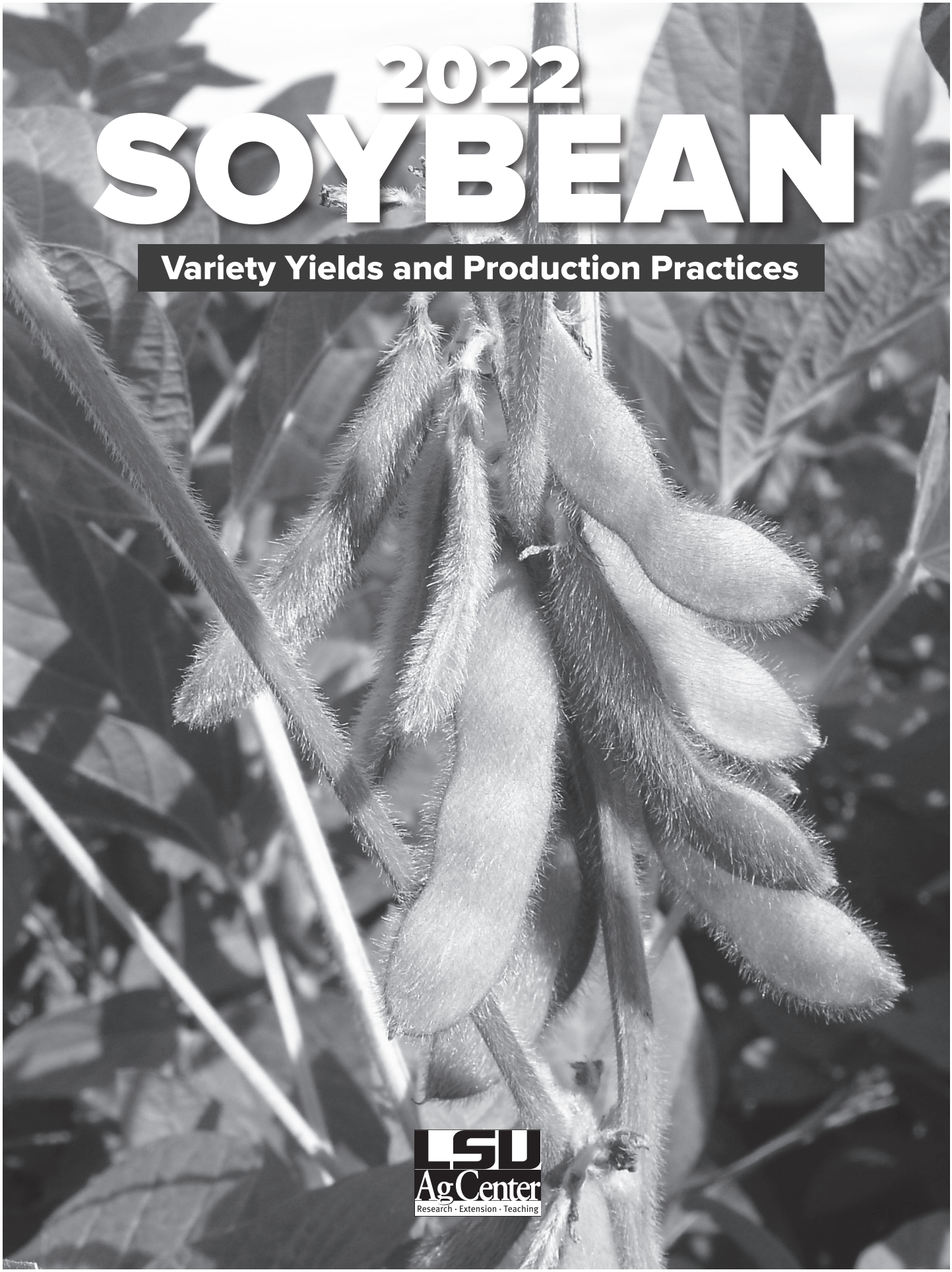


2022 SOYBEAN

Variety Yields and Production Practices

LSU AgCenter
Research · Extension · Teaching

2022 Soybean Variety Yields and Production Practices

Soybean production guidelines are prepared by LSU AgCenter cooperating personnel from Louisiana Agricultural Experiment Station researchers and by Louisiana Cooperative Extension Service specialists.

