LOUISIANA CROPS NEWSLETTER

Cotton, Corn, Soybeans, Sorghum, and Wheat

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Performance of Soybeans in Louisiana, 2015

Performance of soybeans are annually evaluated by Louisiana Agricultural Experiment Station (LAES) researchers in Official Variety Trials (OVT's). The purpose of these trials is to provide to Louisiana growers, seedsmen, county agents of the Louisiana Cooperative Extension Service (LCES), and other interested individuals and organizations with unbiased performance data for commercial soybean varieties submitted for evaluation by private agencies. The cooperating LAES units in 2015 were: Dean Lee Research Station, Alexandria; Red River Research Station, Bossier City; Northeast Research Station, St. Joseph; and Macon Ridge Research Station, Winnsboro; Rice Research Station, Crowley; Iberia Research Station, Jeanerette; and Central Research Station, Baton Rouge. The LCES also conducted on-farm core block trials in 2015 evaluating soybeans on farms around the state. Results from these trials and the OVT's provide information to the grower to help in hybrid selection.

Preliminary data is included below for all OVT soybeans that have been harvested. Other preliminary data results will be available in the next few weeks.

The coefficient of variation (CV) reflects the magnitude of experimental error (random variation not accounted for by variety and replications) in relation to the trial mean. A high CV means that relative differences among hybrids were not consistent among replications, which reduces the precision of a test.

Preliminary

2015 LSU AgCenter Official Variety Trial Results

MG III & Early IV Variety	Dean Lee	NERS	Macon Ridge	Baton Rouge	Red River	Crowley	Iberia	Average
39RY43	52.6	55.1	63.4					**57.0**
S43RY95	54.9	60.9	62.7					**59.5**
S42RY46	47.3	60.4	52.2					**53.3**
5N433R2	53.0	58.6	68.5					**60.0**
S39-C4	49.6	53.3	53.1					**52.0**
P 4214RY	46.1	50.8	52.6					**49.8**
P 4211RY	53.9	62.3	65.6					**60.6**
CZ 3945 LL	46.5	48.0	50.8					**48.4**
CZ 3841 LL	55.0	47.7	54.5					**52.4**
CZ 4105 LL	48.1	43.4	52.5					**48.0**
5N404R2	47.6	47.3	51.1					**48.7**
CZ 4181 RY	53.8	52.8	60.3					**55.6**
LSD P=.05	**5.1756**	**11.9787**	**7.0328**					
Standard Deviation	**3.5976**	**7.0741**	**4.1734**					
CV	**7.09**	**13.25**	**7.29**					

Preliminary

2015 LSU AgCenter Official Variety Trial Results

MG Late IV Variety	Dean Lee	NERS	Macon Ridge	Baton Rouge	Red River	Crowley	Iberia	Average
DG 4970 RR	55.2	50.7	52.5					**52.8**
DG 4990 LL	54.0	57.2	51.7					**54.3**
DG 4967 LL	48.4	59.8	45.7					**51.3**
DG 4765 RR2/STS	53.8	58.0	54.2					**55.3**
DG 4825 RR2/STS	51.8	54.7	52.6					**53.1**
DG 4880 RR	54.8	56.8	57.6					**56.4**
DG 4670 RR2	57.4	58.7	50.6					**55.6**
S11-20337	55.4	58.8	68.4					**60.9**
DG 4781 LL	58.3	58.6	54.3					**57.1**
R09-1589	53.9	58.7	54.9					**55.8**
UA 5014C	47.9	58.7	49.7					**52.1**
DG 4935 RR2/STS	52.0	53.9	50.6					**52.2**
DG 4790 RR2	59.8	55.8	61.9					**59.2**
DG 4981 LL/STS	44.1	57.7	45.8					**49.2**
AG 4934	47.3	50.9	54.5					**50.9**
AG 4835	46.8	54.3	54.8					**51.9**
AG 4135	44.1	56.1	53.1					**51.1**
AG 4632	46.6	51.8	55.4					**51.3**
AG 4534	47.0	52.3	56.4					**51.9**
AG 4232	47.5	40.9	52.7					**47.0**
AG 4336	45.3	45.3	53.7					**48.1**
Armor 48-R66	54.9	54.5	53.7					**54.4**
Armor 46-R65	56.0	53.9	59.5					**56.5**
AR 49X	54.5	53.5	63.1					**57.0**
Armor 47-R13	48.1	61.6	52.4					**54.0**
Armor AR4705	56.0	57.1	61.5					**58.2**
31RY45	57.8	51.0	58.1					**55.6**
S47RY13	49.4	57.6	54.2					**53.7**
S46RY85	53.2	58.5	52.6					**54.8**
S49RY25	48.8	52.6	50.1					**50.5**
S48RS53	53.7	61.6	55.7					**57.0**
S49LL34	47.7	61.4	51.9					**53.7**
Go Soy 4714GTS	48.7	63.8	49.4					**54.0**
Go Soy 483C	47.3	56.2	58.8					**54.1**
Go Soy 4914GTS	50.3	58.0	58.2					**55.5**
Schillinger 495.RC	48.5	59.0	53.5					**53.7**
DG 4977 LL/STS	41.5	59.4	52.2					**51.0**
Armor AR4904	40.6	54.3	47.6					**47.5**
5N490R2	48.0	55.6	51.8					**51.8**
REV 47R53	52.5	55.4	51.9					**53.3**
REV 49A14	52.2	57.9	51.6					**53.9**
REV 47R34	54.1	54.4	60.4					**56.3**
REV 49A75	56.0	55.1	54.9					**55.3**
REV 49R94	57.9	57.0	65.9					**60.3**

