	56.3	abc	72.0	bc
5 8	DOP-5 (5/29) REV 47R34	E	112.0	vwx	38.8	b-h	1.0	f-i	56.7	abc	55.8	m-q
6 8	DOP-6 (6/14) REV 47R34	F	99.0	ABC	40.3	a-d	0.3	ij	54.7	c-g	45.3	u-z
1 9	DOP-1 (3/29) Credenz CZ5375RY	A	143.5	ab	12.3	G	0.0	j	41.8	stu	43.8	x-B
2 9	DOP-2 (4/10) Credenz CZ5375RY	B	143.5	ab	22.0	E	0.0	j	50.1	jk	71.4	bcd
3 9	DOP-3 (4/25) Credenz CZ5375RY	C	141.0	bc	23.3	CDE	0.0	j	55.4	cde	65.2	d-j
4 9	DOP-4 (5/17) Credenz CZ5375RY	D	121.5	nop	29.3	s-x	1.0	f-i	55.3	cde	58.4	j-p
5 9	DOP-5 (5/29) Credenz CZ5375RY	E	114.3	t-w	28.0	w-z	0.5	hij	55.3	cde	43.7	x-B
6 9	DOP-6 (6/14) Credenz CZ5375RY	F	101.0	A	31.0	q-v	0.5	hij	44.4	pqr	22.3	I

Continued.

Table 2. Continued.

Crop Name			Soybean		Soybean		Soybean		Soybean		Soybean	
Rating Date					9/5/2017		9/5/2017		9/5/2017		9/5/2017	
Rating Type			Maturity		Height		Lodging		Test Weight		Yield	
Rating Unit			days		in		0-5		lb/bu		bu/A	
Trt. No.	Trt. Name	Planting Code										
TABLE OF A (Date of Planting) and B (Group/Variety) MEANS												
1 10	DOP-1 (3/29) REV 56R63	A	144.0	ab	18.8	F	0.0	j	42.4	rst	61.5	g-n
2 10	DOP-2 (4/10) REV 56R63	B	146.8	a	29.0	t-x	0.8	g-j	50.8	ijk	73.2	bc
3 10	DOP-3 (4/25) REV 56R63	C	139.5	cd	29.0	t-x	0.8	g-j	55.0	cde	82.0	a
4 10	DOP-4 (5/17) REV 56R63	D	120.8	nop	35.3	i-n	2.3	a-d	56.2	abc	61.9	g-m
5 10	DOP-5 (5/29) REV 56R63	E	114.0	t-w	35.5	i-m	1.0	f-i	55.3	cde	44.0	x-B
6 10	DOP-6 (6/14) REV 56R63	F	100.8	AB	38.0	c-i	3.0	a	49.8	jkl	31.1	FGH
1 11	DOP-1 (3/29) Dyna-Gro S52RY75	A	137.3	def	10.8	G	0.0	j	41.1	tuv	32.7	E-H
2 11	DOP-2 (4/10) Dyna-Gro S52RY75	B	141.3	bc	17.3	F	0.0	j	48.7	klm	55.0	n-r
3 11	DOP-3 (4/25) Dyna-Gro S52RY75	C	134.0	fgh	25.0	A-D	0.0	j	53.9	d-g	67.1	c-i
4 11	DOP-4 (5/17) Dyna-Gro S52RY75	D	119.8	opq	28.5	u-y	0.3	ij	55.7	bcd	61.7	g-n
5 11	DOP-5 (5/29) Dyna-Gro S52RY75	E	112.5	u-x	29.8	r-w	0.3	ij	55.8	a-d	48.5	r-x
6 11	DOP-6 (6/14) Dyna-Gro S52RY75	F	100.3	AB	33.3	l-q	1.0	f-i	52.5	ghi	35.2	C-G
1 12	DOP-1 (3/29) Asgrow AG53X6	A	132.0	ghi	11.8	G	0.0	j	39.6	vw	29.7	GH
2 12	DOP-2 (4/10) Asgrow AG53X6	B	134.5	efg	17.8	F	0.0	j	46.0	nop	52.7	p-t
3 12	DOP-3 (4/25) Asgrow AG53X6	C	134.0	fgh	24.8	B-E	0.0	j	55.3	cde	63.8	e-k
4 12	DOP-4 (5/17) Asgrow AG53X6	D	119.0	p-s	26.0	y-C	0.5	hij	57.7	ab	56.5	l-q
5 12	DOP-5 (5/29) Asgrow AG53X6	E	111.8	wx	26.8	x-B	0.0	j	58.0	a	42.8	x-B
6 12	DOP-6 (6/14) Asgrow AG53X6	F	99.8	AB	29.8	r-w	1.8	c-f	55.4	cde	34.2	D-H
P			0.0001		0.0001		0.0001		0.0001		0.0001	
LSD (0.05)			3.70		3.00		0.83		2.241		6.81	
Standard Deviation			2.66		2.15		0.60		1.608		4.89	
CV			2.21		6.88		57.03		3.252		9.29	

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

Evaluation of Soybean Response to Potassium Rate – H. Rouse Caffey Rice Research Station (South Unit)

Experiment number ....: 17-CS-SB01

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (South Unit)
- **Tillage type**..................................: Spring Stale
- **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 silt loam
- **% organic matter**........................: 1.77
- **pH**...: 5.36
- **Extractable nutrients** ppm ....: Ca-861; Cu-1.1; Mg-169; P-21; K-118; Na-49; S-4.54; Zn-6.7

Crop/Variety ....: Soybean / AG5535
- **Planting method/date** ....: Drill seeded / June 9
- **Seeding rate/depth**......................: 150,000 seeds/A / 1 inch
- **Emergence date**...........................: June 15
- **Harvest date** ....: Oct. 6

Seed treatment/cwt ....: NA

Fertilization..: See data sheet for fertilizer treatments

Water management ....:
- **Flush** ....: NA
- **Flood**..: NA
- **Drain**..: NA

Pest management ....:
- **Herbicides**....................................: See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315
- **Insecticides** ....: See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315
- **Fungicides**....................................: See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315

Table 3. Evaluation of soybean response to potassium rate. H. Rouse Caffey Rice Research Station (South Unit).

Crop Name				Soybean		Soybean		Soybean		Soybean		Soybean	
Description				Maturity		Maturity		Height		Test Weight		Yield	
Rating Date								10/5/2017		10/6/2017		10/6/2017	
Rating Type				Plant-R8		Emerg-R8		Height					
Rating Unit				days		days		in		lb/bu		bu/A	
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
1	0 lb K_2O	0	ATPLAN	110.0	a	104.0	a	24.8	a	55.9	a	48.9	a
2	30 lb K_2O	30	ATPLAN	110.0	a	104.0	a	24.3	a	55.6	a	48.0	a
3	60 lb K_2O	60	ATPLAN	110.0	a	104.0	a	26.3	a	56.0	a	49.6	a
4	90 lb K_2O	90	ATPLAN	110.0	a	104.0	a	24.5	a	55.9	a	49.1	a
5	120 lb K_2O	120	ATPLAN	110.0	a	104.0	a	24.3	a	55.7	a	48.4	a
6	150 lb K_2O	150	ATPLAN	110.0	a	104.0	a	24.8	a	56.1	a	49.2	a
LSD P=.05				N/A		N/A		3.05		0.50		6.21	
Standard Deviation				0.00		0.00		2.03		0.33		4.12	
CV				0.0		0.0		8.18		0.6		8.43	
Replicate F				0.000		0.000		4.310		1.597		0.547	
Replicate Prob(F)				1.0000		1.0000		0.0222		0.2319		0.6579	
Treatment F				0.000		0.000		0.546		1.412		0.079	
Treatment Prob(F)				1.0000		1.0000		0.7392		0.2759		0.9945	

N/A = Could not calculate LSD because of error mean square = 0.
Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Soybean Response to Potassium Time of Application –
H. Rouse Caffey Rice Research Station (South Unit)

Experiment number	17-CS-SB02
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (South Unit)
Tillage type	Spring Stale
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 silt loam
% organic matter	1.77
pH	5.36
Extractable nutrients ppm	Ca-861; Cu-1.1; Mg-169; P-21; K-118; Na-49; S-4.54; Zn-6.7
Crop/Variety	Soybean / AG5535
Planting method/date	Drill seeded / June 9
Seeding rate/depth	150,000 seeds/A / 1 inch
Emergence date	June 15
Harvest date	Oct. 6
Seed treatment/cwt	NA
Fertilization	See data sheet for fertilizer treatments
Water management	
Flush	NA
Flood	NA
Drain	NA
Pest management	
Herbicides	See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315
Insecticides	See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315
Fungicides	See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315

Table 4. Evaluation of soybean response to potassium time of application. H. Rouse Caffey Rice Research Station (South Unit)

Crop Name				Soybean		Soybean		Soybean		Soybean		Soybean	
Description				Maturity		Maturity		Height		Test Weight		Yield	
Rating Date								10/5/2017		10/6/2017		10/6/2017	
Rating Type				Plant-R8		Emerg-R8		Height					
Rating Unit				days		days		in		lb/bu		bu/A	
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
1	Untreated Check	0		110.0	a	104.0	a	25.0	a	55.8	a	49.5	a
2	Muriate of Potash 0-0-60	120	ATPLAN	110.0	a	104.0	a	26.0	a	55.5	a	51.0	a
3	Muriate of Potash 0-0-60	120	V1	110.0	a	104.0	a	26.3	a	55.5	a	51.9	a
4	Muriate of Potash 0-0-60	120	V3	110.0	a	104.0	a	26.8	a	55.9	a	51.7	a
5	Muriate of Potash 0-0-60	120	V5	110.0	a	104.0	a	26.8	a	55.8	a	52.3	a
6	Muriate of Potash 0-0-60	120	R1	110.0	a	104.0	a	26.3	a	55.8	a	52.7	a
7	Muriate of Potash 0-0-60	120	R3	110.0	a	104.0	a	26.0	a	55.8	a	49.9	a
8	Muriate of Potash 0-0-60	120	R5	110.0	a	104.0	a	27.5	a	55.7	a	48.6	a
9	Muriate of Potash 0-0-60	120	R6	110.0	a	104.0	a	25.8	a	55.8	a	50.3	a
LSD P=.05				N/A		N/A		1.92		0.65		3.40	
Standard Deviation				0.00		0.00		1.31		0.45		2.33	
CV				0.0		0.0		5.0		0.8		4.58	
Replicate F				0.000		0.000		8.790		3.343		12.033	
Replicate Prob(F)				1.0000		1.0000		0.0004		0.0360		0.0001	
Treatment F				0.000		0.000		1.161		0.417		1.407	
Treatment Prob(F)				1.0000		1.0000		0.3614		0.8993		0.2439	

N/A = Could not calculate LSD because of error mean square = 0.
Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Soybean Response to Phosphorus Rate – H. Rouse Caffey Rice Research Station (South Unit)

Experiment number ....: 17-CS-SB03

Site and design ....:
- **Location/Cooperator** ....: H. Rouse Caffey Rice Research Station (South Unit)
- **Tillage type**..................................: Spring Stale
- **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 silt loam
- **% organic matter**........................: 1.77
- **pH**...: 5.36
- **Extractable nutrients** ppm ....: Ca-861; Cu-1.1; Mg-169; P-21; K-118; Na-49; S-4.54; Zn-6.7

Crop/Variety ....: Soybean / AG5535
- **Planting method/date** ....: Drill seeded / June 9
- **Seeding rate/depth**......................: 150,000 seeds/A / 1 inch
- **Emergence date**...........................: June 15
- **Harvest date** ....: Oct. 6

Seed treatment/cwt ....: NA

Fertilization..: See data sheet for fertilizer treatments

Water management ....:
- **Flush** ....: NA
- **Flood**..: NA
- **Drain**..: NA

Pest management ....:
- **Herbicides**....................................: See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315
- **Insecticides** ....: See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315
- **Fungicides**....................................: See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315

Table 5. Evaluation of soybean response to phosphorus rate. H. Rouse Caffey Rice Research Station (South Unit).

Crop Name				Soybean		Soybean		Soybean		Soybean		Soybean	
Description				Maturity		Maturity		Height		Test Weight		Yield	
Rating Date								10/5/2017		10/6/2017		10/6/2017	
Rating Type				Plant-R8		Emerg-R8		Height					
Rating Unit				days		days		in		lb/bu		bu/A	
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
1	0 lb P_2O_5	0	ATPLAN	110.0	a	104.0	a	28.3	a	56.3	a	46.3	a
2	30 lb P_2O_5	30	ATPLAN	110.0	a	104.0	a	28.3	a	55.8	a	51.7	a
3	60 lb P_2O_5	60	ATPLAN	110.0	a	104.0	a	28.0	a	55.5	a	53.0	a
4	90 lb P_2O_5	90	ATPLAN	110.0	a	104.0	a	27.0	a	55.8	a	52.3	a
5	120 lb P_2O_5	120	ATPLAN	110.0	a	104.0	a	27.3	a	55.8	a	53.3	a
6	150 lb P_2O_5	150	ATPLAN	110.0	a	104.0	a	28.0	a	55.8	a	54.4	a
LSD P=.05				N/A		N/A		1.15		0.68		7.20	
Standard Deviation				0.00		0.00		0.77		0.45		4.78	
CV				0.0		0.0		2.75		0.81		9.22	
Replicate F				0.000		0.000		15.616		1.761		3.903	
Replicate Prob(F)				1.0000		1.0000		0.0001		0.1976		0.0304	
Treatment F				0.000		0.000		1.948		1.474		1.454	
Treatment Prob(F)				1.0000		1.0000		0.1457		0.2560		0.2621	

N/A = Could not calculate LSD because of error mean square = 0.
Means followed by the same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Soybean Response to Phosphorus Time of Application –
H. Rouse Caffey Rice Research Station (South Unit)

Experiment number	17-CS-SB04
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (South Unit)
Tillage type	Spring Stale
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 silt loam
% organic matter	1.77
pH	5.36
Extractable nutrients ppm	Ca-861; Cu-1.1; Mg-169; P-21; K-118; Na-49; S-4.54; Zn-6.7
Crop/Variety	Soybean / AG5535
Planting method/date	Drill seeded / June 9
Seeding rate/depth	150,000 seeds/A / 1 inch
Emergence date	June 15
Harvest date	Oct. 6
Seed treatment/cwt	NA
Fertilization	See data sheet for fertilizer treatments
Water management	
Flush	NA
Flood	NA
Drain	NA
Pest management	
Herbicides	See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315
Insecticides	See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315
Fungicides	See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315

Table 6. Evaluation of soybean response to phosphorus time of application. H. Rouse Caffey Rice Research Station (South Unit).

Crop Name				Soybean		Soybean		Soybean		Soybean		Soybean	
Description				Maturity		Maturity		Height		Test Weight		Yield	
Rating Date								10/5/2017		10/6/2017		10/6/2017	
Rating Type				Plant-R8		Emerg-R8		Height					
Rating Unit				Days		days		in		lb/bu		bu/A	
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage										
1	Untreated Check	0		110.0	A	104.0	a	28.3	a	55.5	a	49.7	c
2	P_2O_5	120	ATPLAN	110.0	A	104.0	a	28.5	a	55.7	a	55.3	a
3	P_2O_5	120	V1	110.0	A	104.0	a	28.3	a	55.5	a	52.2	abc
4	P_2O_5	120	V3	110.0	A	104.0	a	28.8	a	55.5	a	53.0	ab
5	P_2O_5	120	V5	110.0	A	104.0	a	27.8	a	55.7	a	55.1	a
6	P_2O_5	120	R1	110.0	A	104.0	a	28.3	a	55.7	a	55.3	a
7	P_2O_5	120	R3	110.0	A	104.0	a	27.3	a	55.6	a	54.7	a
8	P_2O_5	120	R5	110.0	A	104.0	a	27.6	a	55.5	a	51.3	bc
9	P_2O_5	120	R6	110.0	A	104.0	a	28.0	a	55.5	a	53.3	ab
LSD P=.05				N/A		N/A		1.34		0.79		3.12	
Standard Deviation				0.00		0.00		0.92		0.54		2.13	
CV				0.0		0.0		3.26		0.97		3.99	
Replicate F				0.000		0.000		7.731		4.091		11.800	
Replicate Prob(F)				1.0000		1.0000		0.0010		0.0189		0.0001	
Treatment F				0.000		0.000		1.022		0.144		3.411	
Treatment Prob(F)				1.0000		1.0000		0.4486		0.9959		0.0106	

N/A = Could not calculate LSD because of error mean square = 0.
Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Evaluation of Soybean Response to Sulfur Application Rate –
H. Rouse Caffey Rice Research Station (South Unit)

Experiment number	17-CS-SB05
Site and design	
Location/Cooperator	H. Rouse Caffey Rice Research Station (South Unit)
Tillage type	Spring Stale
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 silt loam
% organic matter	1.77
pH	5.36
Extractable nutrients ppm	Ca-861; Cu-1.1; Mg-169; P-21; K-118; Na-49; S-4.54; Zn-6.7
Crop/Variety	Soybean / AG5535
Planting method/date	Drill seeded / June 9
Seeding rate/depth	150,000 seeds/A / 1 inch
Emergence date	June 15
Harvest date	Oct. 6
Seed treatment/cwt	NA
Fertilization	See data sheet for fertilizer treatments
Water management	
Flush	NA
Flood	NA
Drain	NA
Pest management	
Herbicides	See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315
Insecticides	See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315
Fungicides	See 2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests on page 315

Table 7. Evaluation of soybean response to sulfur application rate. H. Rouse Caffey Rice Research Station (South Unit).

Crop Name				Soybean	Soybean	Soybean	Soybean	Soybean
Description				Maturity	Maturity	Height	Test Weight	Yield
Rating Date						10/5/2017	10/6/2017	10/6/2017
Rating Type				Plant-R8	Emerg-R8	Height		
Rating Unit				days	days	in	lb/bu	bu/A
Trt. No.	Trt. Name	Rate (lb ai/A)	Growth Stage					
1	Urea	52.5	ATPLAN	110.0 a	104.0 a	27.8 a	55.1 a	51.0 a
2	50 lb ammonium sulfate	12	ATPLAN	110.0 a	104.0 a	28.5 a	55.0 a	53.5 a
	Urea	42	ATPLAN					
3	100 lb ammonium sulfate	24	ATPLAN	110.0 a	104.0 a	28.8 a	55.0 a	52.3 a
	Urea	31.5	ATPLAN					
4	150 lb ammonium sulfate	36	ATPLAN	110.0 a	104.0 a	28.5 a	54.8 a	51.3 a
	Urea	21	ATPLAN					
5	200 lb ammonium sulfate	48	ATPLAN	110.0 a	104.0 a	29.0 a	55.1 a	54.9 a
	Urea	10.5	ATPLAN					
6	250 lb ammonium sulfate	60	ATPLAN	110.0 a	104.0 a	28.0 a	54.1 a	52.2 a
7	None			110.0 a	104.0 a	27.8 a	54.6 a	51.1 a
LSD P=.05				N/A	N/A	1.58	1.28	6.08
Standard Deviation				0.00	0.00	1.07	0.86	4.09
CV				0.0	0.0	3.76	1.57	7.82
Replicate F				0.000	0.000	2.885	7.542	0.282
Replicate Prob(F)				1.0000	1.0000	0.0643	0.0018	0.8379
Treatment F				0.000	0.000	0.860	0.640	0.500
Treatment Prob(F)				1.0000	1.0000	0.5420	0.6974	0.8003

N/A = Could not calculate LSD because of error mean square = 0.

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

2017 Soybean Pest Management Application Sheet for CS-SB01 to CS-SB05 Tests

Date	Field or Test #	Herbicide/Insecticide/Fungicide	Rate/A
6/16/2017	CS-SB01, CS-SB02, CS-SB03, CS-SB04, and CS-SB04	Roundup Charger Max	1.5 pt 1.4 pt
7/3/2017	CS-SB01, CS-SB02, CS-SB03, CS-SB04, and CS-SB04	Roundup	1.5 pt
7/5/2017	CS-SB01, CS-SB02, CS-SB03, CS-SB04, and CS-SB04	Quadris Top Livid 90 NIS	7 oz 1 lb 1%
7/14/2017	CS-SB01, CS-SB02, CS-SB03, CS-SB04, and CS-SB04	Quadris Top Livid 90 NIS	7 oz 1 lb 1%
7/21/2017	CS-SB01, CS-SB02, CS-SB03, CS-SB04, and CS-SB04	Quadris Top Livid 90 NIS	7 oz 1 lb 1%
7/28/2017	CS-SB01, CS-SB02, CS-SB03, CS-SB04, and CS-SB04	Quadris Top Livid 90 NIS	7 oz 1 lb 1%
8/14/2017	CS-SB01, CS-SB02, CS-SB03, CS-SB04, and CS-SB04	Belt SC Quadris Top NIS	2 oz 7 oz 1%
9/19/2017	CS-SB01, CS-SB02, CS-SB03, CS-SB04, and CS-SB04	Livid 90 NIS	1 lb 1%

RICE DISEASE CONTROL RESEARCH

RICE DISEASE CONTROL STUDIES, 2017[1]

D.E. Groth, C.W. Dischler, and L.L. Monte

INTRODUCTION

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. Most recently in 2012 and 2015, major blast epidemics developed on several major rice varieties causing significant damage. Information is critically needed on these disease pest 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 6 to 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 2017.

Product	Common Name	Company
Quadris 2.08 SC	Azoxystrobin	Syngenta
Stratego 2.08 EC	Trifloxystrobin/Propiconazole	Bayer
GEM 500 SC	Trifloxystrobin	Bayer
Sercadis	Xemium	BASF
Tilt 3.6 EC	Propiconazole	Syngenta
Quilt Xcel 2.2SC	Azoxystrobin/Propiconazole	Syngenta
Elegia	Flutolanil	Nichino
Amistar Top	Azoxystrobin/Difenoconazole	Syngenta

2017 Louisiana Variety Rice Disease Nursery Trial

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: Various, 100 lb/A

Plot Size: 3 rows x 4 ft

Planting Method/Date: Drill seeded / March 15

Fertilization: Preplant 0-62-62+7 Zn, Oct. 3; Preflood 115-0-0, April 24

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, March 23; Flooded, April 26; Drained, July 14

Herbicides: Tank-Mix propanil 3.5 qt/A, Londax 1 oz/A, Permit .75 oz/A, and Prowl 1 qt/A, April 7
Tank-Mix propanil 2 qt/A and RiceBeaux 2 qt/A, April 24

Insecticides: Dermacor X-100 seed treatment

Fungicides: Various

Inoculation Dates: *Rhizoctonia solani* culture grown on rice grain/hull mixture, May 31

Application Equipment: N/A

Application Dates:

Growth Stage	Time	Temp	Wind	RH	Clouds	Dew
N/A						

Disease Ratings: July 18 and Aug. 16 and 22

Drained: July 14

Harvest: N/A

Results: See Table 2

Comments: Sheath blight, leaf blast, and bacterial panicle blight severities were moderate. Rotten neck severity was light.

Table 2. Disease reaction of various rice varieties and experimental lines to sheath blight (SB), leaf blast, rotten neck blast (RNB), and bacterial panicle blight (BPB) at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2017.

Description		SB	Leaf Blast	RNB	BPB
Rating Date		July 18	Aug. 16	Aug. 22	Aug. 22
Rating Type		Severity	Severity	Severity	Severity
Rating Unit		0-9	0-9	0-9	0-9
Trt No.	Treatment Name				
1	Caffey	3.5 kl	5.3 cde	0.0 d	2.2 hij
2	Catahoula	7.3 abc	0.3 mn	1.4 bcd	2.4 g-j
3	Cheniere	5.8 d-i	5.8 bc	0.0 d	2.4 g-j
4	CL111	7.5 ab	1.5 j-m	2.8 b	6.8 a
5	CL151	7.3 abc	4.8 c-f	1.4 bcd	4.2 b-e
6	CL152	6.5 b-f	4.0 e-h	0.0 d	1.6 jk
7	CL153	7.3 abc	0.5 mn	0.0 d	3.2 e-i
8	CL163	7.5 ab	5.5 bcd	0.0 d	2.4 g-j
9	CL172	6.3 b-g	0.5 mn	0.0 d	5.6 ab
10	CL272	5.5 e-i	5.0 cde	0.0 d	3.8 d-g
11	CLXL729	5.0 ghi	2.3 i-l	2.0 bc	3.2 e-i
12	CLXL745	6.5 b-f	0.0 n	1.6 bcd	3.0 e-j
13	Cocodrie	6.3 b-g	2.5 ijk	1.4 bcd	3.2 e-i
14	Cypress	6.3 b-g	4.3 d-g	0.0 d	3.8 d-g
15	Della-2	6.5 b-f	5.0 cde	0.0 d	2.6 f-j
16	Jazzman	4.5 ijk	2.5 ijk	0.0 d	5.0 bcd
17	Jazzman-2	7.0 a-d	2.3 i-l	0.0 d	5.4 bc
18	Jupiter	4.8 hij	6.8 b	0.0 d	3.0 e-j
19	LaKast	5.0 ghi	3.3 ghi	0.6 cd	4.0 c-f
20	Mermentau	6.5 b-f	1.0 lmn	0.4 cd	3.4 e-h
21	Roy J	3.8 jkl	3.5 f-i	0.0 d	4.0 c-f
22	Titan	5.5 e-i	5.5 bcd	0.6 cd	4.4 b-e
23	XP753	5.8 d-i	1.3 k-n	1.4 bcd	2.4 g-j
24	XP760	6.0 c-h	0.5 mn	1.2 bcd	1.8 ijk
25	PVL01	5.8 d-i	2.8 hij	0.0 d	4.4 b-e
26	Diamond	3.8 jkl	5.3 cde	0.6 cd	4.2 b-e
27	Thad	6.3 b-g	5.5 bcd	0.6 cd	4.2 b-e
28	XL 766	6.3 b-g	0.8 mn	0.4 cd	3.8 d-g
29	Gemini 214 CL	5.3 f-i	0.0 n	1.4 bcd	1.6 jk
30	Presidio	6.8 b-e	3.3 ghi	0.0 d	4.4 b-e
31	CL-Jazzman	3.5 kl	6.0 bc	0.0 d	3.6 d-h
32	Purple	3.3 l	0.0 n	0.0 d	0.6 k
33	M202	8.0 a	9.0 a	7.0 a	6.8 a
LSD P=.05		1.06	1.25	1.48	1.20
Standard Deviation		0.76	0.89	1.19	0.96
CV		12.96	27.81	157.76	27.06
Replicate F		1.749	0.785	1.794	0.484
Replicate Prob(F)		0.1622	0.5054	0.1340	0.7474
Treatment F		11.464	27.782	6.421	10.667
Treatment Prob(F)		0.0001	0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

2017 Louisiana Uniform Rice Disease Nursery Trial

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: Various, 100 lb/A

Plot Size: One 4-ft row

Planting Method/Date: Drill seeded / March 15

Fertilization: Preplant 0-62-62+7 Zn, Oct. 3; Preflood 115-0-0, April 24

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, March 23; Flooded, April 26; Drained, July 14

Herbicides: Tank-Mix propanil 3.5 qt/A, Londax 1 oz/A, Permit .75 oz/A, and Prowl 1 qt/A, April 7
Tank-Mix propanil 2 qt/A and RiceBeaux 2 qt/A, April 24

Insecticides: Dermacor X-100 seed treatment

Fungicides: None

Inoculation Dates: *Rhizoctonia solani* culture grown on rice grain/hull mixture, May 31

Application Equipment: N/A

Application Dates:

Growth Stage	Time	Temp	Wind	RH	Clouds	Dew
N/A						

Disease Ratings: July 25, Aug. 23, and Oct. 10

Drained: July 14

Harvest: N/A

Results: See Tables 3-9

Comments: All diseases were light in severity.

Table 3. Disease reaction of various rice varieties and experimental lines to sheath blight (SB), bacterial panicle blight (BPB), and leaf blast at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2017. (URN Group I).

Description		SB	BPB	Leaf Blast
Rating Date		July 25	Aug. 23	Oct. 10
Rating Type		Severity	Severity	Severity
Rating Unit		0-9	0-9	0-9
Trt No.	Treatment Name			
1	FRNS/CL.WLLS/2/KBNT/Q36194	6.5 bcd	3.5 b-e	4.3 ab
2	TRNS/4/9502008-A/DREW//CLR 20/3/CPRS/KBNT//WELLS/CFX 18	7.0 ab	4.8 bcd	2.8 cde
3	TH623	5.0 e	3.8 b-e	1.3 f
4	FRNS/CL.WLLS/7/FRNS/6/LBNT/9902/3/DAWN/9695//…	5.8 cde	4.0 b-e	5.3 a
5	CL131/TRNS	7.5 ab	3.3 cde	2.8 cde
6	CPRS/CCDR	7.0 ab	4.0 b-e	2.8 cde
7	FRNS//WLLS/CL161/3/248DREW/CL161	5.8 cde	4.5 bcd	3.8 bc
8	CL131/3/CPRS/KBNT//9502008-A	8.3 a	4.0 b-e	3.5 bcd
9	L202/LQ39a//SABR	7.3 ab	3.5 b-e	2.8 cde
10	91642//KATY/NWBT/5/RU9201176/4/KATY/NWBT/3/…	6.3 bcd	5.5 ab	3.8 bc
11	9502008/3/MBLE//LMNT/200015/4/WELLS/CFX18/5/…	7.3 ab	5.0 bc	3.0 cde
12	LCSN/LGRU	7.3 ab	4.3 bcd	2.8 cde
13	RU1102192/4/WLLS/CFX-18/3/CFX-18//CCDR/9770532 DH2	7.3 ab	3.0 cde	4.3 ab
14	Cheniere/Banks	6.8 bc	2.0 e	4.5 ab
15	Cheniere/Banks	4.8 e	3.8 b-e	2.5 cde
16	CL151//COLUMBIA2/BENGAL	5.5 de	4.0 b-e	3.0 cde
17	CL111	7.3 ab	7.0 a	2.3 def
18	CL153	7.3 ab	3.8 b-e	2.0 ef
19	PRESIDIO	7.0 ab	2.8 de	2.3 def
20	MERMENTAU	5.5 de	3.0 cde	2.5 cde
LSD P=.05		1.07	1.68	1.07
Standard Deviation		0.75	1.18	0.75
CV		11.41	29.88	24.42
Replicate F		1.588	1.745	0.784
Replicate Prob(F)		0.2022	0.1681	0.5078
Treatment F		6.149	3.290	6.538
Treatment Prob(F)		0.0001	0.0003	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

Table 4. Disease reaction of various rice varieties and experimental lines to sheath blight (SB), bacterial panicle blight (BPB), and leaf blast at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2017. (URN Group II).

Description		SB	BPB	Leaf Blast
Rating Date		July 25	Aug. 23	Oct. 10
Rating Type		Severity	Severity	Severity
Rating Unit		0-9	0-9	0-9
Trt No.	Treatment Name			
21	RU1302048/RU1302045	6.0 c-f	4.5 b-e	2.3 f
22	9502008-A/DREW//CLR 20/5/9502008-A/DREW//CLR 20/…..	6.5 a-e	4.3 b-f	2.0 f
23	L202/LQ39a//SABR	6.8 a-d	3.3 efg	2.3 f
24	CL111/3/CCDR//9502008/LGRU	7.0 abc	3.5 d-g	4.5 abc
25	LGRU/LCSN/3/CFX-18//CCDR/9770532 DH2/4/CCDR/JEFF/3/…	7.8 a	5.5 b	3.0 ef
26	CPRS/NWBT//KATY/3/CCDR	6.3 b-e	5.3 bc	2.8 ef
27	CTHL/RU1002192	7.3 abc	2.8 fgh	2.0 f
28	9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	7.3 abc	3.8 c-f	2.3 f
29	CPRS/CCDR	7.8 a	4.5 b-e	2.5 f
30	RU1202168/JPTR	6.0 c-f	3.0 e-h	5.0 abc
31	CPRS/3/9502008-A//AR 1188/CCDR/4/CPRS/9502008-A/3/CFX…	7.5 ab	3.8 c-f	5.3 ab
32	IR64/IR 1321-12	5.5 def	1.8 h	2.3 f
33	Bowman//RSMT/KATY	6.3 b-e	3.5 d-g	5.0 abc
34	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//…	7.3 abc	7.3 a	3.3 def
35	CL131/PSCL	7.0 abc	3.5 d-g	5.8 a
36	CL151//COLUMBIA2/BENGAL	6.8 a-d	4.0 b-f	3.8 cde
37	JUPITER	5.3 ef	2.0 gh	5.3 ab
38	WELLS	4.8 f	5.0 bcd	4.5 abc
39	LAKAST	6.8 a-d	4.0 b-f	4.5 abc
40	DIAMOND	5.3 ef	4.3 b-f	4.3 bcd
LSD P=.05		1.12	1.34	1.10
Standard Deviation		0.79	0.95	0.78
CV		12.12	23.9	21.57
Replicate F		2.620	5.069	7.486
Replicate Prob(F)		0.0595	0.0035	0.0003
Treatment F		4.786	6.817	10.985
Treatment Prob(F)		0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

Table 5. Disease reaction of various rice varieties and experimental lines to sheath blight (SB), bacterial panicle blight (BPB), and leaf blast at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2017. (URN Group III).

