Corn Hybrids for Grain 2020

Introduction

This year, commercial corn seed companies provided 54 hybrids that were entered in the official variety trials. Five hybrid trials were conducted at four AgCenter research stations located throughout the state. Commercial seed companies voluntarily entered and selected the hybrids they wanted to have evaluated by the AgCenter.

In addition to the research station tests, the on-farm core block demonstrations were conducted with a total of 10 hybrids planted over 13 locations throughout the corn-growing areas of Louisiana. LSU AgCenter extension agents coordinated these demonstrations.

The official corn hybrid trials were conducted according to LSU AgCenter best management practices. The on-farm core block demonstrations were placed with corn producers and subjected to their standard production practices.

On-farm core block demonstration results are presented to provide yield results by trial, as well as trend comparisons from the compiled data. As opposed to the official variety trial research, core block demonstrations sometimes are not replicated in the field, and a rigorous statistical analysis is not possible. However, sufficient trials were conducted across a variety of locations; therefore, meaningful and relevant observations can be made that will be useful to Louisiana producers as they make hybrid selection decisions.

In conclusion, the LSU AgCenter corn hybrid trials provide the most complete and unbiased source of information on yield comparisons. The data provided in this publication should help you make more informed decisions about which hybrids will perform best for your production area.

Evaluating the data

This publication includes yield data from the official variety trials conducted by LSU AgCenter scientists in a replicated format that allow for statistical comparisons (Tables 10-11). Detailed plant growth measurements were made, but this report only displays yield data. For a complete review of the official variety trial data, visit the corn section of the LSU AgCenter website at www.lsuagcenter.com/corn.

For a better understanding of how corn hybrids performed in Louisiana, refer to the official variety trial data first. Choose the hybrids that performed well overall and those that performed well in the region most representative of your growing area. Finally, check the on-farm core block data to see if it is consistent with the official variety trial data for your chosen hybrids (Tables 12-25). By making thorough comparisons across the full range of information available, you can improve your chances of choosing hybrids that will perform well on your farm.

Hybrid selection

Hybrid selection is one of the most important decisions a producer will make and is essential for successful corn production. Seed companies offer multiple hybrids for sale to producers for good reasons. Each corn producer has somewhat different soil conditions, irrigation practices and crop rotations than other growers located in the same farming community. Some hybrids will tend to perform better than others based on soil type, planting date, environmental conditions and location.

Yield is important when selecting a corn hybrid; however, maturity, stay-green, lodging, shuck cover, ear placement, disease and insect resistance need to be considered. Yield data from multiple locations and years are good indicators of the consistency of a hybrid's performance.

Hybrid maturity is rated using the relative maturity (RM) or growing degree day (GDD) rating systems. These two methods are based on the number of days or degree days for a hybrid to reach physiological maturity. Louisiana producers can grow early, midseason and full-season hybrids. In Louisiana, 112-to-121-day maturity hybrids usually produce the best yields. Full-season hybrids do not consistently outyield midseason hybrids. It appears there is more variability in yield among hybrids within a given RM rating than there is between maturity groups.

Hybrids that stay green later into their maturity usually retain better stalk strength and have less lodging potential. Shuck cover is important for protecting the ear and kernels from weathering and fungi. At later planting dates, a corn hybrid will grow taller because of an increase in day and night temperatures causing the internodes of the stalks to be longer. Therefore, ear placement will be higher when compared to an earlier planting date. This usually means that the lodging potential will be greater. When planting late in the season, consider planting a hybrid that has a low ear placement.

Also, corn hybrids have different insect and herbicide traits. These biotechnology traits will need to be considered and should be based on which one best fits into your production system.

Select several hybrids that are consistently top performers over multiple locations or years within a region. Consistency over multiple environments is important because we cannot predict next year's growing conditions.

Planting date

Corn growth and development responds to temperature and is not controlled by day length. Thus, the calendar date is not as important as soil temperature and air temperature when considering to plant corn. Good germination and

emergence are expected when the soil temperature at a 2-inch depth is 55 degrees Fahrenheit by 9 a.m. for three consecutive days. This normally occurs in late February and March in Louisiana. In most years, the optimal planting window for south Louisiana is Feb. 23 to March 23, and for north Louisiana the optimal planting window generally is March 10 to April 10. Extending planting past the last optimal planting date can result in losses of half of a bushel to 1 bushel per day.

Frost may occur after these planting dates in some years; however, corn typically withstands frost with little economic injury. Corn younger than V6 (six-leaf stage) usually can withstand a light frost if the temperature does not drop below 30 degrees Fahrenheit. A moderate freeze will burn any existing leaves and cause them to drop, but new leaves can emerge in four to five days with warm temperatures. However, as the growing point moves upward near the soil surface, the possibility of injury increases.

Planting Rate and Depth

The optimal plant population for corn ranges from 27,000 to 30,000 live plants per acre. At 80% field emergence this would equate to planting 33,750 to 37,500 seeds per acre. The lower end of the recommended range should be used when lower yields are expected because of soil type, late planting date, drought-prone areas or low fertility. Higher populations should be used on highly productive deep alluvial soils or irrigated fields where moisture will not be a limiting factor.

Also, seeding densities can be affected by "ear flex." Full-flex hybrids can compensate for fewer plants per acre because the ear grows both in length and girth. These hybrids usually produce only one ear per stalk. Individual semiflex hybrid ears will not compensate to the extent that full-flex hybrids will, but with low stand density and excellent growing conditions they may set two or more ears. Fixed-ear hybrids must obtain the desired population for maximum yields.

Seed size and shape are not critical for a good stand, but be sure to use the correct plate and planter for the size purchased. Corn should be planted 2 inches deep. It is vitally important to establish seed contact with moist soil, but planting seeds greater than 2 inches deep can increase the probability of an uneven plant stand, which can affect growth and yield.

Corn Growth and Development

Corn growth and development are closely related to temperature. Warmer temperatures mean faster corn growth, and cooler temperatures mean slower corn development.

Temperatures are used to calculate growing degree days (GDD), or some people call them heat units (HU). Several formulas exist to calculate these GDD, but the one used most often is the modified 86/50 cutoff method (MGDD).