MG Late IV Variety	Dean Lee	NERS	Macon Ridge	Baton Rouge	Red River	Crowley	Iberia	Average
REV 48A46	55.9	45.6	59.0					**53.5**
REV 49A55	56.4	61.9	61.5					**59.9**
S 47-K5	54.4	50.6	59.8					**54.9**
DG 4755 RR2	53.6	50.6	61.7					**55.3**
P 4613RYS	54.5	56.7	56.0					**55.7**
P 4788RY	51.7	49.7	62.1					**54.5**
P 4757RY	56.4	55.1	56.9					**56.1**
P 4850RYS	54.2	55.5	54.8					**54.8**
P 4930LL	49.4	53.3	46.4					**49.7**
P 4900RY	51.5	64.6	56.2					**57.4**
HBK LL4953	53.1	56.7	51.8					**53.8**
DG 4995 RR	48.8	53.6	56.6					**53.0**
CZ 4748 LL	62.4	59.1	62.9					**61.5**
HBK LL4950	52.4	50.8	41.0					**48.0**
CZ 4818 LL	51.0	59.1	54.2					**54.8**
HBK LL 4653	49.9	56.8	45.5					**50.7**
HBK RY4721	49.9	45.6	54.5					**50.0**
CZ 4590 RY	56.7	56.1	54.0					**55.6**
CZ 4959 RY	45.5	56.6	50.2					**50.8**
CZ 4540 LL	47.5	55.8	58.7					**54.0**
Go soy 4915R2	53.8	51.3	53.6					**52.9**
HBK LL4850	42.5	57.5	51.6					**50.5**
5N452R2	52.0	55.5	63.9					**57.1**
5N479R2	47.5	46.6	53.5					**49.2**
DG 4775 RR2/STS	51.1	58.2	55.1					**54.8**
HBK LL 4850	47.8	59.3	46.0					**51.0**
S48-D9	57.8	56.1	58.6					**57.5**
DG 4587 LL	48.0	57.1	56.2					**53.8**
P 4814 LLS	46.6	62.6	51.2					**53.5**
LSD P=.05	**7.3566**	**13.6659**	**8.0303**					
Standard Deviation	**5.278**	**8.4678**	**4.9758**					
CV	**10.26**	**15.24**	**9.1**					

2015 Soybean Re-Cap and Disease Update

Trey Price, Assistant Professor, Macon Ridge Research Station
Clayton Hollier, Professor, Department of Plant Pathology
Ronnie Levy, Associate Professor& Soybean Specialist, Dean Lee Research Station

For the third year in a row, frogeye leaf spot (FLS) has been one of the most prevalent soybean diseases in the state. This is mostly due to the planting of susceptible varieties on large acreages. Frogeye leaf spot, at varying levels, can probably be found in every remaining field. Symptoms appear as small, circular chlorotic lesions with reddish to purple margins appearing on leaflets during reproductive stages (usually R4-R5) in the upper half of the canopy. If disease becomes severe, chlorotic/necrotic hot spots will develop in the field resulting in premature defoliation. The disease also may develop on pods, petioles, and stems if heavy infection has occurred. FLS will progress slowly, but steadily, during periods of hot and dry weather. Faster disease progression should be expected during rainy conditions.

FLS infection may require fungicide applications for management depending on disease severity, crop stage, and prevailing environmental conditions. It is important to keep in mind that soybeans can tolerate a considerable amount of leaf area loss before a significant yield loss is realized (A good rule of thumb is 20% and 30% at R5 and R6, respectively). If you have a susceptible variety, scouting is key for management. Instead of making a fungicide application at the first sign of disease, a reactionary approach should be implemented. If FLS is relatively light, mark leaflets in the field using spray paint or flagging then estimate disease severity (please see the rating scale from the July issue of this newsletter). Come back a week later and estimate disease severity on the same leaflets. If an application is not warranted, give it another week, and so on. You may be able to avoid or reduce the number of fungicide applications for management using this tactic. If an application is deemed necessary, there are many triazole fungicides available that are effective at slowing disease development and preserving yield. Some triazoles may be more effective than others, so contact your nearest specialist for more information.

Resistant varieties often will develop very light, insignificant levels of FLS. Therefore, fungicide applications are not necessary in these situations, making it extremely important to document and remember which variety was planted and where each variety was planted. **THIS CAN SAVE YOUR OPERATION MONEY**. Fungicides are not cheap, and choosing resistant varieties can be a cost-effective management strategy. Every year, LSU AgCenter scientists plant soybean variety trials, and these trials are rated for naturally-occurring diseases in many locations throughout the state. When choosing varieties, be sure to use official variety trial results from the location nearest your farm. Preliminary results of LSU AgCenter OVT disease ratings are included in this newsletter.

Cercospora leaf blight (CLB) also is an annual problem in Louisiana and seems to be more prevalent this year than in 2014. Symptoms first appear near R5 as reddening or purpling of petioles with leaves in the upper portion of the canopy displaying a leathery appearance quickly followed by bronzing or purpling. Severe infections may result in defoliation of plants beginning at the top of the canopy progressing downward. Other issues that may be mistaken for CLB include: alfalfa hopper damage, dectes stem borer damage, environmental stresses, natural varietal characteristics, natural senescence, nutrient imbalance, or herbicide damage.

Unfortunately, there are currently no fungicides that are consistently effective on CLB. Varieties that are planted earlier seem to escape or have low CLB levels. Some varieties may be somewhat tolerant in a given area; therefore, choosing varieties based on ratings nearest your farm is very important.

Soybean rust has been found at low levels on soybean in East Baton Rouge, Iberia, Lafourche, Rapides, Terrebonne, and Washington parishes in the state. The disease will first appear in the lower canopy as tan to reddish angular lesions. Lesions also may appear on pods, petioles, and stems. Closer inspection of the underside of leaflets with a hand lens will reveal spores produced by the pathogen. Soybean rust may be easily confused with bacterial pustule.