Variety Selection

Variety selection is not a decision to be made lightly as it is the most important decision facing a producer going into the season. No other input can radically change the yield potential to the extent that variety selection can. This decision can be daunting, but through the LSU AgCenter, producers do have information at their disposal to improve this decision-making process.

Fortunately, growers in Louisiana have two types of multienvironment data to use when selecting varieties. The official variety trials (OVT) are small-plot trials. The 125 varieties included in the 2021 OVT were entered by 12 seed companies and two university soybean breeding programs. The varieties consisted of several different herbicide technologies, and the maturity groups range from 3.7 to 5.9. The trial was replicated at seven research stations across the state in different soil types, including sandy loam, silt loam, silty clay loam and clay.

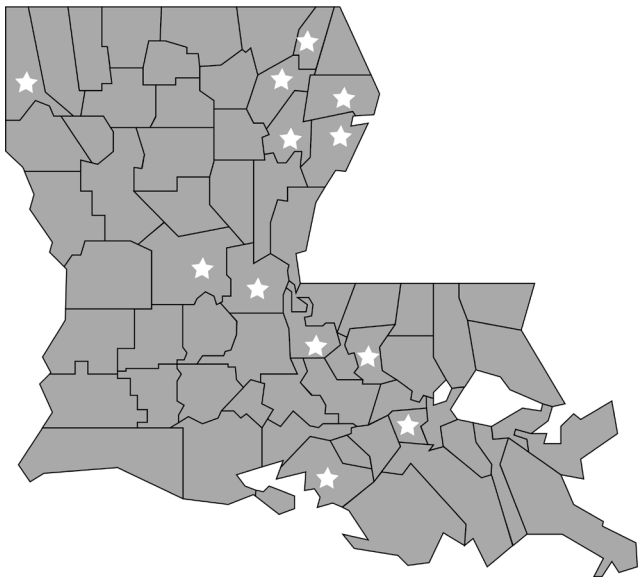
In addition to the OVT, the LSU AgCenter collaborates with soybean producers to evaluate soybean varieties directly on farms. For these core-block demonstration plots,

LSU AgCenter parish agents cooperate with producers to plant, maintain and harvest strip trials submitted by seed companies and university soybean breeding programs. These demonstrations provide valuable yield data from local growing conditions and agronomic practices. The core block program is designed to evaluate a select number of soybean varieties in large plots located across the state. In some cases, observations from these large plots can result in identification of varieties that are resistant to a number of soil-borne maladies. Six seed companies and one university soybean breeding program submitted varieties for the 2021 core-block demonstrations. Twenty demonstrations were planted across 12 parishes. The demonstrations were divided by maturity group (MG). A demonstration consisted of varieties with maturity groups of 3.7 to 4.4; 4.5 to 4.9; or 5.0 to 5.6. The numbers of varieties submitted for each MG were four (MG 3.7 to 4.4), 12 (MG 4.5 to 4.9) and nine (MG 5.0 to 5.6).

The OVT and the core-block demonstrations allow producers to select from the large number of varieties in the OVT and from varieties tested in environments similar to their farms. We would advise growers to make all variety decisions based on multiyear and multienvironment data and to identify stable varieties that perform well over a range of environments.

For best use of this guide, we recommend evaluating variety yield results based on performance and stability. Performance refers to identifying the varieties that are high yielding in environments that best represent your local farm. Stability refers to the performance of a variety across multiple environments. It is important for growers to consider both factors when making variety decisions.

2021 Soybean Core Block Locations



Other Varietal Characteristics

Variety yield potential is an important trait in selecting a variety, but other varietal characteristics should also be considered. How these criteria rank in importance to the grower may vary from one grower to the next and may vary from one field to the next. Several of these criteria for variety selection are discussed below.