MGDD for any given day are calculated by subtracting 50 from the average daily temperature. The average daily temperature is calculated by adding the daily high and the daily low temperatures and then dividing by two.

$$GDD = \frac{\text{Max. Temp} + \text{Min. Temp.}}{2} - 50F$$

Two criteria or rules exist when calculating MGDD. First, if the daily high was greater than 86 degrees Fahrenheit, then 86 degrees Fahrenheit is used to calculate the average. Second, if the daily low was less than 50 degrees Fahrenheit, then 50 degrees Fahrenheit is used to calculate the average. These upper and lower temperature thresholds or limits define the boundaries beyond which corn develops very slowly, if at all.

Throughout the years, we have talked about the number of MGDD accumulation when silking or physiological maturity (black layer) occurs. For example, a particular hybrid will silk at 1,365 MGDD or reach physiological maturity at 2,800 MGDD.

Another useful purpose for following MGDD accumulation is to track the rate of leaf development prior to pollination. From V1 to V10, new leaves, which are defined by the appearance of leaf collars, emerge at a rate of about 85 MGDD per leaf. This is equivalent to about one leaf every five to six days in early April. From V10 to the final leaf, leaves emerge at a rate of about 50 MGDD per leaf.

Practical uses of this information include estimating how far along the corn crop should be for any given location if we know the planting date and the MGDD accumulations since the planting date. It is especially important to know the emergence date, but if this is not available, we can use 125 MGDD from planting to emergence if the actual date is not known.

For instance, corn should reach the V6 growth stage by the time 635 MGDD have accumulated since planting. This is calculated by using 125 MGDD from planting to emergence, then figuring 510 MGDD (6 multiplied by 85) from emergence to V6.

It is very important to remember that a shortage of MGDD resulting from early season cool temperatures can never be recovered. Midsummer days in the 90s do not necessarily accelerate MGDD accumulations because rate of growth is minimal when temperatures are above 86 degrees Fahrenheit.

Also, plant stress (soil compaction, excessive soil moisture, pest injury, hail damage) can interfere with this relationship and retard leaf development. Comparisons of predicted leaf development stages with actual leaf stages can, therefore, be used as an indicator of plant stress.

Fertility

Soil testing is the foundation of a sound fertility program. This is the only way for a crop manager to be efficient in applying the correct rates of lime and fertilizer. Proper fertility is critical for optimizing crop yields, particularly in corn. Seldom is there a field that does not require the addition of fertilizer. The estimated uptake of nitrogen (N), phosphorus (P), potassium (K), and sodium (S) by a 200-bushel-per-acre corn crop is presented in Table 1. Be aware that the values presented are not the amount of nutrients that need to be applied, but rather the total uptake by the corn crop from soil, fertilizer and other sources.

Table 1. Approximate amount of nutrients in a 200-bushel-per-acre corn crop.

	Quantity in pounds	
Element	**Grain**	**Stover**
Nitrogen (N)	134	90
Phosphorus (P_2O_5)	70	32
Potassium (K_2O)	50	220
Sulfur (S)	16	14

International Plant Nutrition Institute, May 2014.

Soil pH

Soil pH affects the availability of nutrients to plant roots. The desirable soil pH for corn ranges from 5.8 to 7.0. Continued cultivation and the use of chemical fertilizers, especially those containing ammonium and sulfur, tend to decrease soil pH over time. Irrigation with water high in calcium carbonate, on the other hand, tends to increase soil pH.

Soil samples should be collected and checked for the degree of acidity or alkalinity. Lime is generally recommended at pH values below 6.1 (Table 2). Recommendations in Table 2 are general guidelines to raise pH. Soil texture and the buffer capacity of the soil are required for a more accurate estimate of the amount of lime that is needed. If lime is needed, it is recommended to apply it during the fall to provide enough time for it to react with the soil.

The relative neutralizing material (RNV) of lime impacts the amount that is needed to be applied. The RNV of a material is based on its fineness and calcium carbonate equivalent (CCE), or the amount of pure calcium carbonate to which the selected material corresponds, with finer materials reacting more quickly than coarse materials. An ag lime material with a CCE of 100 is "stronger" than an ag lime material with a CCE of 90. Consequently, less volume would be needed to increase the pH of a given soil.

Table 2. Lime recommendations for corn, Mehlich 3 extraction.

Soil pH	Lime (tons/acre)[1]
Above 6.1	0
5.8-6.1	1
5.0-5.8	2
Below 5	3

[1]Amount of limestone needed to adjust soil pH to a desired level for corn depends on the initial soil pH, soil clay content and soil buffer capacity (resistance to pH change). Testing soil pH is an excellent indicator of the need for lime and in combination with soil texture is sometimes used to estimate lime requirement. However, most soil testing laboratories offer a buffer lime-requirement test that provides a more accurate estimate of the quantity of lime that should be applied.

Nitrogen

Nitrogen is necessary for chlorophyll synthesis and is part of the chlorophyll molecule involved in photosynthesis. Lack of N and chlorophyll means the crop will not utilize sunlight as an energy source to carry on essential functions, such as nutrient uptake. It is an essential component of amino acids, which form plant proteins. Thus, N is directly responsible for increasing protein content.

A rough rule of thumb is to apply 1 to 1.2 pounds of actual N for each bushel of corn produced. Nitrogen should be applied according to whether the field is an alluvial plain, such as the Delta, or an upland soil and whether it is irrigated or dryland (Table 3).

Apply nitrogen in a split application with 50% to 75% applied before or at planting and the balance when corn is 3 to 12 inches tall. All the nitrogen can be applied preplant or at planting, but this increases the risk of fertilizer burn on seedlings and nitrogen loss from leaching or volatilization. An application of 20 to 50 pounds of nitrogen at tassel may be beneficial if environmental conditions result in leaching or volatilization of nitrogen.

Table 3. Nitrogen rates for corn in Louisiana based on field conditions.

Soil	Irrigation	Nitrogen Rate (lbs./acre)
Alluvial	Yes	180-270
Alluvial	No	140-210
Upland	Yes	160-230
Upland	No	120-190

Phosphorus

Phosphorus plays a role in photosynthesis, respiration, energy storage and transfer, cell division, and cell enlargement in the plant. It promotes early root formation and growth, increases water use efficiency and hastens maturity.