Since the disease has arrived late this growing season, progression to damaging levels is unlikely. However, late-planted soybean should be monitored for infection. There are many fungicides available for managing soybean rust if applications become necessary.

For more information, please do not hesitate to contact your nearest county agent, specialist, or research station.

Frogeye Leaf Spot (FLS) Disease Rating

Ratings:
1=No disease; 2=Few spots; 3=Spots frequent (not on all plants);
4=Few spots on most plants; 5=Numerous spots with defoliated hot spots; 6=Chlorosis and Defol (10-20%);
7=Chlorosia and Defol (20-40%); Severe Defol (40-60%); 9=Complete Defoliation.

Dean Lee MG 4 7/30/2015			Macon Ridge MG 5 7/28/2015		
Variety	**FLS (1-9)**		**Variety**	**FLS (1-9)**	
DG 4970 RR	1	h	DG 5067 LL	1	f
DG 4990 LL	1	h	DG 5367 LL	2.3	def
DG 4967 LL	1	h	S11-20195	2.7	de
DG 4765 RR2/STS	2.3	fgh	S11-17025	1	f
DG 4825 RR2/STS	4.3	bcd	S11-16653	1	f
DG 4880 RR	1	h	UA 5213C	2	def
DG 4670 RR2	1	h	UA 5814HP	1	f
S11-20337	1	h	R09-430	1	f
DG 4781 LL	1	h	UA 5414RR	1.7	ef
R09-1589	1	h	R11-89RY	1	f
UA 5014C	1.3	gh	UA 5612	1	f
DG 4935 RR2/STS	2	gh	Osage	3	cd
DG 4790 RR2	1	h	R10-197RY	1	f
DG 4981 LL/STS	1	h	DG 5170 RR2/STS	3.7	bc
AG 4934	4.7	bc	DG 5575 RR2	1	f
AG 4835	1.7	gh	DG 5230 RR2	1	f
AG 4135	2.3	fgh	DG 5625 RR2	1	f
AG 4632	1.3	gh	DG 5461 LL	1.3	f
AG 4534	3.3	def	DG 5467 LL	1	f
AG 4232	4	bcd	AG 5535	1.3	f
AG 4336	3.3	def	AG 5332	2.7	de
Armor 48-R66	5	b	AG 5533	1	f
Armor 46-R65	1.7	gh	AG 5633	3.7	bc
AR 49X	3.3	def	Armor AR5205	3	cd
Armor 47-R13	1.7	gh	Armor 50-R21	1.3	f
Armor AR4705	2	gh	Armor 57-R17	1	f
31RY45	1	h	Armor AR5605	1	f
S47RY13	2.7	efg	S57RY26	1	f
S46RY85	3.3	def	S56RY84	1	f
S49RY25	1.3	gh	S52RY75	1	f
S48RS53	1.7	gh	Go Soy 5115LL	1	f
S49LL34	1.3	gh	Schillinger 5220. RC	2	def
Go Soy 4714GTS	3.7	cde	Go Soy 5515LL	1	f
Go Soy 483C	1	h	Go Soy Leland	1	f
Go Soy 4914GTS	1	h	5N501R2	1.3	f
Schillinger 495.RC	1	h	5N522R2	1	f

DG 4977 LL/STS	2	gh	X55523NR2	4	b
Armor AR4904	6	a	REV 52A94	1	f
5N490R2	4.7	bc	REV 51A56	1	f
REV 47R53	1	h	REV 54R84	1.7	ef
REV 49A14	3.3	def	REV 55R53	2.3	def
REV 47R34	1	h	REV 57R21	1	f
REV 49A75	2	gh	REV 56R63	1	f
REV 49R94	1	h	S 55-Q3	1	f
REV 48A46	1	h	P 5213RY	1.7	ef
REV 49A55	1	h	P 5460LL	1	f
S 47-K5	1	h	P 5160LL	1.3	f
DG 4755 RR2	2.7	efg	P 5226RYS	4.7	a
P 4613RYS	2.3	fgh	P 5610RY	1	f
P 4788RY	1.3	gh	P 5752RY	1	f
P 4757RY	1	h	P 5555RY	1	f
P 4850RYS	2	gh	P 5333RY	1	f
P 4930LL	1.3	gh	CZ 5147 LL	1	f
P 4900RY	4	bcd	CZ 5150 LL	1	f
HBK LL4953	1	h	CZ 5445 LL	1	f
DG 4995 RR	1	h	CZ 5515 LL	1	f
CZ 4748 LL	1	h	CZ 5242 LL	1	f
HBK LL4950	1	h	39RY57	1	f
CZ 4818 LL	1	h	S 52-Y2	3.7	bc
HBK LL 4653	1.7	gh	HBK 5421RY	1	f
HBK RY4721	1	h	5N550R2	1.3	f
CZ 4590 RY	2.3	fgh	CZ 5225 LL	1	f
CZ 4959 RY	1.7	gh	CZ 5727 LL	1	f
CZ 4540 LL	1	h	HBK RY5421	1	f
Go soy 4915R2	2	gh	Go Soy 5212	2	def
HBK LL4850	4	bcd	CZ 5947LL	1	f
5N452R2	1.3	gh	P 5414 LLS	1	f
5N479R2	2.3	fgh	P 5101RY	1	f
DG 4775 RR2/STS	4.7	bc	P 5960 LL	1	f
HBK LL 4850	3.3	def			
S48-D9	1	h			
DG 4587 LL	1	h			
P 4814 LLS	1	h			

LSD P=.05	**0.71**	**LSD P=.05**	**0.63**
Standard Deviation	**0.44**	**Standard Deviation**	**0.39**
CV	**22.14**	**CV**	**26.95**

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Cover Crops for Louisiana Agriculture

A cover crop is a crop planted primarily to manage soil erosion, increase soil fertility, reduce weeds, and improve water quality. Producers can actually receive assistance though both the Environmental Quality Incentives Program (EQIP) as well as Conservation Stewardship Program (CStP): Contact your local NRCS office for additional information.