Herbicide Tolerance and Weed Management Programs

Six different herbicide tolerances are available in soybean in 2021. They are Roundup Ready, Enlist, Liberty Link, STS/BOLT, Xtend and XtendFlex. Roundup Ready is tolerant to glyphosate; Enlist is tolerant to glyphosate, glufosinate and 2,4-D choline; Liberty Link is tolerant to glufosinate; STS/BOLT is tolerant to glyphosate and higher rates of Classic and other ALS-herbicides; Xtend is tolerant to glyphosate and dicamba, and XtendFlex is tolerant to glyphosate, glufosinate and dicamba. If multiple herbicide technologies are utilized by a producer, they should be careful in their planning because there is no cross tolerance among the varieties. For example, dicamba should only be applied to Xtend varieties, and 2,4-D choline should only be applied to Enlist varieties. Regardless of the herbicide-tolerant technology utilized, application of a residual herbicide prior to soybean emergence followed by a post-emergence application of a residual herbicide that is tank-mixed with a nonselective herbicide is the best strategy to manage herbicide-resistant weeds. For Enlist, Xtend and XtendFlex varieties, the company websites should be consulted prior to mixing herbicides to ensure whether the desired herbicide combination is legal. Furthermore, research has shown that maintaining soybean weed-free for the first five weeks after emergence can maximize yield.

Disease Resistance

Soybean varieties differ in susceptibility to diseases and nematodes. Aerial blight is an important foliar disease south of Alexandria and is becoming more of an issue in northern parishes. Cercospora leaf blight is a major disease throughout the state. Frogeye leaf spot has been less of an issue in recent years because of resistant varieties but can be found annually. These, and other foliar diseases, may cause significant yield losses and harvest delays. Soil-borne diseases may also be a problem in any given year. Sudden death syndrome (SDS) has been confirmed in Louisiana, but it is not widespread and is rarely seen. A soil-borne disease with similar foliar symptoms as SDS known as taproot decline has recently been confirmed by pathologists and is likely the most prevalent issue in the state. Phytophthora root rot is an isolated issue and is more prevalent in clay or poorly drained soils. Root-knot nematode is prevalent in sandy soils and is an annual problem in certain areas. When these and other diseases occur in official variety trials,

ratings are conducted to identify potential sources of resistance, making variety selection the most economical way for producers to manage diseases. Specialized variety trials may be conducted in certain areas to target specific diseases, such as the taproot decline variety screening at Macon Ridge Research Station.

Insects

Soybeans are damaged by a diverse insect pest complex of stink bugs, threecornered alfalfa hoppers, beetles, several Lepidopteran defoliators (soybean loopers, velvetbean caterpillars, green cloverworms) and pod feeders (corn earworms) from plant emergence until harvest. Soybeans can compensate for considerable insect injury; however, high pest populations can cause severe yield reductions or total crop loss. To reduce yield loss, fields should be scouted weekly using a shake sheet or sweep net, and applications of the proper insecticide materials should be made when action thresholds have been met. Soybean varieties can differ in their ability to tolerate various insect pests, and those that are less tolerant should be scouted more often.

Scouting fields is especially important for locating the most damaging soybean pest in Louisiana, the redbanded stink bug. This pest feeds only on legumes; thus, earlier maturing varieties have the most potential for stink bug damage. In general, MG IV soybeans will have more damage than MG V at pod initiation, and seed set begins earlier and lasts longer. This results in longer exposure to stink bugs over time, resulting in greater opportunities for stink bug injury. Planting soybeans as early as possible can mitigate late season damage. As early planted soybean mature and begin to be harvested, the later planted soybean act as a sponge and absorb all the surrounding stink bugs searching for a news host. As a rule, scouting for redbanded stink bugs should begin at R2 and occur every five days, if possible. Failure to detect early populations can result in missed opportunities for control. As a reminder, the action threshold for the redbanded stink bug is 16 insects per 100 sweeps.

For several years, we have screened high-yielding, commercially available soybean varieties for susceptibility to stink bugs to provide agents, consultants and growers information on what to expect from stink bug pressure. No varieties are currently available that provide immunity from stink bugs. Many commercial varieties, however, provide excellent yields under varied growing conditions that are highly susceptible to stink bugs.