Corn uses phosphorus early in its growth cycle, so these nutrients should be applied preplant or at planting (Table 4). Banding phosphorus will increase its efficiency when the soil pH is very acidic or alkaline or when soil test phosphorus levels are low. Also, starter fertilizers can be beneficial for soils that have a high pH or have very low to low phosphorus levels.

Soil testing is recommended to apply appropriate levels for each field, but in many soils 40 to 60 pounds of P2O5 per acre will be needed.

Table 4. Phosphorus recommendations for corn based on soil test (ppm) and pounds of P2O5 to apply per acre.

	Very low	Low	Medium	High	Very high
	<10 ppm	10-19 ppm	20-34 ppm	35-50 ppm	>50 ppm
Alluvial-Irrigated	120	90	60	0	0
Alluvial-Nonirrigated	100	80	60	0	0
Upland-Irrigated	100	80	60	0	0
Upland-Nonirrigated	80	60	40	0	0

Potassium

Potassium is vital to photosynthesis. When K is deficient, photosynthesis declines and the plant's respiration increases, which reduces the plant's carbohydrate supply. Other functions of K include that it is essential for protein synthesis, helps control ionic balance and translocation of heavy metals, helps overcome the effects of disease, and is involved in the activation of 60 enzyme systems. Potash deficiency in corn results in reduced growth, delayed maturity and lodging.

Corn uses potassium early in its growth cycle, so these nutrients should be applied preplant or at planting (Tables 5-8). Soil testing is recommended to apply appropriate levels for each field, but in many soils 40 to 60 pounds of K2O per acre will be needed.

Table 5. Potassium recommendations based on soil test (ppm) and soil type for corn on alluvial soils (irrigated).

Soil Type	VL	VL	L	L	M	M	H	H	VH	VH
	ppm	K_2O	ppm	K_2O	ppm	K_2O	ppm	K_2O	ppm	K_2O
Clay	<141	100	141-210	90	211-316	60	317-334	0	>334	0
Clay Loam	<123	100	123-175	90	176-263	60	264-282	0	>282	0
F. Sandy Loam	<53	100	53-87	90	88-122	60	123-141	0	>141	0
Loamy Sand	<35	100	35-52	90	53-78	60	79-123	0	>123	0
Silty Clay	<141	100	141-210	90	211-316	60	317-334	0	>334	0
Silt Clay Loam	<123	100	123-175	90	176-263	60	264-282	0	>282	0
Silt Loam	<70	100	70-105	90	106-140	60	141-158	0	>158	0
V. F. Sandy Loam	<53	100	53-87	90	88-122	60	123-141	0	>141	0

Table 6. Potassium recommendations based on soil test (ppm) and soil type for corn on alluvial soils (nonirrigated).

Soil Type	VL	VL	L	L	M	M	H	H	VH	VH
	ppm	K_2O	ppm	K_2O	ppm	K_2O	ppm	K_2O	ppm	K_2O
Clay	<141	100	141-210	80	211-316	60	317-334	0	>334	0
Clay Loam	<123	100	123-175	80	176-263	60	264-282	0	>282	0
F. Sandy Loam	<53	100	53-87	80	88-122	60	123-141	0	>141	0
Loamy Sand	<35	100	35-52	80	53-78	60	79-123	0	>123	0
Silty Clay	<141	100	141-210	80	211-316	60	317-334	0	>334	0
Silt Clay Loam	<123	100	123-175	80	176-263	60	264-282	0	>282	0
Silt Loam	<70	100	70-105	80	106-140	60	141-158	0	>158	0
V. F. Sandy Loam	<53	100	53-87	80	88-122	60	123-141	0	>141	0

Table 7. Potassium recommendations based on soil test (ppm) and soil type for corn on upland soils (irrigated).

Soil Type	VL	VL	L	L	M	M	H	H	VH	VH
	ppm	K_2O	ppm	K_2O	ppm	K_2O	ppm	K_2O	ppm	K_2O
Clay	<88	100	88-140	80	141-175	60	176-194	0	>194	0
Clay Loam	<88	100	88-140	80	141-175	60	176-194	0	>194	0
F. Sandy Loam	<44	100	44-69	80	70-105	60	106-123	0	>123	0
Loamy Sand	<88	100	88-140	80	141-175	60	176-194	0	>194	0
Silty Clay	<88	100	88-140	80	141-175	60	176-194	0	>194	0
Silt Clay Loam	<62	100	62-96	80	97-140	60	141-158	0	>158	0
Silt Loam	<35	100	35-52	80	53-87	60	88-106	0	>106	0
V. F. Sandy Loam	<44	100	44-69	80	70-105	60	106-123	0	>123	0

Table 8. Potassium recommendations based on soil test (ppm) and soil type for corn on upland soils (nonirrigated).

Soil Type	VL	VL	L	L	M	M	H	H	VH	VH
	ppm	K_2O	ppm	K_2O	ppm	K_2O	ppm	K_2O	ppm	K_2O
Clay	<88	80	88-140	60	141-175	40	176-194	0	>194	0
Clay Loam	<88	80	88-140	60	141-175	40	176-194	0	>194	0
F. Sandy Loam	<44	80	44-69	60	70-105	40	106-123	0	>123	0
Loamy Sand	<88	80	88-140	60	141-175	40	176-194	0	>194	0
Silty Clay	<88	80	88-140	60	141-175	40	176-194	0	>194	0
Silt Clay Loam	<62	80	62-96	60	97-140	40	141-158	0	>158	0
Silt Loam	<35	80	35-52	60	53-87	40	88-106	0	>106	0
V. F. Sandy Loam	<44	80	44-69	60	70-105	40	106-123	0	>123	0

Sulfur

Sulfur is part of every living cell and is a constituent of two of the 21 amino acids that form proteins. Sulfur is often overlooked in a soil fertility program. Increased crop yields, reduced sulfur emissions from industrial chemical facilities, increased use of higher analysis fertilizers and a greater awareness of the importance of sulfur to corn production are contributing to an increased need for sulfur fertilization.