Winter cover crops fall into two general categories – grass (grain) crops and legumes. The grass crops include wheat, rye and oats, while the legumes include such crops as the vetches, peas and clovers.

The winter grain crops can be grown for grain harvest or can be grown as green manure crops. The legumes will usually be grown as a green manure only. Green manure crops usually do not need fertilization and grow entirely on residual fertilizers. Winter grain crops require nitrogen fertilization but usually no other applied nutrients. Legumes do not require applied nitrogen but do require the appropriate nitrogen-fixing bacteria. Legumes have the ability to "fix" nitrogen from atmospheric nitrogen. Some of that "fixed" nitrogen will be available to provide low-cost nitrogen for the following summer crop – a very important feature that makes planting of legume cover crops practical and economical.

Other factors that are important in selection of cover crops are winter survival, biomass potential, maturity time, and nitrogen fixing potential. Specific characteristics of the available cover crops planted in Louisiana are extensive and information on the advantages and disadvantages of each are available from LSU AgCenter personnel in parish offices and research centers across Louisiana and from USDA Natural Resources Conservation Service.

There are also summer cover crops, but are not planted in the southern United States in recent years because they are the principal income-producing crops for this region.

Summer cover crops may have a place in sugarcane production during the fallow period before planting a new plant-cane crop but, even here, a soybean grain crop is preferable to a cover crop. In fact, soybeans were once grown primarily as a summer cover crop in the southern United States, but soybeans' development as a cash crop during the 1950s illustrates the strong need and preference for a summer cash crop over a cover crop.

Other possible summer cover crops range from such crops as the familiar field peas or sorghum sudan grass to the more exotic such as sun hemp.

Planting Date

Critical to the success of winter cover crops is planting date. To achieve the plant growth desired for ground cover and nitrogen fixation, cover crops should be planted early enough to establish stands and attain some growth before low temperature limits plant development. Early establishment also is important so the cover crop can suppress winter weeds.

Clover crops can be planted as early as August. Most clovers also have reseeding capability and will re-establish year after year under appropriate conditions – under a cotton canopy, for example, but they can be killed by herbicide or defoliate applications.

For best results, winter peas and vetches should be planted by October 15. Later plantings through November will be successful but will not provide as much winter ground cover.

Growth Termination

Proper cover crop management is important to attain benefits without penalizing the productivity of the following cash crops. For maximum benefit, cover crops should have good biomass production before growth termination. The biomass produced protects the soil during the winter and provides the residue needed for ground cover during early summer. Legumes also must have attained a high rate of nitrogen fixation. Winter cover crops must be completely killed before planting a summer crop to prevent competition for soil water and to minimize insect damage to the summer crop. The cover crop should be dead for at least two weeks before planting the summer crop to avoid providing a "green bridge" that allows insects or pathogens to survive on the growing cover crop. Optimal termination timing also is important to minimize reproduction of plant-pathogenic nematodes on the roots of susceptible cover crops. Warming soils in the spring increases nematode growth and reproduction.

Optimal termination timing is therefore a balance between attainment of sufficient biomass and nitrogen fixation with the need for timely planting of the following summer crop. Because complete kill of winter cover crops is essential before planting the summer crop, all of the benefits of a winter cover crop will not be attained when the following summer crop is an early planted crop such as corn. Winter covers will not have accumulated maximum biomass or nitrogen when terminated in late February or early March, which somewhat limits the benefits of cover crops in corn production. Winter covers are better used in rotations with cotton, soybeans, grain sorghum or sweet potatoes - crops that can be planted after mid-April, which allows the winter cover to grow until early April, if necessary.

Biomass and nitrogen production from selected legume cover crops for four years and six locations throughout Louisiana.				
	Above-ground biomass	Range in above-ground biomass production		Average nitrogen content
Cover crop	average	lowest	highest	
	---------- lb/acre ----------			
Hairy vetch	4347	2946	8699	144
Common vetch 'Cahaba white'	4054	0*	4592	122
Common vetch 'Au Early Cover'				
Bigflower vetch 'Woodford'	4157	2639	5925	97
Crimson clover 'Tibbee'	5827	4286	8254	147
Berseem clover 'Bigbee'	5489	2843	9498	137
Arrowleaf clover 'Amclo'	2480			135
Sub clover 'Mt. Barker'	4290	2733	5567	122
Red clover 'Cherokee'	3519	0*	5584	116
Austrian winter pea	3866	1904	7088	88
Rough (Caly) pea	3968	2704	7666	135
Wheat	4835	2103	6738	54
Ryegrass	3856	851	7285	46
*Winter killed in some years at some locations.				
Data adapted from Dabney et al. Louisiana Agriculture 33:8-9.				

Nutrient Cycling

Both grass and legume cover crops will use the residual plant nutrients applied to the previous crops. This sequestering of nutrients prevents their loss during the winter and early spring when rainfall in Louisiana is highest and nutrient loss through leaching and runoff is most likely to occur. Cover crops will assimilate and sequester up to 50 pounds of nitrogen per acre and significant quantities of other major and minor nutrients, as well. The sequestered nutrients in winter legume cover crops are mineralized quickly and will be available for use by the following summer crop. Grass cover crops, however, release the sequestered nutrients slowly in a process that may take 3 years. Until equilibrium is attained, additional fertilizer application may be needed to replace the nutrients held in grass residues.