Salt-Chloride Tolerance

Soybeans under continuous irrigation may be subjected to high levels of salts or chlorides from well or surface water. Observations from several years at the Macon Ridge Research Station at Winnsboro have made it possible to pinpoint varieties that have resistance or sensitivity to the problem. The problem shows up as leaf scorching and usually occurs shortly after irrigation water is applied. When choosing varieties to be utilized in irrigated systems, excluders (those varieties that can tolerate high chloride levels) should be chosen. However, yield potential of both excluders and includers (those varieties that cannot tolerate high chloride levels) will be reduced in soils with high chloride levels.

Maturity

There is a certain amount of overlap in maturity between groups within the state. Environmental conditions, especially drought and pest pressure, can cause variation in maturity. Most varieties within a group mature in the following range when planted at recommended times:

- Very early maturity (MG 3.0-4.5): Aug. 10 – Aug. 19.
- Early maturity (MG 4.5-4.9): Aug. 20 – Sept. 10.
- Medium maturity (MG 5+): Sept. 11 – Oct. 1.

Where large acreages are involved, varieties of differing maturity should be selected to stagger the harvest and avoid losses from shattering and poor quality.

Lower Pod Height

Pod height is especially important in rough, poorly drained soils and new ground. It is important for all varieties to set pods a reasonable distance above the soil surface to aid in harvestability.

Poor Drainage

Many soybeans in Louisiana are planted on heavy clay soils with poor internal drainage. Research has determined that certain varieties are superior to others under these conditions. Consult results from the St. Joseph Sharkey clay test to select varieties for tolerance to poor drainage. Planting on raised beds is desirable where drainage is less than optimal.

Lodging Resistance

Soybean varieties are more likely to lodge if a population of more than six plants per foot of row is present and if grown on a highly fertile soil. Tall varieties tend to lodge more severely than short ones. When lodging occurs, seed quality and yield are affected. A lodged field is more susceptible to disease and reduces harvest efficiency.

Plant Height

Plant height varies according to growing conditions, planting date, soil type and variety. If canopy closure has been a problem, a taller variety should be selected or a closer row spacing should be adopted. On highly fertile soil, too much growth is sometimes a problem, and a shorter variety is the better choice.

Seed Quality

Poor seed quality is more often found in early maturing varieties. Poor quality is especially true for indeterminate varieties that do not mature uniformly. However, in wet harvest seasons when temperatures and humidity remain high, seed quality issues can often be observed for most varieties. Poor seed quality occurs when fields are not

harvested when ready or under heavy disease pressure. When poor conditions occur between physiological maturity (maximum dry matter accumulation) and harvest, chances increase for a decline in seed quality.

Cultural Practices

Lime and Molybdenum

Availability of most plant nutrients is typically greatest in soils with a pH of 5.8 to 7.0. When the soil pH drops below 5.2 on sandy loam and silt loam soils, and below 5.0 on clay soils, manganese toxicity may occur. When the soil pH drops below 5.0, aluminum toxicity may also occur. Soil testing should be conducted on a regular basis , and agricultural lime should be used to correct low pH soils to proper levels.

In extreme cases, manganese toxicity is expressed as a stunted plant with crinkled leaves. In milder cases, manganese toxicity may result in reduced yields even when visible symptoms are not present. Aluminum toxicity typically affects the roots, resulting in short, thick roots, a condition known as club root. Manganese and aluminum toxicities can be controlled by keeping the soil pH above the critical levels.

Molybdenum is a critical component of the nitrogenase complex that fixes atmospheric nitrogen into a usable form for the soybean plant. Molybdenum is a nutrient needed by soybeans in small quantities. Although our soils typically have enough molybdenum for optimal growth, molybdenum is less available to plants as the soil becomes more acidic. At soil pH below 6.2, molybdenum should be applied as seed treatment at planting. However, if a commercial inoculum is needed and is applied as a seed treatment, molybdenum should not be applied as a seed treatment. The molybdenum salt will reduce the viability of the inoculum and will result in poor nodulation.