A typical 200-bushel-per-acre corn crop takes up about 30 pounds per acre with about 16 pounds per acre removed in the grain at harvest. When a soil test is utilized to determine if sulfur is needed, values of less than 12 ppm (Mehlich 3) generally suggest that additional sulfur may be needed. The typical recommended rate is 20 pounds of sulfur in the sulfate form per acre.

Zinc

Zinc was one of the first micronutrients recognized as essential for plants and the one most commonly limiting yields. Although it is required in small amounts, high yields are impossible without it. Corn is one of the most responsive crops to zinc applications.

If zinc is lower than 1 ppm, apply 10 pounds of zinc in a soluble form, such as zinc sulfate or zinc chelate, per acre (Table 9). Among the inorganic zinc sources on the market, the most common sources are sulfates, oxides and oxysulfates. Zinc sulfate and zinc chelates essentially are 100% water-soluble, while zinc oxides essentially are insoluble in a single crop season and are thus unavailable to the crop to be planted. Oxysulfates are a mixture of sulfates and oxides, with varying proportions of sulfates and oxides and different solubility levels (0.7% to 98.3%). The effectiveness of these can be highly variable, depending on solubility. Low solubility materials may have some value in a long-term buildup program, but when immediate results are the goal, highly soluble fertilizers are the best choices. For acceptable in-season efficacy, a zinc-fertilizer source should be at least 50% water-soluble. If a soil test shows zinc is between 1 and 2.25 ppm, apply 5 pounds of zinc per acre when broadcasting. Less is needed if using a banded application.

Table 9. Zinc Recommendations for corn based on soil test (ppm) and pounds of zinc to apply per acre.

Low	Medium	High
<1 ppm	1-2.25 ppm	>2.25 ppm
10 lbs/acre	5 lbs/acre	0 lbs/acre

Seed Relabeling

Seed selection is one of the most critical decisions that farmers make each year. Seed is one of the largest expenses on the farm, and seed varieties differ greatly in both price and yield potential.

To make seed selection even more challenging, farmers also need to contend with common practice in the seed industry where the same variety is sold under multiple brand names, which is referred to seed relabeling.

Seed relabeling creates two significant problems for farmers

- **Overpaying for seed:** Because different brands often sell the same variety for very different prices, some farmers significantly overpay, perhaps not realizing that other brands sell the variety at a lower price.
- **Lack of genetic diversity:** When the same variety is sold under multiple brand names, it is easy for farmers to unknowingly purchase the same variety from multiple brands while thinking they are buying a unique variety from each brand. This can lead to a failure to establish the genetic diversity that many farmers strive for when selecting the seed lineup.

Methodology: Decoding a seed tag

Federal and state seed labeling regulations typically require bags of seed to be labeled with the variety name. Relabeled seeds can be identified when you find the same **variety** marketed under multiple brand names. For example, when you observe the seed tag on Dyna-Gro D54VC14 and Armor 1447Pro2, you will find that the variety name for both of them is the same **(01071448).** This indicates that this variety is sold under multiple brand names.

Table 10. Cultural practices for the LSU AgCenter's official variety trials, 2019.

Location	Soil Type	Previous Crop	Planting Date	Harvest Date	Row Spacing	Seeding Rate	Irrigated
St. Joseph	Commerce silt loam	cotton	3/20	8/22	40	36,000	Yes
St. Joseph	Sharkey clay	cotton	4/11	8/30	40	36,000	Yes
Winnsboro	Gigger silt loam	soybeans	3/20	8/22	40	36,000	Yes
Alexandria	Coushatta silt loam	soybeans	3/19	8/14	38	36,000	No
Bossier City	Caplis very fine sandy loam	wheat	3/21	8/30	40	36,000	No

Table 11. Yield (adjusted to 15.5%) performance of hybrids entered in the LSU AgCenter's official variety trials, 2019.

Company	Hybrid	Alex[1,2]	BC	SJ-sl	SJ-c	WN	AVG
Dyna-Gro	D57VC51	247.4	121.0	272.7	205.9	207.9	211.0
DeKalb	DKC 68-69	245.2	129.4	262.2	206.8	216.7	212.1
Armor	A1778	239.9	114.2	259.5	206.8	217.7	207.6
Dyna-Gro	D57VC17	236.2	124.0	257.2	220.7	209.6	209.5
LG Seeds	LG68C22VT-2PRO	235.6	145.9	261.2	223.6	208.4	214.9
Armor	AX9115B	235.2	108.4	244.6	201.0	188.7	195.6
Armor	C5678	234.8	103.9	235.2	212.9	211.6	199.7
Armor	A1447	234.6	120.8	254.6	204.8	211.8	205.3
DeKalb	DKC 64-35	234.4	106.7	261.9	205.9	199.8	201.7
Progeny	PGY 9117VT2P	233.8	124.9	271.4	206.4	220.3	211.4
BH Genetics	BH8721VT2P	233.6	122.6	256.0	183.7	218.4	202.9
Dyna-Gro	D52VC63	232.2	125.5	258.6	202.1	197.5	203.2
Dyna-Gro	D54VC14	231.6	125.6	242.8	196.2	201.2	199.5
Dyna-Gro	D55VC80	231.6		266.2	216.3		238.0
Local Seed	LC1878VT2P	231.0	117.0	259.7	198.9	202.4	201.8
Augusta	A1367	231.0	129.1	262.3	189.7	223.3	207.1
Armor	A1810	229.6	124.1	253.9	209.0	219.8	207.3
Local Seed	LC1488VT2PRIB	229.4	113.0	241.4	188.9	185.9	191.7
Terral/REV	28BHR18	228.8	137.8	265.8	196.4	214.4	208.6
DeKalb	DKC 62-53	228.6	103.0	245.6	202.0	205.7	197.0
DeKalb	DKC 66-75	228.2	131.7	253.2	202.9	215.6	206.3
LG Seeds	LG66C32VT-2PRO	227.8	115.5	253.5	194.3	204.2	199.1
BH Genetics	X18052VT2P	227.4	115.4	270.0	209.2	195.3	203.5
Progeny	PGY EXP1918	226.6	109.1	228.8	197.7	198.0	192.0
Progeny	PGY 9114VT2P	226.4	121.3	260.7	172.5	206.6	197.5
Augusta	A4565	225.6	126.3	243.8	191.1	209.9	199.3
Local Seed	LCX17-98	224.0	132.2	241.1	194.4	205.7	199.5
DeKalb	DKC 70-27	223.6	110.4	274.4	218.0	227.3	210.7
Mission Seed	A1687VT2P	223.4	115.1	234.6	200.0	190.0	192.6
LG Seeds	LG5650VT2RIB	221.2	138.2	249.6	211.0	210.7	206.1
Dyna-Gro	D58VC65	221.0	111.5	243.7	157.2	201.1	186.9
Terral/REV	24BHR99	220.2	154.1	264.5	212.7	207.8	211.9
Terral/REV	25BHR89	219.2	116.1	264.4	210.8	216.1	205.3
Pioneer	P1464 VYHR	218.2	135.3	268.8	218.8	215.2	211.3
Local Seed	LC1289VT2PRIB	218.2	130.0	229.9	197.3	199.7	195.0
Local Seed	LC1577VT2PRIB	217.8	141.9	254.7	190.1	200.2	200.9
Terral/REV	26BHR30	217.8	137.1	260.6	204.5	222.0	208.4
DeKalb	DKC 67-44	217.4	121.8	259.2	224.3	222.0	208.9
Armor	AX9115	217.2	124.5	267.2	219.2	218.2	209.3
Pioneer	P1870 YHR	217.0	132.1	275.7	198.8	225.1	209.7
Progeny	PGY 8116 SS	216.2	134.2	256.0	220.3	212.6	207.9
BH Genetics	X17014 SS	216.0	111.2	257.8	210.1	207.6	200.5
DeKalb	DKC 66-18	215.2	123.1	256.6	203.4	203.5	200.4
Progeny	PGY 6119VT2P	213.0	120.6	250.4	192.2	192.5	193.7