Soil Cover

The amount of soil cover provided by cover crops and their residues varies with location, growing conditions, soil type, and termination time. Variation among locations and years due to differences in growing conditions is greater than the variation among cover crop species. Still, some species of cover crops are more likely than others to produce adequate ground cover.

The most consistent biomass producers for rotations in Louisiana are winter grains, hairy vetch and various types of winter peas. With warm winters and adequate water, cover crops can sometimes produce excessive biomass, in which case growth should be terminated at an earlier date to prevent problems with planting summer crops. The residue from cover crops should not be burned (which would destroy large amounts of plant nutrients) and should always be left on the soil surface to attain the conservation benefits.

Nitrogen Fixation

As with biomass production, cover crops vary in the amount of nitrogen fixation. Hairy vetch and winter peas are some of the best winter legumes for Louisiana and will contain as much as 150 pounds of available nitrogen in the aboveground biomass, although 100 to 120 pounds is more typical. Usually, about 70 percent of the nitrogen content of legume biomass is from nitrogen fixation, and the remaining 30 percent is from scavenging residual nitrogen sources.

Significant amounts of nitrogen are not fixed and stored in plant biomass until the plants enter reproductive growth phases. Winter peas are faster to establish and have faster early growth than vetch, providing more ground cover and nitrogen during fall and winter months. Clovers can produce higher levels of biomass and nitrogen fixation but only if planted very early. Otherwise, growth and especially nitrogen fixation occur too late in the spring for maximum benefit. Some clovers produce plenty of biomass and fixed nitrogen, but clovers are more difficult to manage than peas and vetches and have shown allelopathic effects on summer crops in Louisiana research.

Tillage Radish

Over the past several years, there has been a great interest in tillage radish as a cover crop in Louisiana. Research in other states has shown because of their deep root system, rapid root extension, and heavy N feeding, radishes are excellent scavengers of residual N following summer crops. Unlike small grains whose residues decompose slowly and continue to immobilize nitrogen for an extended period, radish residues decompose and release nitrogen rapidly. Other states have also shown that a good stand of radishes can reduce winter weeds. It is important to keep in mind that even though tillage radish produce a lot of biomass, they are highly decomposable and increases in soil organic matter is unlikely. Research by the LSU AgCenter continues to look at tillage radish as a cover crop and to develop an effective termination program that will allow planting following tillage radish as a cover crop.

Below are other links that have good cover crop information:

Environmental Quality Incentives Program (EQIP) as well as Conservation Stewardship Program (CStP):

http://www.nrcs.usda.gov/wps/portal/nrcs/main/la/programs/financial/eqip/

http://www.nrcs.usda.gov/wps/portal/nrcs/main/la/programs/financial/csp/

Planting Rates for Louisiana by MLRA:

http://efotg.sc.egov.usda.gov/references/public/LA/PLANTMATERIALSTECHNICALNOTENO1.pdf

Statewide cost list for FY 2015. HU = Historically Underserved.

http://www.nrcs.usda.gov/wps/PA_NRCSConsumption/download?cid=stelprdb1269568&ext=pdf

Conservation Update publication articles:

http://www.nrcs.usda.gov/wps/PA_NRCSConsumption/download?cid=nrcseprd395809&ext=pdf

http://www.nrcs.usda.gov/wps/PA_NRCSConsumption/download?cid=stelprdb1258847&ext=pdf

NRCS Louisiana Cover Crop Standard:

http://efotg.sc.egov.usda.gov/references/public/LA/340CoverCropStandard.pdf

NRCS Louisiana Cover Crop Specifications:

http://efotg.sc.egov.usda.gov/references/public/LA/CoverCropSpecifications_022315.pdf

The next two pages are an example of the information in the above link.

Chart 2 **PERFORMANCE AND ROLES**

	Species	Legume N Source	Total N (lb./A)[1]	Dry Matter (lb./A/yr.)	N Scavenger[2]	Soil Builder[3]	Erosion Fighter[4]	Weed Fighter	Good Grazing[5]	Quick Growth
NONLEGUMES	Annual ryegrass *p. 74*			2,000–9,000	◕	◕	◕	◕	◕	◕
	Barley *p. 77*			2,000–10,000	◕	◕	●	◕	◕	◕
	Oats *p. 93*			2,000–10,000	◕	◑	◕	●	◑	●
	Rye *p. 98*			3,000–10,000	●	●	●	●	◑	●
	Wheat *p. 111*			3,000–8,000	◕	◕	◕	◕	◕	◕
	Buckwheat *p. 90*			2,000–4,000	○	◑	◔	●	○	●
	Sorghum-sudan. *p. 106*			8,000–10,000	●	●	●	◕	◕	●
BRASSICAS	Mustards *p.81*		30–120	3,000–9,000	◑	◕	◕	◕	◑	◕
	Radish *p. 81*		50–200	4,000–7,000	●	◕	◕	●	◑	◕
	Rapeseed *p. 81*		40–160	2,000–5,000	◕	◑	◕	◕	◑	◕
LEGUMES	Berseem clover *p. 118*	●	75–220	6,000–10,000	◕	◕	◕	●	●	●
	Cowpeas *p. 125*	●	100–150	2,500–4,500	◔	◑	●	●	◑	◕
	Crimson clover *p. 130*	◕	70–130	3,500–5,500	◑	◕	◕	◕	●	◑
	Field peas *p. 135*	●	90–150	4,000–5,000	◔	◑	◕	◑	◕	◕
	Hairy vetch *p. 142*	●	90–200	2,300–5,000	◔	◕	◑	◑	◑	◔
	Medics *p. 152*	◑	50–120	1,500–4,000	◔	◑	◑	◕	◕	●
	Red clover *p. 159*	◕	70–150	2,000–5,000	◑	◕	◑	◕	●	◔
	Subterranean clovers *p.164*	●	75–200	3,000–8,500	◔	◕	◕	●	◕	◑
	Sweetclovers *p. 171*	●	90–170	3,000–5,000	◔	●	◕	◕	◕	◑
	White clover *p. 179*	●	80–200	2,000–6,000	◔	◑	◕	◕	●	◔
	Woollypod vetch *p. 185*	●	100–250	4,000–8,000	◑	●	◑	●	◑	◕