Nitrogen

Soybeans need large quantities of nitrogen. Soybeans remove about 4 pounds of nitrogen in each harvested bushel. Fortunately, soybeans are legumes and can obtain most of their nitrogen from the atmosphere. They accomplish this with the aid of the bacterium *Rhizobium japonicum*. These bacteria use soybean roots as a livable environment and form nodules on soybean roots that capture nitrogen from the atmosphere and fix it into a usable form. Seed should be inoculated with *Rhizobium japonicum* bacteria in soils with no recent history of soybeans or when conditions have reduced bacteria survival.

Phosphorus

Phosphorus is critical in the early stages of soybean growth. It stimulates root growth, is essential in the storage and transfer of energy throughout the plant and is an important component of several biochemicals that control plant growth and development. Phosphorus is concentrated in the seed and strongly affects seed formation. Soybeans remove about 0.8 of a pound of phosphate (P_2O_5) per bushel in the harvested portion of the crop.

Phosphorus deficiencies are not easily observed. Usually, no striking visual symptoms indicate phosphorus deficiency in soybeans. The most common characteristics of phosphorus-deficient soybean plants are stunted growth and reduced yields.

Phosphorus fertilization rates should be based on soil test results. Soil pH affects the availability of phosphorus, which is most available to soybeans when the soil pH is between 6.0 and 7.0.

Potassium

Potassium is essential in the growth and development of soybeans and is indirectly related to many plant cell functions. Some 60 enzymes require the presence of potassium, and plants with adequate amounts of potassium are better able to resist diseases than potassium-deficient plants. About four times as much potash (K_2O) is required by soybeans as phosphate, (P_2O5) and about twice as much potash (K_2O) is removed in the seed as phosphate (P_2O_5). Soybeans remove about 1.4 pounds of potash (K_2O) per bushel in the harvested portion of the plant.

Potassium deficiency symptoms are easy to diagnose when they are severe enough to be seen visually and will usually occur on the lower leaves during pod fill as margins (edges) of the leaves appear necrotic (dead and brown). Severe potassium deficiencies can greatly reduce yields. Potassium fertilizer rates should be based on soil test results.

Early Planting

Soybeans should not be planted until soil temperature reaches 60 degrees Fahrenheit. Because emergence may also be affected by cool soil temperatures after planting, early planting decisions should also consider the forecast up to seven days after planting. Adequate soil temperatures are often observed in April but can vary by location and year. Maturity Group IV and indeterminate Group V varieties perform best in April plantings. Research in north Louisiana has shown instances of high yields for Group IV and V planted in mid-to-late March. In these cases, daily average soil temperatures were generally at or above 60 degrees Fahrenheit at planting. A few (especially determinate types) may be sensitive to planting before early May. Narrow row spacing may be beneficial when planting early because of the potential of reduced plant height. Always use a base fungicide seed treatment when planting early and conditions are less than favorable.

Late Planting

When planting is delayed until June 15 or later, the amount of vegetative growth that the plant produces

becomes more critical. It is important to choose varieties that grow rapidly in a short time. When blooming starts, most vegetative growth ceases in determinate varieties. Maturity Group V soybeans should be used when planting after June 1. When planting late, seeding rates should be increased to compensate for reduced vegetative growth.

Seeding Rate

Plant populations that are too dense reduce yields, encourage diseases and lodging, and increase seed cost. When calibrating planters, use seed-per-foot as your guide rather than pounds of seed per acre. In the following table, the estimated pounds per acre should be used only to calculate how much seed to buy. Because of varietal difference in seed size, as well as seasonal variation within lots of the same variety, planting rates can be misleading if expressed in pounds per acre. The following rates are recommended:

Row Width (Inches)	Seed/Row Foot	Plants/ Row Foot	Population in 1,000s
36-40	8-9	6-8	78-104
30-32	6-7	4-5	78-104
20-24	5-6	4-5	104-130
7-10	4-5	3	104-130
Broadcast	5-6/sq. ft.	3/sq. ft.	150
Late planting	6-7/sq. ft.	4/sq. ft.	200

Planting Dates

Because weather conditions are different from year to year, seeding dates can be affected by environmental conditions. Early or late planting can cause a reduction in plant height in many varieties. Generally, late plantings have less chance of success unless irrigation is available or optimal weather and timely rains occur throughout the growing season. A general rule is that half a bushel per day is lost for every day that planting is delayed past the first week of June.