Company	Hybrid	Alex[1,2]	BC	SJ-sl	SJ-c	WN	AVG
Local Seed	LC1776VT2P	210.2	123.3	261.0	195.6	211.2	200.3
DeKalb	DKC 65-95	209.6	135.6	270.2	217.8	211.8	209.0
Local Seed	LC1586TC	208.2	126.8	172.1	187.9	195.2	178.0
LG Seeds	LG64C30TRC	206.2	139.0	241.0	196.5	190.8	194.7
Local Seed	AV8614YHB	205.0	127.6	270.7	202.0	222.3	205.5
Local Seed	LCX16-91	203.9	135.2	241.8	196.3	198.0	195.0
Armor	A1688T	201.2	138.0	161.7	204.3	198.7	180.8
Local Seed	LC1987VT2P	197.6	117.4	254.0	209.4	210.7	197.8
Local Seed	LC0877VT2PRIB	193.8	123.0	239.3	172.8	182.8	182.3
Terral/REV	24BHR70	187.8	107.7	270.2	196.2	207.0	193.8
Average		222.16	124.14	253.76	202.00	207.48	
CV, %		9.06	12.81	9.51	7.99	5.50	
LSD (0.10)		21.04	21.56	28.25	18.88	11.92	
Prob (F)		0.0001	0.0442	0.0002	0.0001	0.0001	

Numbers shaded within a column are not significantly different from the numerically greatest value.
[1]Alex=Alexandria; BC=Bossier City; SL-sl=St. Joseph silt loam; SJ-c=St. Joseph clay; WN=Winnsboro
[2]Adjusted to 15.5% moisture.

Table 12. Summary of on-farm corn core block demonstrations at 16 locations by parish. Yield in bushels per acre (15.5%), 2019.

Company	Brand Name	Variety Name	Avoyelles	Beauregard	Caldwell	Catahoula	Franklin	Madison	Morehouse	Pointe Coupee	Rapides	Richland	St. Landry	W. Baton Rouge	W. Carroll	Average
Armor	A1447	**01071448**	201.9	208.3	202.6	197.5	233.0		149.2	168.3	167.2	222.5	226.3	198.1	231.4	200.5
DeKalb	DKC70-27	1065462	185.3	192.6	187.8	169.8	243.4	222.4	180.4	157.3	157.7	229.8	216.3	179.9	270.3	199.4
Dyna-Gro	D54VC14	**01071448**	187.7	193.3	196.6	168.2	242.9	228.8	174.4	169.6	145.1	232.5	225.3	193.8	234.1	199.4
CropLan	C5678	01067297	169.2	204.2	191.5	181.1	237.5		174.1	166.0	167.5	224.3	224.6	181.8	253.2	197.9
Dyna-Gro	D57VC17	01070347	187.8	193.5	171.2	184.2	242.1	234.1	186.1	163.9	143.3	217.0	213.6	177.6	257.8	197.9
Pioneer	P1464VYHR	Not available	191.1	202.2	177.9	185.2	213.7	208.3	190.3	163.7	164.6	231.2	219.2	184.4	237.8	197.7
REV	28BHR18	Not available	185.0	189.7	197.2	185.4	233.8	208.3	184.0	153.2	171.1	238.6	213.3	149.3	248.7	196.7
DeKalb	DKC66-75	1067286	184.6	192.8	185.1	171.7	234.5	229.7	164.1	161.6	150.8	224.1	221.5	187.5	241.7	196.1
Pioneer	P1870YHR	Not available	159.4	184.1	196.0	175.5	232.7	216.5	183.3	151.7	142.6		214.1	172.0	271.1	191.6
REV	24BHR99	Not available	169.5	182.1	196.8	177.5	197.5	210.2	177.3	141.6	164.6	228.4	204.7	161.8	231.0	187.9
Average			182.1	194.3	190.3	179.6	231.1	219.8	176.3	159.7	157.4	227.6	217.9	178.6	247.7	

Variety names in bold: Indicates this variety is sold under multiple brand names.