Description		SB	BPB	Leaf Blast
Rating Date		July 25	Aug. 23	Oct. 10
Rating Type		Severity	Severity	Severity
Rating Unit		0-9	0-9	0-9
Trt No.	Treatment Name			
41	FRNS/CL/WLLS/2/KBNT/Q36194	6.3 bcd	3.5 bc	2.8 d-g
42	TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/..	8.0 a	6.8 a	1.8 g
43	043752/0047277/CHEN	4.8 ef	3.8 bc	2.3 efg
44	MRMT/RU0502068	7.0 ab	3.5 bc	2.3 efg
45	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CFX-26/…	8.0 a	7.8 a	3.3 de
46	IR64/IR 1321-12	3.8 f	2.0 c	3.5 cd
47	RU0801076/2/KBNT/Q36194	5.3 de	3.0 bc	3.0 def
48	BNGL//MERC/RICO/3/MERC/RICO//BNGL/4/MARS	5.0 e	2.5 bc	3.8 cd
49	CPRS/3/CPRS/NWBT/KATY/4/SPRING	6.8 bc	2.8 bc	4.5 bc
50	CL271/JPTR	5.3 de	4.3 b	5.5 ab
51	CATAHOULA/3/TRNS//9502008-A/DREW	7.0 ab	3.0 bc	2.8 d-g
52	CPRS/9901081	7.0 ab	3.8 bc	2.3 efg
53	Cheniere/Banks	5.3 de	3.0 bc	6.5 a
54	CL151//COLUMBIA2/BENGAL	6.8 bc	4.0 b	3.8 cd
55	CL151/JSMN85//CL161	5.8 cde	2.8 bc	3.8 cd
56	MM14	5.0 e	4.3 b	5.8 a
57	Rex	5.5 de	3.5 bc	5.8 a
58	CHENIERE	7.0 ab	2.8 bc	3.8 cd
59	COCODRIE	7.0 ab	3.3 bc	2.0 fg
60	CL272	6.3 bcd	2.8 bc	4.5 bc
LSD P=.05		1.02	1.49	1.06
Standard Deviation		0.72	1.06	0.75
CV		11.74	29.02	20.46
Replicate F		0.677	0.819	1.625
Replicate Prob(F)		0.5695	0.4888	0.1937
Treatment F		10.008	6.813	13.601
Treatment Prob(F)		0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

Table 6. Disease reaction of various rice varieties and experimental lines to sheath blight (SB), bacterial panicle blight (BPB), and leaf blast at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2017. (URN Group IV).

Description		SB	BPB	Leaf Blast
Rating Date		July 25	Aug. 23	Oct. 10
Rating Type		Severity	Severity	Severity
Rating Unit		0-9	0-9	0-9
Trt No.	Treatment Name			
61	RU1302045/CL111	6.8 abc	4.3 ab	4.0 abc
62	11AY022/CTHL	7.0 ab	4.3 ab	3.5 bcd
63	WAB 450-11-1-1-P31-HB (NERICA 5)/RSMT	7.0 ab	2.5 cde	4.8 a
64	JZMN/PI597046	5.3 c-f	4.3 ab	5.0 a
65	TRNS//CCDR/JEFF/4/9502008-A//AR 1188/CCDR/3/CCDR/JEFF	7.3 ab	4.5 ab	2.3 e
66	AC110DH2/AC108DH2//CHEN	4.8 ef	2.5 cde	3.5 bcd
67	CL142-AR//KBNT/Q36194/3/248WE16i-5/TGRT	5.8 b-e	4.0 abc	4.5 ab
68	RU1102034/MRMT	7.8 a	3.5 bcd	2.0 e
69	WAB 450-11-1-1-P31-HB (NERICA 5)/RSMT	5.3 c-f	1.8 e	4.0 abc
70	BRAZ/T489//MARS/3/M201/KATY/4/LMNT/RA73//KATY/5/TGRT	5.0 def	4.5 ab	2.5 de
71	CLH161 (HYBRID)	7.3 ab	2.3 de	2.5 de
72	043752/0047277/CHEN	6.5 a-d	3.3 b-e	2.5 de
73	CL131/PSCL	7.8 a	3.5 bcd	4.3 ab
74	Cheniere/Banks	4.8 ef	4.3 ab	4.3 ab
75	SABR/CCDR//PRESIDIO	6.5 a-d	3.0 b-e	2.5 de
76	IRGA409/RXMT/5/BRAZ/TBNT/3/164986-4/NV66//NTAI/4/ BNGL/6/WLLS	6.3 a-e	5.3 a	4.3 ab
77	Texmont/TeQing(BF7-46)/Trenasse	6.5 a-d	4.5 ab	5.0 a
78	043752/0047277/CHEN	5.3 c-f	3.0 b-e	3.0 cde
79	ROY J	4.0 f	4.0 abc	3.0 cde
80	TITAN	7.0 ab	4.3 ab	4.5 ab
LSD P=.05		1.43	1.33	1.04
Standard Deviation		1.01	0.94	0.73
CV		16.33	25.7	20.39
Replicate F		3.295	2.722	0.771
Replicate Prob(F)		0.0268	0.0527	0.5153
Treatment F		4.739	3.809	7.240
Treatment Prob(F)		0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

Table 7. Disease reaction of various rice varieties and experimental lines to sheath blight (SB), bacterial panicle blight (BPB), and leaf blast at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2017. (URN Group V).

Description		SB	BPB	Leaf Blast
Rating Date		July 25	Aug. 23	Oct. 10
Rating Type		Severity	Severity	Severity
Rating Unit		0-9	0-9	0-9
Trt No.	Treatment Name			
81	IRGA409/RXMT/5/NWBT/3/LBNT/9902//LBLE/4/MILL/6/LBNT/9902/…	4.5 d-g	5.0 d-g	3.5 cde
82	LA169 (HYBRID)	6.5 a-d	4.5 e-h	2.0 ef
83	BOWMAN/CL131	8.0 a	4.5 e-h	3.0 c-f
84	RU0801076/4/KATY/NWBT//L201/7402003/3/WLLS/4/L201/7402003//…	4.0 efg	3.0 hij	4.0 cd
85	09A/RA604 (HYBRID)	3.0 g	2.0 j	3.0 c-f
86	CL161/CPRS	6.5 a-d	2.5 ij	3.0 c-f
87	19991516/19951166/7/LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/…	4.5 d-g	5.0 d-g	3.5 cde
88	CL162/3/TRNS//CCDR/JEFF	8.0 a	4.5 e-h	4.5 bc
89	AC110DH2/AC108DH2//CYBT	5.5 b-f	2.5 ij	2.0 ef
90	WLLS/CL161//TGRT/3/DREW/CL161//CL142-AR	5.5 b-f	4.5 e-h	2.0 ef
91	CPRS/9502008-A/3/CFX 29//AR 1142/LA 2031/4/CCDR//CFX-29/CCDR	7.5 ab	5.5 c-f	4.0 cd
92	IR64/IR 1321-12	5.5 b-f	5.0 d-g	3.0 c-f
93	CL142-AR//KBNT/Q36194/7/248DREW16C-1-3/6/LGRU//KATY/….	6.0 a-e	5.5 c-f	3.5 cde
94	CCDR/JEFF/3/CFX-18//CPRS/KBNT/4/TRNS//CCDR/JEFF	8.0 a	6.5 a-d	2.0 ef
95	TH613	3.5 fg	3.5 g-j	2.0 ef
96	CL172/RU1102192	6.5 a-d	3.0 hij	1.5 f
97	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/TRNS	7.5 ab	8.0 a	2.5 def
98	CPRS/3/CPRS/NWBT/KATY	5.5 b-f	4.5 e-h	2.0 ef
99	RU0502068/RU1202088	7.0 abc	2.5 ij	1.5 f
100	BOWMAN/CYPRESS	4.5 d-g	4.0 f-i	3.5 cde
101	CF4-69/CCDR//Sierra	5.5 b-f	2.5 ij	4.0 cd
102	JASM85//DREW/UA99-167	5.5 b-f	3.5 g-j	4.0 cd
103	CCDR/JEFF//CFX-26/9702128/3/WELLS/CFX-18//DREW/CFX-18	7.5 ab	4.5 e-h	4.0 cd
104	TH633	4.0 efg	2.5 ij	2.0 ef
105	JZMN/PI560239//JES	3.5 fg	5.0 d-g	3.0 c-f
106	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A//AR1188/…	8.0 a	7.0 abc	2.5 def
107	LGRU/LCSN/CF4-85//Sierra	-	-	-
108	JZMN/RU0701124//JZMN2	6.0 a-e	5.5 c-f	2.0 ef
109	9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/CHENIERE	7.5 ab	4.5 e-h	3.0 c-f
110	Carolina Gold Select/Presidio	4.0 efg	2.5 ij	3.0 c-f
111	RU1002128/RU1202097	6.5 a-d	3.5 g-j	2.5 def
112	CL162/CATAHOULA	8.0 a	4.5 e-h	4.0 cd
113	9302065/CPRS	5.5 b-f	3.5 g-j	2.5 def
114	Bowman//RSMT/KATY	6.5 a-d	6.0 b-e	2.5 def
115	CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/CATAHOULA	8.0 a	7.0 abc	2.0 ef
116	L202/SABR//PACE	4.5 d-g	5.0 d-g	5.5 b
117	JAZZMAN 2	5.0 c-g	5.5 c-f	2.5 def
118	CL172	5.5 b-f	5.0 d-g	2.5 def

Continued.

Table 7. Continued.

Description	SB	BPB	Leaf Blast
Rating Date	July 25	Aug. 23	Oct. 10
Rating Type	Severity	Severity	Severity
Rating Unit	0-9	0-9	0-9
Trt No. Treatment Name			
119 M206	7.0 abc	7.5 ab	9.0 a
120 CL163	7.5 ab	2.0 j	5.5 B
LSD P=.05	1.90	1.51	1.28
Standard Deviation	0.94	0.75	0.63
CV	15.69	16.83	20.2
Replicate F	18.912	1.472	2.054
Replicate Prob(F)	0.0001	0.2325	0.1600
Treatment F	5.031	8.554	9.534
Treatment Prob(F)	0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

Table 8. Disease reaction of various rice varieties and experimental lines to sheath blight (SB), bacterial panicle blight (BPB), and leaf blast at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2017. (URN Group VI).

Description	SB	BPB	Leaf Blast
Rating Date	July 25	Aug. 23	Oct. 10
Rating Type	Severity	Severity	Severity
Rating Unit	0-9	0-9	0-9
Trt No. Treatment Name			
121 EARL/9902028//JPTR	5.5 def	4.0 b-f	4.0 a-d
122 CL151/JSMN85//CL161	6.5 b-e	3.5 c-f	4.0 a-d
123 CL161//Kaybonnet/Zhongyouzao3	7.5 abc	3.0 def	2.5 cde
124 JPTR/TITN	5.5 def	3.0 def	4.5 abc
125 LFTE/BNGL/5/EARL/4/BNGL/3/SMARS/MARS//MARS	5.5 def	3.5 c-f	3.5 a-e
126 Carolina Gold Select/Presidio	- -	- -	- -
127 JPTR/J062	4.5 f	2.0 f	4.5 abc
128 11AY023/MRMT	6.0 c-f	3.5 c-f	2.0 de
129 IR64/IR 1321-12	6.0 c-f	2.0 f	3.0 b-e
130 JPTR/TITN	7.0 a-d	6.0 ab	3.0 b-e
131 RU0401182/RU0902134	8.0 ab	4.0 b-f	2.0 de
132 CPRS/3/CPRS/NWBT/KATY	4.5 f	2.5 ef	3.0 b-e
133 RU1102034/RU1202155	7.0 a-d	3.0 def	2.0 de
134 RU1102137/CTHL	6.0 c-f	2.0 f	1.5 e
135 CL161//Kaybonnet/Zhongyouzao3	7.5 abc	3.5 c-f	1.5 e
136 EARL/9902028//RU1202068	4.5 f	4.5 a-e	3.0 b-e
137 MRMT/RU0602025	7.0 a-d	3.0 def	2.0 de
138 CL161/CPRS	7.5 abc	2.5 ef	3.0 b-e
139 STG05-IMI-02-055/CL142-AR/7/IRGA409/RXMT/5/NWBT/3/LBNT/ 9902//LBLE/4/MILL/6/	6.0 c-f	5.5 abc	3.5 a-e
140 CHNR/MRMT	6.5 b-e	2.5 ef	2.5 cde
141 CL161/CPRS	7.5 abc	3.5 c-f	2.5 cde
142 IRGA409/RXMT/5/NWBT/3/LBNT/9902//LBLE/4/MILL/6/LBNT/…	7.0 a-d	5.5 abc	4.5 abc
143 CAFFEY/3/BNGL/9502065//EARL	6.5 b-e	4.5 a-e	2.0 de
144 CL161/CPRS	6.5 b-e	3.5 c-f	1.5 e
145 LGRU//KATY/STBN/3/LGRU/7/248DREW16C-1-3/6/LGRU//KATY/ STBN/5/NWBT/KATY//RA73	6.5 b-e	3.5 c-f	3.0 b-e
146 CCDR/JEFF/3/CFX-18//CCDR/9770532 DH2/4/AR 1188/CCDR//…	8.0 ab	6.5 a	2.0 de
147 CPRS/NWBT//KATY/3/CCDR	7.5 abc	4.5 a-e	2.0 de
148 CYBT/TMPT/7/248DREW/CL161/6/LGRU//KATY/STBN/5/NWBT/…	7.5 abc	4.5 a-e	3.5 a-e
149 MERMENTAU/3/FRANCIS/CLR 13//9502008-A/DREW	7.0 a-d	4.5 a-e	2.5 cde
150 Sabine//CF4-69/CCDR	7.0 a-d	3.5 c-f	2.0 de
151 FRNS//WLLS/CL161/7/FRNS/6/LBNT/9902/3/DAWN/9695//STBN/4/…	5.0 ef	4.0 b-f	4.0 a-d
152 9502008-A//AR 1188/CCDR/3/CFX-26/9702128/4/9502008-A// AR1188/…	8.5 a	6.5 a	2.0 de
153 CCDR/LQ275a//CCDR	5.5 def	2.0 f	3.0 b-e
154 Rex/CL151	6.0 c-f	4.5 a-e	2.0 de
155 L201//TBNT/BLMT (PACE)/CL131	7.0 a-d	2.5 ef	4.0 a-d
156 CL151//COLUMBIA2/BENGAL	7.5 abc	5.0 a-d	2.0 De
157 Cheniere/Banks	6.0 c-f	2.0 f	5.5 a
158 DELLA-2	5.5 def	2.5 ef	5.0 ab

Continued.

Table 8. Continued.

Description	SB	BPB	Leaf Blast
Rating Date	July 25	Aug. 23	Oct. 10
Rating Type	Severity	Severity	Severity
Rating Unit	0-9	0-9	0-9
Trt No. Treatment Name			
159 CPRS/CCDR	8.0 ab	2.5 ef	2.5 cde
160 THAD	6.5 b-e	4.5 a-e	3.5 a-e
LSD P=.05	1.57	1.69	1.76
Standard Deviation	0.77	0.83	0.87
CV	11.85	22.69	29.74
Replicate F	10.344	0.018	1.696
Replicate Prob(F)	0.0027	0.8928	0.2006
Treatment F	3.526	4.473	2.839
Treatment Prob(F)	0.0001	0.0001	0.0009

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

Table 9. Disease reaction of various rice varieties and experimental lines to sheath blight (SB), bacterial panicle blight (BPB), and leaf blast at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2017. (URN Group VII).

Description	SB	BPB	Leaf Blast
Rating Date	July 25	Aug. 23	Oct. 10
Rating Type	Severity	Severity	Severity
Rating Unit	0-9	0-9	0-9
Trt No. Treatment Name			
161 TGRT/6/LGRU//LMNT/RA73/3/LGRU/4/WLLS/5/CYBT	5.0e	4.5a-d	5.0ab
162 BNGL//MERC/RICO/3/EARL/4/BNGL/CL161	7.0abc	3.5c-f	4.5abc
163 Hayakogane/BALDO	8.0a	2.5ef	2.0e
164 RU1202094/RU0902088	8.0a	4.5a-d	2.5de
165 CAFFEY/CL261	6.5bcd	3.5c-f	3.5b-e
166 CPRS/3/CPRS/NWBT/KATY	7.5ab	5.0abc	3.0cde
167 RU1202168/JPTR	6.5bcd	4.0b-e	3.5b-e
168 CL131/3/CPRS/KBNT//9502008-A/4/LGRU/CLR 11/4/9602065/3/CFX-29/…	8.0a	5.5ab	2.0e
169 Hayakogane/BALDO	7.5ab	4.0b-e	2.5de
170 RU1102192/4/9502008-A//AR1188/CCDR/3/CFX-29/CCDR	6.5bcd	4.0b-e	2.5de
171 LAKAST/5/9502008-A/DREW//CFX 26/WELLS/4/CPRS/3/CFX 29//…	7.0abc	4.5a-d	3.0cde
172 AC110DH2/AC108DH2//CHEN	5.5de	2.0f	4.0a-d
173 MRMT/RU1401044	7.1abc	4.5a-d	2.5de
174 JZMN/08CLR004//RU0802146/3/RU0802146	6.0cde	5.0abc	3.0cde
175 CPRS/CCDR	8.0a	3.5c-f	3.0cde
176 19991516/19951166/7/LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/WLLS/…	5.5de	6.0a	3.0cde
177 CCDR/JEFF/3/CFX-18//CCDR/9770532 DH2/4/CFX-18//CPRS/KBNT/3/…	8.0a	4.5a-d	2.0e
178 Hayakogane/BALDO	6.5bcd	4.0b-e	2.0e
179 LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/WLLS/6/RU9201179/7/…	6.0cde	4.0b-e	5.5a
180 BNGL/CL161//CAFFEY/3/NEPTUNE//BNGL/CL161	6.5bcd	3.5c-f	4.0a-d
181 AC110DH2/AC108DH2//CYBT	7.5ab	4.0b-e	2.5de
182 DREW/CL161/6/LGRU//LMNT/RA73/3/LGRU/4/WLLS/5/CYBT	5.5de	5.0abc	3.5b-e
183 TRNS//CCDR/JEFF/5/9502008-A/DREW//CLR 20/4/CPRS/KBNT//9502008-A	8.0a	5.5ab	2.0e
184 CPRS/9901081//PACE	6.5bcd	3.5c-f	2.5de
185 CHNR/CTHL	6.5bcd	4.0b-e	2.0e
186 Cheniere/Banks	6.5bcd	4.0b-e	2.0e
187 CPRS/3/CPRS/NWBT/KATY	7.0abc	4.0b-e	3.0cde
188 JZMN/RU0701124//JZMN2	7.0abc	4.0b-e	4.5abc
189 CPRS//82CAY21/TBNT/3/CFX 29//AR 1142/LA 2031/4/LGRU/LCSN/3/…	8.0a	5.5ab	3.5b-e
190 9302065/CPRS//CPRS	7.0abc	4.5a-d	2.0e
191 Cheniere/Banks	6.0cde	6.0a	3.5b-e
192 CPRS/KBNT//9502008-A/3/CFX-18//CCDR/977532 DH2/4/TRNS//CCDR/JEFF	8.0a	4.5a-d	3.0cde
193 Cheniere/Banks	6.0cde	4.5a-d	3.5b-e
194 Cheniere/Banks	6.0cde	4.0b-e	2.5de
195 CPRS/KBNT//9502008-A/3/CCDR/4/CL131	8.0a	4.5a-d	2.0e
196 BOWMAN/CL131	7.5ab	2.5ef	3.5b-e
197 BOWMAN/CL131	6.5bcd	5.0abc	4.0a-d
198 BOWMAN/CL131	8.0a	2.5ef	4.5abc

Continued.

Table. 9. Continued.

Description	SB	BPB	Leaf Blast
Rating Date	July 25	Aug. 23	Oct. 10
Rating Type	Severity	Severity	Severity
Rating Unit	0-9	0-9	0-9
Trt Treatment No. Name			
199 RHONDO	5.0e	3.5c-f	2.0e
200 CL151	8.0a	3.0def	2.5de
LSD P=.05	1.17	1.60	1.52
Standard Deviation	0.58	0.79	0.75
CV	8.42	19.0	24.72
Replicate F	3.831	0.180	2.683
Replicate Prob(F)	0.0577	0.6738	0.1095
Treatment F	5.113	2.722	3.065
Treatment Prob(F)	0.0001	0.0012	0.0003

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

2017 H. Rouse Caffey Rice Research Station Yield Loss Fungicide Trial

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 15

Fertilization: Preplant 0-62-62+7 Zn, Oct. 3; Preflood 115-0-0, April 24

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, March 23; Flooded, April 26; Drained, July 14

Herbicides: Tank-Mix propanil 3.5 qt/A, Londax 1 oz/A, Permit .75 oz/A, and Prowl 1 qt/A, April 7
Tank-Mix propanil 2 qt/A and RiceBeaux 2 qt/A, April 24

Insecticides: Dermacor X-100 seed treatment

Fungicides: Various

Inoculation Dates: *Rhizoctonia solani* culture grown on rice grain/hull mixture, May 31

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	Boot	9:00	84°F	7 mph	85%	70%	Slight

Disease Ratings: July 17

Drained: July 14

Harvest: Aug. 1

Results: See Table 10

Comments: Sheath blight severity was moderate. Yield losses were light.

Table 10. Effect of fungicide applications on sheath blight (SB) development and rice yield and milling at the H. Rouse Caffey Rice Research Station, Crowley, LA. 2017.

Description				SB	SB	Yield	Milling Head	Milling Total
Rating Date				July 17	July 17	Aug. 1	Aug. 9	Aug. 9
Rating Type				Severity	Infestation	Weight	Quality	Quality
Rating Unit				0-9	%	lb/A	%	%
Trt No.	Treatment Name	Rate	Rate Unit					
1	Untreated			7.8 a	82.8 a	7459 -	61.303 -	74.957 b
2	Tilt	6	oz/A	6.0 bc	51.0 bc	7586 -	62.340 -	75.310 ab
3	Tilt	9	oz/A	6.3 b	53.8 b	7616 -	62.250 -	75.607 a
4	Tilt	12	oz/A	6.3 b	55.0 b	7357 -	61.590 -	75.610 a
5	GEM	4.7	oz/A	4.8 d	30.0 d	7382 -	62.173 -	75.517 a
6	Stratego	19	oz/A	4.5 d	35.3 cd	7778 -	62.377 -	75.313 ab
7	Stratego Tilt	19 3	oz/A oz/A	4.8 d	30.3 d	7822 -	63.720 -	75.667 a
8	Quadris	12	oz/A	4.8 d	30.3 d	7857 -	64.587 -	75.620 a
9	Quilt Xcel	21	oz/A	4.5 d	28.5 d	7899 -	63.913 -	75.550 a
10	Quilt Xcel Tilt	21 3	oz/A oz/A	4.5 d	30.5 d	7571 -	62.903 -	75.540 a
11	Sercadis	6.8	oz/A	4.8 d	36.5 cd	7810 -	63.360 -	75.603 a
12	Sercadis Tilt	6.8 3	oz/A oz/A	5.0 cd	30.0 d	7472 -	63.203 -	75.257 ab
13	Elegia	32	oz/A	5.0 cd	36.3 cd	7459 -	61.453 -	75.280 ab
14	Elegia Tilt	32 9	oz/A oz/A	4.5 d	32.0 d	7647 -	63.033 -	75.493 a
15	Amistar Top	14	oz/A	4.5 d	32.3 d	8058 -	62.983 -	75.647 a
16	Amistar Top Tilt	14 9	oz/A oz/A	4.0 d	25.5 d	7803 -	64.057 -	75.603 a
LSD P=.05				1.03	15.31	479.9	3.1202	0.3802
Standard Deviation				0.73	10.75	337.0	1.8712	0.2280
CV				14.2	27.75	4.4	2.98	0.3
Replicate F				9.206	11.263	22.566	10.840	26.964
Replicate Prob(F)				0.0001	0.0001	0.0001	0.0003	0.0001
Treatment F				7.086	7.692	1.499	0.801	2.213
Treatment Prob(F)				0.0001	0.0001	0.1466	0.6678	0.0312

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

2017 Jefferson Davis Yield Loss Trial

Location: Jimmy Hoppe Farm, Fenton, LA, Jefferson Davis Parish

Soil Type: Crowley silt loam

Variety/Seed Rate: CL111, 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill seeded / March 15

Fertilization: Preplant 20-59-59, March 18; Preflood 106-0-0, April 26

Experimental Design: Randomized complete block design with four replications

Water Management: Flooded, April 28; Drained, July 17

Herbicides: Tank-Mix propanil 4 qt/A, Londax 1 oz/A, Permit 1 oz/A, April 6
Tank-Mix propanil 4 qt/A, Londax 1 oz/A, Permit 1 oz/A, June 4

Insecticides: Dermacor X-100 seed treatment

Fungicides: Various

Inoculation Dates: All natural inoculums

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	Boot	10:00	86°F	6 mph	86%	50%	Slight

Disease Ratings: July 20

Drained: July 18

Harvest: July 29

Results: See Table 11

Comments: Sheath blight severity was light. Yield losses were very light.

Table 11. Effect of fungicide applications on sheath blight (SB) development and rice yield and milling, Jimmy Hoppie Farm, Fenton, LA, Jefferson Davis Parish. 2017.

Description	SB	SB	First Crop Yield	Milling Heading	Milling Total	Second Crop Yield
Rating Date	July 18	July 18	July 25	Aug. 10	Aug. 10	Oct. 31
Rating Type	Infestation	Severity	Weight	Quality	Quality	Weight
Rating Unit	%	0-9	lb/A	%	%	lb/A
Trt No. / Treatment Name / Rate / Rate Unit						
1 Untreated	38 -	5.8 -	9222 -	62.353 -	75.467 -	2278.3 -
2 Tilt 6 oz/A	28 -	5.3 -	9436 -	63.447 -	75.810 -	2330.6 -
3 Tilt 9 oz/A	28 -	5.0 -	9434 -	62.717 -	75.510 -	2353.4 -
4 Tilt 12 oz/A	23 -	4.3 -	9223 -	63.420 -	75.977 -	2349.1 -
5 GEM 4.7 oz/A	26 -	4.8 -	9497 -	63.963 -	75.840 -	2380.1 -
6 Stratego 19 oz/A	18 -	3.5 -	9650 -	63.363 -	75.523 -	2415.5 -
7 Stratego 19 oz/A Tilt 3 oz/A	24 -	4.0 -	9904 -	62.750 -	75.843 -	2439.7 -
8 Quadris 12 oz/A	26 -	4.3 -	9425 -	62.967 -	75.113 -	2337.1 -
9 Quilt Xcel 21 oz/A	31 -	5.3 -	9493 -	63.043 -	75.593 -	2291.2 -
10 Quilt Xcel 21 oz/A Tilt 3 oz/A	21 -	3.8 -	9417 -	63.453 -	75.420 -	2615.9 -
11 Sercadis 6.8 oz/A	29 -	5.0 -	9188 -	62.567 -	75.223 -	2629.3 -
12 Sercadis 6.8 oz/A Tilt 3 oz/A	27 -	5.0 -	9601 -	62.700 -	75.427 -	2492.1 -
13 Elegia 32 oz/A	27 -	5.0 -	9523 -	63.027 -	75.287 -	2385.1 -
14 Elegia 40 oz/A Tilt 9 oz/A	28 -	4.5 -	9730 -	63.563 -	75.813 -	2556.5 -
15 Amistar Top 14 oz/A	23 -	4.8 -	9220 -	61.413 -	75.063 -	2410.5 -
16 Amistar Top 14 oz/A Tilt 9 oz/A	17 -	3.8 -	9633 -	63.307 -	75.343 -	2470.0 -
LSD P=.05	11.6	1.44	726.9	3.1846	1.0210	267.96
Standard Deviation	8.2	1.01	510.4	1.9098	0.6123	188.15
CV	31.84	21.89	5.39	3.03	0.81	7.77
Replicate F	0.678	0.302	12.721	1.397	0.368	9.823
Replicate Prob(F)	0.5702	0.8240	0.0001	0.2629	0.6955	0.0001
Treatment F	1.546	1.603	0.622	0.297	0.619	1.302
Treatment Prob(F)	0.1296	0.1113	0.8409	0.9921	0.8363	0.2409

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

2017 Cercospora Trial

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: CL151, 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill seeded / May 10

Fertilization: Preplant 0-54-54+6 Zn, Oct. 6; Preflood 160-0-0, June 10; Topdress, 46-0-0, June 24

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, May 27; Flooded, June 10; Drained, Aug. 24

Herbicides: Tank-Mix propanil 3 qt/A and Prowl H2O 2.4 pt/A, May 25
Tank-Mix propanil 2 qt/A and RiceBeaux 2 qt/A, May 31
Tank-Mix propanil 2 qt/A and RiceBeaux 2.25 qt/A, June 9

Insecticides: Dermacor X-100 seed treatment

Fungicides: Various

Inoculation Dates: NA natural inoculum

Application Equipment: CO_2 backpack sprayer, 3 tip (TJ8002) hand wand, 20 gal/A

Application Dates:	Growth Stage	Time	Temp	Wind	RH	Clouds	Dew
July 25	Heading	09:00	88°F	3 mph	82%	80%	Mod.

Disease Ratings: Sept. 13

Drained: Aug. 19

Harvest: Sept. 8

Results: See Table 12

Comments: Cercospora severity was moderate. The trial was not harvested.

Table 12. Effect of fungicide application on narrow brown leaf spot (NBLS) development. H. Rouse Caffey Rice Research Station, Crowley, LA. 2017.

Description				NBLS
Rating Date				Sept. 13
Rating Type				Severity
Rating Unit				0-9
Trt No.	Treatment Name	Rate	Rate Unit	
1	Untreated			4.8 a
2	Tilt	6	oz/A	3.3 cd
3	Tilt	9	oz/A	3.0 de
4	Tilt	12	oz/A	2.5 ef
5	GEM	4.7	oz/A	3.8 bc
6	Stratego	19	oz/A	3.3 cd
7	Stratego	19	oz/A	3.0 de
	Tilt	3	oz/A	
8	Quadris	12	oz/A	4.3 ab
9	Quilt Xcel	21	oz/A	3.0 de
10	Quilt Xcel	21	oz/A	2.8 de
	Tilt	3	oz/A	
11	Sercadis	6.8	oz/A	3.0 de
12	Sercadis	6.8	oz/A	2.0 f
	Tilt	3	oz/A	
13	Elegia	32	oz/A	3.8 bc
14	Elegia	40	oz/A	3.3 cd
	Tilt	9	oz/A	
15	Amistar Top	14	oz/A	2.0 f
16	Amistar Top	14	oz/A	1.3 g
	Tilt	9	oz/A	
LSD P=.05				0.60
Standard Deviation				0.42
CV				13.8
Replicate F				3.389
Replicate Prob(F)				0.0260
Treatment F				17.016
Treatment Prob(F)				0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

2017 H. Rouse Caffey Rice Research Station Second Crop (Ratoon) Fungicide Trial #1

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 23

Fertilization: Preplant 0-60-60+7 Zn, Sept. 24; Preflood 150-0-0, May 7; Topdress 46-0-0, May 31
Ratoon Crop Topdress 70-0-0, Aug. 9

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, April 6; Flooded, May 9; Drained, July 19
Ratoon Crop Flooded, Aug. 10; Drained, Oct. 17

Herbicides: Prowl 1 qt/A, April 5
Tank-Mix propanil 3.5 qt/A, Prowl 1qt/A, and Permit 1oz/A, May 6

Insecticides: Dermacor X-100 seed treatment

Fungicides: Various

Inoculation Dates: *Rhizoctonia solani* culture grown on rice grain/hull mixture, May 31

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 15	Boot	09:00	86°F	7 mph	85%	70%	Moderate

Disease Ratings: July 17 and Oct. 6

Drained: July 19

Drained Ratoon Crop: Oct. 17

Harvest: Aug. 5 and 8

Harvest Ratoon Crop: Oct. 27

Results: See Table 13

Comments: Sheath blight severity in the first crop was moderate. Cercospora (NBLS) severity was moderate in the second crop.