Optimal seeding dates for each maturity group planted in Louisiana are:

- Group III: April 15 – May 10.
- Group IV: April 15 – May 10.
- Group V: March 25 – May 5.
- Group VI (not typically recommended in Louisiana).

Row Spacing

Varieties respond differently to row spacing. The most important consideration is that the canopy be closed as quickly as possible to avoid late-season weed problems and to maximize the amount of light captured. Research has shown that narrow row spacing (30 inches or fewer) may outyield wide row spacing in some environments.

Depth of Seeding

Plant only deep enough to get the seed in moist soil. On sandy or silt loam soils, plant only 1 inch deep if moisture is available. On clay soils, plant 1 to 2 inches deep, depending on moisture conditions. Rolling the soil, especially clays, after planting will help obtain a stand by conserving moisture.

Table 1A. Highest Yielding Maturity Group 3.0-4.4 Soybean Varieties From Seven LSU AgCenter Research Stations.

Variety	Central Station	Dean Lee	Iberia	Macon Ridge	Northeast 1[1]	Northeast 2[1]	Red River	Rice Station	2021 Average[2]	2-Year Average	3-Year Average
Bayer AG38XF1	30.6	48.7	17.4	**64.0**	49.8	25.8	44.0	63.5	43.0		
Bayer AG40XF1	30.7	55.9	11.0	**62.9**	63.8	31.9	49.0	67.1	46.5		
Bayer AG43XF2	27.8	57.0	18.1	**66.7**	71.0	33.9	**53.7**	70.6	49.8		
Dyna-Gro S43XS70	39.7	**62.0**	**24.2**	**63.1**	**77.8**	37.1	**63.3**	**81.1**	56.0	59.0	
Erwin-Keith/Progeny P 4444RXS	**41.1**	57.4	**29.4**	60.3	**91.8**	**42.9**	**66.0**	71.4	57.5	58.3	59.2
Local Seed Company LS4415XF	**41.8**	**64.2**	**26.5**	**62.0**	**84.8**	**48.4**	**68.7**	74.0	58.8		
Pioneer 42A96X	33.4	56.4	17.9	**64.7**	45.6	33.6	47.0	70.4	46.1	51.1	51.7
Syngenta NK S44-C7X	30.2	**62.9**	17.4	**67.8**	68.3	33.4	**57.0**	72.6	51.2	54.1	56.7
WinField United Seed Armor 44-D49	**49.1**	**64.5**	**26.8**	**67.8**	**78.8**	34.0	50.3	72.1	55.4		
Location Average	36.0	58.8	21.0	64.4	70.2	35.7	55.4	71.4			
Other group 3.0-4.4 soybean varieties included in Louisiana OVT trial:											
BASF CZ 4202XF	25.6	48.5	22.9	49.0	59.5	28.6	53.3	62.8	43.8		
Erwin-Keith/Progeny P 4431E3	27.9	54.8	19.5	60.4	68.0	33.8	53.3	70.1	48.5		
Syngenta NK39-A1XF	23.2	46.6	10.2	60.8	45.4	31.5	46.7	75.8	42.5		
Location Average	25.5	50.0	17.5	56.7	57.6	31.3	51.1	69.6			
Soil Type	silt loam	silt loam	silty clay loam	silt loam	silt loam	Sharkey clay	sandy loam	silt loam			
LSD (P=.05)	8.4	4.3	6.0	6.7	14.9	7.6	15.2	5.2			
Standard Deviation	5.8	3.0	4.1	4.7	8.8	5.2	9.0	3.6			
CV	17.3	5.3	20.6	7.5	13.1	15.0	16.5	5.1			

The 2021 OVT Trial was planted at these LSU AgCenter research stations: Dean Lee, Alexandria; Macon Ridge, Winnsboro; Northeast, St. Joseph; Red River, Bossier; Rice Research, Crowley; Iberia, New Iberia; and Central Research, Baton Rouge..