Table 13. Avoyelles Parish

Community: Bordelonville
County Agent: Justin Dufour
Cooperator: Jeffery Bordelon
Previous Crop: Soybeans
Soil Type: Coushatta silty clay loam

Date Planted: 3/21/19
Row Spacing (inches): 36
Plant Population: 36,000
Nitrogen Rate (lbs/acre): 200
Irrigation: No

Tillage: Conventional
Harvest Date: 8/9/19
GPS Coordinates: 31.093805N, 91.934839W
Yield Results Obtained By: Weigh Wagon

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
Dyna-Gro 57VP51	8	900	0.50	17.1	58.9	148.95	11
REV 24BHR99	4	900	0.25	16.4	56.7	169.45	8
Dekalb DKC66-75	4	900	0.25	16.4	57.0	184.55	7
Dyna-Gro D57VC17	4	900	0.25	17.4	59.5	187.84	3
Pioneer P1870YHR	4	900	0.25	19.0	56.7	159.35	10
CropLan C5678	4	900	0.25	18.1	56.5	169.21	9
DeKalb DKC70-27	4	900	0.25	18.4	56.4	185.27	5
REV 28BHR18	4	900	0.25	18.4	56.4	185.01	6
Dyna-Gro D54VC14	4	900	0.25	16.9	56.7	187.70	4
Pioneer P1464VYHR	4	900	0.25	17.2	56.2	191.12	2
Armor A1447	4	900	0.25	16.2	59.8	201.85	1

[1]Adjusted to 15.5% moisture.
Hybrid in bold letters is the grower's standard.

Table 14. Beauregard Parish

Community: Deridder
County Agent: Todd Fontenot
Cooperator: David Smith
Previous Crop: Corn
Soil Type: Beauregard silt loam

Date Planted: 3/20/19
Row Spacing: 30
Plant Population: 33,000
Nitrogen Rate (lbs/acre): 180
Irrigation: Yes

Tillage: Reduced
Harvest Date: 8/19/19
GPS Coordinates: 30.834634N, 93.361717W
Yield Results Obtained By: Weigh Wagon

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
Armor A1447	12	800	0.55	15.3	57.9	208.31	1
REV 28BHR18	12	800	0.55	15.7	57.7	189.70	9
REV 24BHR99	12	800	0.51	16.8	58.0	182.07	11
Dyna-Gro D54VC14	12	800	0.55	15.6	58.0	193.33	6
DeKalb DKC70-27	12	800	0.55	16.3	57.6	192.56	8
DeKalb DKC66-75	12	800	0.55	15.9	55.4	192.77	7
Pioneer P1870YHR	12	800	0.55	16.7	56.6	184.10	10
Pioneer P1464VYHR	12	800	0.55	15.7	57.2	202.15	4
Dyna-Gro D57VC17	12	800	0.55	15.4	59.3	193.53	5
CropLan C5678	12	800	0.55	15.5	58.4	204.19	2
Dyna-Gro D58VC65	12	800	0.55	15.0	59.0	202.98	3

[1]Adjusted to 15.5% moisture.
Hybrid in bold letters is the grower's standard.

Table 15. Caldwell Parish

Community: Columbia
County Agent: Jimmy McCann
Cooperator: Sherry Kenney
Previous Crop: Corn
Soil Type: Hebert silt loam

Date Planted: 3/21/19
Row Spacing: 38
Plant Population: 33,000
Nitrogen Rate (lbs/acre): 230
Irrigation: Yes

Tillage: Reduced
Harvest Date: 8/22/19
GPS Coordinates: 32.09825N, 092.04014W
Yield Results Obtained By: Weigh Wagon

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
DeKalb DKC68-26	8	1197	0.70	15.1	58.0	192.47	6
CropLan C5678	8	1188	0.69	14.2	59.3	191.53	7
Dyna-Gro D54VC14	8	1176	0.68	13.9	61.1	196.60	4
REV 24BHR99	8	1164	0.68	14.0	59.3	196.79	3
Armor A1447	8	1164	0.68	14.3	59.7	202.63	1
REV 28BHR18	8	1176	0.68	15.1	60.1	197.22	2
Dyna-Gro D57VC17	8	1197	0.70	14.3	59.3	171.18	11
Pioneer P1870YHR	8	1209	0.70	15.3	61.4	195.99	5
DeKalb DKC70-27	8	1227	0.71	14.7	60.5	187.79	8
DeKalb DKC66-75	8	1236	0.72	13.9	59.3	185.09	9
Pioneer P1464VYHR	8	1260	0.73	13.7	59.2	177.85	10

[1]Adjusted to 15.5% moisture
Hybrid in bold letters is the grower's standard.

Table 16. Catahoula Parish

Community: Harrisonburg
County Agent: Dennis Burns
Cooperator: Marcus and Chad Evans
Previous Crop: Soybeans
Soil Type: Sharkey clay

Date Planted: 3/26/19
Row Spacing: 38
Plant Population: 32,800
Nitrogen Rate (lbs/acre): Not available
Irrigation: Yes

Tillage: No-till
Harvest Date: 8/16/19
GPS Coordinates: 31.774335N, 91.748653W
Yield Results Obtained By: Yield Monitor

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
Pioneer P1464VYHR	8	911	0.53	12.0		185.19	3
DeKalb DKC70-27	8	911	0.53	15.2		169.80	10
DeKalb DKC66-75	8	911	0.53	13.0		171.70	9
Pioneer P1870YHR	8	911	0.53	13.0		175.49	8
Croplan C5678	8	911	0.53	13.5		181.14	6
Dyna-Gro D54VC14	8	911	0.53	12.3		168.15	11
Dyna-Gro D57VC17	8	911	0.53	12.2		184.17	5
REV 24BHR99	8	911	0.53	13.0		177.50	7
Armor A1447	8	911	0.53	13.1		197.54	1
Rev 28BHR18	8	911	0.53	15.0		185.35	2
DeKalb DK67-44	8	963	0.84	14.0		184.47	4

[1]Adjusted to 15.5% moisture
Hybrid in bold letters is the grower's standard.