Table 13. Effect of fungicide application on sheath blight (SB) and narrow brown leaf spot (NBLS) development and rice first and second crop yields. H. Rouse Caffey Rice Research Station, Crowley, LA. 2017.

Description			SB	SB	First Crop Yield	NBLS	Second Crop Yield	Second Crop Yield Difference
Rating Date			July 17	July 17	Aug. 1	Oct. 6	Oct. 27	Oct. 27
Rating Type			Severity	Infestation	Weight	Severity	Weight	Weight
Rating Unit			0-9	%	lb/A	0-9	lb/A	lb/A
Trt No.	Treatment Name	Rate Rate Unit						
1	Untreated		7.5 a	87 a	8295 -	2.8 -	2345 d	0 d
2	Tilt	6 oz/A	6.5 a	57 b	8254 -	3.0 -	2668 c	323 c
3	Tilt	9 oz/A	6.5 a	57 b	8263 -	2.5 -	2753 c	408 c
4	Tilt	12 oz/A	4.8 b	37 c	8530 -	3.0 -	2908 abc	563 abc
5	GEM	4.7 oz/A	4.0 b	28 c	8700 -	3.0 -	2864 abc	519 abc
6	Stratego	19 oz/A	4.8 b	28 c	8620 -	4.3 -	3101 ab	756 ab
7	Stratego Tilt	19 oz/A 3 oz/A	4.3 b	28 c	8741 -	3.8 -	2934 abc	589 abc
8	Quadris	12 oz/A	4.0 b	28 c	8554 -	4.0 -	3057 ab	712 ab
9	Quilt Xcel	21 oz/A	4.5 b	29 c	8461 -	3.8 -	2832 bc	487 bc
10	Quilt Xcel Tilt	21 oz/A 3 oz/A	4.3 b	25 c	8831 -	4.0 -	2893 abc	548 abc
11	Sercadis	6.8 oz/A	5.0 b	36 c	8817 -	3.0 -	2756 c	411 c
12	Sercadis Tilt	6.8 oz/A 6 oz/A	4.5 b	31 c	8823 -	2.8 -	2917 abc	572 abc
13	Elegia	32 oz/A	5.0 b	35 c	8436 -	3.5 -	2812 bc	467 bc
14	Elegia Tilt	40 oz/A 9 oz/A	4.5 b	32 c	8717 -	3.5 -	2872 abc	527 abc
15	Quadris Top SB	14 oz/A	4.5 b	34 c	8793 -	3.3 -	3132 a	787 a
16	Quadris Top SBX	7.7 oz/A	4.0 b	28 c	8996 -	3.5 -	3053 ab	708 ab
LSD P=.05			0.99	15.3	654.9	1.14	248.3	248.3
Standard Deviation			0.69	10.7	459.9	0.80	174.3	174.3
CV			14.15	28.8	5.34	23.98	6.08	33.3
Replicate F			2.983	3.634	10.879	3.920	3.103	3.103
Replicate Prob(F)			0.0411	0.0197	0.0001	0.0144	0.0359	0.0359
Treatment F			8.775	9.227	0.963	1.652	4.794	4.794
Treatment Prob(F)			0.0001	0.0001	0.5071	0.0974	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

2017 H. Rouse Caffey Rice Research Station Second Crop (Ratoon) Fungicide Trial #2

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 23

Fertilization: Preplant 0-60-60+7 Zn, Sept. 24; Preflood 150-0-0, May 7; Topdress 46-0-0, May 31
Ratoon Crop Topdress 70-0-0, Aug. 9

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, April 6; Flooded, May 9; Drained, July 19
Ratoon Crop Flooded, Aug. 10; Drained Ratoon Crop, Oct. 17

Herbicides: Prowl 1 qt/A, April 5
Tank-Mix propanil 3.5 qt/A, Prowl 1qt/A, and Permit 1oz/A, May 6

Insecticides: Dermacor X-100 seed treatment

Fungicides: Various

Inoculation Dates: *Rhizoctonia solani* culture grown on rice grain/hull mixture, May 31

Application Equipment: CO_2 backpack sprayer, 3 tip (TJ8002) hand wand, 20 gal/A

Application Dates:	Growth Stage	Time	Temp	Wind	RH	Clouds	Dew
Aug. 24	5 weeks Post-harvest	08:00	87°F	2 mph	84%	60%	Moderate

Disease Ratings: July 17 and Oct. 6

Drained: July 19

Drained Ratoon Crop: Oct. 17

Harvest: Aug. 5 and 8

Harvest Ratoon Crop: Oct. 29

Results: See Table 14

Comments: Cercospora (NBLS) was moderate in the second crop.

Table 14. Effect of fungicide application on narrow brown leaf spot (NBLS) development and rice first and second crop yields. H. Rouse Caffey Rice Research Station, Crowley, LA. 2017.

Description				First Crop Yield	NBLS	Second Crop Yield	Second Crop Yield Difference
Rating Date				Aug. 1	Oct. 6	Oct. 27	Oct. 27
Rating Type				Weight	Severity	Weight	Weight
Rating Unit				lb/A	0-9	lb/A	lb/A
Trt No.	Treatment Name	Rate	Rate Unit				
1	Untreated			8694.9 -	3.5 a	2349 -	0 -
2	Tilt	6	oz/A	8332.9 -	2.3 abc	2391 -	42 -
3	Tilt	9	oz/A	8719.1 -	1.5 c	2437 -	88 -
4	Tilt	12	oz/A	8449.2 -	2.3 abc	2576 -	227 -
5	GEM	4.7	oz/A	8269.8 -	3.5 a	2318 -	-31 -
6	Stratego	19	oz/A	8359.4 -	2.3 abc	2431 -	82 -
7	Stratego Tilt	19 3	oz/A oz/A	8394.8 -	1.8 bc	2604 -	255 -
8	Quadris	12	oz/A	8226.0 -	3.3 a	2469 -	120 -
9	Quilt Xcel	21	oz/A	8589.4 -	1.5 c	2517 -	168 -
10	Quilt Xcel Tilt	21 3	oz/A oz/A	8529.5 -	2.8 abc	2506 -	157 -
11	Sercadis	6.8	oz/A	8471.2 -	3.0 ab	2511 -	162 -
12	Sercadis Tilt	6.8 6	oz/A oz/A	8433.3 -	2.5 abc	2283 -	-66 -
13	Elegia	32	oz/A	8089.5 -	3.0 ab	2307 -	-42 -
14	Elegia Tilt	40 9	oz/A oz/A	7986.8 -	2.5 abc	2394 -	45 -
15	Amistar Top	14	oz/A	8105.6 -	1.8 bc	2497 -	148 -
16	Amistar Top	7.7	oz/A	8244.6 -	1.8 bc	2406 -	57 -
LSD P=.05				588.89	1.18	217.4	217.4
Standard Deviation				413.49	0.83	152.6	152.6
CV				4.94	34.12	6.26	172.78
Replicate F				3.261	0.422	1.320	1.320
Replicate Prob(F)				0.0300	0.7383	0.2795	0.2795
Treatment F				1.038	2.675	1.560	1.560

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

2017 H. Rouse Caffey Rice Research Station Second Crop (Ratoon) Fungicide Trial #3

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 23

Fertilization: Preplant 0-60-60+7 Zn, Sept. 24; Preflood 150-0-0, May 7; Topdress 46-0-0, May 31
Ratoon Crop Topdress 70-0-0, Aug. 9

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, April 6; Flooded, May 9; Drained, July 19
Ratoon Crop Flooded, Aug. 10; Drained, Oct. 17

Herbicides: Prowl 1 qt/A, April 5
Tank-Mix propanil 3.5 qt/A, Prowl 1qt/A, and Permit 1oz/A, May 6

Insecticides: Dermacor X-100 seed treatment

Fungicides: Tilt

Inoculation Dates: *Rhizoctonia solani* culture grown on rice grain/hull mixture, May 31

Application Equipment: CO_2 backpack sprayer, 3 tip (TJ8002) hand wand, 20 gal/A

Application Dates:

	Growth Stage Post-Harvest	Time	Temp	Wind	RH	Clouds	Dew
Aug. 17	9 Days	09:30	81°F	4 mph	93%	90%	Moderate
Aug. 22	14 Days	08:30	81°F	4 mph	92%	85%	Heavy
Aug. 30	22 Days	08:30	78°F	4 mph	93%	20%	Moderate
Sept. 6	29 Days	08:30	78°F	5 mph	94%	95%	Moderate
Sept. 12	35 Days	08:30	75°F	3 mph	96%	Fog	Heavy
Sept. 19	42 Days	09:00	82°F	4 mph	92%	5 %	Moderate
Sept. 26	49 Days	08:30	80°F	3 mph	93 %	5 %	Moderate
Oct. 3	56 Days	08:30	69°F	4 mph	84 %	0 %	Moderate

Disease Ratings: Oct. 6

Drained: July 19

Drained Ratoon Crop: Oct. 17

Harvest: Aug. 1

Harvest Ratoon Crop: Oct. 27

Results: See Table 15

Comments: Cercospora severity was moderate in severity.

Table 15. Effect of fungicide application timing on narrow brown leaf spot (NBLS) development and rice first and second crop yields. H. Rouse Caffey Rice Research Station, Crowley, LA. 2017.

Description									First Crop Yield	NBLS	Second Crop Yield	Second Crop Yield Difference
Rating Date									Aug. 1	Oct. 6	Oct. 27	Oct. 27
Rating Type									Weight	Severity	Weight	Weight
Rating Unit									lb/A	0-9	lb/A	lb/A
Trt No.	Type	Treatment Name	Form Conc.	Form Unit	Form Type	Rate	Rate Unit	Growth Stage				
1	CHK								9035 -	3.3 abc	2571 -	0 -
2	FUNG	Tilt	3.6	LBA/GAL	EC	9	fl oz/A	1 Week post H	8622 -	3.5 ab	2498 -	-73 -
3	FUNG	Tilt	3.6	LBA/GAL	EC	9	fl oz/A	2 Weeks post H	8745 -	2.8 a-d	2691 -	120 -
4	FUNG	Tilt	3.6	LBA/GAL	EC	9	fl oz/A	3 Weeks post H	8528 -	2.8 a-d	2778 -	207 -
5	FUNG	Tilt	3.6	LBA/GAL	EC	9	fl oz/A	4 Weeks post H	8535 -	2.3 cd	2730 -	159 -
6	FUNG	Tilt	3.6	LBA/GAL	EC	9	fl oz/A	5 Weeks post H	8842 -	2.0 d	2797 -	226 -
7	FUNG	Tilt	3.6	LBA/GAL	EC	9	fl oz/A	6 Weeks post H	8799 -	2.0 d	2720 -	149 -
8	FUNG	Tilt	3.6	LBA/GAL	EC	9	fl oz/A	7 Weeks post H	8470 -	3.3 abc	2791 -	220 -
9	FUNG	Tilt	3.6	LBA/GAL	EC	9	fl oz/A	8 Weeks post H	8282 -	3.3 abc	2582 -	11 -
10	FUNG	Tilt	3.6	LBA/GAL	EC	9	fl oz/A	9 Weeks post H	8554 -	3.8 a	2621 -	50 -
11	FUNG	Tilt	3.6	LBA/GAL	EC	9	fl oz/A	10 Weeks post H	8274 -	3.8 a	2681 -	110 -
12	FUNG	Tilt	3.6	LBA/GAL	EC	12	fl oz/A	3 Weeks post H	8377 -	3.5 ab	2746 -	175 -
13	FUNG	Tilt	3.6	LBA/GAL	EC	12	fl oz/A	4 Weeks post H	8159 -	2.0 d	2724 -	153 -
14	FUNG	Tilt	3.6	LBA/GAL	EC	12	fl oz/A	5 Weeks post H	8301 -	2.3 cd	2528 -	-43 -
15	FUNG	Tilt	3.6	LBA/GAL	EC	12	fl oz/A	6 Weeks post H	8659 -	1.8 d	2787 -	216 -
16	FUNG	Tilt	3.6	LBA/GAL	EC	12	fl oz/A	7 Weeks post H	8618 -	2.5 bcd	2735 -	164 -
LSD P=.05									596.5	1.04	267.7	267.7
Standard Deviation									418.8	0.73	187.9	187.9
CV									4.9	26.22	7.0	163.17
Replicate F									12.358	4.112	6.103	6.103
Replicate Prob(F)									0.0001	0.0116	0.0014	0.0014
Treatment F									1.280	3.564	1.069	1.069
Treatment Prob(F)									0.2541	0.0005	0.4100	0.4100

Means followed by same letter or symbol do not significantly differ (P=.05, Duncan's New MRT).

GENETIC MAPPING, BREEDING, AND DEVELOPMENT OF NEW STRATEGIES TO IMPROVE RICE DISEASE MANAGEMENT FOR SHEATH BLIGHT AND BACTERIAL PANICLE BLIGHT

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Introduction

This project aims to reduce the damages in rice production from sheath blight and bacterial panicle blight through multiple approaches including genetic studies, breeding efforts, and application of chemical and biological materials. Sheath blight is caused by the fungal pathogen *Rhizoctonia solani* and can be managed by fungicide application. However, this disease management option is limited by the high cost and the occurrence of fungicide-resistant pathogen isolates resulting from the repeated and heavy usages of fungicides. Bacterial panicle blight, caused by the bacterial pathogens *Burkholderia glumae* (major pathogen) and *Burkholderia gladioli* (minor pathogen), cannot be managed by fungicide applications, and few disease management options are available for this disease. Four major areas of research were conducted in 2017 to mitigate these chronic rice disease problems: 1) genetic and genomic studies of rice disease resistance, 2) development of new disease-resistant lines, 3) development of new foliar application materials, and 4) development of new seed treatment materials.

Progress

Genetic and genomic studies of rice disease resistance. Four mapping populations have been generated from the cross combinations between the disease-resistant rice (Jupiter and LM-1) and the disease-susceptible rice (Trenasse and Bengal) for the cross pairs of Trenasse/Jupiter, Bengal/Jupiter, Trenasse/LM-1, and Bengal/LM-1. Currently, each mapping population contains ~300 F_{10} recombinant inbred lines (RILs). Another set of mapping populations composed of ~300 $F_{8:10}$ bulk RILs is also stored as backup material. Among these mapping populations, the RIL population from the Trenasse/Jupiter pair has been examined the most for studying genetic traits of disease resistance. Individual RILs of this mapping population have been tested for their phenotypes in disease resistance to sheath blight and bacterial panicle blight and in other agronomic traits, including days to heading, plant height, and grain shape through multiple years of field tests. In 2017, the phenotype of bacterial panicle blight was evaluated with two sets of the $F_{8:9}$ Trenasse/Jupiter RIL population in test plots at the H. Rouse Caffey Rice Research Station (HRCRRS) (Table 1). For genetic linkage mapping of the disease resistance traits, about 1,000 molecular markers including 750 simple sequence repeat (SSR) and 250 single nucleotide polymorphism (SNP) markers were designed based on the genome sequence information of Trenasse and Jupiter. Genotyping has been completed with 75 SSR markers for the 300 RILs of the Trenasse/Jupiter population and with 80 SNP markers for 192 RILs of the same mapping population in collaboration with Dr. Adam Famoso from the HRCRRS, using the high-throughput genotyping system (PHERAstar plus SNP, BMG LABTECH, Offenburg, Germany) in his laboratory. Based on the phenotyping and genotyping data collected from the Trenasse/Jupiter RIL population, genetic linkage mapping of the quantitative trait loci (QTLs) for disease resistance to bacterial panicle blight and sheath blight was conducted in 2017. In this genetic analysis, two molecular markers located at the upper end of Chromosome 3 were closely associated with disease resistance to both bacterial panicle blight and sheath blight (Figure 1). It is noteworthy that this genetic location also closely correlates with the phenotype of heading time. It remains to be determined whether the early heading trait makes the physiological condition of rice to be more susceptible to the diseases or the QTLs associated with disease resistance and heading time are independently located at a similar position. For precise genetic analysis, draft genome sequence data have been obtained using an Illumina high-throughput DNA sequencing platform from the five rice lines (Trenasse, Bengal, Jupiter, LM-1, and Lemont) and the 15 selected RILs of the Trenasse/Jupiter mapping population, which represent disease-resistant and -susceptible lines for bacterial panicle blight and sheath blight. The DNA sequence data of these rice lines have been analyzed using various bioinformatics to identify sequence variations associated specifically with the disease resistance traits.

Development of new disease-resistant lines. In 2017, screening of disease-resistant germplasm lines from various sources continued in both greenhouse and field conditions. Similar to previous years, primary tests were conducted in the greenhouse for screening sheath blight-resistant lines, and secondary tests were carried out in the field with the primarily screened lines for the resistance to bacterial panicle blight. About 30 germplasm lines have shown promising disease resistance to both diseases in the field tests of multiple years, and five additional sheath blight-resistant lines were newly identified this year in the initial greenhouse tests. Several lines, such as LB-33 and INIAP12, exhibiting superior phenotypes in disease resistance were used as new breeding materials to improve disease resistance of commercial varieties. Chemical mutagenesis and anther-culture techniques were also employed to generate new germplasm lines. As a result, twelve and five lines have been screened based on higher tolerance to the rice diseases through chemical mutagenesis of the commercial variety 'Mermentau' and anther-culture procedures, respectively. These lines were tested again in the field this year for their resistant phenotypes to bacterial panicle blight. However, meaningful data was not obtained due to the low disease pressure during this growing season (Table 2). In addition, 38 sheath blight-resistant lines developed by Dr. James Oard's group were tested for the second time for their disease resistance trait against bacterial panicle blight but, as mentioned above, overall disease scores were too low to determine their disease resistance traits to bacterial panicle blight (Table 2). Similarly, eighteen lines previously screened as sheath-blight lines in a greenhouse condition could not be evaluated well for their phenotypes in bacterial panicle blight due to the low disease pressure in 2017 (Table 2).

Development of new foliar application materials. More than 100 strains of antagonistic bacteria have been identified from various parts of rice plants in the field, including roots, leaves, and panicles, as well as soils of rhizosphere. These bacterial strains have been tested for their biological control activities against sheath blight and bacterial panicle blight, and some of them have shown promising biocontrol activities in field trials. In addition, several chemical materials (e.g. ascorbic acid, chitosan, and ZnO) have been found as potential alternative measures for management of bacterial panicle blight and sheath blight. These materials have also been tested in combination with the commercial copper agent, Kocide 3000, to observe any possible synergistic effects. Significant disease suppression has been observed with some treatments, but more years of tests are necessary to confirm the disease suppression activities. In 2017, three bacterial agents selected based on multiple tests in previous years (RRB985, REB711, and RAB14R) were tested for their sheath blight suppression activities, in which RRB985 and REB711 exhibited significant disease suppression activities comparable to that of the fungicide Quadris (Figure 2). In this field trial, each biological agent was prepared in two different ways: 1) bacterial cells grown on LB agar were resuspended in the buffer solution (10 mM $MgCl_2$) and 2) bacterial cells grown in LB broth were sprayed directly. There was no significant difference in disease suppression activity between the two different types of bacterial suspension at the same concentration of bacterial cells (~ 10^8 CFU/ml) (Figure 2). Interestingly, AgSil (a liquid product of silica) also exhibited a significant level of sheath blight suppression activity when it was sprayed at the concentration of 100 ppm (Figure 2). However, this result should be verified through repeated field trials. In addition, another set of three bacterial agents (RPB NT5, RRB1044, and RRB1047) was tested for suppression of bacterial panicle blight along with Kocide 3000, ascorbic acid, and mixtures of Kocide 3000 and ascorbic acid (Figures 3 and 4). However, disease pressure of bacterial panicle blight was too low to determine significant activities, except that the mixture of Kocide 3000 (1 lb/A) and ascorbic acid (100 µM) exhibited a significant disease suppression activity (Figure 4).

Development of new seed treatment materials. Various chemical materials, including different types of nanoparticles, chitosan, and biological agents, including 36 antagonistic bacterial strains isolated from rice panicles and roots, have been tested for their rice growth promotion activities. For this, bactericidal/antibacterial activities of these chemical and biological materials have been evaluated in the laboratory. In addition, high-throughput systems to evaluate the effect of these materials on seedling vigor through seed treatment have been newly developed for both laboratory and greenhouse scale experiments. Seed-treated materials that showed positive results in laboratory and greenhouse conditions were also tested in the field condition during the 2017 season. Each seed-treated material was tested for the antimicrobial activity against *B. glumae* in the growth medium, water, rice seeds, and rice seedlings. Growth inhibition and killing of *B. glumae* cells by each seed-treated material were evaluated by measuring the number of bacterial cells that survived the treatment of each material. Silver and zinc nanoparticles have shown excellent growth inhibition and pathogen-killing activities in the growth medium and water, and on rice seeds and seedlings. Chitosan also showed high levels of pathogen growth inhibition and killing activities, but the solvent for the chitosan solution (1% acetic acid) exhibited the same activities, which interfered with the accurate determination of the pathogen growth inhibition/killing activities of chitosan. In 2017, silver and zinc nanoparticles and chitosan were applied to rice seeds to test their pathogen growth inhibition/killing activities in rice seed and seedling conditions. For this test, rice seeds (cv. Bengal) previously infiltrated with a bacterial pathogen (~ 10^9 CFU/ml of *B. glumae*) were coated with each of these materials using a commercial seed-coating product (UniCoat, Universal Coating Systems, Independence, OR). The rice seeds treated with different antimicrobial materials were primarily planted in 50-well trays in the laboratory under fluorescent light with four replications and grown until the seedling stage then moved to the greenhouse and transplanted to individual pots. All three of the materials tested made substantial reductions of pathogen populations in both rice seeds right after treatment and in two-week-old rice seedlings (Figure 5). Moreover, rice seedlings grown from the seeds treated with the zinc nanoparticles were more vigorous than those from other treatments (Figure 6). These results suggest that the seed-treatment materials tested in this project can be used for promoting the growth and health of rice seedlings.

Growth promotion of rice seedlings by bacteria. REB1, a rice-associated bacteria showing antagonistic activities against *B. glumae*, promoted the growth of rice seedlings in a laboratory experiment (Figure 7). As an extended follow-up experiment, a total of 36 bacterial strains isolated from various parts of rice plants (roots, leaves, and panicles) were tested for their rice growth promotion activity using 50-well trays for high-throughput testing. However, none of the bacterial strains tested showed a significant growth promotion activity. More bacterial strains will be tested in both normal and stress conditions in 2018. In addition, we observed occasionally that rice seeds infiltrated with the pathogen suspension (~ 10^9 CFU/ml of *B. glumae* cells) grew better than non-treated seeds (Figure 8). This serendipitous finding suggests a new aspect of rice-pathogen interactions in that treatment of a high concentration of *B. glumae* can stimulate early growth and development. Comprehensive experiments will be performed to verify this phenomenon in both laboratory and greenhouse conditions. The pathogen population in the rice seedlings grown from the seeds infiltrated with *B. glumae* cells continued to increase until the last week (the 10^{th} week) of data collection (Figure 9). This result was not consistent with the result of 2016, in which the pathogen population was diminished to zero by the same time period, suggesting that the survival and growth of the *B. glumae* population in rice plants is substantially variable depending on unknown factors.

Table 1. Phenotypes of the TJF$_{8:9}$ RIL population in bacterial panicle blight (BPB[1]).

RIL ID	1st	2nd	RIL ID	1st	2nd	RIL ID	1st	2nd	RIL ID	1st	2nd	RIL ID	1st	2nd
Trenasse	3	4.5	TJF8:9-060	0.5	2.5	TJF8:9-121	1.5	3	TJF8:9-182	1.5	1.5	TJF8:9-243	5.5	3.5
Jupiter	0.5	1	TJF8:9-061	0	0.5	TJF8:9-122	1	2	TJF8:9-183	2	2	TJF8:9-244	5	1.5
TJF8:9-001	2.5	1	TJF8:9-062	3.5	1.5	TJF8:9-123	1.5	2.5	TJF8:9-184	1.5	2.5	TJF8:9-245	2	1.5
TJF8:9-002	4.5	2	TJF8:9-063	2	2	TJF8:9-124	0	3	TJF8:9-185	2.5	2	TJF8:9-246	1	1.5
TJF8:9-003	1	1.5	TJF8:9-064	1.5	1	TJF8:9-125	1	2	TJF8:9-186	2	2	TJF8:9-247	1	1.5
TJF8:9-004	4.5	2	TJF8:9-065	3.5	1	TJF8:9-126	1.5	2	TJF8:9-187	2.5	1.5	TJF8:9-248	1.5	2
TJF8:9-005	1.5	1.5	TJF8:9-066	2	5.5	TJF8:9-127	1	2.5	TJF8:9-188	3	1	TJF8:9-249	2	2.5
TJF8:9-006	1.5	1.5	TJF8:9-067	1	1	TJF8:9-128	1	3.5	TJF8:9-189	2.5	4.5	TJF8:9-250	2	1.5
TJF8:9-007	0.5	1	TJF8:9-068	1	1	TJF8:9-129	1.5	2	TJF8:9-190	1.5	4.5	TJF8:9-251	5.5	1
TJF8:9-008	0	1	TJF8:9-069	2.5	1.5	TJF8:9-130	0.5	1	TJF8:9-191	1	1.5	TJF8:9-252	4.5	1
TJF8:9-009	0	1	TJF8:9-070	4.5	5.5	TJF8:9-131	1.5	5	TJF8:9-192	2.5	3	TJF8:9-253	2	1.5
TJF8:9-010	0	1	TJF8:9-071	1.5	4.5	TJF8:9-132	1	3	TJF8:9-193	1	1.5	TJF8:9-254	5.5	6
TJF8:9-011	0	1	TJF8:9-072	3.5	2	TJF8:9-133	3	6.5	TJF8:9-194	1	1.5	TJF8:9-255	1	2
TJF8:9-012	1	2	TJF8:9-073	2	2	TJF8:9-134	1.5	1.5	TJF8:9-195	2	2	TJF8:9-256	5.5	6
TJF8:9-013	1	0.5	TJF8:9-074	1.5	2	TJF8:9-135	1	1.5	TJF8:9-196	ND[2]		TJF8:9-257	1.5	2
TJF8:9-014	2.5	3.5	TJF8:9-075	1.5	3.5	TJF8:9-136	1	1	TJF8:9-197	5.5	2	TJF8:9-258	1	2.5
TJF8:9-015	2	2.5	TJF8:9-076	1	1.5	TJF8:9-137	2	2	TJF8:9-198	2.5	2.5	TJF8:9-259	4.5	1
TJF8:9-016	1	1	TJF8:9-077	2.5	2	TJF8:9-138	0.5	1	TJF8:9-199	5	3	TJF8:9-260	2	1
TJF8:9-017	1	1.5	TJF8:9-078	1.5	2	TJF8:9-139	0.5	2	TJF8:9-200	2	1	TJF8:9-261	4.5	1.5
TJF8:9-018	3.5	1.5	TJF8:9-079	1	1.5	TJF8:9-140	0.5	1	TJF8:9-201	2	1.5	TJF8:9-262	2	2
TJF8:9-019	1	3.5	TJF8:9-080	2	3.5	TJF8:9-141	1	1.5	TJF8:9-202	1.5	1.5	TJF8:9-263	1.5	1
TJF8:9-020	0	1	TJF8:9-081	2.5	5	TJF8:9-142	1	1	TJF8:9-203	2	0.5	TJF8:9-264	1.5	0.5
TJF8:9-021	3.5	1.5	TJF8:9-082	1.5	5.5	TJF8:9-143	1.5	1	TJF8:9-204	2	1	TJF8:9-265	6	6.5
TJF8:9-022	5.5	2	TJF8:9-083	2	6.5	TJF8:9-144	1	1.5	TJF8:9-205	3	1.5	TJF8:9-266	2	4
TJF8:9-023	1.5	2.5	TJF8:9-084	1	1.5	TJF8:9-145	2.5	4	TJF8:9-206	3	4	TJF8:9-267	2.5	4
TJF8:9-024	1.5	2.5	TJF8:9-085	0.5	2	TJF8:9-146	1.5	3	TJF8:9-207	3.5	3	TJF8:9-268	3	3.5
TJF8:9-025	1.5	2	TJF8:9-086	6.5	5	TJF8:9-147	1	2.5	TJF8:9-208	1.5	1.5	TJF8:9-269	1.5	1.5
TJF8:9-026	1	2	TJF8:9-087	5.5	2.5	TJF8:9-148	1	5.5	TJF8:9-209	2	1.5	TJF8:9-270	2	3.5
TJF8:9-027	1	1	TJF8:9-088	1	1.5	TJF8:9-149	1	2.5	TJF8:9-210	1	1.5	TJF8:9-271	3.5	5.5
TJF8:9-028	8.5	7	TJF8:9-089	1	2	TJF8:9-150	0.5	2	TJF8:9-211	1	1.5	TJF8:9-272	1	1.5
TJF8:9-029	1	1.5	TJF8:9-090	2	2.5	TJF8:9-151	0.5	1	TJF8:9-212	1	1	TJF8:9-273	1	2
TJF8:9-030	3.5	2	TJF8:9-091	1	1	TJF8:9-152	2.5	5	TJF8:9-213	1.5	1.5	TJF8:9-274	6.5	5.5
TJF8:9-031	0.5	1.5	TJF8:9-092	0.5	1	TJF8:9-153	2.5	4.5	TJF8:9-214	1.5	1	TJF8:9-275	1	1.5
TJF8:9-032	1.5	6.5	TJF8:9-093	5.5	5.5	TJF8:9-154	3	5	TJF8:9-215	2	1.5	TJF8:9-276	1	1
TJF8:9-033	2	2.5	TJF8:9-094	1	5.5	TJF8:9-155	2	2.5	TJF8:9-216	1	2	TJF8:9-277	3.5	2.5
TJF8:9-034	1.5	2.5	TJF8:9-095	2.5	6	TJF8:9-156	1	1	TJF8:9-217	3.5	1	TJF8:9-278	5.5	3.5
TJF8:9-035	1	2	TJF8:9-096	5.5	6	TJF8:9-157	2	5.5	TJF8:9-218	1	1.5	TJF8:9-279	2	2.5
TJF8:9-036	1.5	2	TJF8:9-097	1	2	TJF8:9-158	2.5	5.5	TJF8:9-219	1	2.5	TJF8:9-280	1.5	1.5
TJF8:9-037	1	1	TJF8:9-098	0.5	2.5	TJF8:9-159	1.5	2.5	TJF8:9-220	1.5	4.5	TJF8:9-281	4	3
TJF8:9-038	2.5	4	TJF8:9-099	1.5	3.5	TJF8:9-160	1.5	2.5	TJF8:9-221	2.5	2.5	TJF8:9-282	2	4.5
TJF8:9-039	0.5	1.5	TJF8:9-100	2	4	TJF8:9-161	1	5	TJF8:9-222	1	1.5	TJF8:9-283	3.5	6.5
TJF8:9-040	1.5	4	TJF8:9-101	1.5	3	TJF8:9-162	0.5	4.5	TJF8:9-223	0.5	1.5	TJF8:9-284	3.5	2
TJF8:9-041	2.5	3.5	TJF8:9-102	1.5	4	TJF8:9-163	1.5	4	TJF8:9-224	0.5	1.5	TJF8:9-285	2	3
TJF8:9-042	1	2	TJF8:9-103	2	5.5	TJF8:9-164	1.5	2.5	TJF8:9-225	3.5	1.5	TJF8:9-286	1.5	2
TJF8:9-043	1.5	1.5	TJF8:9-104	1	2.5	TJF8:9-165	2	2.5	TJF8:9-226	1	1	TJF8:9-287	2	3.5
TJF8:9-044	1.5	1.5	TJF8:9-105	6.5	6.5	TJF8:9-166	1	1.5	TJF8:9-227	1	1	TJF8:9-288	1	4.5
TJF8:9-045	6.5	7.5	TJF8:9-106	3	6	TJF8:9-167	1	2	TJF8:9-228	1.5	2.5	TJF8:9-289	1	3.5
TJF8:9-046	2.5	7.5	TJF8:9-107	1	2.5	TJF8:9-168	0.5	1.5	TJF8:9-229	1.5	1.5	TJF8:9-290	1.5	4
TJF8:9-047	1	7.5	TJF8:9-108	0.5	5	TJF8:9-169	5.5	7	TJF8:9-230	2.5	2	TJF8:9-291	1	5.5
TJF8:9-048	8.5	8	TJF8:9-109	2.5	6.5	TJF8:9-170	0.5	6	TJF8:9-231	3.5	2.5	TJF8:9-292	1.5	4.5
TJF8:9-049	2	2	TJF8:9-110	1.5	1.5	TJF8:9-171	1	8	TJF8:9-232	1	3.5	TJF8:9-293	1.5	2
TJF8:9-050	5.5	6.5	TJF8:9-111	5.5	6.5	TJF8:9-172	4.5	2	TJF8:9-233	7.5	7	TJF8:9-294	1	1.5
TJF8:9-051	4.5	2.5	TJF8:9-112	2	4	TJF8:9-173	5	4.5	TJF8:9-234	1	3	TJF8:9-295	1	1.5
TJF8:9-052	2	4	TJF8:9-113	4.5	2	TJF8:9-174	2.5	1	TJF8:9-235	1.5	1.5	TJF8:9-296	2	1.5
TJF8:9-053	1.5	4.5	TJF8:9-114	1.5	5.5	TJF8:9-175	3	1	TJF8:9-236	2.5	3	TJF8:9-297	1	2
TJF8:9-054	2	2	TJF8:9-115	6.5	6	TJF8:9-176	1.5	4.5	TJF8:9-237	4.5	2	TJF8:9-298	1.5	2.5
TJF8:9-055	1	2	TJF8:9-116	0.5	2	TJF8:9-177	1	1	TJF8:9-238	3.5	2.5	TJF8:9-299	1.5	3.5
TJF8:9-056	1.5	5.5	TJF8:9-117	2.5	5.5	TJF8:9-178	0.5	1	TJF8:9-239	5.5	3.5	TJF8:9-300	1	3.5
TJF8:9-057	5	5.5	TJF8:9-118	1	3.5	TJF8:9-179	0.5	3.5	TJF8:9-240	0.5	2			
TJF8:9-058	6.5	7	TJF8:9-119	1.5	2.5	TJF8:9-180	5.5	5.5	TJF8:9-241	2	1.5			
TJF8:9-059	1	1	TJF8:9-120	0.5	3.5	TJF8:9-181	5.5	3.5	TJF8:9-242	5.5	2			

[1] Disease Index of bacterial panicle blight: 0-9 scale, average value of two readings on each RIL in a row (~ 15-20 plants).
[2] Not determined due to germination failure.