[1]**Total N**—Total N from all plant. Grasses not considered N source. [2]**N Scavenger**—Ability to take up/store excess nitrogen.
[3]**Soil Builder**—Organic matter yield and soil structure improvement. [4]**Erosion Fighter**—Soil-holding ability of roots and total plant.
[5]**Good Grazing**—Production, nutritional quality and palatability. Feeding pure legumes can cause bloat.

○=Poor; ◔=Fair; ◑=Good; ◕=Very Good; ●=Excellent

Chart 2 **PERFORMANCE AND ROLES** continued

	Species	Lasting Residue[1]	Duration[2]	Harvest Value[3] F*	Harvest Value[3] S*	Cash Crop Interseed[4]	Comments
NONLEGUMES	Annual ryegrass	◕	◕	◑	◔	●	Heavy N and H_20 user; cutting boosts dry matter significantly.
	Barley	●	◑	◕	◑	◕	Tolerates moderately alkaline conditions but does poorly in acid soil < pH 6.0.
	Oats	◑	◔	◑	◑	●	Prone to lodging in N-rich soil.
	Rye	●	◕	◔	◔	◕	Tolerates triazine herbicides.
	Wheat	◕	◕	◑	◕	◔	Heavy N and H_20 user in spring.
	Buckwheat	○	◔	○	◔	◕	Summer smother crop; breaks down quickly.
	Sorghum–sudangrass	◕	●	●	○	○	Mid-season cutting increases yield & root penetration.
BRASSICAS	Mustards	◔	◑	○	◔	○	Suppresses nematodes and weeds.
	Radish	◔	◑	◕	◔	◔	Good N scavenging and weed control; N released rapidly.
	Rapeseed	◑	◕	◔	●	○	Suppresses *Rhizoctonia.*
LEGUMES	Berseem clover	◑	●	●	◕	◑	Very flexible cover crop, green manure, forage.
	Cowpeas	◔	●	◑	◑	◑	Season length, habit vary by cultivar.
	Crimson clover	◑	◔	●	◕	●	Established easily, grows quickly if planted early in fall; matures early in spring.
	Field peas	◔	◑	●	◕	●	Biomass breaks down quickly.
	Hairy vetch	◔	◕	◔	◕	◑	Bi-culture with small grain expands seasonal adaptability.
	Medics	◑	◕	◑	◑	◑	Use annual medics for interseeding.
	Red clover	◔	◑	●	◕	●	Excellent forage, easily established; widely adapted.
	Subterranean clover	◕	◕	◕	○	●	Strong seedlings, quick to nodulate.
	Sweetclovers	◕	◕	◕	◑	◑	Tall stalks, deep roots in second year.
	White clover	◔	●	◕	◑	◕	Persistent after first year.
	Woollypod vetch	◔	◕	◔	◕	◑	Reseeds poorly if mowed within 2 months of seeddrop; overgrazing can be toxic.

[1]**Lasting Residue**—Rates how long the killed residue remains on the surface. [2]**Duration**—Length of vegetative stage.
[3]**Harvest Value**—Economic value as a forage (F) or as seed (S) or grain. [4]**Cash Crop Interseed**—Rates how well the cover crop will perform with an appropriate companion crop.

○=Poor; ◔=Fair; ◑=Good; ◕=Very Good; ●=Excellent

Performance of Grain Sorghum Hybrids in Louisiana, 2015

Rick Mascagni

Performance of grain sorghum hybrids is annually evaluated by Louisiana Agricultural Experiment Station (LAES) researchers. The purpose of these trials is to provide to Louisiana growers, seedsmen, county agents of the Louisiana Cooperative Extension Service (LCES) and other interested individuals and organizations with unbiased performance data for commercial grain sorghum hybrids submitted for evaluation by private agencies. The cooperating LAES units in 2015 were: Dean Lee Research Station, Alexandria; Central Research Station, Baton Rouge; Red River Research Station, Bossier City; Rice Research Station, Crowley; Northeast Research Station, St. Joseph; and the Macon Ridge Research Station, Winnsboro. Baton Rouge was planted late and is not included in this report. There were early and late planting dates at St. Joseph, April 1 and May 5. A more detailed report will be posted on the AgCenter webpage this fall.

Table 1. Preliminary yield data for grain sorghum hybrid performance trials at five locations, 2015