Table 17. Franklin Parish

Community: Winnsboro
County Agent: Keith Collins
Cooperator: Campbell Farms
Previous Crop: Soybeans
Soil Type: Gilbert Egypt Complex

Date Planted: 3/19/19
Row Spacing: 38
Plant Population: 33,500
Nitrogen Rate (lbs/acre): 250
Irrigation: Yes

Tillage: Conventional
Harvest Date: 9/3/19
GPS Coordinates: 32.07713N, 091.74668W
Yield Results Obtained By: Weigh Wagon

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
REV 24BHR99	8	1230	0.72	12.6	59.3	197.52	10
Armor 1447 Pro	8	1230	0.72	11.9	59.3	232.99	7
Dekalb DKC70-27	8	1230	0.72	11.7	60.7	243.43	1
Pioneer 1464VYHR	8	1233	0.72	11.1	58.9	213.73	9
Dyna-Gro D57VC17	8	1233	0.72	11.9	59.3	242.14	3
CropLan C5678	8	1251	0.73	11.5	59.0	237.52	4
REV 28BHR18	8	1239	0.72	11.7	59.8	233.84	6
Pioneer P1870YHR	8	1245	0.72	11.7	61.0	232.67	8
Dekalb DKC66-75	8	1245	0.72	11.1	60.3	234.51	5
Dyna-Gro D54VC14	8	1248	0.73	12.4	59.1	242.87	2

[1]Adjusted to 15.5% moisture.
Hybrid in bold letters is the grower's standard.

Table 18. Madison Parish

Community: Mound
County Agent: R.L. Frazier
Cooperator: Wade Hargrave
Previous Crop: Soybeans
Soil Type: Commerce silt loam

Date Planted: 3/26/19
Row Spacing: 38
Plant Population: 34,000
Nitrogen Rate (lbs/acre): not available
Irrigation: Yes

Tillage: Minimum
Harvest Date: 8/13/19
GPS Coordinates: 32.31367N, 091.03725N
Yield Results Obtained By: Yield Monitor

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
DeKalb DKC 70-27	10	1273	0.93	17.9		228.87	4
Pioneer P1464VYHR	10	1273	0.93	16.7		211.27	8
REV 24BHR99	10	1265	0.92	16.5		212.69	6
Dyna-Gro D54VC14	10	1250	0.91	17.2		233.51	3
DeKalb DKC66-75	10	1247	0.91	16.9		233.56	2
Pioneer P1870YHR	10	1237	0.90	19.1		226.18	5
REV 28BHR18	10	1227	0.89	18.7		216.49	7
Dyna-Gro D57VC17	10	1216	0.88	17.4		239.44	1

[1]Adjusted to 15.5% moisture.
Hybrid in bold letters is the grower's standard.

Table 19. Morehouse Parish

Community: Bonita
County Agent: R. Letlow and O. Hill
Cooperator: Hill Farms
Previous Crop: Soybeans
Soil Type: Gallion silt loam

Date Planted: 3/28/19
Row Spacing: 38
Plant Population: 30,000
Nitrogen Rate (lbs/acre): 190
Irrigation: Yes

Tillage: Conventional
Harvest Date: 9/4/19
GPS Coordinates: 32.88928N, 91.66094W
Yield Results Obtained By: Yield Monitor

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
Dekalb DKC70-27	8	1210	0.70	13.1		180.38	5
Dekalb DKC66-75	8	1210	0.70	12.2		164.06	9
Pioneer P1464VYHR	8	1210	0.70	12.0		190.33	1
Pioneer P1870YHR	8	1210	0.70	13.1		183.30	4
REV 24BHR99	8	1210	0.70	12.1		177.26	6
REV 28BHR18	8	1210	0.70	13.2		184.03	3
Dyna-Gro D54VC14	8	1210	0.70	12.3		174.35	7
Dyna-Gro D57VC17	8	1210	0.70	12.7		186.09	2
CropLan C5678	8	1210	0.70	12.4		174.10	8
Armor A1447	8	1210	0.70	12.5		149.20	10
Great Heart HT7261	8	1210	0.70	12.8		142.56	11

[1]Adjusted to 15.5% moisture.
Hybrid in bold letters is the grower's standard.

Table 20. Pointe Coupee Parish

Community: Innis
County Agent: Mark Carriere
Cooperator: George LaCour
Previous Crop: Cotton
Soil Type: Commerce silt loam

Date Planted: 3/18/19
Row Spacing: 38
Plant Population: 34,000
Nitrogen Rate (lbs/acre): 220
Irrigation: No

Tillage: Reduced
Harvest Date: 8/8/19
GPS Coordinates: 30.86949N, 91.74146W
Yield Results Obtained By: Weigh Wagon

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
Dyna-Gro D54VC14	6	1485	0.65	16.2	57.2	169.62	1
REV 28BHR18	6	1485	0.65	17.4	57.8	153.23	9
DeKalb DKC66-75	6	1465	0.64	16.9	55.9	161.60	7
CropLan C5678	6	1465	0.64	16.9	57.2	165.99	2
Pioneer P1870YHR	6	1445	0.63	17.9	57.1	151.68	10
DeKalb DKC67-44	6	1445	0.63	16.9	58.1	161.83	6
REV 24BHR99	6	1428	0.62	15.8	57.2	141.64	11
Dyna-Gro D57VC17	6	1428	0.62	16.6	59.2	163.89	3
Armor A1447	6	1404	0.61	15.6	59.2	162.28	5
Pioneer P1464VYHR	6	1404	0.61	16.3	56.4	163.71	4
DeKalb DKC70-27	6	1404	0.61	17.8	57.2	157.26	8

[1]Adjusted to 15.5% moisture
Hybrid in bold letters is the grower's standard.