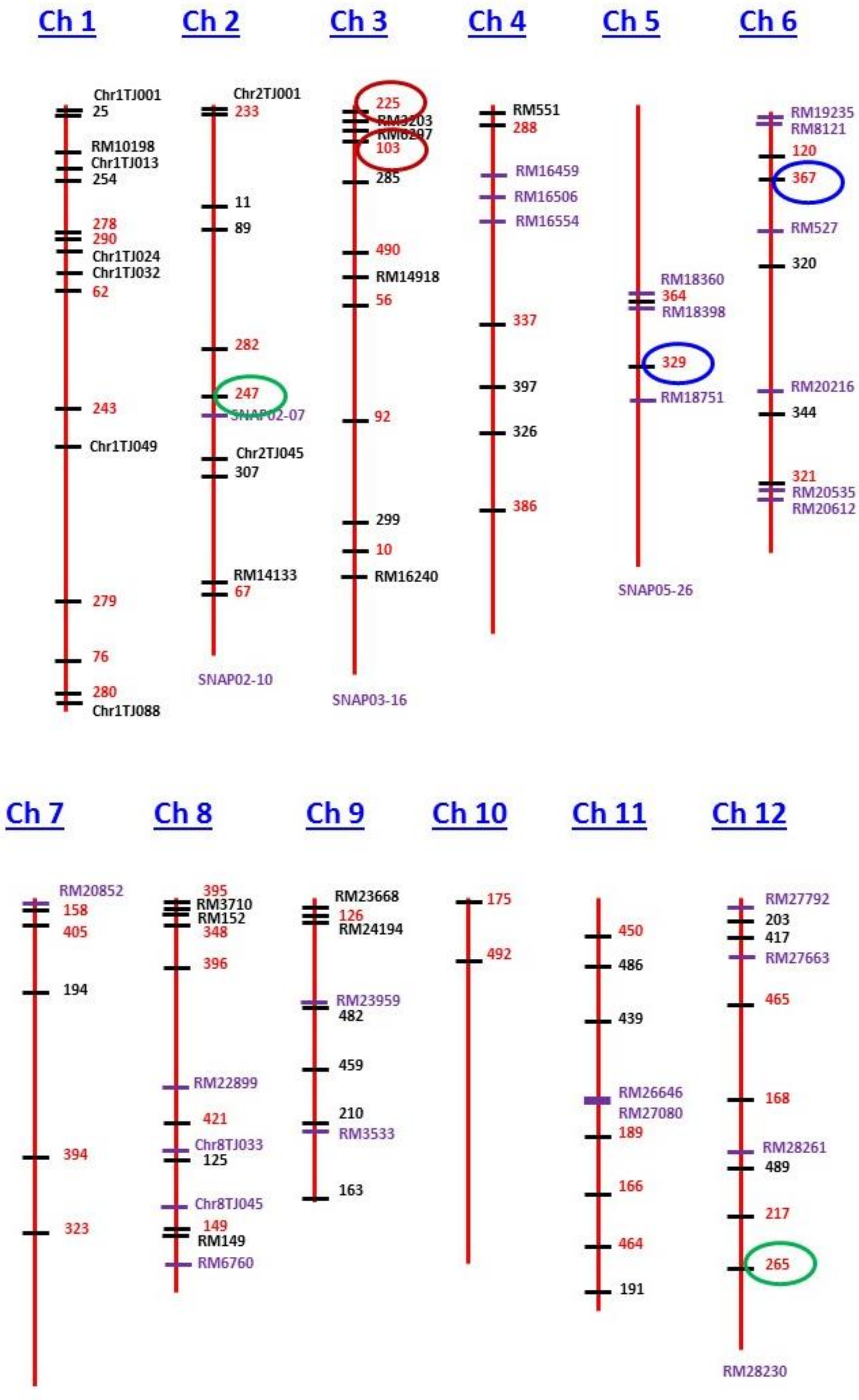

Figure 1. A physical map of SNP (black) and SSR (purple) markers used for the genotyping of the $TJF_{8:9}$ RIL population. The markers in red ovals are associated with resistance to both sheath blight and bacterial panicle blight. The markers in green and blue ovals are associated with sheath blight and bacterial panicle blight, respectively.

Table 2. Phenotypes of sheath blight-resistant lines in bacterial panicle blight (BPB) resistance.

Mutant/Breeding Lines	BPB[1]	Breeding Line ID	BPB[1]
Mermentau	0	ML-SS-11	0
ML-SS-1	0	ML-SS-12	0
ML-SS-2	0	ML-SS-13	0
ML-SS-3	0	ML-SS-14	0
ML-SS-4	0	ML-SS-15	0
ML-SS-5	0	ML-SS-16	0
ML-SS-6	0	ML-SS-17	0
ML-SS-7	0.5	ML-SS-18	0.5
ML-SS-8	0	ML-SS-19	0
ML-SS-9	0	ML-SS-20	0
ML-SS-10	0	ML-SS-21	0.5
PGC-611	1	PGC-649	0
PGC-615	No panicle	JAC-1	1
PGC-617	0	JAC-2	0
PGC-622	0	JAC-3	1
PGC-626	0	JAC-4	0
PGC-635	0	JAC-5	0
PGC-642	0	JAC-6	0
PGC-646	0	JAC-7	0
PGC-647	0	JAC-8	1
Trenasse	4.5 (3.0)[2]	11PY730	2 (3.3)[2]
Bengal	2 (8.3)	PI658312	0 (0.7)
Jupiter	1.3 (3.3)	PI658313	0 (1.0)
Lemont	0.8 (2.5)	PI658314	0 (5.3)
LM-1	0.5 (1.8)	PI658315	0 (0.7)
LB-33	0.3 (2.0)	PI658316	0 (1.7)
14SP#10	0 (2.0)	PI658317	0 (2.0)
14SP#20	2.8 (5.3)	PI658318	0 (6.7)
14SP#23	1.3 (4.8)	PI658319	0 (0.7)
14SP#35	1 (2.5)	PI658320	0 (2.3)
14SP#45	1 (3.3)	PI658322	0 (6.7)
14SP#56	1 (3.8)	PI658323	0 (4.7)
14SP#69	1.5 (3.8)	PI658324	0 (3.7)
14SP#79	0.5 (4.8)	PI658325	0 (2.7)
14SP#87	1 (3.0)	PI658326	0 (1.0)
14SP#175	1 (2.8)	PI658328	0 (3.7)
14SP#185	1 (5.0)	PI658329	0 (4.0)
14SP#208	1 (2.8)	PI658330	0 (5.0)
14SP#220	1 (3.8)	PI658331	0 (4.0)
14SP#246	1 (3.5)	PI658332	0 (5.7)
14SP#268	1 (4.5)	PI658333	0 (0.3)
RUSHSBR4/09125	0.7 (2.7)	PI658334	0 (3.0)
SB131/SB125	0 (1.0)	PI658335	0 (5.0)
SB2-225	1.7 (2.3)	PI658336	3.7 (7.7)
SB125/SB131	2.3 (2.3)	TJF8-014	1 (6.0)
RUSHSBR4	0.7 (2.7)	TJF8-019	1.5 (2.3)
JODN/3/TDCN/SBNT//LSRR5/LMNT	1 (1.7)	TJF8-041	0 (3.3)
WELLS/CANTORSB51//97URN128/96CR921	2.3 (4.3)	TJF8-137	0.5 (3.0)
PI658321	0.3 (6.3)	TJF8-151	1 (1.5)
PI658327	0 (2.3)	TJF8-221	1.8 (4.5)
RUSHC99-1166	0 (0.7)	LBF8-007	0.8 (1.5)
09DN/RUSH222	1 (1.7)	LBF8-008	2 (2.3)
09DN/RUSH222//SBR174	0.7 (2.3)	LBF8-013	1 (1.8)
09DN157//TRP545/CL161	0.3 (3.0)	LBF8-014	0.5 (5.3)
WELLS/CANTORSB51//97URN128/96CR921//CTHL	0 (2.0)	LBF8-015	0.5 (3.5)
GSOR101021	0 (3.7)	INIAP12	0 (0.8)

[1] Disease index of bacterial panicle blight (0-9 scale, average value of four panicles observed).
[2] Disease indexes observed in 2016 are indicated in parentheses.

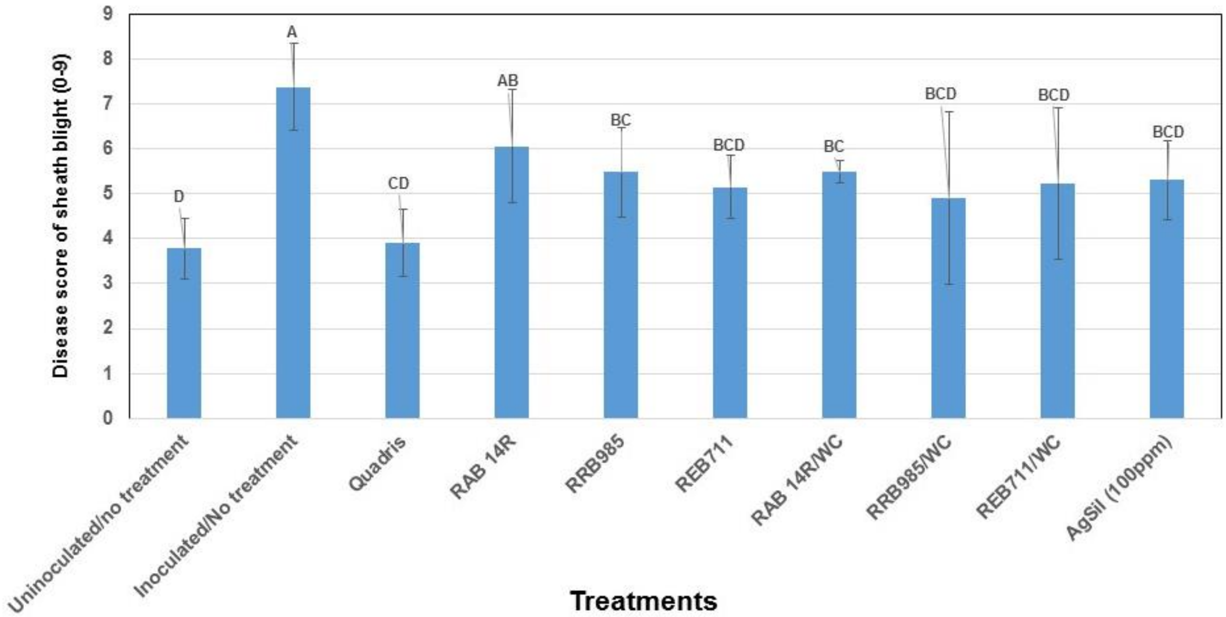

Figure 2. Suppression of sheath blight by biological control agents, Quadris (fungicide), and AgSil (silica). WC: Whole cell culture.

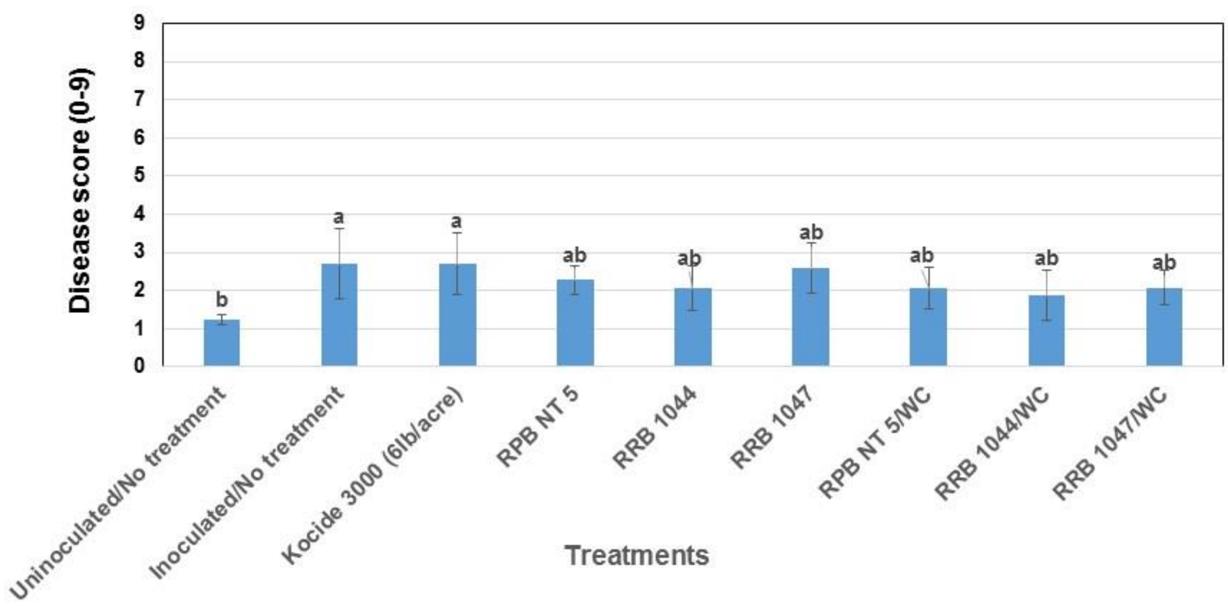

Figure 3. Suppression of bacterial panicle blight by biological control agents and Kocide 3000 (bactericide). WC: Whole cell culture.

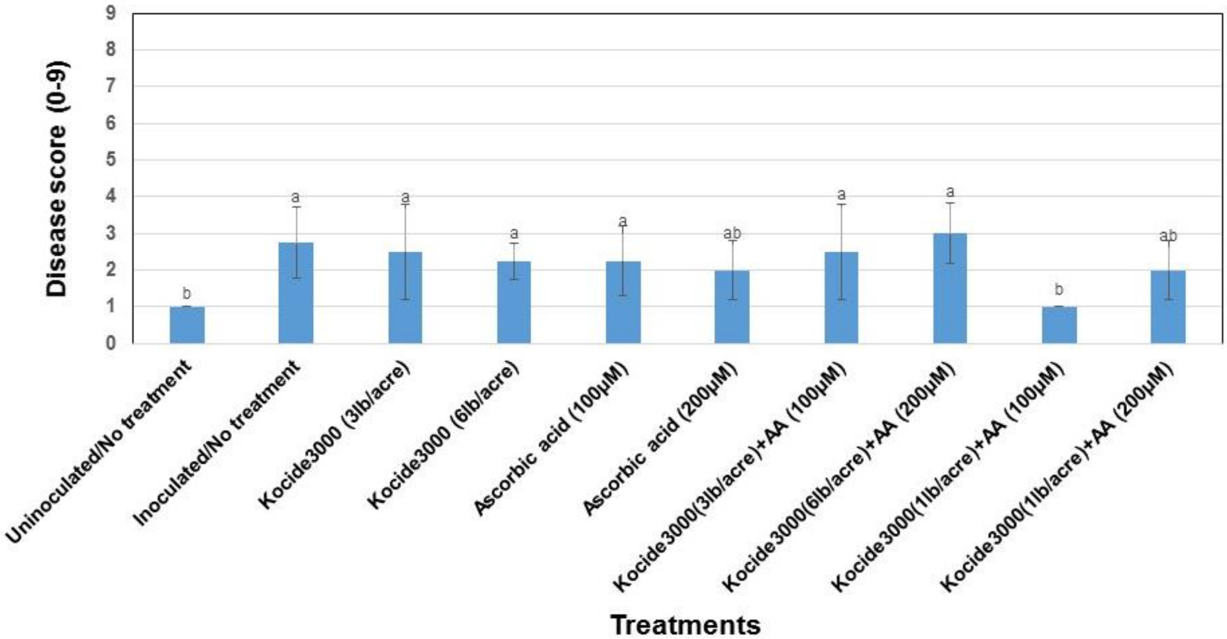

Figure 4. Suppression of bacterial panicle blight by Kocide 3000 (bactericide) and ascorbic acid.

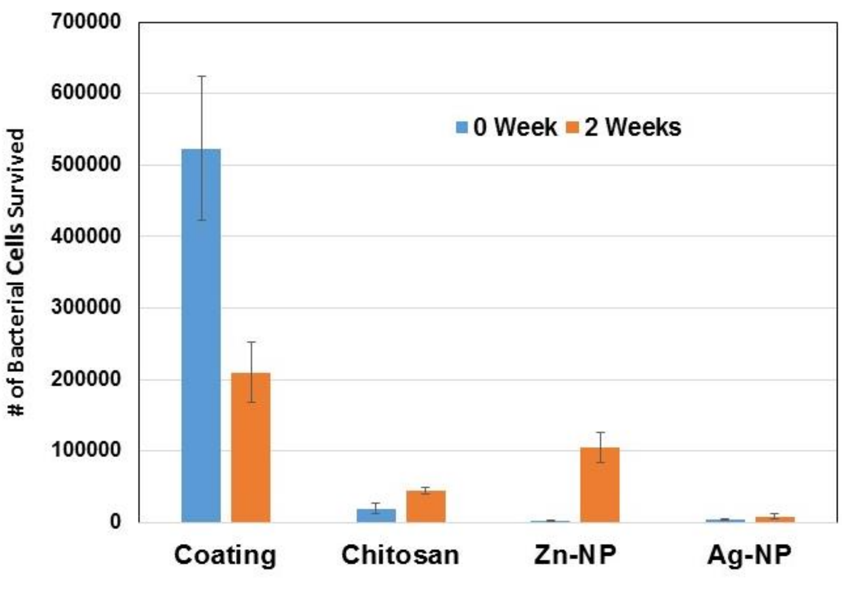

Figure 5. Pathogen-killing activities of chitosan, zinc nanoparticles (Zn-NP), and silver nanoparticles (Ag-NP) in rice seeds (0 week) and two-week-old rice seedlings (2 weeks). ‘Coating’ indicates the coating material itself (UniCoat, Universal Coating Systems, Independence, OR).

Figure 6. Rice seedlings grown from the seeds treated with chitosan, silver nanoparticles (Ag-NP), or zinc nanoparticles (Zn-NP) after the infiltration of *B. glumae* cells.

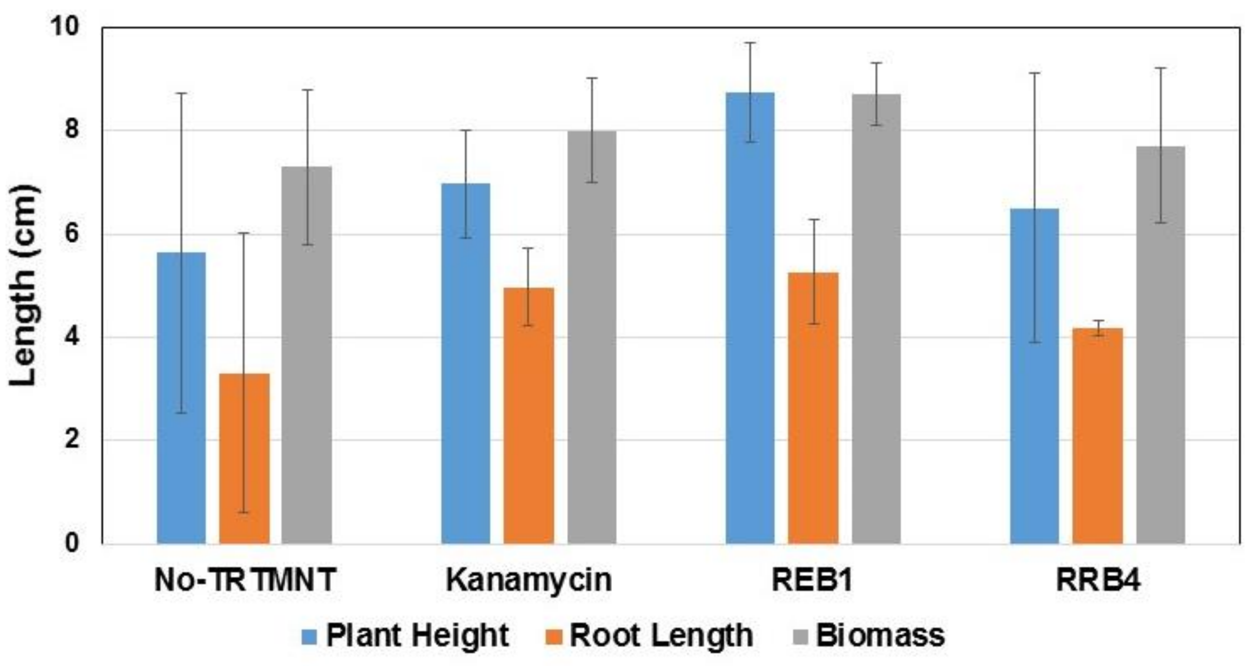

Figure 7. The growth promotion of rice seedlings by the rice endophytic bacterium, REB1, in comparison with that by kanamycin (antibiotics) and RRB4 (another biological control agent isolated from rice roots).

Figure 8. Improved vigor of rice seedlings by infiltration of *B. glumae* cell suspension.

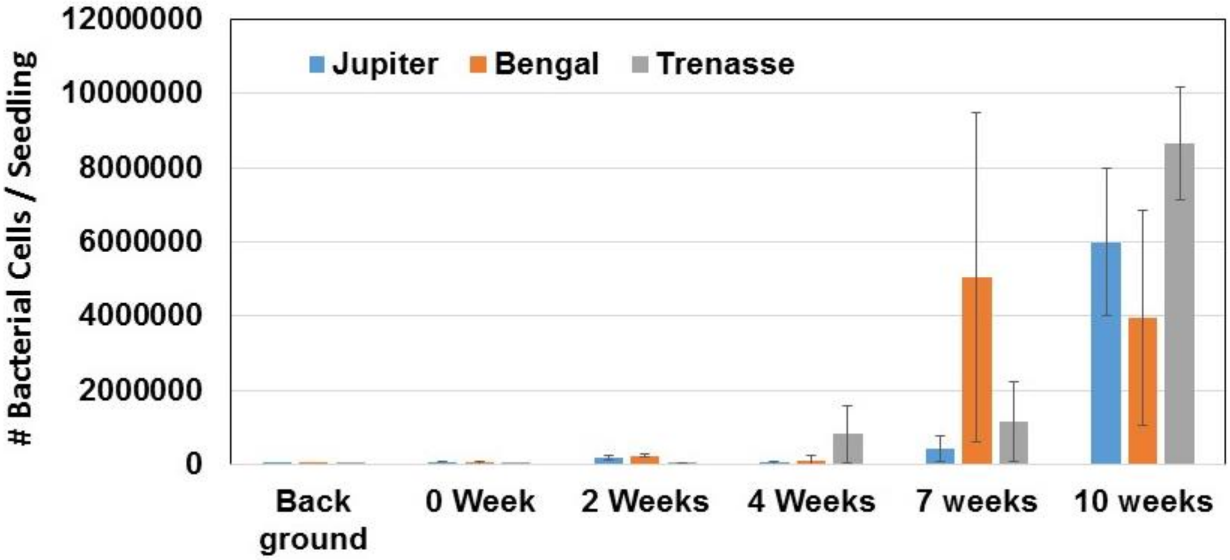

Figure 9. The survival and growth of *B. glumae* cells in rice seedlings.

RICE INSECTS RESEARCH

EFFECTS OF DERMACOR X-100 AGAINST THE SOUTH AMERICAN RICE MINER

L. Bernaola, M.M. Saad, J.M.P. Villegas, E.C. Kraus, B.E. Wilson, M.J. Frey, and M.J. Stout

The South American rice miner (SARM), *Hydrellia wirthi* Korytkowski (Diptera: Ephydridae), is an invasive insect pest of rice detected for the first time in the southeastern United States in 2004. Since then, the SARM has been reported sporadically in rice fields of Louisiana and Texas, but its occurrence was widespread in 2016 and 2017.

Purpose:

The objective of this study was to evaluate the efficacy of the active ingredient, chlorantraniliprole, in Dermacor X-100 as a seed treatment against the SARM in three conventional and three hybrid varieties of rice.

Experimental Narrative and Analysis:

Data were recorded from an experiment designed to compare the tolerance of conventional and hybrid varieties against the rice water weevil. Rice varieties were drill seeded at the LSU AgCenter H. Rouse Caffey Rice Research Station, Crowley, LA on May 29, 2017. Field plots were 4.1 ft wide by 18 ft long (seven rows at 7-inch spacing). Two seeding rates of 25 and 60 lb/A were used for the conventional varieties Cocodrie, CL111, and Cheniere; and a single seeding rate of 25 lb/A was used for the hybrid varieties CLRT7311, CLXL745, and CLXL729. Rice emerged by June 8, 2017. Plots were cultivated following recommendations of the LSU AgCenter for drill-seeded rice with the exception of insect control. Seeds were treated with Dermacor X-100 at rates of 6 and 4 fl oz of product per 100 lb before seeding. In total, there were 18 treatments, and four replications of each treatment were arranged in a randomized complete block design. Rates and treatments are specified in Table 1. The SARM injury was assessed by taking stand counts and by visually rating the SARM injury in each plot. For stand counts, numbers of seedlings in two randomly selected 1 ft^2 areas were counted in each plot. For the SARM injury, a visual 0-10 scale was used (0 = no visual injury, 10 = no living plants remaining in plots). Stand counts and visual ratings were made on June 27, 28 days after planting. The two stand counts per plot were averaged, and mean stand counts from visual ratings for each plot were used in statistical analyses. Stand count and visual rating data were analyzed by two-way ANOVA using PROC GLM in SAS.

Results:

Infestations of the SARM were widespread in field experiments planted at the H. Rouse Caffey Rice Research Station between April and May in 2017. Infestations occurred after plant emergence and before the end of the tillering stage. Severe infestations of seedlings can result in plant death and reduced stands, but plants may be able to recover from less severe infestations of the tillering stage.

Treatments significantly affected stand counts on June 27 ($F_{17,54}$=7.57, P=<0.0001) (Figure 1). Except for CL111 and Cheniere varieties, there was a trend for higher stand counts in plots treated with insecticide. Results also showed significant effect of variety (F=12.95, P=<0.001) and variety by insecticide interaction on stand count (F=2.36, P=0.03). Hybrid rice varieties treated with Dermacor X-100 had the highest stand count numbers.

Treatments significantly reduced visual injury by the SARM ($F_{17,54}$=4.13, P=<0.0001) (Figure 2). All rice varieties showed a lower injury level in plots treated with Dermacor X-100 compared to untreated plants, where Cocodrie, CL111, and Cheniere varieties had the lowest injury levels (Figure 2). Results also showed no significant interaction between treatment and variety on injury (F=0.74, P=0.659).

Conclusion:

Dermacor X-100 appears to be an effective treatment against the SARM. Early planting is recommended to avoid high infestation by the SARM**.**

Table 1. Labels, seeding rate, seed treatment rate, and treatments included in a field experiment in 2017.

Rice Variety	Seed Treatment Rate (lb/A)	Insecticide Rate / 100 lb	Treatments
Cocodrie (C1)	25	6 oz	Untreated & Insecticide
CL111 (C2)	25	6 oz	Untreated & Insecticide
Cheniere (C3)	25	6 oz	Untreated & Insecticide
CLRT7311 (H1)	25	6 oz	Untreated & Insecticide
CLXL745 (H2)	25	6 oz	Untreated & Insecticide
CLXL729 (H3)	25	6 oz	Untreated & Insecticide
Cocodrie (S1)	60	4 oz	Untreated & Insecticide
CL111 (S2)	60	4 oz	Untreated & Insecticide
Cheniere (S3)	60	4 oz	Untreated & Insecticide

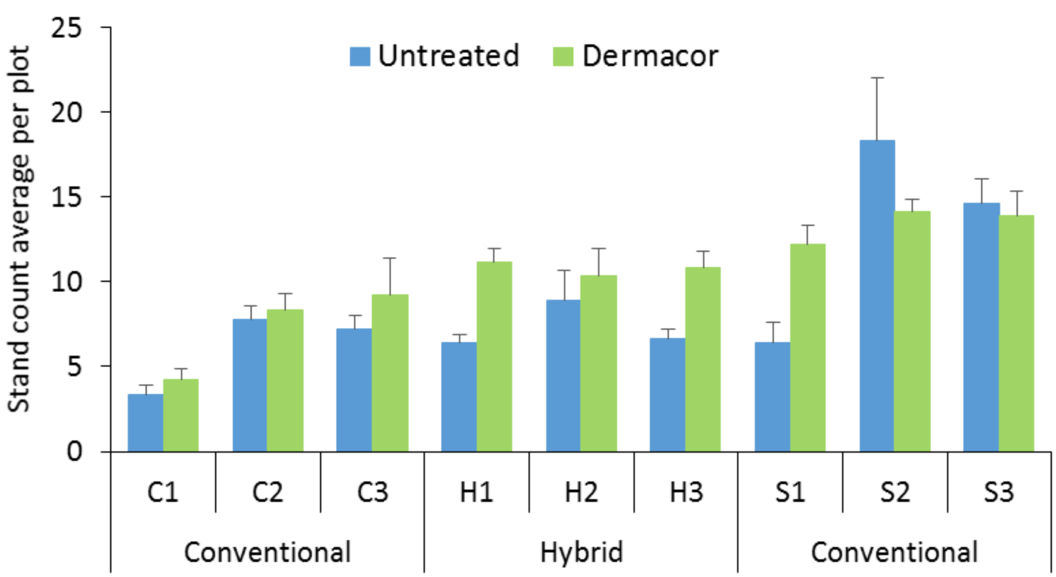

Figure 1. Average number of stand count per plot for each group of rice varieties. Bars represent standard error of the means.