				St. Joseph[2]			
				Early	Late		
Hybrid[1]	Alexandria	Bossier City	Crowley	planting	planting	Winnsboro	Average
				Bu/Acre			
Pioneer 83P17	114.7	135.8	57.6	107.5	124.0	71.0	101.8
Pioneer 83P99	101.3	124.6	53.0	105.4	124.1	76.3	97.5
Pioneer 84G62	108.6	108.6	52.1	116.4	111.6	72.9	95.0
Pioneer 84P80	96.9	107.8	60.5	110.3	115.4	81.5	95.4
Mycogen 1G855	87.4	142.4	45.0	103.5	124.1	69.2	95.3
Terral/Rev 9924	106.1	126.9	59.7	98.5	116.2	78.4	97.6
Terral/Rev 9782	118.9	127.6	52.9	110.3	108.1	82.3	100.0
Terral/Rev 9562	118.9	120.7	60.8	109.9	113.4	60.3	97.3
DEKALB DKS51-01	130.5	155.0	55.0	112.0	120.6	80.4	108.9
DEKALB DKS53-67	112.4	122.1	50.8	113.5	106.0	82.5	97.9
Dyna-Gro 765B	111.1	104.9	58.1	108.0	124.3	63.8	95.0
Dyna-Gro M75GB39	108.8	91.6	45.0	100.2	108.8	61.2	85.9
Dyna-Gro M77GB52	85.6	103.5	52.0	96.5	102.2	66.7	84.4
Dyna-Gro GX15561	103.5	127.1	38.5	103.4	119.9	44.8	89.5
Dyna Gro GX15672	118.9	117.1	51.3	109.1	125.1	45.7	94.5
Alta Seeds AG1203	103.0	112.3	43.7	109.2	114.1	62.7	90.8
Alta Seeds AG2103	96.3	93.5	40.0	106.8	105.8	66.3	84.8
Alta Seeds AG2105	114.3	112.6	62.7	103.4	116.8	63.1	95.5
Alta Seeds AG2115	86.1	129.2	53.9	101.5	103.6	63.6	89.7
Alta Seeds AG3101	84.8	85.4	62.8	97.4	95.3	43.5	78.2
Alta Seeds AG3201	96.9	116.5	56.8	103.6	120.9	67.8	93.7
Alta Seeds XG02008	88.3	94.8	61.8	95.5	99.7	63.6	84.0
Alta Seeds XG30001	75.4	106.9	52.3	102.9	112.3	68.9	86.4
Alta Seeds XG30002	94.8	123.0	49.6	109.6	115.6	73.9	94.4
Alta Seeds XG30003	84.9	105.8	36.6	89.4	107.9	74.2	83.1

SP SP7868	98.7	117.5	56.9	103.9	124.3	62.8	94.0
SP NK6638	90.5	119.4	53.9	99.1	98.0	65.6	87.8
SP SP7715	99.0	119.6	57.3	101.7	117.1	69.2	94.0
SP SPX17414	104.0	83.3	48.7	106.7	108.8	83.7	89.2
SP SPX17514	103.2	92.5	50.8	100.4	108.3	76.3	88.6
SP SPX17114	101.1	111.8	64.9	104.2	113.4	72.0	94.6
Average	**101.4**	**114.2**	**53.1**	**104.5**	**113.1**	**68.2**	
CV, %	**13.8**	**21.3**	**20.7**	**7.9**	**7.5**	**16.2**	
LSD (0.10)	**16.5**	**25.5**	**12.9**	**8.6**	**11.6**	**11.6**	

[1]SP=Sorghum Partners

[2]Early and late planting dates at St. Joseph were April 1 and May 5, respectively.

Wheat Variety Performance and Production Practices in Louisiana

Steve Harrison, Boyd Padgett, and Trey Price, LSU AgCenter

The 2015 wheat production season was very challenging for growers across the region, primarily due to excessive rainfall during the spring that resulted in poor yields, low test weight, lodging, and high levels of Fusarium headblight. Much of our planted wheat acreage was abandoned as a result. Results of the 2015 wheat trials are summarized in Table A (South Louisiana) and Table B (North Louisiana).

Variety selection:

Choice of varieties for planting is a crucial management decision that sets the stage for yield potential and input costs. Since the 2015 season was atypical and yields were poor, growers should place more emphasis on yield means over two or even three years within their region (North or South Louisiana). While grain yield is the most important factor, test weight, disease resistance, and heading date are also important considerations as they also impact economic return.

Test weight is important because low test weights result in dockage at the elevator. Heading day is an indication of cold requirement (vernalization) and day length (photoperiod) requirement that determines when a variety heads out. Some varieties head very late or not at all in south Louisiana due to a long vernalization requirement or photoperiod response, while those same varieties perform well in north Louisiana. As can be seen in Tables A and B, late-heading varieties generally perform poorly in south Louisiana. By contrast, early-heading varieties sometimes perform poorly in north Louisiana due to spring freeze damage. Disease resistance protects yield and reduced input costs. Vernalization and photoperiod response are the primary reasons for dividing Louisiana into North and South regions.

Early-heading and maturing varieties permit earlier harvest and timelier planting in a double-cropping system, while later-heading varieties guard against damage from a late spring freeze and can be planted earlier in north Louisiana. Early-heading varieties should be planted in the second half of the recommended planting window to avoid the likelihood of spring freeze damage. Lodging resistance helps guard against test weight decreases and yield loss that can result from near-mature heads laying on the ground from storms.

Disease susceptibility is very important in terms of yield and profitability. The 2015 season was notable for the severe Fusarium headblight (FHB) epidemic that occurred as a result of prolonged rainfall during flowering. There are no varieties fully resistant to FHB but some varieties have a moderate level of resistance that helps reduce losses. It should be noted that varieties less susceptible to disease may not always produce the highest yields, especially if disease pressure is not present. However, in high disease pressure situations, the resistance may result in higher yields as well as enhanced profitability by saving the costs of fungicide applications.

Triazole fungicides may suppress FHB. In earlier research tebuconazole (Folicur and generics) reduced incidence and severity of FHB. Prosaro (prothioconazole + tebuconazole), Proline (prothioconazole), and Caramba (metconazole) was somewhat efficacious on FHB in other studies. When applications are made under ideal conditions, one can expect a maximum of 50% control. On average, 40% control is more realistic.