Table 21. Rapides Parish

Community: LeCompte
County Agent: Justin Dufour
Cooperator: Dean Lee Research and Extension Center
Previous Crop: Soybeans
Soil Type: Coushatta silt loam

Date Planted: 3/19/19
Row Spacing: 38
Plant Population: 36,000
Nitrogen Rate (lbs/acre): 200
Irrigation: No

Tillage: Reduced
Harvest Date: 8/21/19
GPS Coordinates: 31.183102N, 92.411509W
Yield Results Obtained By: Small plot combine
Misc.: Replicated four times in RCBD

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
REV 28BHR18	4	250	0.18	15.3	60.0	171.09	1
CropLan C5678	4	250	0.18	15.0	59.8	167.45	2
Armor A1447	4	250	0.18	14.2	59.5	167.19	3
REV 24BHR99	4	250	0.18	14.0	58.9	164.58	4
Pioneer P1464YHR	4	250	0.18	13.4	58.2	164.58	5
DeKalb DKC70-27	4	250	0.18	15.8	60.7	157.65	6
DeKalb DKC66-75	4	250	0.18	13.3	59.1	150.79	7
Dyna-Gro D54VC14	4	250	0.18	13.4	59.2	145.14	8
Dyna-Gro D57VC17	4	250	0.18	14.4	60.6	143.33	9
Pioneer P1870YHR	4	250	0.18	15.3	60.1	142.55	10

[1]Adjusted to 15.5% moisture

Table 22. Richland Parish

Community: Start
County Agent: Keith Collins
Cooperator: Elliot Colvin
Previous Crop: Corn
Soil Type: Mer Rouge/Gallion silt loam

Date Planted: 3/22/19
Row Spacing; 8/9/19
Plant Population: 35,000
Nitrogen Rate (lbs/acre): 270
Irrigation: Yes

Tillage: Reduced
Harvest Date: 8/9/19
GPS Coordinates: 32.46316N, 91.88613W
Yield Results Obtained By: Yield Monitor

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
CropLan C5678	8	871	0.40	22.6		224.26	6
Dekalb DKC70-27	8	871	0.40	23.4		229.80	4
REV 24BHR99	8	871	0.40	21		228.40	5
Dyna-Gro D54VC14	8	871	0.40	20.7		232.53	2
Armor A1447	8	871	0.40	19.5		222.48	8
Pioneer P1464VYHR	8	871	0.40	20.7		231.15	3
Dekalb DKC66-75	8	871	0.40	19.5		224.10	7
Dyna-Gro D57VC17	8	871	0.40	21.8		216.99	9
REV 28BHR18	8	871	0.40	22.6		238.58	1

[1]Adjusted to 15.5% moisture.
Hybrid in bold letters is the grower's standard.

Table 23. St. Landry Parish

Community: Melville
County Agent: Vince Deshotel
Cooperator: Cannatella Outdoors
Previous Crop: Soybeans
Soil Type: Convent very fine sandy loam

Date Planted: 3/20/19
Row Spacing; 36
Plant Population: 35,000
Nitrogen Rate (lbs/acre): 186
Irrigation: No

Tillage: Conventional
Harvest Date: 8/5/19
GPS Coordinates: 30.719730N, 91.750378W
Yield Results Obtained By: Weigh Wagon

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
DeKalb DKC70-27	8	927	0.51	17.4	59.0	216.27	6
DeKalb DKC66-75	8	930	0.51	15.6	57.7	221.52	4
Pioneer P1464VYHR	8	936	0.52	15.8	58.6	219.17	5
Pioneer P1870YHR	8	942	0.52	17.5	58.7	214.05	7
REV 24BHR99	8	945	0.52	16.1	58.9	204.66	10
REV 28BHR18	8	960	0.53	16.9	59.5	213.29	9
Dyna-Gro D54VC14	8	960	0.53	16	59.4	225.33	2
Dyna-Gro D57VC17	8	966	0.53	15.7	61.0	213.62	8
CropLan 5678	8	972	0.54	15.6	60.8	224.61	3
Armor 1447	8	981	0.54	14.8	60.3	226.66	1

[1]Adjusted to 15.5% moisture.

Table 24. West Baton Rouge Parish

Community: Erwinville
County Agent: S. Borel & M. Carriere
Cooperator: Ray Schexnayder
Previous Crop: Soybeans
Soil Type: Sharkey clay

Date Planted: 3/21/19
Row Spacing; 36
Plant Population: 32,500
Nitrogen Rate (lbs/acre): 220
Irrigation: No

Tillage: Reduced/Stale Seedbed
Harvest Date: 8/6/19
GPS Coordinates: 30.505343N, 91.394977W
Yield Results Obtained By: Yield Monitor

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
REV 24BHR99	12	1749	1.45	15.2		161.84	9
Dyna-Gro D57VC17	12	1773	1.47	16.2		177.61	7
DeKalb DKC66-75	12	1805	1.49	16.2		187.50	3
Pioneer P1464VYHR	12	1831	1.51	15.4		184.42	4
CropLan 5678VT2P	12	1855	1.53	16.0		181.84	5
REV 28BHR18	12	1869	1.54	17.1		149.30	10
DeKalb DKC70-27	12	1903	1.57	17.2		179.92	6
Dyna-Gro D54VC14	12	1928	1.59	15.4		193.81	2
Pioneer P1870YHR	12	1956	1.62	17.2		172.01	8
Armor 1447PRO2	12	1980	1.64	15.5		198.14	1

[1]Adjusted to 15.5% moisture
Hybrid in bold letters is the grower's standard.

Table 25. West Carroll Parish

Community: Goodwill
County Agent: Bruce Garner
Cooperator: Ty Rogers
Previous Crop: Soybeans
Soil Type: Forestdale silty clay loam

Date Planted: 3/19/19
Row Spacing; 8/15/19
Plant Population: 33,000
Nitrogen Rate (lbs/acre): 230
Irrigation: Yes

Tillage: Reduced
Harvest Date: 8/15/19
GPS Coordinates: 32.79109N, 091.55775W
Yield Results Obtained By: Yield Monitor

Hybrid	Rows/plot	Row length	Acres/plot	% moisture	Test weight	Bu/acre[1]	Rank
Pioneer P1870YHR	24	1225	1.69	18.7		271.09	1
CropLan C5678	24	1225	1.69	17.6		253.21	4
Dyna-Gro D54VC14	24	1225	1.69	16.5		234.14	8
DeKalb DKC70-27	24	1225	1.69	18.1		270.29	2
Armor A1447	24	1225	1.69	16.3		231.44	9
REV 28BHR18	24	1225	1.69	18.0		248.67	5
Dyna-Gro D57VC17	24	1125	1.55	17.3		257.80	3
DeKalb DKC66-75	24	1225	1.69	16.5		241.71	6
Pioneer P1464VYHR	24	1225	1.69	16.8		237.80	7
REV 24BHR99	24	1225	1.69	16.8		231.03	10

[1]Adjusted to 15.5% moisture.
Hybrid in bold letters is the grower's standard.

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