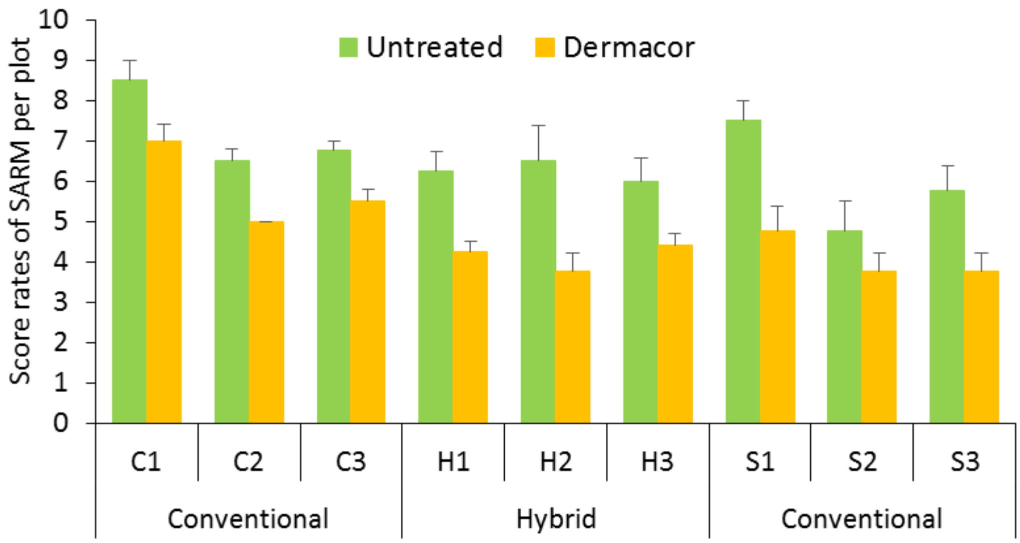

Figure 2. Averages of the visual rates of the South America Rice Miner per plot for each group of rice varieties. Bars represent standard error of the means.

THE SPATIAL DISTRIBUTION OF RICE PESTS IN COMMERCIAL UNTREATED RICE FIELDS IN LOUISIANA

M.M. Mulcahy, B.E. Wilson, L. Lama, and M.J. Stout

Introduction:

The rice water weevil (RWW), *Lissorhoptrus oryzophilus* Kuschel, is the most destructive insect pest of rice, *Oryza sativa* L., in the United States. After the permanent flood has been established, RWW larvae feed on rice roots, thereby reducing plant growth and yields. Severe infestations of RWW can cause up to 25% yield. Lepidopteran stem borers are also considered important pests of rice in Louisiana. The stem borer complex that can be found attacking rice in this region includes the rice stalk borer (*Chilo plejadellus* Zink), the sugarcane borer (*Diatraea saccharalis* F.), and the invasive pest, the Mexican rice borer (*Eoreuma loftini* Dyar). The larvae of these species feed within the leaf sheath before boring into the culms of rice plants to complete their development. The damage that they cause typically results in dead hearts (dead leaves and tillers) and whiteheads (panicles with unfilled grains).

Recent research has shown that infestations of RWW larvae are concentrated along field edges in California rice; however, the spatial distribution of RWW or stem borers in rice has never been investigated in Louisiana.

Our objective was to gain a thorough understanding of the spatial distribution of RWW and Lepidopteran stem borers in untreated rice fields in Louisiana. Since both RWW and Lepidopteran stem borers are known to overwinter in non-crop habitats adjacent to rice fields, we hypothesized that infestations of these pests would be concentrated near the edges of rice fields. The information gathered here will be used to improve the deployment of insecticidal seed treatments in accordance with better Integrated Pest Management principles. More efficiently targeted seed treatments will not only improve pest management in rice, but also help to reduce farmer input costs and decrease the build-up of pest resistance by reducing selective pressure.

Methods and Materials:

Four untreated commercial rice fields in Vermilion Parish and four untreated rice fields in Jefferson Davis Parish were selected in March 2017 and mapped using Google Earth and GSAK (hand-held Garmin GPS software). Each field had a total of 16 sampling points located at various distances away from the edge of the field. The average size of the fields that were sampled was 95 acres. Soil cores were taken at each sampling point to determine the densities of RWW. Stem borer counts were taken using a 1 m^2 quadrat in July 2017 (before harvest). An ANOVA and a Tukey HSD post-hoc analysis was used to analyze the data at a 95% confidence level.

Results:

Figure 1 shows that RWW and stem borer populations are not randomly distributed within untreated commercial rice fields in Louisiana. Greater densities of these pests can be found along field margins indicating that there is an edge effect and that overwintering sites may be playing a role in the spatial distribution of these pests. Rice water weevil populations increased significantly from the center of the field to the outer edge of the field (Fig. 1.A). In the stem borer samples, a three-fold increase in the mean number of larvae found per m^2 can be seen along field margins (Fig. 1.B). Furthermore, rice stand counts did not differ between samples. No differences in rice density were recorded between rice growing near field margins and rice growing in the center of the fields (Fig. 1.C). Therefore, we can conclude that rice density did not result in the differences that were observed in pest population distributions.

Conclusion:

The results from this study show that pest populations are not randomly distributed within rice fields. This indicates that insecticidal seed treatments can potentially be applied selectively within rice fields. By specifically targeting areas, which are at a higher risk of infestation, we can enhance the practical application of insecticidal seed treatments. Ultimately this can help us to reduce farmer costs and negate harmful environmental effects.

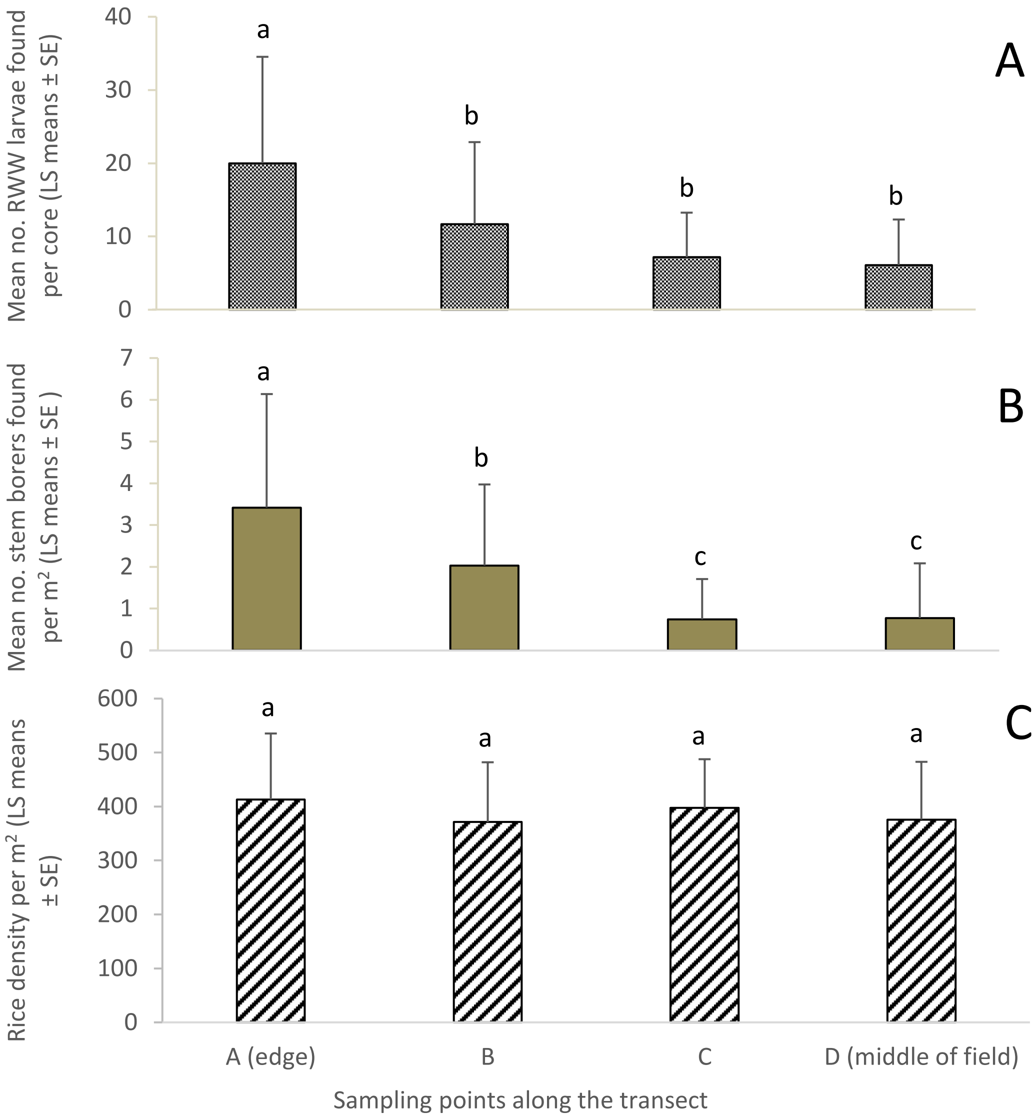

Figure 1. Rice density (C) and the spatial distribution of rice water weevils (A) and Lepidopteran stem borers (B) along various sampling points of a transect progressing from the edge to the center of commercial rice fields. Letters indicate significance at $p < 0.05$.

EFFECTS OF PLANTING DATE ON STEM BORER POPULATIONS IN DRILL-SEEDED RICE

J.M.P. Villegas, L. Bernaola, M.J. Frey, E.C. Kraus, M.M. Mulcahy, B.E. Wilson, and M.J. Stout

A complex of stem boring lepidopteran pests has long been reported to attack Louisiana rice but infestations have been sporadic. The sugarcane borer, *Diatraea saccharalis* F., and the rice stalk borer, *Chilo plejadellus* Zincken, have been occasional pests of rice in Louisiana for decades. In contrast, the Mexican rice borer, *Eoreuma loftini* Dyar, has invaded Louisiana rice only in the past decade and may pose a bigger threat to rice production. The stem borer larvae initially feed within the leaf sheath before boring into the stem. Feeding within the stem disrupts the flow of nutrients to the upper portions of the plant. Injury to the rice plant due to stem borer feeding during the reproductive stages of the plant causes panicles to emerge with unfilled grains, remain straight, and appear whitish in color. This condition is known as a whitehead (Figure 1A).

Stem borer activity in rice fields is often measured through whitehead incidence. Negative correlations between whitehead incidence and rice yield have been previously reported. During winter months, rice stubble and grasses are suitable hosts for stem borer larvae to overwinter. These larvae pupate and emerge as adults in spring.

This study examined the effects of planting date on whitehead incidence caused by stem borer feeding. Populations of adult Mexican rice borers on the H. Rouse Caffey Rice Research Station were also monitored.

Experimental Narrative and Analysis:

Field experiments were conducted at the H. Rouse Caffey Rice Research Station, Crowley, LA in 2017. Small field plots (4.1 ft x 20 ft, 7 rows at 7-inch spacing) were drill seeded on March 15, March 30, April 10, April 28, May 15, and May 29. Experiments varied at each planting date; thus, data collected were from plots that were not treated with insecticides. Standard recommendations of the LSU AgCenter for drill-seeded rice were followed as necessary. Whiteheads visible at the 100% heading were used as indicators of stem borer activity in the field. Densities of whiteheads (average whiteheads per plot) at each planting date were assessed, and plants were subsequently collected and dissected to identify stem borer species. Whitehead densities were analyzed using one-way ANOVA in PROC MIXED of SAS at 0.05 level of significance.

Adult Mexican rice borer populations were also monitored using pheromone traps for several months. Two standard green, yellow, and white bucket traps (Unitrap) were baited with synthetic Mexican rice borer sex pheromone lures (Luresept). Each trap contained an insecticidal strip (Vaportape II) (Figure 1B). Traps were attached to metal poles at approximately 1 m above the soil surface and were placed 100 m apart from each other. Pheromone lures and insecticidal strips were replaced every 3-4 weeks right after collecting adult Mexican rice borer.

Results:

Whitehead densities were significantly lower on early planting dates compared to later planting dates ($F = 48.752$; $df = 5$; $P < 0.0001$) (Figure 2). Recommended planting dates for rice in southwest Louisiana are March 10 to April 15. Planting at a later date can potentially increase whitehead densities three-fold or more (Figure 2). Although the densities of whiteheads dramatically dropped at the latest planting date in this study (May 29), yields may be compromised in rice planted this late.

Sugarcane borer, rice stalk borer, and Mexican rice borer were identified as the cause of whiteheads in the field. However, the majority of the recovered larvae were either sugarcane borer or Mexican rice borer. Infestation of stem borers in 2017 was also remarkably high compared to past years. A parasitoid wasp, *Alabagrus stigma* (Hymenoptera: Braconidae), was recovered from Mexican rice borer larvae (Figure 1C). This Braconid parasitoid infested approximately 60% of the Mexican rice borer larvae collected from the field. It has been reported that *A. stigma* has been used as biological control agent against sugarcane borer and other stalk borer species in the 1950s. However, the current status of *A. stigma* in rice is not well understood and thus needs further research.

Populations of Mexican rice borer adults were monitored in late 2016 and early 2017. Data shows lower numbers of Mexican rice borers in the months of October 2016 to January 2017 as the pest prepared to overwinter as larvae (Figure 3). An increase in Mexican rice borer populations was observed early in the year (February and March). This might be caused by the mild winter in Louisiana in 2017. The early emergence of adult stem borers may have contributed to the increase of stem borer activity in the field later in the season.

Conclusion:

Stem borers appear to be gaining more importance as pests of Louisiana rice with the entry of the Mexican rice borer into southwest Louisiana. Planting early or at the recommended planting dates reduces infestations of stem boring lepidopteran pests. If planting late is unavoidable, the use of insecticide might be necessary. Some rice varieties available in Louisiana have also shown some level of resistance to stem borers.

Comments:

Populations of Mexican rice borer in the field will be continuously monitored in 2018. The use of *A. stigma* as a potential biological control strategy of Mexican rice borer in rice will also be explored.

Figure 1. (A) Whiteheads caused by stem borers feeding at the reproductive stage of rice. (B) Adult Mexican rice borers attracted by a pheromone lure and subsequently killed by insecticidal strips. (C) Braconid wasp, *Alabagrus stigma*, emerged from Mexican rice borer larvae.

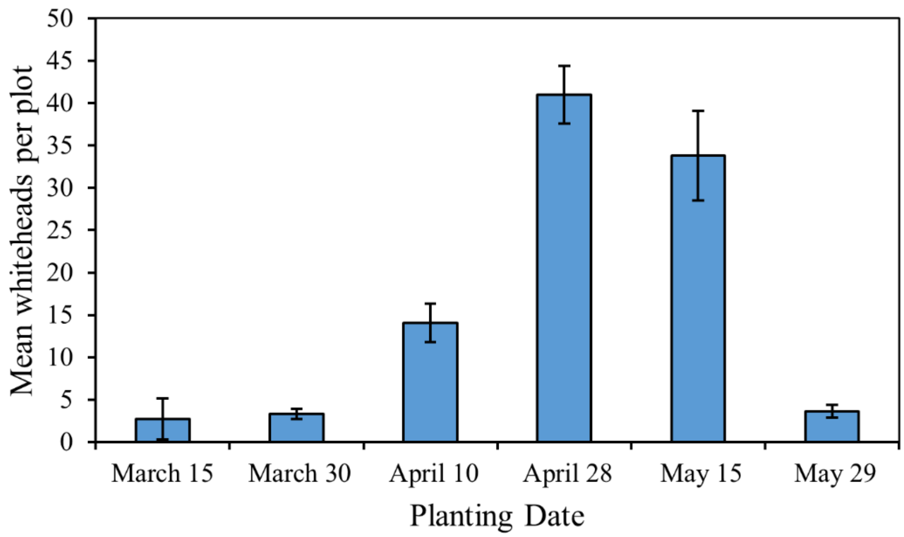

Figure 2. Average number of whiteheads per plot at each planting date. Bars represent standard error of the means.

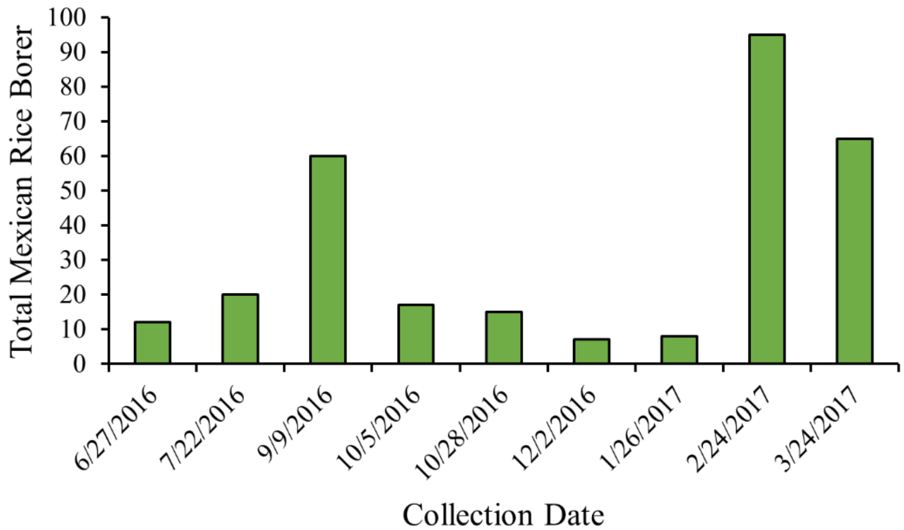

Figure 3. Total number of adult Mexican rice borers captured from two pheromone traps in 2016 and 2017.

RICE VARIETAL RESISTANCE TO STEM BORERS

E.C. Kraus, J.M.P. Villegas, M.M. Mulcahy, M. Saad, L. Bernaola, B.E. Wilson, and M.J. Stout

Stem borers are becoming more problematic in Louisiana rice. While there are insecticidal options, including seed treatments, which provide protection against these insects, it is also important to explore varietal resistance as a potential management strategy. Presented below is a study which examines seven rice varieties for levels of resistance to stem borers.

Experimental Narrative:

Field experiments were conducted at the H. Rouse Caffey Rice Research Station, Crowley, LA in 2017. Small field plots (4.1 ft x 20 ft, 7 rows at 7-inch spacing) were drill seeded on May 16, 2017, with varieties Caffey, Colorado, LaKast, CL111, Jupiter, Jefferson, and Roy J. These varieties had shown varying levels of susceptibility in previous experiments. Rice was flooded on June 20, 2017. Plots were cultivated following standard recommendations of the LSU AgCenter for drill-seeded rice. None of the plots in the experiment were treated with insecticides. The experimental design was a randomized complete block with four replications. As an estimate of stem borer density, whiteheads were counted. Counts were made on Sept. 30, 2017, when plots were at 100% heading. A one-way ANOVA using SAS version 9.4, PROC MIXED was used for analysis. Blocks were treated as a random effect and variety as a fixed effect. Means were separated using Tukey's standard HSD with significance at the 0.05 level.

Results:

Analysis of whitehead density indicated that there was a significant difference between varieties (df=6; F=5.72; P=0.0018). Significantly more whiteheads were found in plots of Caffey than in plots of Jupiter, Jefferson, and Roy J. Numbers of whiteheads in Colorado, LaKast, and CL111 were intermediate and did not differ significantly from each other or any other variety (Figure 1).

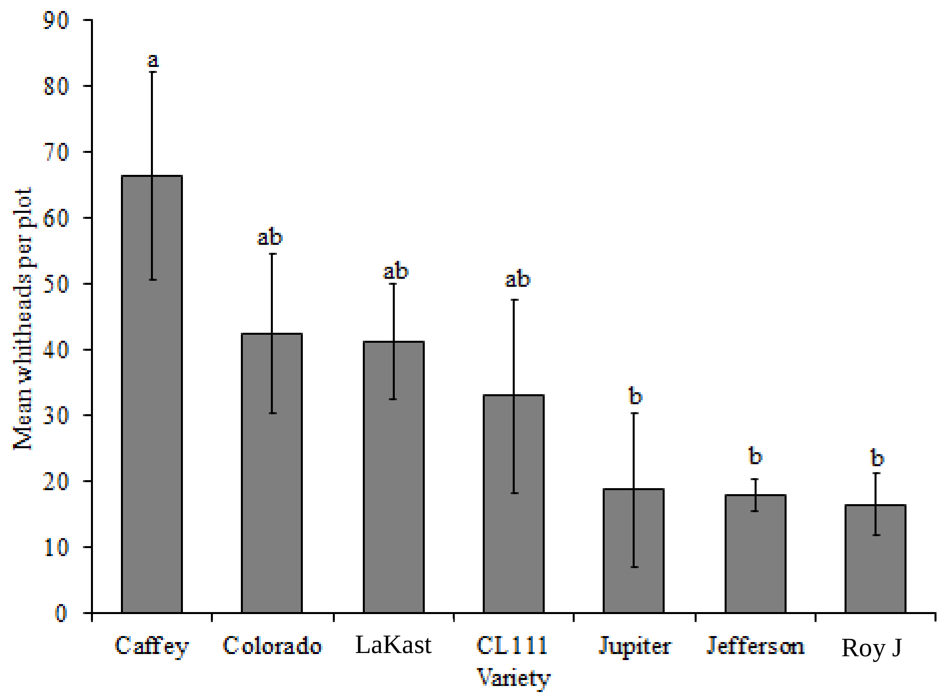

Figure 1. Average number of whiteheads per plot in each variety. Bars represent standard error of the mean. Different letters indicate a significant difference at the 0.05 level. Means were separated using Tukey's standard HSD with significance at the 0.05 level.

Conclusion:

Differences exist in varietal levels of resistance to stem borers. Varieties Jupiter, Jefferson, and Roy J appear to be the most resistant of the varieties tested. Caffey appears to be the most susceptible with the highest density of whiteheads. Colorado, LaKast, and CL111 have an intermediate level of resistance. This information is useful to those not using insecticidal seed treatments or for using plant resistance in concert with insecticides in an integrated pest management plan.

RICE WEED MANAGEMENT

WEED MANAGEMENT IN HERBICIDE-RESISTANT/TOLERANT AND CONVENTIONAL RICE

E.P Webster, B.M. McKnight, S.Y. Rustom, Jr., G.M. Teló, L.C. Webster, and M.J. Osterholt

Overcoming Provisia Antagonism with Ammonium Sulfate (AMS).

Previous research indicates Provisia activity is antagonized when mixed with broadleaf and/or nutsedge herbicides. A study was established to evaluate dry AMS and two liquid substitutes, Choice and Quest. The broadleaf/sedge herbicides mixed with Provisia were Grasp, Permit, and RiceBeaux. Antagonism of Provisia occurred when mixed with Grasp and RiceBeaux for control of barnyardgrass. The addition of any AMS did little to reduce the antagonism. Very little antagonism of Provisia occurred when mixed with Grasp or Permit for the control of red rice, CL 111, and CLXL 745. The addition of any AMS formulation to Provisia alone did not impact control.

Broad Spectrum Weed Control with the Dow Herbicide Loyant.

Loyant is the new herbicide from Dow AgroSciences. Loyant was granted a full label in the fall of 2017, which will allow the use of this herbicide to occur for the first time during the 2018 growing season. The mode of action of Loyant is similar to 2,4-D and Grandstand. Loyant has activity on grasses, sedges, and broadleaf weeds. Loyant has excellent activity on barnyardgrass, rice flatsedge, hemp sesbania, Indian jointvetch, grassy arrowleaf, creeping burhead, ducksalad, and many other weeds. The use rate of this herbicide will be 1 pt/A with the addition of a methylated seed oil. Long grain rice cultivars have excellent tolerance of Loyant; however, medium-grain rice and hybrids are slightly sensitive.

Rice Tolerance to Loyant.

A study was established to evaluate the tolerance of CLXL 745, CL 111, and Cheniere. Rice was treated at the 3- to 4-leaf or the 2- to 3-tiller stage. CLXL 745 was injured from 0 to 5% when treated with Loyant at 13.7 oz/A at 9 and 18 days after treatment when sprayed at the 3- to 4-leaf stage. At the 2X rate of Loyant, 27.4 oz/A, rice was injured 5 to 10% at 9 to 18 days after treatment. Injury was slightly higher on CL 111 with injury of 5 to 13% at 9 to 32 days after treatment. By 42 days after treatment no injury was observed on CLXL 745 or CL 111. Early season injury did not translate into a yield reduction. Excessive injury has been observed on rice grown on nearly leveled soil.

Water-seeded Rice Tolerance to Benzobicyclon.

Diamond, Provisia, Cheniere, CL 111, CL 272, and CLXL 745 were treated with benzobicyclon at 1 lb ai/A which is equivalent to 16.8 oz/A of product. Rice was treated with benzobicyclon 24-hours after planting into a continuous flood system, 24-hours after flooding rice in the pegging stage, and rice in the 3- to 4-leaf stage. In the continuous flood, every rice line and hybrid evaluated was killed by benzobicyclon at 14 days after treatment. At the pegging timing, Diamond, Provisia, Cheniere, CL 111, and CL 272 were injured 15 to 31% at 21 days after treatment. Similar injury was observed for the 3- to 4-leaf timing. CLXL 745 was injured the least with 5% injury. The injury that was observed early in the growing season translated into a yield reduction for all rice lines and the hybrid evaluated.

Evaluation of Experimental Herbicides.

This project continues to evaluate several experimental herbicides. In 2017, this project evaluated 9 experimental herbicides. The experimental herbicides included several numbered compounds along with several herbicides that are close to receiving a full federal label.

The entire Annual Weed Management Research Report can be located at the link below.

http://edit.lsuagcenter.com/~/media/system/3/3/6/1/3361c7ec4eba194b1d007389cac02ca9/annual%20report%202017pdf.pdf

AQUACULTURE RESEARCH

ANNUAL SUMMARY OF ENVIRONMENTAL CONDITIONS AND CRAWFISH PRODUCTION

W.R. McClain and J.J. Sonnier

Table 1 contains the average weekly data for environmental conditions and crawfish catch, 2016-2017 season, crawfish research project, H. Rouse Caffey Rice Research Station (HRCRRS), Crowley, LA. The catch consisted exclusively of red swamp crawfish (*Procambarus clarkii*). The production summary is composed of cumulative yield from both experimental units (i.e., traps) and non-experimental trap lifts but only from the pond located at the HRCRRS.

Pond History: Pond was fallow for a period of 10 months following the previous crawfish season of 2014-2015.

Pond Area: 14.0 A

Soil Type: Midland silty clay loam

Water Source: Groundwater

Forage Crops: Rice variety Jupiter was drill-seeded on April 26, 2016, at 57 lb/A. Grain was harvested by a rice combine on Sept. 15, 2016, and a ratoon forage crop was managed for crawfish production.

Fertilizer: Main Crop: 8-24-24 at 250 lb/A post plant application; 46-0-0 at 250 lb/A June 15; and 46-0-0 at 100 lb/A June 23, 2016

Herbicide: Londax at 1 oz/A, Permit at 0.5 oz/A, RiceBeaux at 2 qt/A, and Stam at 2 qt/A applied as a tank mix on May 26, 2016; Clincher at 20 oz/A plus Crop Oil at 1 qt/A on June 22, 2016

Insecticide: None

Fungicide: None

Crawfish Stocking Rate: 48.6 lb/A from June 14-24, 2016

Permanent Flood Date: Oct. 17, 2016

Feed: None

Trap Type and Density: 3-funnel pyramid trap: (0.75-inch square mesh); Density = 14.3 traps/A

Bait Used: Manufactured bait: *Southern Pride*, *Early-On* (Purina Mills, Inc., Shreveport, LA) or fish baits that included gizzard shad or menhaden (pogy). Experimental formulated baits were used for a limited number of trap sets and catch totals also included incidental yields from a limited number of non-baited trap sets.

Crawfish Harvest: Jan. 3 - June 22, 2017 (1,258.4 total trap-sets/A)

Fields Drained: June 30, 2017

Support: This project was partially supported by USDA National Institute of Food and Agriculture.

Table 1. Annual environmental conditions and crawfish production (averaged or totaled weekly). H. Rouse Caffey Rice Research Station, Crowley, LA 2016-2017.

Weeks (2016 - 2017)	Avg. Air Temp. Min.	Avg. Air Temp. Max.	Avg. Water Temp. Min.	Avg. Water Temp. Max.	Total Rainfall	Total Crawfish Harvest	Total Trap Sets
	-----------deg. F	-----------------			(inches)	(lb/A)	(#/A)
June 1-4	72.0	84.3	77.0	83.0	1.40		
June 5-11	72.4	87.9	77.1	85.4	2.91		
June 12-18	76.4	89.4	79.3	87.3	1.75		
June 19-25	74.4	89.6	80.4	90.0	.34		
June 26-July 2	74.7	92.6	82.4	91.4	2.25		
July 3-9	77.6	93.3	84.0	92.0	.24		
July 10-16	75.0	92.1	82.6	91.4	.96		
July 17-23	74.7	92.6	82.4	92.7	.49		
July 24-30	74.6	90.9	81.0	89.6	1.24		
July 31-Aug. 6	75.6	93.3	82.3	92.4	.15		
Aug. 7-13	75.2	92.8	80.5	90.0	16.67		
Aug. 14-20	74.1	86.3	77.9	84.7	.78		
Aug. 21-27	74.2	91.8	80.5	90.2	2.68		
Aug. 28-Sept. 3	73.1	89.7	79.1	87.7	.42		
Sept. 4-10	74.0	90.9	80.3	89.4	.64		
Sept. 11-17	72.9	89.1	79.0	87.3	.94		
Sept. 18-24	72.6	89.9	79.1	86.1	1.55		
Sept. 25-Oct. 1	64.6	86.7	78.0	86.7			
Oct. 2-8	63.0	86.9	77.6	85.6	.80		
Oct. 9-15	59.0	85.6	74.1	84.0			
Oct. 16-22	62.0	85.7	74.9	84.0	.96		
Oct. 23-29	50.7	80.9	67.0	77.7			
Oct. 30-Nov. 5	59.6	86.0	71.1	80.7			
Nov. 6-12	56.0	73.6	66.7	72.7	1.10		
Nov. 13-19	48.4	75.6	60.4	69.7	.33		
Nov. 20-26	47.2	73.6	57.0	66.6	.54		
Nov. 27-Dec. 3	50.2	69.8	57.8	65.5	1.70		
Dec. 4-10	45.4	57.6	53.2	59.4	6.20		
Dec. 11-17	46.1	66.0	53.3	61.7	.70		
Dec. 18-24	46.6	68.0	54.0	62.4	.50		
Dec. 25-31	62.5	76.7	64.3	69.8			
Jan. 1-7	52.6	68.8	60.4	65.4	5.20	8.5	42.9
Jan. 8-14	51.0	71.7	54.7	61.7	.38	5.0	14.3
Jan. 15-21	62.6	74.3	64.4	68.1	3.26	10.4	28.6
Jan. 22-28	41.7	68.3	60.3	65.3		17.1	28.6
Jan. 29-Feb. 4	45.8	70.6	55.8	61.4		17.7	28.6
Feb. 5-11	53.8	73.0	60.7	66.0		36.5	57.2
Feb. 12-18	59.0	74.3	64.5	68.0			
Feb. 19-25	54.1	74.6	62.7	69.1	.40	45.3	71.5
Feb. 26-March 4	52.3	72.4	62.1	69.4		56.1	57.2
March 5-11	58.1	74.0	63.1	68.6		42.5	57.2
March 12-18	46.5	68.3	60.3	66.8		39.6	42.9

Continued.