Timing is critical. Essentially, we have a short window during flowering to make an effective application for FHB. The biggest problem is that ideal conditions (wet weather) for FHB infection are not ideal for making fungicide applications. Head coverage is also critical. Sprayers should be calibrated to deliver maximum water volume (minimum 15 GPA by ground, 5 GPA by air) and optimal droplet size (300 to 350 microns). For ground sprayers, nozzles angled at 30° to the horizontal may maximize head coverage. Some research has shown that dual nozzles angled in opposite directions will also increase head coverage.

It is common to see 2-3 years of epidemics of FHB followed by years with little to no disease. If similar weather conditions are encountered next year during flowering, expect to encounter FHB again in 2016. An online (www.wheatscab.psu.edu) risk assessment tool that is based on temperature and relative humidity is available online, which has regional commentary that will help you to determine your risk at a given location next year.

Crop management:

Planting dates for Louisiana wheat depend on location and variety. For southern and central Louisiana optimum planting dates range from November 1 through November 30. The optimum planting for northern Louisiana is slightly earlier, ranging from October 15 through November 15. Early-heading varieties should generally be planted after the mid-date, while late-heading varieties can be pushed a little on the early side of the planting window. The weather in north Louisiana is cooler in the fall and early winter, which slows growth and prevents excess winter growth. It is important that the wheat crop be well-established and fully tillered before going dormant in the coldest part of the winter. Additionally, because of the cooler conditions, the threat for fall pests (Hessian fly, army worms and rust) are decreased earlier in the fall compared to south and central Louisiana. While these dates are the optimum planting window averaged over years, the timing will vary in some years depending on weather patterns. Additionally, if wheat cannot be planted within these optimum windows, planting later than the optimum window is usually better than planting too early. Early planting can result in greater insect and fall rust establishment and also makes plants more prone to spring freeze injury due to excessive fall growth and development. Planting too late (more than 14 days after the optimum window) can result in significant yield loss of due to slow emergence, seed rotting and decreased tillering period, which can results in fewer and smaller heads.

Wheat can be planted by broadcasting seed and incorporating; however, it is preferred that the seed be drilled. Drilling the seed increases the uniformity of depth and stand. Use recommended planting rates for drilled wheat (60 to 90 lb/A) or broadcast wheat (90-120 lb/A) of quality seed into a good seedbed with adequate moisture. This higher seeding rate should be adapted for conditions in which high germination or emergence is not expected, as with late-planted wheat or heavy, wet soils. Late-planted seed should be planted at a higher seeding rate using a drill to ensure rapid, adequate and uniform emergence.

Good surface drainage is critical to successful wheat production. Saturated fields lead to diseases such as root rots and downy mildew, reduce tillering and vegetative growth, and decrease root development and nutrient utilization. Yields in wheat fields suffering from waterlogging stress are greatly reduced. Field with marginal drainage should be ditched to ensure that water stands for a minimum time after heavy rainfall.

Nitrogen (N) fertilization of wheat can be a challenging aspect of production. Total N application should normally range from 90 to 120 pounds per acre, but this will vary depending on soil type and rainfall after applications. Timing of N application depends on several factors. The wheat crop needs adequate N in the fall and early winter to establish ground cover and properly tiller; however, excessive levels of fall N can result in rank growth and increased lodging potential, as well as a higher probability of spring freeze damage from early heading. If the wheat crop is following soybeans, soil residual or mineralizable N should be adequate for fall growth, and no pre-plant N is needed. However, if the wheat crop follows corn, sorghum, rice or cotton, the application of 15 to 20 pounds of N per acre would typically be beneficial. Where the wheat crop is planted later than optimum, additional N may be necessary to ensure adequate fall growth prior to winter conditions. If the wheat crop did not receive a fall application and appears to be suffering from N deficiency in January, the initial topdress N application can be made early to promote additional tillering. Early spring is when the majority of N for the wheat crop should be applied. There is no universal rule on how early spring N should be applied. Each field should be evaluated based on tillering, stage of development, environmental conditions and crop color. A crop that has good growth and good color should not need N fertilization prior to erect leaf sheath (Feekes 5), usually sometime in February. However, first spring fertilizer application should be applied prior to first node (Feekes 6) in order to ensure optimum head development, tiller retention and head size. Crop N stress around jointing (Feekes 6) will result in yield losses. Any additional N applied following flag leaf typically contributes very little to crop yield. Splitting topdress N into two or three applications is common in Louisiana production systems due to the increased risk of N losses often associated with heavy rainfall and our long growing season. Splitting N typically occurs by applying fertilizer N at or just prior to jointing with a second application occurring 14 to 28 days later. About 50 percent of the topdress N is normally applied with the first split, but this may be decreased if the first split is put out early and plants are not well enough developed to take up that much N.

Phosphorus, K, and micronutrients should be applied in the fall based on soil test reports. All fertilizers applied as well as lime should be incorporated into the soil prior to planting. Required lime should be applied as soon as possible because it takes time for the lime to begin to neutralize the acidity of most soils. The application of sulfur is a growing concern in Louisiana production systems, with increasing deficiencies appearing every year. Oftentimes, early spring sulfur (S) deficiencies are mistaken for N deficiencies and additional S is not applied. Because sulfur is mobile, similar to N, the application solely in the fall will not be adequate. Supplemental applications of S with spring N applications are often warranted.

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Upcoming Calendar of Events

Oct. 8, Landscape Horticulture Field Day at the Hammond Research Station, Hammond.

Oct. 8, Beef Cattle and Forage Field Day at the Dean Lee Research and Extension Center, Alexandria.

Oct. 22-Nov. 8, AgMagic, an agricultural awareness exhibit for youth at the State Fair, Shreveport.

November 9-10th, LAIA Annual Convention: Crowne Plaza Hotel, Baton Rouge

For additional calendar information on LSU AgCenter Parish and Statewide events, visit our website at www.lsuagcenter.com/calendar

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