Table 1. Continued.

Weeks (2017)	Avg. Air Temp. Min.	Avg. Air Temp. Max.	Avg. Water Temp. Min.	Avg. Water Temp. Max.	Total Rainfall	Total Crawfish Harvest	Total Trap Sets
	-----------deg. F			------------	(inches)	(lb/A)	(#/A)
March 19-25	60.9	81.4	66.3	74.9	.26	55.6	71.5
March 26-April 1	62.6	79.4	68.0	74.9	1.25	67.9	71.5
April 2-8	57.7	77.6	65.6	74.1	2.30	64.6	57.2
April 9-15	60.3	80.0	67.6	77.1		85.0	71.5
April 16-22	67.4	82.1	71.3	67.3	1.30	82.6	71.5
April 23-29	58.9	79.1	68.1	76.6		64.9	71.5
April 30-May6	56.9	76.4			7.50	75.9	71.5
May 7-13	62.6	81.0			.90	59.8	57.2
May 14-20	68.9	83.7				55.1	42.9
May 21-27	66.1	81.3			2.70	61.3	57.2
May 28-June 3	71.7	84.0			2.20	34.3	42.9
June 4-10	68.3	83.6	73.3	82.5	2.23	50.9	42.9
June 11-17	74.3	87.6	77.9	86.6	.48	33.4	57.2
June 18-24	76.0	89.0	80.3	87.7	1.90	27.9	42.9
Yearly Total					**75.09[1]**	**1097.7**	**1258.4**

[1] Rainfall total is for one year only (June 1, 2016 - May 31, 2017) and does not include additional rainfall for the extended harvest period (June 2017).

CONVENTIONAL AND HYBRID RICE BIOMASS COMPARISONS UNDER CRAWFISH AQUACULTURE CONDITIONS – YEAR 2

W.R. McClain and J.J. Sonnier

INTRODUCTION

Crawfish aquaculture in the Southern United States relies solely on a forage-based system to furnish the necessary food resources for growing crawfish. Supplemental feeds are not routinely applied, nor have they been shown in research to provide cost benefits on a predictable or consistent basis. Crawfish receive their sustenance from sources within the pond, based largely on a detrital food chain. Intact vegetative matter contributes little to the direct nourishment of crawfish, short of providing some limited nutrients, and is mostly consumed when other food sources are in short supply. Decomposing plant material and associated microorganisms, collectively referred to as detritus, and some seeds are consumed to a much greater degree by crawfish and have higher food values. The optimum food resource in the pond, however, is the collection of aquatic invertebrates that, in turn, depend on detritus for their nourishment. Thus, the main role of forage crops in crawfish aquaculture is not to provide direct nutrition; rather, it is to provide the fuel that powers the food web, with crawfish at the top of the food chain within the web. Vegetation is also beneficial in providing cover for crawfish and protection from predators and in providing vertical structure that allows crawfish to disperse from the bottom and reach the water surface when necessary.

The microbes and larger invertebrate communities that crawfish rely on for high quality nutrition requires a continual influx of plant fragments to the aquatic environment for much of their nutrition. Too little vegetal fuel entering the detrital pool can cause a disruption of the invertebrate biomass and possible food shortages for crawfish. Too much plant fragmentation at one time is wasted because it can't be stockpiled and simply deteriorates or decomposes before it can be fully consumed. Furthermore, excess plant fragmentation over a short period of time can lead to premature depletion of the forage crop and/or contribute to water quality issues, principally low dissolved oxygen. Therefore, a forage crop that yields small portions of its total biomass on a consistent basis over the duration of the crawfish production season is desired.

Rice has generally become the standard forage crop for the crawfish industry because of its semi-aquatic nature and its characteristics under extended flooded conditions. It can produce considerable biomass and persist well in flooded crawfish ponds, yet it furnishes plant fragments to the detrital pool in a consistent manner. As immature rice grows, the older (lower) leaves sluff off, providing early plant fragments to the pond bottom. Once a freeze or heavy frost kills the above-water portion of the plant, the dead plant material tends to fragment gradually over time. Rice seeds that are produced also furnish food for crawfish as well as the indigenous invertebrate community. Moreover, under some conditions, rice plants can achieve further regrowth as water warms the following spring.

When crawfish population densities are moderate to high, rice (as well as many other forage types) can become taxed as a forage crop even under the best management practices. Early or premature depletion of rice biomass prior to completion of the crawfish growing/harvesting season can hamper maximum potential production, and is not an uncommon problem. Therefore, subtle differences in rice lines, especially with regard to the amount of biomass present late in the crawfish season, could influence overall production and/or net profits. Rice, or any agronomic crop for that matter, that yields high total biomass production with excellent biomass persistence (i.e., gradual fragmentation rate) is most likely to be associated with greater crawfish production and/or larger harvested individuals. Therefore, this study was conducted to acquire some preliminary information regarding the forage characteristics of several conventional versus hybrid rice lines under actual commercial crawfish aquaculture conditions.

Experimental Conditions: In cooperation with local rice producers, RiceTec, Inc. (Houston, TX) sponsored several outfield research/demonstration tests in large field plots to evaluate and compare rice yield and performance among several conventional and hybrid rice lines under commercial conditions. This study piggybacked off of those test plots to examine and compare forage characteristics of the same lines following the rice harvest under typical commercial crawfish culture conditions. One farm location (Byrne Farm) realized a single, main-crop rice harvest followed by pond reflooding with the intent of maximizing crawfish production from the field. The other location (Hundley Farm) managed the field for maximum rice yield with two rice harvests (main and ratoon crop harvests), followed by crawfish as a secondary crop. Both fields were stocked with crawfish broodstock during the early vegetative growth phase of the rice crop. All rice lines within a field were managed alike with regard to planting and harvest dates, as well as fertilizer and pest management practices. Planting rates were based on recommendations specific to rice type.

Pertinent data for each location are presented in Table 1. Beginning after the establishment of the crawfish permanent flood (October 2016 for the Byrne Farm and December 2016 for the Hundley Farm) and occurring bi-monthly until pond draining, total rice biomass in each plot was sampled. All forage matter was collected within three randomly selected 5 ft^2 (0.46 m^2) areas within each rice plot – to include both standing vegetation and or lodged or decomposing plant fragments within the sampled area. Standing plants were cut at the soil line, any non-rice vegetative types were discarded, and rice composed of all vegetative and/or reproductive plant components were dried to a constant weight at 167ºF (75ºC). Dry biomass data were then averaged (N=3) by rice line by month for each location and expressed as total dry weight in lb/A (Figures 1 and 2).

Support: This research was supported in part by RiceTec, Inc. (Houston, TX).

Results:

Table 1. Experimental conditions and farm locations for selected rice lines monitored for total biomass production and persistence over the subsequent crawfish season of 2016-2017. Three random samples were collected bi-monthly after crawfish pond flood-up.

Hundley Farm (Mowata, LA)	**CLXP769**	**CLXP766**	**XL745**	**Gemini 214 CL**	**CL111**	**CL151**
Seeding rate	450,000 seeds/A	450,000 seeds/A	450,000 seeds/A	450,000 seeds/A	65 lb/A	65 lb/A
Planting date	March 7, 2016					
Plot widths	40 ft					
Approx. field (“cut”) size	700 ft					
Main crop rice harvest date	Aug. 4, 2016					
Flood-up (for crawfish) date	Dec. 2016					
Relative crawfish density	Low to Moderate					
Byrne Farm (Elton, LA)	**CLXP769**	**CLXP766**	**XL745**	**Gemini 214 CL**	**CL111**	**CL151**
Seeding rate	450,000 seeds/A	450,000 seeds/A	450,000 seeds/A	450,000 seeds/A	65 lb/A	65 lb/A
Planting date	March 28, 2016					
Plot widths	40 ft					
Approx. field (“cut”) size	700 ft					
Main crop rice harvest date	Aug. 24, 2016					
Flood-up (for crawfish) date	Oct. 2016					
Relative crawfish density	Moderate					

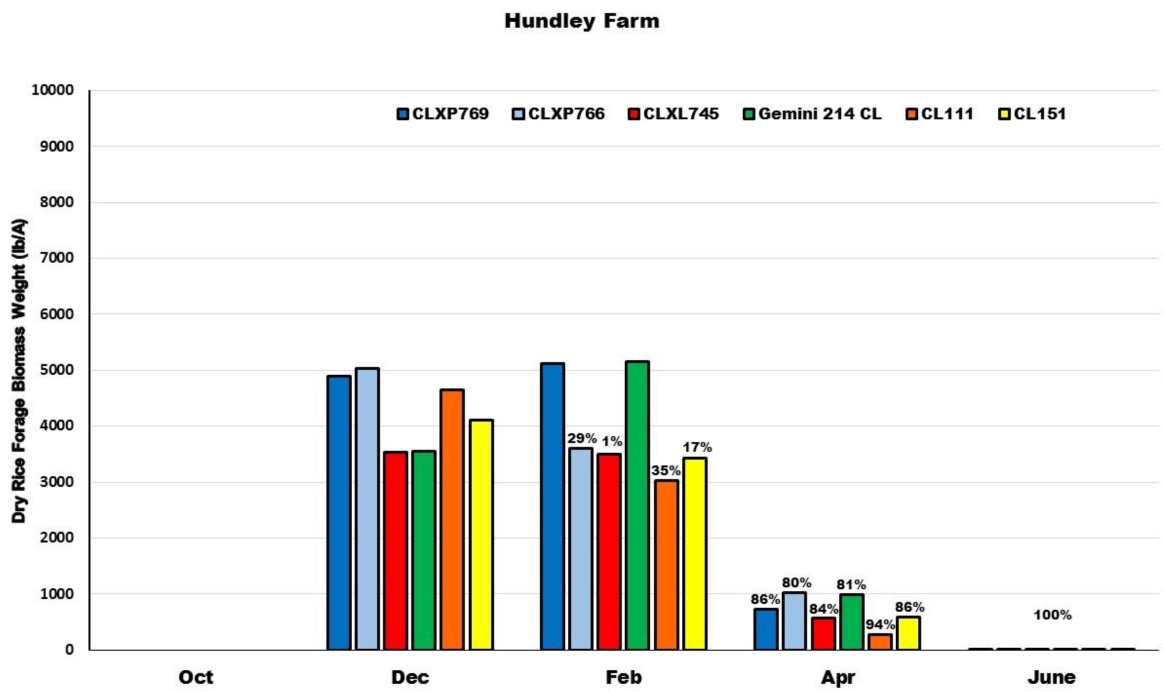

Figure 1. Mean rice forage biomass (lb/A dry weight) at bi-monthly intervals from six lines at the Hundley Farm, Mowata, LA, during the crawfish season. N = 3 replicates per line per month. Rice lines consisted of two commercial Clearfield pure-bred lines (CL111 and CL151) and four RiceTec hybrid lines (CLXP769, CLXP766, CLXL745, and Gemini 214 CL). Two rice crop yields were harvested from these lines prior to flood-up in December for crawfish. Bar heights represent average dry rice forage biomass weight for each line at each sampling, and numerical percentages represent the percentage reduction of biomass from peak weight, which occurred in December for four lines and in February for two lines.

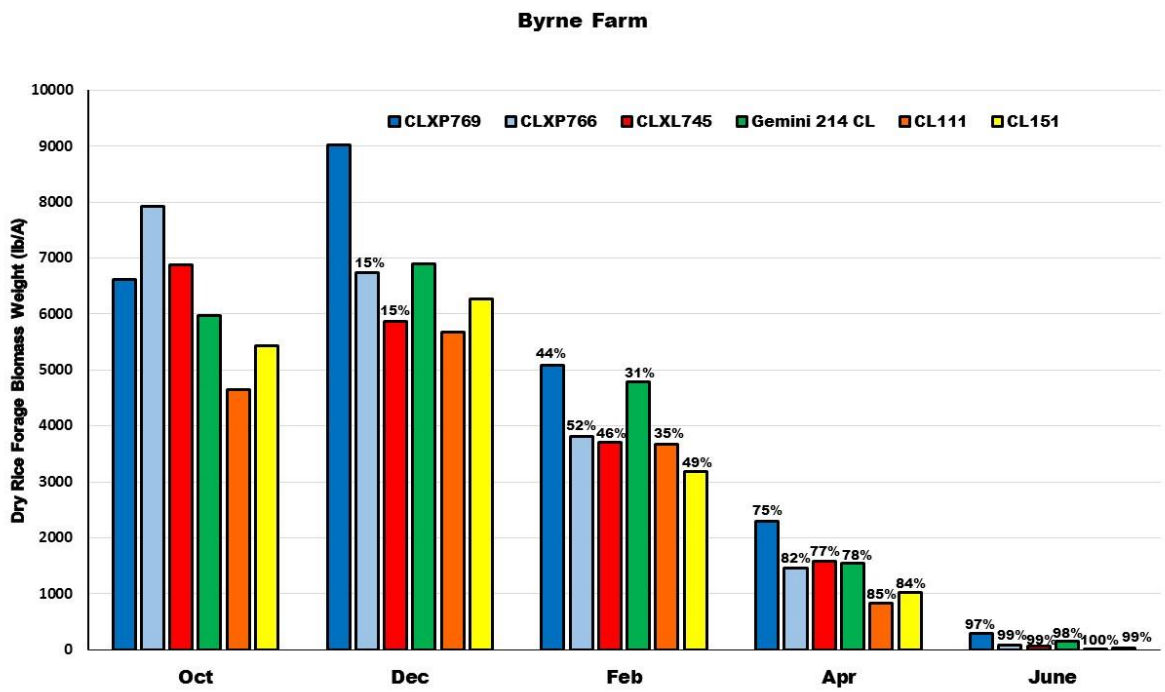

Figure 2. Mean rice forage biomass (lb/A dry weight) at bi-monthly intervals from six lines at the Byrne Farm, Elton, LA, during the crawfish season. N = 3 replicates per line per month. Rice lines consisted of two commercial Clearfield pure-bred lines (CL111 and CL151) and four RiceTec hybrid lines (CLXP769, CLXP766, CLXL745, and Gemini 214 CL). Single rice crop yields were harvested from these lines prior to flood-up in October. Bar heights represent average dry rice forage biomass weight for each line at each sampling, and numerical percentages represent the percentage reduction of biomass from peak weight, which occurred in October for two lines and in December for four lines.

Comments: Total rice biomass production for crawfish was far less for each rice line at the Hundley Farm as a result of the second rice harvest and lack of suitable growing conditions following that harvest. Given the warm weather and lack of an early killing frost, peak biomass production was reached by the December sampling for four of the six lines (CLXP766, CLXL745, CL111, and CL151). Biomass decline progressed thereafter for those. A slight increase in biomass was detected at the February sampling for CLXP769 and Gemini 214 CL. However, by April, biomass declines of 81-94% for all lines were recorded, and no detectable rice biomass remained by June. Under this scenario, whereby crawfish production followed the second rice crop, the selected hybrid lines exhibited little advantage over the pure-bred Clearfield lines in terms of biomass production or persistence for crawfish production. This may be explained by the limited opportunity for regrowth following the late (second) rice harvest and the fragile nature of the young, tender growth irrespective of rice genotype.

Under a more conventional approach of single crop rice followed by crawfish, as practiced on the Byrne Farm, the data reveals a potential slight advantage with several of the hybrid lines. In general, the hybrids achieved greater biomass production following the rice harvest and tended to have a slight advantage in biomass persistence late into the crawfish production season. While CLXP766 and CLXL745 reached peak biomass in October, with the other two hybrids and the pure-bred Clearfield lines peaking in December, each one of the hybrids achieved greater biomass than did the Clearfield lines at their peaks.

As shown by this data, as well as in previous studies, those rice types that yield a greater peak biomass typically retain a higher amount of biomass late in the season. For example, on average the hybrid lines yielded a 28.6% advantage in peak biomass production. Moreover, the hybrids also exhibited a slightly slower rate of decline from their peak biomass production (78% versus 85% for the pure-bred lines), giving them an 85% advantage with regard to available biomass on this farm by April. By June, most of the biomass had been depleted and utilized regardless of rice type, due in part to the moderately high population of crawfish present in this field.

These results, though preliminary, suggest that forage characteristics of at least the hybrid rice lines tested in this study, especially as managed for single crop rice, may provide important advantages over the pure-bred lines tested in this study. A similar trend favoring hybrid rice lines was observed in a previous study. A greater production of vegetative biomass and/or a slower rate of decline of that biomass pool over the course of the crawfish season may mean a greater availability of food for crawfish near the end of the season when crawfish biomass is typically the highest and demand the greatest. Although differences among the conventional lines and hybrids were not great in this study, any advantage in food resource presence, especially late in the season, could equate to fewer incidences of cannibalism and/or weight loss.

It should be noted though that these results are preliminary and more research is needed to determine if these advantages lie with hybrids in general or are specific to the lines tested and to what extent management practices, such as seeding rate, might affect the outcome. More research under a wider range of culture conditions is warranted before firm recommendations or conclusions can be made.

EFFECTS OF BAIT TYPE ON CRAWFISH CATCH UNDER COOL TEMPERATURES AT DIFFERENT TIMES WITHIN A SEASON

W.R. McClain and J.J. Sonnier

INTRODUCTION

While commercially manufactured crawfish baits have been on the market for several decades, cut fish has typically been the bait of choice for harvesting crawfish in the cooler parts of the season because it consistently generates larger catches. Gizzard shad and pogy (menhaden) are the most common fish used because they are the most economical and have typically been readily available. However, costs of fish baits have risen substantially in recent years and supplies have been limited at times. The price of fish baits are now approximately twice that of the manufactured crawfish baits. Moreover, nearly all fish baits require cutting into smaller portions, which is inconvenient and unpleasant, and fish bait must be kept frozen until used. Because of the costs and inconsistent supply of fish baits and because manufactured baits are easier to obtain and use and need no refrigeration, manufactured baits are sometimes used during the cooler harvesting period despite their lower yields. However, this measure is often taken without realizing the economic consequences.

Therefore, to provide producers with additional information from which to base management decisions, this study was undertaken to generate additional data regarding the differences in catch due to bait type at cooler water temperatures. This study also examined catch differentials at similar water temperatures but at different parts of the harvest season. Specifically, catch data was obtained early in the season when the population density of market-size crawfish is typically low and food resources typically high and then again about two months later when food resources are typically more scarce and harvestable density of crawfish higher.

Test Site and Production Scenario: A medium-sized (14 A) experimental crawfish pond at the H. Rouse Caffey Rice Research Station (HRCRRS), Crowley, LA, was managed to simulate a rice-crawfish field rotational production system. Following standard commercial practices and timings, rice (variety Jupiter) was planted in April 2016 and harvested in September 2016. The field was flushed periodically to encourage regrowth of rice for a crawfish forage crop until the permanent flood was established.

Crawfish Stocking: Brood crawfish were stocked at 48.6 lb/A during the early growth stage of the primary rice crop (June 2016), and pond recruitment occurred as a result of natural reproduction.

Permanent Flood Date: Oct. 17, 2016

Trap Type: Industry standard 3-funnel pyramid traps constructed of 0.75-inch coated square mesh wire. Traps were placed in designated trapping lanes and spaced at approximately 50-ft intervals. Bait treatments were randomly assigned to traps and were replicated with 10 traps per bait per 24-hour soak.

Baits: Experimental baits (i.e., treatments) consisted of either cut pogy (menhaden) or a commercially available pelleted bait (Southern Pride, Purina Mills, Shreveport, LA). Bait quantity used throughout the study was approximately 115 to 150 g (or 1/4 to 1/3 lb) per trap and was adjusted by catch and amount of residual bait remaining following the 24-hour soak. Bait quantity was adjusted to ensure bait was available over the entire soak period. Fresh bait was used daily. Non-baited traps were also employed on each date (10 reps per date) as a negative control and to ascertain relative population densities of harvestable size crawfish.

Trap Soak Duration: 24 hours.

Dates: Harvesting was initiated on four dates in January (10, 11, 24, and 25) within the first month of the harvest season and on four dates within the month of March (6, 7, 14, and 15), typically the peak of the harvest season. Dates were chosen to ensure similar water temperatures within the cooler (58-68°F) portion of effective harvesting temperature ranges. Harvesting dates and effort (i.e., number of total trap lifts) were consistent for each bait treatment.

Water Temperature: Water temperature was recorded by a submerged temperature data logger (Hobo®, 104 Onset Computers, Pocasset, MA. model TEMP) that recorded temperature at 4-hour intervals. Average daily water temperature was derived from the data for each 24-hour period preceding the trap lifts.

Parameters: Average number and weight of crawfish captured per trap by bait treatment, and percentage increase in catch with cut-fish over the manufactured crawfish bait.

Comments: Average crawfish catch data (lb/trap) for each harvest date, by bait treatment, is presented in Figure 1, along with the average daily water temperature for the 24-hour period leading up to each trap run. Mean 24-hour water temperatures ranged from 58-66ºF during the trial with nearly identical monthly averages (60.5ºF for January verses 60.1ºF for March). Note that crawfish catches were generally lower for the month of January. This is most likely due to a lower density of crawfish in the larger size classes (as is typical early in the season) as evidenced by lower numbers of harvestable-size crawfish entering non-baited traps.

The most notable feature of the graphic is the magnitude of the differences in catch with fish over the manufactured bait, Southern Pride, and the consistency of the difference throughout the trial. These observations have been consistent with virtually all previous baiting studies within these temperature ranges. To further quantify the differences in catch between bait types, and to compare results among different periods within the cooler part of a typical harvest season, the data are presented in Table 1. While the catch was substantially lower (both in number and weight of crawfish captured) in January, the magnitude of the difference (% increase in catch) between fish baited traps and those baited with Southern Pride were much greater than the magnitude of the difference at the peak of the harvest season (in March). The degree of difference may also be affected by population density of harvest-size individuals and/or quantity and quality of natural foods available. Therefore, it may be more preferable for farmers to use fish baits over the more convenient manufactured baits early in the harvest season. Depending on cost differentials of the different bait types and on market prices of crawfish, net profits are likely to be greatest when fish baits are used whenever water temperatures are consistently below about 65ºF based on this and other studies.

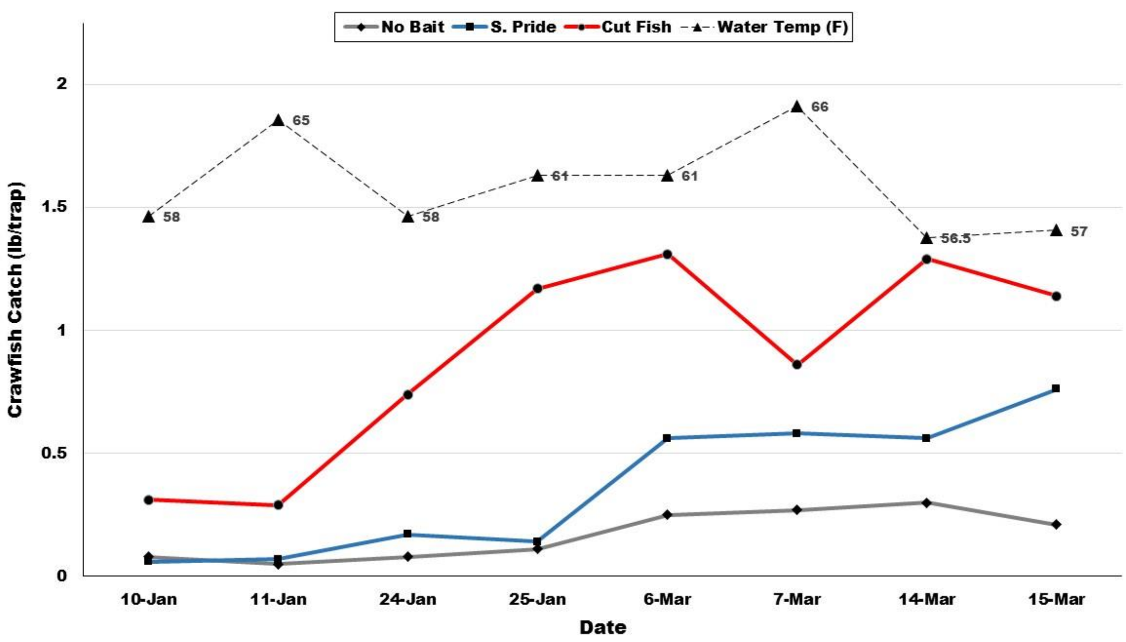

Figure 1. Average crawfish catch per trap at similar water temperatures in January and March 2017 with different bait treatments. Water temperature data represent the average temperature during each 24-hour bait soak period.

Table 1. Average water temperature and catch values (both in number of crawfish and weight of crawfish) per trap by month, and average percentage increase in catch with fish bait over that with Southern Pride (SP), by month, both in number (No. CF) and weight (lb/trap) of crawfish captured.

Month	Avg. Water Temp. (ºF)	Avg. Catch with SP (No. CF)	Avg. Catch with Fish (No. CF)	Avg. Catch with SP (lb/trap)	Avg. Catch with Fish (lb/trap)	Avg. Individual Crawfish Size (g)	Avg. Increase in Catch (No. CF)	Avg. Increase in Catch (lb/trap)
Jan.	60.5	3.0	14.0	0.11	0.62	15.7	371%	468%
March	60.1	11.3	19.2	0.62	1.15	25.6	69.8%	86.9%

EFFECTS OF A PARTIAL DRAIN ON MITIGATING CRAWFISH OVERPOPULATION: A PRELIMINARY INVESTIGATION

W.R. McClain and J.J. Sonnier

INTRODUCTION

Harvest of sub-optimal size crawfish can be problematic for producers that compete in the live market trade. It was once thought that the overwhelming factor causing the excessive production of small or stunted crawfish in production ponds was food deficiency. Harvests of stunted populations are nearly always associated with premature depletion of the food resources. It is likely that as crawfish density increases beyond some optimum level, food resources become depleted and nutritional shortages do limit growth. Research has shown, however, that crawfish grown under crowded conditions will have a slow growth rate and small size at maturity even with supplemental feeding. It has been clearly demonstrated that crawfish exhibit a density-dependent growth response. Final size is inversely related to density, and high feeding rates with quality diets are unable to fully counteract the effects of high density on crawfish growth. Research suggests that the overwhelming factor affecting size-at-harvest in commercial crawfish ponds is not simply food shortages, as was once thought, but principally overcrowding.

While high population density has been identified as the single most limiting factor affecting crawfish growth and harvest size, control of crawfish numbers is possibly one of the most elusive aspects of crawfish pond management. This is largely due to the fact that crawfish aquaculture relies solely on natural reproduction to populate ponds, and the degree of reproductive success is largely independent of producer inputs, but highly dependent on environmental conditions. Efforts to influence young-of-the-year recruitment rates by exercising controls on broodstock populations outside of the growing season have typically been ineffective, due largely to subsequent environmental factors.

To better achieve more favorable and predictable results within a growing season, one must be able to identify overcrowding early on and implement the appropriate corrective action. This must be accomplished early in the season before food resources have been depleted and before the bulk of the growing population reaches the terminal molt. In short, overpopulation must be recognized near completion of young-of-the-year recruitment, and then some corrective action undertaken to reduce the population to an optimum level such that the remaining crawfish will have time, space, and food resources to achieve optimum growth prior to harvest.

In a previous set of trials, this hypothesis was tested in small experimental earthen ponds at the H. Rouse Caffey Rice Research Station with mixed results. Overpopulated crawfish ponds were partially drained from 3 days to one week in late winter and then refilled. This practice was based on the theory that if crawfish can be concentrated in small pools of water for a short time, cannibalism and aggression will effectively thin out the population, especially with regard to smaller individuals, leaving the survivors more room and resources to grow optimally when ponds are refilled. In those trials, standing water was reduced to about 20% of the bottom surface area (largely in ditches and boat ruts), with the remaining bottom surface area exposed. In some cases the subsequent results consisted of high yields of large crawfish (desirable outcome), while in other cases the yields were low but of very large crawfish (over-compensatory effect) or moderate yields of small crawfish (under-compensatory effect).

Therefore, this study was undertaken to again test this theory of a controlled mid-season drain to mitigate overpopulation but with the hope of better controlling the variables by using large outdoor pools. The outdoor pools, with soil and planted rice crops and stocked with crawfish of known densities, is capable of simulating pond culture environments but offer more precise control over key variables such as stocking densities and timings and water management.

Experimental Units: Twelve, 12-ft diameter x 5-ft tall (10.5 m^2 bottom surface area) outdoor fiberglass pools with 6 inches (15.2 cm) of soil and a planted rice crop served as simulated natural crawfish habitats (mesocosms) and were utilized as experimental units.

Forage Crop: The rice variety Jupiter was planted Aug. 23, 2016, at 120 lb/A. Fertilizer (8-24-24) was applied pre-planting at 250 lb/A, and 45-0-0 was applied at 200 lb/A as a topdress on Sept. 21, 2016. A tank mix of herbicides (Basagran, Londax, and Permit) was applied at recommended rates on Sept. 7 and again on Sept. 21, 2016. The insecticide Karate (at 10 ml/gal) was applied as a mist application for armyworm control on Sept. 9 and again on Sept. 21, 2016. A permanent flood was established on Oct. 21, 2016.

Water Source: Municipal water was vigorously aerated and aged at least two days prior to use in pools. Water levels in pools were maintained at approximately 14 inches (35.6 cm) deep throughout the crawfish growth trials.

Crawfish: Stocker crawfish were red swamp (*Procambarus clarkii*) hatchlings, obtained by capturing females in berry. Broods from several berried females at each stocking were pooled, with exceptionally large or small hatchlings excluded and remaining young randomly stocked in tanks according to preassigned rates and dates. Overall average weight for stocked hatchlings was 1.29 mg with averages by stocking date ranging from 1.14 to 1.39 mg.

Experimental Design: A completely randomized design with four replicated mesocosms per treatment.

Crawfish Stocking Rate and Dates: Hatchlings were stocked over four dates to represent multiple recruitment waves with 20 (1.9/m^2), 80 (7.6/m^2), 80 (7.6/m^2), and 20 (1.9/m^2) crawfish per tank introduced on Nov. 11, Nov. 21, Dec. 1, and Dec. 12, 2016, respectively, to yield a total of 200 crawfish per tank (19/m^2).

Supplemental Aeration: A Sweetwater® regenerative blower provided supplemental aeration via four shop-built diffusers (3-inch PVC pipe, 1 ft long) per tank. Aeration was provided continuously when water temperature was greater than about 80ºF and was provided nocturnally when water temperature was between approximately 70 and 80ºF. Aeration was consistent across all treatments. Dissolved oxygen (DO) was monitored periodically with a YSI model 50B oxygen meter (Yellow Spring Instrument Corp., Yellow Springs, Ohio) to ensure early morning DO levels remained above 1.5 ppm.

Temperature Monitoring: Water temperature was recorded every 4 hours by temperature data-loggers (Hobo®, 104 Onset Computers, Pocasset, MA, model TEMP) placed randomly in representative tanks at each stocking.

Experimental Treatments: Partial, mid-season drain constituted the experimental treatments. Drain treatments consisted of discharge of all water, filtered to exclude loss of crawfish, over the course of several hours, and halted when approximately half of the soil surface was exposed. Shallow water remained in the other 50% of each tank. Drained tanks remained in this condition for 24 hours and were refilled to the previous depth with aerated water. Treatments consisted of an Early drain (Feb. 1, 2017), Late drain (March 1, 2017), and Control (no drain), with 4 replicated tanks each. See Table 1.

Crawfish Sampling: Crawfish populations in each tank were sampled periodically by means of baited traps to assess growth and maturity. Captured crawfish were immediately returned to the population. When 50% of the captured crawfish were judged to be mature, the trial was soon terminated, and all crawfish in each tank were retrieved and weighed.

Study Termination: Three days before trial termination, crawfish harvest commenced in earnest by baited trap with three traps per tank (equivalent of 1,156 trap sets per acre) per night. After three nights of retrieving crawfish by trap, the tanks were drained and residual crawfish were removed by hand.

Parameters: Average crawfish survival and individual weight at termination.

Comments: Results at termination of the study are presented in Table 2. There were no significant differences among treatments in either average individual weight or percent survival. Because survival rates following the drain treatments were no different than the non-drained control group, reflecting similar results in average final weights among treatments, this was an indication that the partial drain was ineffective in increasing crawfish mortality above the natural rate of mortality observed under these experimental conditions. It is apparent that one or both of the established parameters set for this study (50% soil exposure, 24-hour drain duration) was insufficient for effectively reducing the crawfish population under the conditions of this test.

Previous research has indicated that crawfish densities over about 4-6 crawfish/m^2 result in slower growth and lower final weights. Therefore, at an average final density of over 10 crawfish/m^2 in the control group, and with no additional reduction in density in the drain groups, average final weights of crawfish were below market expectations of 25-30 g.

The timing and conditions of the partial mid-season drain were obviously ineffective in significantly reducing standing crop density in this preliminary test, thereby confounding the possibility for testing the theory of affecting growth and/or final weights via use of a mid-season drain. To facilitate a more effective reduction in crawfish density, it is suggested that standing water occupy less percentage of the bottom surface area and/or the drain interval be extended, at least under similar experimental conditions. Experimentation for one or both conditions may be necessary to obtain the desired degree of density reduction, and only then can the theory of a mid-season drain be fully tested as a possible means for correcting overcrowding.

In short, to rely on aggression and cannibalism as the primary means to effect sufficient reduction in their numbers, crawfish have to be sufficiently confined to very crowded habitats for an adequate period of time such that numbers are adequately, but not overly, reduced. Even after successful research trials, this objective may be more art than science in the commercial sector for some time to come due to the variability of conditions and factors affecting outcomes.

Table 1. Experimental treatment details.

Drain Treatment	Mid-Season Drain	Drain Duration	% Surface Exposed	Drain Date
Control	No	-	-	-
Early	Yes	14 hours	50	Feb. 1, 2017
Late	Yes	14 hours	50	March 1, 2017

Table 2. Average crawfish survival (5) and individual weight (g) at termination of the study by treatment.

Treatment	Total Crawfish Retrieved	Avg. % Survival	Avg. Ind. Weight (g)
Control	106	53	16.3
	150	75	11.3
	75	37.5	16.7
	100	50	17.7
Control Avg.	**108**	**54**	**15.5**
Early Drain	121	60.5	15.2
	81	40.5	19.3
	133	66.5	11.5
	112	56	13.9
Early Avg.	**112**	**56**	**15.0**
Late Drain	117	58.5	15.2
	133	66.5	11.6
	84	42	18.7
	113	56.5	13.5
Late Avg.	**112**	**56**	**14.7**

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 170,400 cwt. of pedigreed stock of more than 45 rice varieties.

Concurrent with the distribution of pure seed by the HRCRRS, an industry was developed in Louisiana composed of independent seed dealers through whom farmers could 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 of 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 are performed 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.

2017 ACTIVITIES

Of the 776 cwt. of foundation seed rice sold in 2017, the varieties and quantities were as follows: Cheniere, 367 cwt.; Jupiter, 184 cwt.; Pirogue, 51 cwt.; Jazzman, 50 cwt.; Della-2, 37 cwt.; Toro-2, 36 cwt.; Jazzman-2, 33 cwt.; and Catahoula, 18 cwt.

The HRCRRS's foundation seed crop in 2017 consisted of 12 acres of Mermentau, 1 acre of Jazzman, 1 acre of Caffey, 1.5 acres of Della-2, and 1 acre of Cocodrie.

Headrows of Mermentau, Jazzman, Caffey, Cocodrie, and Della-2 were grown for replenishment of breeder seed stock.

RICE PRODUCTION ECONOMICS RESEARCH IN 2017

M.A. Deliberto and M.E. Salassi

The 2017 projected cost and return rice enterprise budgets were developed in the fall of 2016 for alternative rice production systems in Louisiana. These enterprise budgets are intended to serve as a farm management planning tool. 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 variety 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 are 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 tenure situation that is reflected 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 $468.24 per acre of variable costs and $559.14 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 $523.03 per acre of variable costs and $612.78 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 $606.26 per acre of variable costs and $691.82 per acre for total specified costs. Net return estimates for the ratoon crop production system (Table 4) are based on production cost estimates of $108.54 per acre of variable costs and $131.05 per acre for total specified costs.

To further assist rice producers in planning for the 2017 crop year, the Projected 2017 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 2017 and the model will automatically generate estimates for net returns above variable and total production costs. Farm program payments of the Agricultural Act of 2014 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, 2017.

		Percent								
		80%	85%	90%	95%	100%	105%	110%	115%	120%
	Yield	Rice Market Price ($/cwt)								
Percent	(cwt.)	$8.00	$8.50	$9.00	$9.50	$10.00	$10.50	$11.00	$11.50	$12.00
		($/A)								
80%	56.0	-106	-90	-73	-57	-40	-24	-8	9	25
85%	59.5	-86	-69	-51	-33	-16	2	19	37	55
90%	63.0	-67	-48	-29	-10	9	27	46	65	84
95%	66.5	-47	-27	-7	13	33	53	73	93	113
100%	70.0	-28	-6	15	36	58	79	100	122	143
105%	73.5	-8	15	37	60	82	105	127	150	172
110%	77.0	12	35	59	83	107	130	154	178	202
115%	80.5	31	56	81	106	131	156	181	206	231
120%	84.0	51	77	103	129	156	182	208	234	260

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, 2017.

		Percent								
		80%	85%	90%	95%	100%	105%	110%	115%	120%
	Yield	Rice Market Price ($/cwt)								
Percent	(cwt.)	$8.00	$8.50	$9.00	$9.50	$10.00	$10.50	$11.00	$11.50	$12.00
		($/A)								
80%	56.0	-160	-143	-127	-110	-94	-78	-61	-45	-28
85%	59.5	-140	-122	-105	-87	-70	-52	-34	-17	1
90%	63.0	-120	-102	-83	-64	-45	-26	-7	122	30
95%	66.5	-101	-81	-61	-41	-21	0	20	40	60
100%	70.0	-81	-60	-39	-17	4	25	47	68	89
105%	73.5	-62	-39	-17	6	28	51	74	96	119
110%	77.0	-42	-18	6	29	53	77	100	124	148
115%	80.5	-22	3	28	53	77	102	127	152	177
120%	84.0	-3	23	50	76	102	128	154	181	207

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, 2017.

		Percent								
		80%	85%	90%	95%	100%	105%	110%	115%	120%
	Yield	Rice Market Price ($/cwt)								
Percent	(cwt.)	$8.00	$8.50	$9.00	$9.50	$10.00	$10.50	$11.00	$11.50	$12.00
		($/A)								
80%	64.0	-188	-169	-151	-132	-113	-94	-76	-57	-38
85%	68.0	-166	-146	-125	-105	-85	-65	-45	-25	-5
90%	72.0	-143	-122	-100	-79	-57	-36	-14	7	29
95%	76.0	-121	-98	-75	-52	-29	-6	17	40	63
100%	80.0	-99	-74	-50	-26	-1	23	47	72	96
105%	84.0	-76	-50	-25	1	27	53	78	104	130
110%	88.0	-54	-27	1	28	55	82	109	136	163
115%	92.0	-31	-3	26	54	83	111	140	168	197
120%	96.0	-9	21	51	81	111	141	171	201	231

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, 2017.

		Percent								
		80%	85%	90%	95%	100%	105%	110%	115%	120%
	Yield	Rice Market Price ($/cwt)								
Percent	(cwt.)	$8.00	$8.50	$9.00	$9.50	$10.00	$10.50	$11.00	$11.50	$12.00
		($/A)								
80%	18.4	9	15	20	25	31	36	42	47	52
85%	19.6	16	22	27	33	39	45	50	56	62
90%	20.7	22	28	35	41	47	53	59	66	72
95%	21.9	29	35	42	48	55	62	68	75	81
100%	23.0	35	42	49	56	63	70	77	84	91
105%	24.2	41	49	56	64	71	78	86	93	101
110%	25.3	48	56	64	71	79	87	95	103	110
115%	26.5	54	63	71	79	87	95	104	112	120
120%	27.6	61	69	78	87	95	104	112	121	130

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 - 2017[1]

K.A. Fontenot and D.L. Harrell

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 a total of 10 parishes (Acadia, Allen, Avoyelles, Calcasieu, East Carroll, Evangeline, Jefferson Davis, Madison, Morehouse, St. Landry, and Vermilion). From 1999 to 2016, 133 fields had been included in the verification program. In 2017, the program included five fields (Figure 1).

The fields were visited on at least a weekly basis by a specialist, extension associate, or county agent to make production practice recommendations. 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). Yields of the first crop averaged 8,316.64 lb/A (50.07 bbl/A or 183.07 bu/A) at 12% moisture. The ratoon crop was harvested in Calcasieu Parish adding another 2,338 lb/A to the total for a final average of 8,686.7 lb/A (52.3 bbl/A or 191.28 bu/A). This is the seventh highest ranked overall yield of the verification program in the 20 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 field.

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.

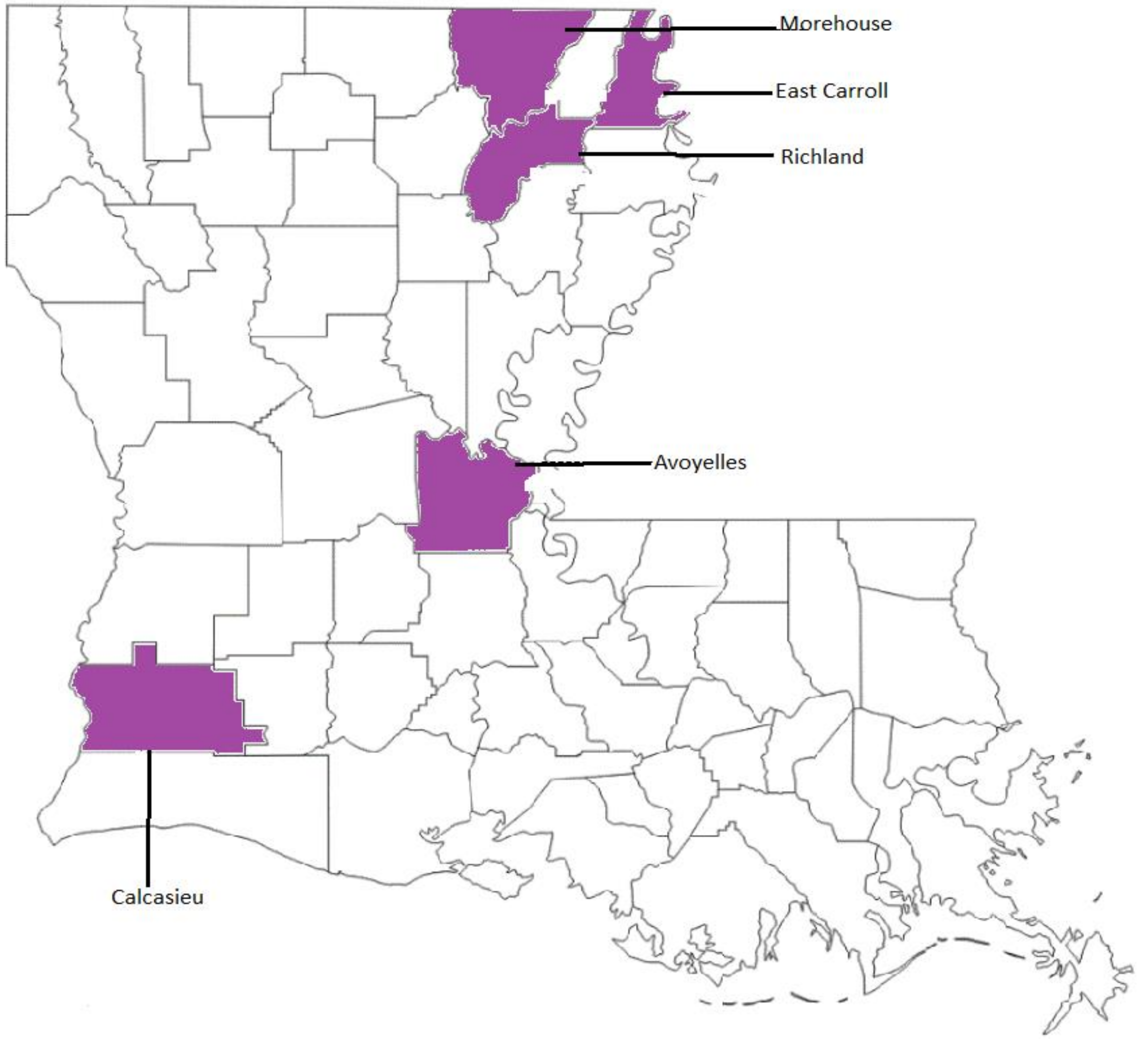

Figure 1. Verification parishes in 2017.

Table 1. Yields of Verification Fields in 2017.

Parish	Acres	Variety	Cwt/A Green	Bbl/A Green	Bu/A Green	Cwt/A Dry	Bbl/A Dry	Bu/A Dry
Avoyelles	31.6	Cheniere	63.40	39.14	140.9	61.75	38.12	137.23
Calcasieu[1]	19.5	CL111	94.53	58.31	209.8	88.81	54.79	197.3
East Carroll	5.0	CLXL745 and RT Silver	102.96	63.5	228	97.09	59.8	215.75
Morehouse	34.4	CLXL7311 and RT 753	108.90	67.2	242	106.67	65.8	237
Richland	32.7	CL163	88.73	54.78	197.19	84.65	52.25	188.12
Total Acres	123.2							
Average			88.97	55.19	198.50	86.86	52.30	191.28

[1] Yield includes ratoon crop.

Table 2. 2017 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]
Avoyelles	Cheniere	61.75	60.98 / 75.27	452.85	7.33	290.00
Calcasieu[1]	CL111	88.81	69.27 / 75.56 52.19 / 72.14	655.52	7.37	412.86
East Carroll	CLXL745 and RT Silver	97.09	N/A	521.77	5.37	646.77
Morehouse	CLXL7311 and RT 753	106.67	54.7 / 74	546.68	6.45	687.39
Richland	CL163	84.65	54.7 / 74	595.85	5.58	471.65

[1] Figure includes ratoon crop yield.
[2] Costs captured are from land preparation to harvest. They do not include land rent, transporting, drying, storing, or fixed costs.
[3] This value was obtained using a selling price of $12.03/cwt.

AVOYELLES PARISH

After disking and bed leveling the drained crawfish field, this 31.6-acre field was planted on April 25, by aerially dry broadcasting 117 lb of untreated Cheniere seed per acre. The seed was then harrowed in to cover it. A herbicide application of 12 oz of Command and 26 oz of Roundup was applied after harrowing in of the seed. The field was flushed lightly to aid in seed germination and herbicide activation, and also received .9 inch of rain five days after flushing.

At planting, 100 lb of diammonium phosphate (DAP) plus 100 lb of SUL4R-PLUS, and 5 lb of zinc were applied for a fertilizer blend of 18-46-0-16-1.5/A. Once a stand was established, delayed flood water management was employed.

Approximately 10 days after emergence, an application of 100 lb of ammonium sulfate was made, and the field was flushed by a 1.35-inch rain the next day. A rainy and overcast period over the next three weeks necessitated watchful water management. Even with this, the rice stretched. After allowing for recovery, a herbicide application of 4 qt/A of Duet along with 175 lb of urea was applied, and the water level was brought back up to flood level. A period of drier weather and sunshine really enhanced the growth and vigor of the rice. The final fertilizer application of 100 lb of urea was applied on June 28 during green ring.

Rice water weevils as well as rice stink bugs were present in the field and populations were monitored. However, as this was an intended crawfish field, no control was recommended for either of the insects. Sheath blight lesions were found low in the canopy and were monitored until the 50% heading stage when an application of 19 oz of Stratego was applied. The farmer also elected to include 32 oz of malathion with the fungicide application for insect control. Although this was not a recommended application, we did monitor the insect population afterwards and found no noticeable control effect from the application.

The growth stages of the field were noted as: Planted - April 25, Emergence - May 8, Green Ring - June 26, Panicle Differentiation - July 6, 50% Heading - July 15, Drained for Harvest - Aug. 14, and Harvested - Sept. 7.

Harvest was on Sept. 7 at 14.2% moisture with the following totals: the yield was 63.40 cwt/A, 140.9 bu/A, or 39.14 bbl/A. When adjusted to 12% moisture, the yield was 61.75 cwt/A, 137.23 bu/A, or 38.12 bbl/A.

AVOYELLES PARISH

Cooperator: Kevin Lacour
Agent: Justin Dufour
Consultant: N/A
Field Size: 31.6 Acres

Cultural Practices

Variety: Cheniere
Method of Planting: Dry broadcast-air
Water Management: Delayed flood
Seeding Rate: 117 lb/A
Date of Planting: April 25
Date of Emergence: May 8

Growth and Development

Stage	Observation Date
Green Ring	May 26
Panicle Differentiation	July 6
50% Heading	July 15
Drain for Harvest	Aug. 14
Harvest	Sept. 7

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	61.75	60.98 / 75.27	452.84	7.33	290.00

[1] Costs captured are from land preparation to harvest. They do not include land rent, transportation, drying, storage, or fixed costs.

[2] This value was obtained using a selling price of $12.03/cwt.

Fertilization

Date	Source	Rate (lb/A)	N (lb/A)	P (lb/A)	K (lb/A)	S (lb/A)	Zn (lb/A)
April 24	18-46-0-16-1.5	100	18	46	0	16	1.5
May 18	21-0-0-24	100	21	0	0	24	0
June 11	46-0-0	175	81	0	0	0	0
June 28	46-0-0	100	46	0	0	0	0
First Crop / Season Total			165	46	0	40	1.5

Weed Management

Weeds Present	Date of Treatment Decision	Recommendation
Various Broadleaves/Grasses	April 25	12 oz Command + 26 oz Roundup
Broadleaves and Few Grasses	June 11	4 qt Duet

Disease Management

Diseases Present	Date of Treatment Decision	Recommendation
Sheath Blight	July 17	19 oz Stratego

Insect Management

Insects Present	Date of Treatment Decision	Recommendation
Rice Stink Bug	July 17 (Not Recommended)	32 oz malathion

Avoyelles Parish

Item	Description	Cost/A	Acres	Total
Burndown				$0.00
Application Cost - Herbicide				$0.00
Field Work, Disking, etc.	Disk and Bed Level	$9.84	31.6	$310.94
Water Leveling				$0.00
Ditching		$1.24	31.6	$39.18
Seed	Cheniere 117 lb/A	$39.78	31.6	$1,257.05
Seed Treatment (if separate)	N/A			$0.00
Planting	Dry Broadcast and Harrowed in	$11.93	31.6	$376.99
Fertilizer	100 lb DAP + 100 lb S + 5 lb Zn	$43.05	31.6	$1,360.38
Application Cost - Fertilizer		$7.00	31.6	$221.20
Herbicide	12 oz Command + 26 oz Roundup	$14.57	31.6	$460.41
Application Cost - Herbicide		$6.00	31.6	$189.60
Herbicide	Duet 4 qt. + Crop Oil Concentration	$37.00	31.6	$1,169.20
Application Cost - Herbicide		$6.00	31.6	$189.60
Fertilizer	100 lb Ammonium Sulfate	$15.69	31.6	$495.80
Application Cost - Fertilizer		$6.92	31.6	$218.67
Fertilizer (urea)	175 lb Urea	$27.13	31.6	$857.31
Application Cost - Fertilizer		$11.81	31.6	$373.20
Fertilizer (urea)	100 lb Urea	$14.90	31.6	$470.84
Application Cost - Fertilizer		$6.75	31.6	$213.30
Fungicide	19 oz Stratego + 32 oz malathion (NR)	$30.65	31.6	$968.54
Application Cost - Fungicide		$6.00	31.6	$189.60
Harvest - Cart with Tractor		$5.04	31.6	$159.26
Harvest - Combine		$43.50	31.6	$1,374.60
Water Costs		$108.05	31.6	$3,414.38
Fuel and Maintenance				$0.00
Power Unit and Gear Head				$0.00
First Crop Totals		$452.85		$14,310.06

CALCASIEU PARISH

This 19.5-acre field was one section of a 60-acre piece farmed by the producer. A burndown application of 40 oz of glyphosate plus 2.5 oz of Afforia and 8 oz of Classic was applied by air. The field was lightly disked then harrowed after a pre-plant application of 150 lb of 0-18-36 fertilizer plus 5 lb of zinc sulfate fertilizer that was applied by a spreader truck prior to planting. The field was drill planted on March 21 with Dermacor X-100-treated CL111 seed at the rate of 70 lb/A. Emergence was called on March 21. Rains continuously affected the timing of management practices both early and late in the season, especially affecting early season fertilizer and herbicide applications.

Stand evaluation was very good, while weeds present in the field were a few grasses but primarily broad-leaves, such as alligator weed, jointvetch, ducksalad, eclipta, and dayflower. Early weed control at planting was 6 oz of Command plus 30 oz of glyphosate. This was followed in two weeks by 5 oz of Newpath plus 2 pt of Prowl at the three-leaf stage of growth. Ammonium sulfate was applied at 100 lb/A, and then the field was flushed. Weed persistence necessitated an application of .5 oz of Regiment plus .3 oz of Herbivore plus 6 oz of Newpath along with 200 lb of urea followed by an application of permanent flood. As the rice was tillering, narrow brown leaf spot disease was found on a few scattered leaves. We monitored this and watched for any blast or sheath blight lesion development as well as several areas of thin stand where the soil had been cut hard during leveling operations. Approaching green ring, there were still some persistent alligator weed infestations, so 1.5 pt of 2,4-D along with the green ring application of 100 lb of urea were applied. The Cercospora and narrow brown leaf spot lesions were no longer evident; although, we did get some leaf spotting from the 2,4-D application. Cloudy and rainy weather from this point lasting about two weeks did not assist plant growth. We did find areas of the field with scattered sheath blight lesions low in the canopy near the waterline. This field was very uneven during the heading development growth stage. When rice panicles reached two inches with some approaching boot split, the decision was made to apply 19 oz of Stratego plus 4 oz of Topaz fungicide for sheath blight control. Stink bug levels were monitored throughout heading and filling stages but never approached economic threshold levels.

The growth stages of the field were noted as: Planted - March 9, Emergence - March 21, Green Ring - May 15, Panicle Differentiation - May 22, 50% Heading - June 19, Drained for Harvest - July 10, and Harvested - July 26.

After first harvest, the stubble was shredded to stimulate plants for the ratoon crop production. However, this was quickly followed by a hurricane and torrential rains which delayed the application of the fertilizer to the stubble. On Aug. 22, 200 lb of urea was applied. The ratoon crop was harvested on Nov. 7.

First crop harvest was on July 26. Harvest moisture averaged 17% with the following totals: the yield was 69.39 cwt/A, 154 bu/A, and 42.8 bbl/A. When adjusted to 12% moisture, the yield was 65.43 cwt/A, 145.4 bu/A, 40.39 bbl/A.

Ratoon crop was harvested on Nov. 7. Harvest moisture averaged 18% with the following totals: the yield was 25.14 cwt/A, 55.86 bu/A, or 15.51 bbl/A. When adjusted to 12% moisture, the yield was 23.38 cwt/A, 51.9 bu/A, 14.4 bbl/A.

Total yield (first and ratoon) adjusted to 12% moisture was 88.81 cwt/A, 97.3 bu/A, or 54.79 bbl/A.

CALCASIEU PARISH

Cooperator: Brandon Vail
Agent: Bradley Pousson / Jimmy Meaux
Consultant: Kim Landry
Field Size: 19.5 Acres

Cultural Practices

Variety: CL111
Method of Planting: Drill seeded
Water Management: Delayed flood
Seeding Rate: 70 lb/A
Date of Planting: March 9
Date of Emergence: March 21

Growth and Development

Stage	Observation Date
Green Ring	May 15
Panicle Differentiation	May 22
50% Heading	June 19
Drain for Harvest	July 10
Harvest	July 26

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	65.43	69.27 / 75.56	540.50	8.26	246.62
Ratoon Crop	23.38	52.19 / 72.14	115.02	4.91	166.24
Total Crop	88.81		655.52	7.38	412.86

[1] Costs captured are from land preparation to harvest. They do not include land rent, transportation, drying, storage, or fixed costs.
[2] This value was obtained using a selling price of $12.03/cwt.
[3] Costs and returns for first and ratoon crop combined.

Fertilization

Date	Source	Rate (lb/A)	N (lb/A)	P (lb/A)	K (lb/A)	S (lb/A)	Zn (lb/A)
March 8	0-18-36	150	0	27	54	0	0
March 8	Zinc Sulfate	10	0	0	0	0	10
April 5	21-0-0-24	100	21	0	0	24	0
April 24	46-0-0	200	92	0	0	0	0
May 15	46-0-0	100	46	0	0	0	0
First Crop Total			159	27	54	24	10
Aug. 22	46-0-0	200	92	0	0	0	0
Ratoon Crop Total			92	0	0	0	0
Season Total			251	27	54	24	10

Weed Management

Weeds Present	Date of Treatment Decision	Recommendation
Alligator Weed, Ducksalad, Dayflower, Eclipta, Sedges, and Few Grasses	March 10	6 oz Command + 30 oz glyphosate
Same as Above	March 29	5 oz Newpath + 2 pt Afforia (Prowl)
Same as Above	April 24	.5 oz Regiment + 6 oz Newpath + .3 oz Herbivore (Permit)
Same as Above	May 15	1.5 pt 2,4-D

Disease Management

Diseases Present	Date of Treatment Decision	Recommendation
Sheath Blight	June 9	21 oz Stratego + 4 oz Topaz

Insect Management

Insects Present	Date of Treatment Decision	Recommendation
Rice Water Weevil	Seed treatment	Dermacor X-100

Calcasieu Parish

Item	Description	Cost/A	Acres	Total
Burndown	July 26 - 40 oz Cornerstone Plus / 2.5 oz Afforia / 8 oz Classic	$19.43	19.5	$378.89
Application Cost - Herbicide	Airplane	$9.50	19.5	$185.25
Field Work, Disking, etc.	2 Diskings @ $7.23 and 1 Harrow @ $18.41	$32.67	19.5	$637.07
Water Leveling	1 Winter @ $6.27	$6.27	19.5	$122.27
Ditching	2 - Winter and spring after planting @ $1.24	$2.48	19.5	$48.36
Seed	March 8 - CL111 @ 70 lb/A	$64.24	19.5	$1,252.68
Seed Treatment (If Separate)	Dermacor X-100 seed treatment	$14.95	19.5	$291.53
Planting	Drilled	$11.03	19.5	$215.09
Fertilizer	Pre-plant 150 lb 0-18-36 / 5 lb Zinc Sulfate	$32.34	19.5	$630.63
Application Cost - Fertilizer	Spreader truck	$8.00	19.5	$156.00
Herbicide	March 8 - 6 oz Command / 1 qt Cornerstone Plus / 4 oz Interlock	$10.49	19.5	$204.56
Application Cost - Herbicide	Spray truck	$8.00	19.5	$156.00
Fertilizer	April 5 - 100 lb 21-0-0 Ammonium Sulfate	$15.44	19.5	$301.08
Application Cost - Fertilizer	Airplane	$9.50	19.5	$185.25
Herbicide	March 28 - 5 oz Newpath / 2 pt Framework / 4 oz Interlock	$27.01	19.5	$526.70
Application Cost - Herbicide	Spray truck	$8.00	19.5	$156.00
Fertilizer (urea)	April 17 - 200 lb Urea / Agrotain	$39.47	19.5	$769.67
Application Cost - Fertilizer	Airplane	$9.50	19.5	$185.25
Herbicide	April 17 - 1/2 oz Regiment / 1/3 oz Herbivore / 6 oz Newpath / 12.8 oz Triple Play	$47.50	19.5	$926.25
Application Cost - Herbicide	Airplane	$9.50	19.5	$185.25
Fertilizer (urea)	May 11 - 100 lb Urea	$15.50	19.5	$302.25
Application Cost - Fertilizer	Airplane	$9.50	19.5	$185.25
Herbicide	May 11 - 1.5 pt 2,4-D / 4 oz Interlock	$5.37	19.5	$104.72
Application Cost - Herbicide	Airplane	$9.50	19.5	$185.25
Fungicide	June 8 - 19 oz Stratego / 4 oz Topaz / 6 oz Interlock	$24.53	19.5	$478.34
Application Cost - Fungicide	Airplane	$9.50	19.5	$185.25
Harvest - Cart with Tractor		$5.07	19.5	$98.87
Harvest - Combine		$43.12	19.5	$840.84
Water Costs		$33.09	19.5	$645.26
Fuel and Maintenance				$0.00
Power Unit and Gear Head				$0.00
First Crop Totals		$540.50		$10,539.75

Ratoon Crop

Item	Description	Cost/A	Acres	Total
Ratoon Crop Manipulation	Mowed	$7.77	19.5	$151.52
Ratoon Crop Fertilizer	Aug. 22 - 200 lb Urea	$27.50	19.5	$536.25
Ratoon Fertilizer Application	Airplane	$9.50	19.5	$185.25
Ratoon Crop Water Cost	Pump time @ $11.03	$22.06	19.5	$430.17
Ratoon Crop Harvest Cart		$5.07	19.5	$98.87
Ratoon Crop Harvest Combine		$43.12	19.5	$840.84
Ratoon Crop Totals		$115.02		$2,242.89

Total for First Crop and Ratoon	$655.52		$12,782.64

EAST CARROLL PARISH

The East Carroll Parish field management practices were seriously affected by rainfall from planting through harvest. A burndown application of Valor with Touchdown, Intensity, and 2,4-D was applied in late February. Disking and bed leveling of the field in early April led to planting on April 18. Rain halted planting which was completed on April 21. Treated CLXL745 and RT Silver seeds were drill planted at a rate of 22 and 30 lb/A, respectively, onto a flat seedbed with no pulled levees. A post-planting herbicide application of 32 oz of glyphosate plus 12.8 oz of Command was applied on April 21. Emergence was on April 26 with the stand being full and vigorous. On May 2, 200 lb/A of 19.5-23-0-22 fertilizer was applied. There was light Command damage along the edging of the canal that borders the field, which was attributed to mixing and pump priming issues, according to the producer.

Levees were pulled on May 9 and 10, still under wet conditions but needing to be done prior to any further applications or management practices being carried out. Grasses, smell melon, dayflower, and sedges were the major weed problems seen in the field. An application of 6 oz of Newpath plus .7 lb of League herbicide plus 150 lb of urea were recommended on May 16 followed by flushing to incorporate the application. Due to excessive rain, this was not applied until May 28. As a result of the delay, the producer applied 275 lb of urea along with the herbicides. As it turned out with weather delays and a tropical depression that moved through the state, this proved to be a very good decision. A week after the storm passed, approximately one month after the initial nitrogen application another 75 lb of urea was applied between the green ring and panicle differentiation stages of growth. A kernel smut prevention application of 10 oz of Tilt fungicide was applied at the 2- to 4-inch panicle development stage. Continued scouting of the field revealed no other disease development. Rice stink bug monitoring during heading stages continued, and the economic threshold for treatment was reached on July 18. An application of 2 oz of Karate insecticide was carried out on July 20. Continuous monitoring of the field revealed that the panicles were filling well with no further insect population surges. Filled and hardened seed changed color which indicated that draining was due on Aug. 10. The field was harvested on Sept. 5. The portion of the field that was measured for harvest was a five-acre paddy, which was part of a much larger 90-acre field.

The field was harvested at 17% moisture and had the following totals: the yield was 102.96 cwt/A, 228 bu/A, or 63.5 bbl/A. When adjusted to 12% moisture, the yield was 97.09 cwt/A, 215.75 bu/A, or 59.8 bbl/A.

EAST CARROLL PARISH

Cooperator: Robert and Ty Warren
Agent: Donna Lee and Bruce Garner
Consultant: N/A
Field Size: 5 Acres of a 90-acre field

Cultural Practices

Variety: CLXL745 and RT Silver

Seeding Rate: 22 lb/A of CLXL745 and 30 lb/A of RT Silver

Method of Planting: Drill seeded

Date of Planting: April 18 and 21 (rain delayed)

Water Management: Delayed flood

Date of Emergence: April 26

Growth and Development

Stage	Observation Date
Green Ring	June 20
Panicle Differentiation	June 26
50% Heading	July 20
Drain for Harvest	Aug. 10
Harvest	Sept. 5

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	97.09	N/A	521.77	5.37	646.77

[1] Costs captured are from land preparation to harvest. They do not include land rent, transportation, drying, storage, or fixed costs.
[2] This value was obtained using a selling price of $12.03/cwt.

Fertilization

Date	Source	Rate (lb/A)	N (lb/A)	P (lb/A)	K (lb/A)	S (lb/A)	Zn (lb/A)
May 2	19.5-23-0-22	200	40	46	0	44	0
May 29	46-0-0	275	127	0	0	0	0
June 20	46-0-0	75	35	0	0	0	0
First Crop / Season Total			202	46	0	44	0

Weed Management

Weeds Present	Date of Treatment Decision	Recommendation
Burndown	Feb. 25	2 oz Valor + 32 oz Touchdown + 6 oz Intensity + 32 oz 2,4-D
Various Grasses and Broadleaves	April 21	32 oz glyphosate + 12.8 oz Command + 2 oz Sharpen
Various	May 16	6 oz Newpath + .7 lb League

Disease Management

Diseases Present	Date of Treatment Decision	Recommendation
Kernel Smut	July 6	10 oz Tilt

Insect Management

Insects Present	Date of Treatment Decision	Recommendation
Rice Water Weevil	Seed treatment	RiceTec package
Rice Stink Bug	July 20	2 oz Karate

East Carroll Parish

Item	Description	Cost/A	Acres	Total
Burndown	2 oz Valor + 32 oz Touchdown + 32 oz 2,4-D + 6 oz Intensity	$24.96	5	$124.80
Application Cost - Herbicide		$6.43	5	$32.15
Field Work, Disking, etc.	Disking and Bed Leveling	$12.25	5	$61.25
Water Leveling	Ground			$0.00
Ditching		$1.34	5	$6.70
Seed	22 lb CLXL745 + 30 lb RT Silver	$98.60	5	$493.00
Seed Treatment (If Separate)	RT Package	$8.88	5	$44.40
Planting	Drill	$11.46	5	$57.30
Fertilizer			5	$0.00
Application Cost - Fertilizer			5	$0.00
Herbicide	32 oz Touchdown + 12.8 oz Command	$24.04	5	$120.20
Application Cost - Herbicide		$5.97	5	$29.85
Herbicide	6 oz Newpath + .7 lb League	$44.90	5	$224.50
Application Cost - Herbicide		$9.34	5	$46.70
Fertilizer	200 lb 19.5-23-0-22	$36.16	5	$180.80
Application Cost - Fertilizer		$14.30	5	$71.50
Fertilizer (urea)	275 lb 46-0-0	$39.28	5	$196.40
Application Cost - Fertilizer		$19.28	5	$96.40
Fertilizer (urea)	75 lb 46-0-0	$11.86	5	$59.30
Application Cost - Fertilizer		$6.00	5	$30.00
Fungicide	10 oz Tilt	$7.69	5	$38.45
Application Cost - Fungicide		$6.51	5	$32.55
Insecticide	Karate 2 oz	$3.98	5	$19.90
Application Cost - Insecticide		$6.43	5	$32.15
Water Cost		$72.75	5	$363.75
Harvest - Cart with Tractor		$6.24	5	$31.20
Harvest - Combine		$43.12	5	$215.60
Fuel and Maintenance				$0.00
Power Unit and Gear Head				$0.00
First Crop Totals		$521.77		$2,608.85

MOREHOUSE PARISH

The Morehouse Parish field was actually a rice demonstration field rather than a verification field. The reasoning being that a verification field measures the effect of LSU Agcenter recommended practices. The AgCenter currently has no recommended practices for row rice production. With that being established, we will outline the management practices used on this demonstration field.

A herbicide burndown application of 1.5 oz of Valor plus 30 oz of glyphosate plus 16 oz of 2,4-D was applied in late February. The field had established 38-inch rows, which a row conditioner was run over prior to planting. CLXL7311 and RT 753, a non-Clearfield variety, were planted on the 34-acre field. The treated seed was drill planted at 24 lb/A running parallel with the rows. A post-planting herbicide application of 32 oz of glyphosate plus 18.2 oz of Command plus 2 oz of Sharpen was applied the same day. Emergence was called on April 14 with the field having a very thick, lush, and vigorous stand. On April 25, 100 lb of ammonium sulfate and 50 lb of DAP were applied and flushed in. A week later the stand looked excellent. The identified weeds included sprangletop, broad leaf signalgrass, barnyardgrass, and very few broadleaves. On May 10, following the recommendations of Dr. Eric Webster, we applied 1 gal of RiceBeaux plus 16 oz of Command plus 32 oz of Facet for weed control. Although it was a tough mixture, it was one that would keep the field clean under wetting and drying conditions until the rice canopied over the rows. This was followed on the same day with 200 lb of urea treated with Agrotain and was flushed in. Thirteen days later the rice was estimated at 75% canopied over the rows. One week later, on May 30, full canopy was reached. Water was being held at a low level in the bottom of the field and allowed to backup into the field. In the bottom of the field, rice water weevil feeding scars were noticed as well as weevils themselves damaging leaves, while the top half of the field, where no water was held, showed no scars or damage and no weevils. Plants were pulled from the top and bottom of the field to compare growth and root systems, with both looking excellent. Rice reached green ring on June 6, and 100 and 150 lb of urea were applied to different sides of the field. On June 20, rice reached the 2- to 4-inch panicle stage and was ready for a kernel smut preventative application, but an approaching tropical depression delayed this application for three days. On June 23, 10 oz of Topaz fungicide was applied for kernel smut control. On July 1, the producer decided to add another 75 lb of urea due to a yellowing of some leaf tips he noticed on the upper part of the field. On June 5, the rice began heading with some of the older leaf tips senescing. The water was saturating row furrows to the top of the field at that time. Diseases and insects were monitored during the growth and heading phases, but neither disease levels or insect populations ever reached the economic threshold. On June 13, the producer did make a non-recommended application of 4.2 oz of Karate for rice stink bug control, due to hot spots found by his consultant in other fields. On Aug. 1, agents met at the field and agreed that the maturity and color of the panicles indicated that it was time to drain the field. The field was drained for harvest on Aug. 5.

The growth stages of the field were as follows: Planted - April 7, Emergence - April 14, Green Ring - June 6, Panicle Differentiation - June 13, 50% Heading - June 8, Drained for Harvest - Aug. 5, and Harvested - Aug. 22 and 24.

The field was harvested at 13.6% moisture with the following totals: the yield was 108.90 cwt/A, 242 bu/A, or 67.2 bbl/A. When adjusted to 12% moisture, the yield was 106.67 cwt/A, 237 bu/A, or 65.8 bbl/A.

MOREHOUSE PARISH

Cooperator: Jason Waller
Agent: Richard Letlow and Keith Collins
Consultant: N/A
Field Size: 34.4 Acres

Cultural Practices

Variety: CLXL7311 and RT 753
Method of Planting: Drill seeded
Water Management: Row rice with backup flood

Seeding Rate: 24 lb/A
Date of Planting: April 7
Date of Emergence: April 14

Growth and Development

Stage	Observation Date
Green Ring	June 6
Panicle Differentiation	June 13
50% Heading	July 8
Drain for Harvest	Aug. 5
Harvest	Aug. 22 and 24

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	106.67	54.7 / 74	595.85	5.58	687.39

[1] Costs captured are from land preparation to harvest. They do not include land rent, transportation, drying, storage, or fixed costs.
[2] This value was obtained using a selling price of $12.03/cwt.

Fertilization

Date	Source	Rate (lb/A)	N (lb/A)	P (lb/A)	K (lb/A)	S (lb/A)	Zn (lb/A)
April 25	Ammonium Sulfate	100	21	0	0	24	0
April 25	DAP	50	9	23	0	0	0
May 10	46-0-0	200	92	0	0	0	0
June 7	46-0-0 ½ field	150	69	0	0	0	0
June 7	46-0-0 ½ field	100 fb 100	46	0	0	0	0
July 1	46-0-0	75	35	0	0	0	0
First Crop / Season Total			226/203	23	0	24	0

Weed Management

Weeds Present	Date of Treatment Decision	Recommendation
Hemp sesbania and Sprangletop	Feb. Burndown	1.5 oz Valor + 30 oz glyphosate + 16 oz 2,4-D
Post Planting	April 7	32 oz glyphosate + 18.2 oz Command + 2 oz Sharpen
Jointvetch and Sprangletop	May 10	1 gal RiceBeaux + 1 pt Command + 1 qt Facet

Disease Management

Diseases Present	Date of Treatment Decision	Recommendation
Kernel Smut	July 23	10 oz Topaz

Insect Management

Insects Present	Date of Treatment Decision	Recommendation
Rice Stink Bugs (N/R)	July 13	4.2 oz Karate

Morehouse Parish

Item	Description	Cost/A	Acres	Total
Burndown	1.5 oz Valor + 30 oz glyphosate + 16 oz 2,4-D	$7.65	34.4	$263.16
Application Cost - Herbicide		$3.00	34.4	$103.20
Field Work, Disking, Etc.	Light field work	$23.00	34.4	$791.20
Water Leveling				$0.00
Ditching		$1.50	34.4	$51.60
Seed	CLXL7311 + RT 753 24 lb/A	$166.12	34.4	$5,714.53
Seed Treatment (If Separate)	RT Package	$8.88	34.4	$305.47
Planting	Drill	$11.46	34.4	$394.22
Fertilizer	100 lb ammonium sulfate + 50 lb DAP	$15.00	34.4	$516.00
Application Cost - Fertilizer		$10.06	34.4	$346.06
Herbicide	32 oz glyphosate + 18.2 oz Command + 2 oz Sharpen	$23.66	34.4	$813.90
Application Cost - Herbicide		$3.00	34.4	$103.20
Herbicide	1 gal RiceBeaux + 16 oz Command + 32 oz Facet	$69.75	34.4	$2,399.40
Application Cost - Herbicide		$3.00	34.4	$103.20
Fertilizer	200 lb urea	$25.00	34.4	$860.00
Application Cost - Fertilizer		$10.06	34.4	$346.06
Fertilizer (urea)	150 lb urea on 1/2 field + 100 lb urea on 1/2	$18.75	34.4	$645.00
Application Cost - Fertilizer		$10.06	34.4	$346.06
Fertilizer	75 lb urea	$9.36	34.4	$321.98
Application Cost - Fertilizer		$10.06	34.4	$346.06
Fungicide	10 oz Topaz	$4.20	34.4	$144.48
Application Cost - Fungicide		$4.50	34.4	$154.80
Insecticide	4.2 oz Karate (old blend)	$1.45	34.4	$49.88
Application Cost - Insecticide		$4.50	34.4	$154.80
Harvest - Cart with Tractor 1		$6.24	17.2	$107.33
Harvest - Cart with Tractor 2		$6.24	17.2	$107.33
Harvest - Combine 1		$43.12	17.2	$741.66
Harvest - Combine 2		$43.12	17.2	$741.66
Water Cost		$53.11	34.4	$1,826.98
Fuel and Maintenance			34.4	$0.00
Power Unit and Gear Head			34.4	$0.00
First Crop Totals		$595.85		$18,799.26

RICHLAND PARISH

Planting of the Richland field was delayed due to excessive rain and flooded field conditions. These conditions eventually necessitated changing field locations to an earlier planted field that was agreed upon. Soil sample information was available for management decisions, and the rice variety planted was a recommended variety.

On April 20, 100 lb of 0-60-40 fertilizer was applied pre-plant. The treated CL163 seed was drill planted on April 25 at 70 lb/A. A post-planting application of 32 oz of glyphosate plus 1.5 oz of Sharpen was applied on April 26. Emergence was called on May 1 with a very thick vigorous stand. On May 16, weeds identified were as follows, palm leaf morning glory, hemp sesbania, jointvetch, nutsedge, and red ludwigia. The red ludwigia was positively identified by Dr. Eric Webster from a field sample. For this weed spectrum, his recommended herbicide mixture was 22 oz of Grasp Xtra plus .33 oz of Permit plus 6 oz of Newpath. This tank mix was applied on May 23 followed by 100 lb of ammonium sulfate and a flush. Unfortunately, when the herbicide application was made, standing water in tire tracks in the field limited contact and control of some of the weeds. Rain also delayed any further action until the water was drained off the field. On June 9, 2/3 lb Clearpath plus 1 oz of Permit along with 225 lb of urea were finally able to be applied to the field. This was followed by establishment of the flood. A tropical depression moving across the state delayed the green ring fertilizer application by one week. On June 28, 100 lb of urea was applied. Spots in the field that tested positive for sheath blight were noted and monitored. Due to the disease susceptibility of CL163, it was decided that two applications of fungicide would be made to cover kernel smut, sheath blight, and potential blast. The first application of 8 oz of propiconazole was made on July 20. The second application was on July 27 with 19 oz of Stratego, a propiconazole and strobilurin combination. Rice stink bug populations were also monitored from the start of heading through the hard dough stages but never reached economic threshold treatment levels. Rice growth was vigorous and very even through all stages of growth.

The growth stages of the field were noted as: Planted - April 25, Emergence - May 1, Green Ring - June 20, Panicle Differentiation - June 28, 50% Heading - July 25, Drained for Harvest - Aug. 25, and Harvested - Sept. 15.

The field was harvested on Sept. 15 at 16.07% moisture with the following totals: the yield was 88.73 cwt/A, 197.19 bu/A, or 54.78 bbl/A. When adjusted to 12% moisture, the yield was 84.65 cwt/A, 188.12 bu/A, or 52.25 bbl/A.

RICHLAND PARISH

Cooperator: Tyler Amos
Agent: Keith Collins
Consultant: N/A
Field Size: 32.73 Acres

Cultural Practices

Variety: CL163
Method of Planting: Drill seeded
Water Management: Delayed flood
Seeding Rate: 70 lb/A
Date of Planting: April 25
Date of Emergence: May 1

Growth and Development

Stage	Observation Date
Green Ring	June 20
Panicle Differentiation	June 28
50% Heading	July 25
Drain for Harvest	Aug. 25
Harvest	Sept. 15

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	84.65	67.28 / 73.43	546.68	6.45	471.65

[1] Costs captured are from land preparation to harvest. They do not include land rent, transportation, drying, storage, or fixed costs.
[2] This value was obtained using a selling price of $12.03/cwt.

Fertilization

Date	Source	Rate (lb/A)	N (lb/A)	P (lb/A)	K (lb/A)	S (lb/A)	Zn (lb/A)
April 20	0-60-40	100	0	60	40	0	0
May 23	ammonium sulfate	100	21	0	0	24	0
June 13	46-0-0	225	104	0	0	0	0
June 28	46-0-0	100	46	0	0	0	0
First Crop / Season Total			171	60	40	24	0

Weed Management

Weeds Present	Date of Treatment Decision	Recommendation
Various Broadleaves and Grasses	Post planting	32 oz glyphosate + 1 oz Sharpen + 16 oz Command
Red Ludwigia, Jointvetch, Sedges, Hemp sesbania, and Ducksalad	May 23	22 oz Grasp extra + .33 oz Permit + 6 oz Newpath
Sedges and Grasses	June 13	2/3 lb Clearpath + 1 oz Permit

Disease Management

Diseases Present	Date of Treatment Decision	Recommendation
Sheath Blight and Kernel Smut	July 18	8 oz Tilt
Sheath Blight and Blast	July 27	19 oz Stratego

Insect Management

Insects Present	Date of Treatment Decision	Recommendation
Rice Water Weevil	Seed Treatment	CruiserMaxx

Richland Parish

Item	Description	Cost/A	Acres	Total
Burndown	1 qt glyphosate + 1.5 oz Sharpen	$12.44	32.73	$407.16
Application Cost - Herbicide	Burndown	$6.00	32.73	$196.38
Field work, Disking etc.		$9.20	32.73	$301.12
Water Leveling				$0.00
Ditching		$1.24	32.73	$40.59
Seed	Treated CL163, 70 lb/A @ 1.33/lb	$93.10	32.73	$3,047.16
Seed Treatment (If Separate)	N/A			$0.00
Planting	Grain drill	$10.16	32.73	$332.54
Fertilizer	N, P, K, and S	$91.38	32.73	$2,990.87
Application Cost - Fertilizer	4 applications @ 7.5 cents/lb	$39.38	32.73	$1,288.91
Herbicide	Command, Permit (2), Grasp Xtra, Newpath, Clearpath	$104.08	32.73	$3,406.54
Application Cost - Herbicide	2 @ $6.00/A	$12.00	32.73	$392.76
Herbicide				$0.00
Application Cost - Herbicide				$0.00
Fertilizer				$0.00
Application Cost - Fertilizer				$0.00
Fertilizer				$0.00
Application Cost - Fertilizer				$0.00
Fungicide	Tilt and Stratego, 2 applications	29.69	32.73	$971.75
Application Cost - Fungicide	2 applications @ $6.00/A	$12.00	32.73	$392.76
Insecticide				$0.00
Application Cost - Insecticide				$0.00
Harvest - Cart 1 with Tractor		$5.07	32.73	$165.94
Harvest - Cart 2 with Tractor		$5.07	32.73	$165.94
Harvest - Combine 1		$43.12	32.73	$1,411.32
Harvest - Combine 2				$0.00
Water Cost		$72.75	32.73	$2,381.11
Fuel and Maintenance				$0.00
Power Unit and Gear Head				$0.00
First Crop Totals		$546.68	32.73	$17,892.84

Table 1. Summary of Management Practices and Economic Data per Acre for 2017 Verification Fields.

Parish	Planting Method	Rice Variety	Planting Date	Water Management	Seed Cost ($/A)	Insecticide Seed Treatment Costs ($/A)	Herbicide Cost ($/A)	Herbicide Application Costs ($/A)
Avoyelles	Dry Broadcast Air/ Harrow in	Cheniere	April 25	Delayed Flood	39.78	N/A	57.57	12.00
Calcasieu	Drill	CL111	March 9	Delayed Flood	64.24	14.95	109.80	44.50
East Carroll	Drill	CLXL745 and RT Silver	April 18 and 21	Delayed Flood	98.60	8.88	93.90	31.08
Morehouse	Drill	CLXL7311 & RT753	April 7	Delayed Flood	166.12	8.88	101.06	9.00
Richland	Drill	CL163	April 25	Delayed Flood	84.22	8.88	104.88	12.00

Continued.

Table 1. Continued.

Parish	Fertilizer Cost ($/A)	Fertilizer Application Cost ($/A)	Fungicide Costs ($/A)	Fungicide Application Cost ($/A)	Insecticide Cost ($/A)[2]	Insecticide Application Cost ($/A)	Water Cost ($/A)
Avoyelles	100.77	32.48	20.40	3.00	10.25	3.00	108.05
Calcasieu[1]	130.25	46.00	24.53	9.50	N/A	N/A	55.15
East Carroll	87.30	39.58	7.69	6.51	3.98	6.43	72.75
Morehouse	68.11	40.25	4.20	4.50	1.45	4.50	53.11
Richland	91.38	39.88	29.69	12.00	N/A	N/A	72.75

[1] Costs include first and ratoon crop.
[2] Does not include insecticide seed treatment.

Continued.

Table 1. Continued.

Parish	Harvest Date	Yield at 12% Moisture[1]			Milling % (% Whole / % Total)	Variable Cost ($/A)[1]	Cost of Production ($/cwt)[1]	Return on Variable Cost ($/A)[1,2]
		cwt	**bbl**	**bu**				
Avoyelles	Sept. 7	64.75	35.12	137.23	60.98 / 75.27	452.85	7.33	290.00
Calcasieu[1]	July 26 Nov. 7	88.87	54.79	197.3	69.27 / 75.56 52.19 / 72.14	655.52	7.37	412.86
East Carroll	Sept. 5	97.09	59.8	215.75	N/A	521.77	5.37	646.77
Morehouse	Aug. 22 and 24	106.67	65.8	237	54.7 / 74	595.85	5.58	687.39
Richland	9/15	84.65	52.25	188.12	67.28 / 73.43	546.68	6.45	471.65

[1] Costs and yields include first and ratoon crop.
[2] Value obtained using selling price of $12.03/cwt.

Table 3. Twenty-Year Louisiana Rice Research Verification Summary.

1998 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/A**
Acadia[1]	53.0	32.8	118.1	5,314
Avoyelles	32.5	42.9	154.4	6,950
Calcasieu[1]	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[1]	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**

[1] Yield includes ratoon crop.

1999 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/A**
Acadia[1]	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[1]	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**

[1] Yield includes ratoon crop.

Table 3. Continued.

2000 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/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[1]	21.6	37.7	135.7	6,107
TOTALS	**393.8**	**35.7**	**128.4**	**5,780**

[1] Yield includes ratoon crop.

2001 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/A**
Acadia[1]	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[1]	61.9	39.4	142.0	6,388
Concordia	79.6	36.1	130.1	5,853
Evangeline[1]	20.8	52.7	189.7	8,538
Jefferson Davis[1]	21.6	57.3	206.4	9,289
Richland	65.9	46.0	165.5	7,447
St. Landry[1]	40.6	51.1	184.0	8,282
Vermilion[1]	33.3	52.4	188.7	8,493
TOTALS	**489.1**	**45.9**	**165.3**	**7,438**

[1] Yield includes ratoon crop.

Table 3. Continued.

2002 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/A**
Acadia[1]	38.4	49.8	179.3	8,068
Allen[1]	25.1	46.0	165.6	7,452
Avoyelles	37.4	49.9	179.6	8,084
Beauregard[1]	49.5	53.1	191.2	8,602
Calcasieu[1]	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[1]	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[1]	32.0	49.8	179.4	8,072
TOTALS	**433.6**	**46.6**	**167.8**	**7,551**

[1] Yield includes ratoon crop.

2003 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/A**
Acadia	57.2	44.0	158.4	7,128
Allen[1]	35.7	46.1	166.0	7,469
Avoyelles	37.4	50.1	180.4	8,116
Beauregard[1]	45.7	48.7	175.2	7,884
Concordia	79.5	49.2	177.1	7,970
Evangeline[1]	48.4	44.5	160.2	7,209
Jefferson Davis[1]	52.9	28.7	103.3	4,649
Richland	40.2	44.7	160.8	7,234
St. Landry[1]	32.7	61.1	220.0	9,898
Vermilion[1]	33.0	40.0	144.0	6,480
TOTALS	**462.7**	**45.7**	**164.5**	**7,404**

[1] Yield includes ratoon crop.

Table 3. Continued.

2004 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/A**
Allen[1]	53.2	40.9	147.1	6,620
Avoyelles	33.3	32.8	118.0	5,307
Beauregard[1]	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[1]	42.3	38.5	138.6	6,237
Natchitoches	47.2	44.1	158.8	7,144
St. Landry[1]	60.1	65.1	234.3	10,543
Vermilion[1]	30.0	42.1	151.6	6,824
TOTALS	**455.7**	**42.3**	**152.2**	**6,848**

[1] Yield includes ratoon crop.

2005 Verification Acres and Yields[1]				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/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**

[1] No ratoon crop was harvested in the verification program in 2005.

Table 3. Continued.

2006 Verification Acres and Yields[1]				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/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**

[1] No ratoon crop was harvested in the verification program in 2006.

2007 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/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[1]	38.9	55.8	201	9,046
Vermilion[1]	36.6	46.0	166	7,451
West Carroll	40.2	45.4	164	7,356
TOTALS	**267.3**	**51.2**	**184**	**8,293**

[1] Yield includes ratoon crop.

2008 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/A**
Avoyelles	40.9	47	170	7,657
Calcasieu[1]	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[1]	37.7	52	189	8,481
St. Landry	60.2	48	173	7,801
Vermilion[1]	51.1	70	252	11,359
TOTALS	**387.6**	**51**	**183**	**8,228**

[1] Yield includes ratoon crop.

Table 3. Continued.

2009 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/A**
Acadia[1]	56.6	70.9	255.3	11,489
Avoyelles	28.6	50.7	182.5	8,214
Calcasieu[1]	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[1]	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[1]	41.5	66.9	241.0	10,843
TOTALS	**359.9**	**56.0**	**201.7**	**9,078**

[1] Yield includes ratoon crop.

2010 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/A**
Avoyelles	41.8	49.7	179.0	8,057
Jefferson Davis[1]	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**

[1] Yield includes ratoon crop.

2011 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/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 ratoon crop.
[2] Yield calculated on 10.5 acres, total field acres 73.4.

Table 3. Continued.

2012 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/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 ratoon crop.

2013 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/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
West Carroll	34.5	65.3	235.2	10,582
TOTALS	**181.5**	**62.5**	**225.0**	**10,125**

[1] Yield includes ratoon crop.

2014 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/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]				
West Carroll	32.2	51.4	185.1	8,329
TOTALS	**118.5**			**9,931**

[1] Yield includes ratoon crop.

Table 3. Continued.

2015 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/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
West Carroll	36.5	56	202	9,089
TOTALS	**179.2**	**61**	**219.9**	**9,908**

[1] Yield includes ratoon crop.

2016 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/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
Richland	24	42	151	6,902
Vermilion[2]	18	--	--	--
TOTALS[3]	**112**	**60.4**	**217**	**9,814**

[1] Yield includes ratoon crop.
[2] Not harvested due to flood.
[3] Harvested acres only.

2017 Verification Acres and Yields				
		Yield at 12% Moisture		
Parish	**Acres**	**Barrels/A**	**Bushels/A**	**Pounds/A**
Avoyelles	31.6	35.12	137.23	6,475
Calcasieu[1]	19.5	54.79	197.3	8,887
East Carroll	5.0[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 ratoon crop.
[2] Yield calculated on 5 acres; total field area was 90 acres.

1998 – 2017 Louisiana Rice Research Verification Yield Summary

Verification Totals			Verification Parish Totals†		
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	112.0	9,814	111,177.9	7,352	2,462
2017	**123.2**	**8,686**	*	*	*
Totals	**5,850.2**		**4,951,417.9**		

* Not available at press time.

† 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.

STATION PERSONNEL

Steven D. Linscombe, Professor[1] -- Regional Director/Resident Coordinator
Donald E. Groth, Professor[2] ---Resident Coordinator

Valerie B. Dartez	Administrative Coordinator III
Kimberly G. Guidry	Accounting Specialist I
Carol D. LeDoux	Administrative Program Specialist-A
Donna L. Sonnier	Custodian I

Adam N. Famoso, Assistant Professor -- Rice Breeding

Brijesh Angira[3]	Research Associate/Specialist
Jessica L. Thornton[4]	Laboratory Technician I
Christopher K. Addison[5]	Graduate Assistant

Donald E. Groth, Professor[2] -- Rice Pathology

Carl W. Dischler	Research Associate/Specialist
Laura L. Monte	Research Farm Specialist I

Dustin L. Harrell, Professor/Research Coordinator[6] ------------------ Rice Agronomy/Rotational Crops/Extension

Jacob S. Fluitt	Research Associate/Specialist
Jason R. Hartman	Research Farm Assistant II
James P. Leonards	Research Associate/Specialist
Nutifafa Adotey[7]	Postdoctoral Researcher
Anna E. Coker[8]	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

Nathan T. Breaux	Research Farm Specialist I
Brian D. Broussard	Research Farm Supervisor
Brandon J. Frey[9]	Research Farm Manager
Paul A. Miller	Research Farm Specialist I
Jimmy D. Pellerin	Research Farm Specialist II
Thomas J. Reed	Research Farm Specialist II

Steven D. Linscombe, Professor[1] --- Rice Breeding

Karen F. Bearb	Research Associate/Coordinator
Corey A. Conner	Research Associate/Specialist
Raymond R. Dilly, Jr.	Research Associate/Specialist
Gavin J. Guidry	Research Associate/Specialist
Brady L. Williams[10]	Research Farm Specialist I

Mona M. Meche, Research Associate/Coordinator --------------------------Rice Anther Culture/Tissue Culture

Jennifer D. Dartez	Research Farm Specialist II

[1] Retired 09/30/2017
[2] Appointed Resident Coordinator 12/01/2017
[3] Appointed 02/13/2017
[4] Appointed 09/30/2017
[5] Appointed 07/01/2017
[6] Appointed Research Coordinator 12/01/2017
[7] Appointed 01/19/2017
[8] Appointed 06/01/2017
[9] Transferred from Breeding 06/27/2017
[10] Transferred from Hybrid Breeding 08/03/2017

STATION PERSONNEL
(Continued)

W. Ray McClain, Professor -- Aquaculture

John J. Sonnier	Research Farm Specialist II

James H. Oard, Professor --- Rice Hybrid Breeding

Tommaso Cerioli[11]	Research Associate/Specialist
Lazo N. Pavich	Research Associate/Specialist
Justin P. Sarver[12]	Research Farm Specialist I
Anna H. Borjas Artica[13]	Graduate Assistant
Jose Roberto Camacho Montero[14]	Graduate Assistant
Manuel Q. Esguerra[15]	Graduate Assistant
Dominique C.A. Galam	Graduate Assistant
Federico Molina Casella[16]	Graduate Assistant
Paola Mosquera[17]	Graduate Assistant
Democrito Banay Rebong II	Graduate Assistant

Glenn J. Schexnayder, Research Farm Maintenance Manager ----------------------- Maintenance Department

Mitchell J. Miller[18]	Maintenance Repairer I
Ted R. Trahan	Maintenance Repairer II

Michael J. Stout, Professor (Baton Rouge)--Rice Entomology

Marty J. Frey	Research Associate/Specialist

Herry S. Utomo, Associate Professor------------------------------Marker-Assisted Selection Breeding/Biotechnology

Lauren E. Ingalls	Research Farm Specialist I
Gretchen M. Zaunbrecher	Research Associate/Specialist

Ida Wenefrida, Assistant Professor-Research --- Biotechnology

Richard E. Zaunbrecher, Research Associate/Coordinator --------------------------------------Foundation Seed Rice

[11] Appointed 03/01/2017; Separated 09/01/2017
[12] Appointed 08/07/2017
[13] Appointed 06/01/2017
[14] Graduated 12/15/2017
[15] Separated 08/03/2017
[16] Graduated 12/15/2017
[17] Appointed 07/01/2017
[18] Appointed 04/15/2017; Separated 11/07/2017

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

Michael E. Salassi, Professor---Economics
Department of Agricultural Economics and Agribusiness

Michael J. Stout, Professor---Rice Entomology
Department of Entomology

Marty J. Frey (HRCRRS)	Research Associate/Specialist
Blake E. Wilson	Assistant Professor
Lina Bernaola Alvarado	Graduate Assistant
Emily C. Kraus	Graduate Assistant
Luna Lama	Graduate Assistant
Megan M. Mulcahy	Graduate Assistant
James M.P. Villegas	Graduate Assistant

Eric P. Webster, Professor -- Rice Weed Control
School of Plant, Environmental and Soil Sciences

Gustavo Teló	Postdoctoral Researcher
Benjamin M. McKnight	Research Associate
Matthew J. Osterholt	Graduate Assistant
Samer Y. Rustom, Jr.	Graduate Assistant
L. Connor Webster	Graduate Assistant

COOPERATING PERSONNEL

Cooperating personnel on research projects at the H. Rouse Caffey Rice Research Station include the following:

Lucas Aviles -- 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

Clayton A. Hollier---Soybean and Rice Disease Control
Department of Plant Pathology and Crop Physiology
Louisiana State University Agricultural Center

Ronald J. Levy -- Soybeans
Todd Spivey -- 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

E. Allen Wilson --Bird Control
USDA Animal Damage Control
Crowley, Louisiana

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

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