All yields expressed in bushels per acre and adjusted to 13% moisture.

Bold — *Highest yielding (p=0.05) at this location in 2021.*

[1] *Northeast locations had two different soil types.*

[2] *Variety average from seven research stations and eight locations: Central, Dean Lee, Iberia, Macon Ridge, Northeast 1 (silt loam), Northeast 2 (Sharkey clay), Red River and Rice Station.*

Table 1B. MG 3.0-4.4 - Agronomic Data From Seven LSU AgCenter Research Stations.

Description	Dean Lee Maturity[1]	Iberia Maturity[1]	Macon Ridge Maturity[1]	Red River Maturity[1]	Rice Station Maturity[1]	Central Station Height[2]	Dean Lee Height[2]	Iberia Height[2]	Macon Ridge Height[2]	Northeast Height[2]	Red River Height[2]	Rice Station Height[2]	Central Station Lodging[3]	Dean Lee Lodging[3]	Macon Ridge Lodging[3]	Red River Lodging[3]
BASF CZ 4202XF	105	110	112	114	101	19	36	24	38	28	36	42	4	3	4	1
Bayer AG38XF1	103	117	111	112	101	17	34	22	36	26	30	37	3	2	2	1
Bayer AG40XF1	108	126	112	111	100	19	35	23	34	30	33	40	3	2	1	1
Bayer AG43XF2	107	124	113	111	105	19	35	23	35	30	33	38	2	2	2	1
Dyna-Gro S43XS70	109	123	113	112	105	20	37	25	43	32	36	42	2	2	2	1
Erwin-Keith/Progeny P4431E3	106	115	112	111	102	17	37	25	38	33	35	42	2	2	2	1
Erwin-Keith/Progeny P4444RXS	108	118	110	111	104	26	37	25	40	33	34	41	3	3	4	1
Local Seed Company LS4415XF	111	118	113	112	105	25	34	23	35	30	33	39	3	3	3	1
Pioneer 42A96X	108	121	114	111	106	23	34	24	35	29	33	38	3	1	1	1
Syngenta NK S44-C7X	108	125	113	114	103	17	34	22	37	30	33	38	3	2	2	1
Syngenta NK39-A1XF	100	124	110	94	116	19	32	20	36	25	31	33	3	1	2	1
WinField United Seed Armor 44-D49	109	119	113	114	106	27	41	28	43	38	38	44	4	3	3	1
Location Average	107	120	112	111	104	20	35	24	38	30	34	39	3	2	2	1
LSD (P=.05)	1.6	2.7	1.3	2.8	2.0	NS	2.1	2.1	2.2	NS	2.4	2.8	1.0	0.7	0.9	
Standard Deviation	1.1	1.9	0.6	1.6	1.4	3.8	1.4	1.2	1.3	3.8	1.4	1.9	0.4	0.5	0.6	
CV	1.1	1.6	0.5	1.5	1.3	18.4	4.1	5.2	3.5	12.6	4.2	4.8	16.2	22.7	25.5	

[1] Maturity (R8 - 95% brown pods; days after planting); [2] Plant height in inches; [3] Lodging (1-5): 1=almost all plants erect, 5=all plants down.

Table 1C: MG 3.0-4.4 - Disease Tolerance (With and Without Fungicide).

	Macon Ridge TRD[1]	Macon Ridge CLB[2]	Central Station AB[3] Fungicide	Central AB[3] Untreated	Central Station TS[4] Untreated	Central FE[5] Fungicide	Central FE[5] Untreated	Dean Lee FE[5] Fungicide	Dean Lee FE[5] Untreated	Dean Lee Yield Fungicide	Dean Lee Yield Untreated
BASF CZ 4202XF	7.0	1.6	0.0	2.3	0.0	0.0	0.5	0.0	1.3	48.5	42.3
Bayer AG38XF1	3.8	0.0	0.0	0.8	2.0	0.0	0.0	0.0	0.0	48.7	38.3
Bayer AG40XF1	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.9	46.1
Bayer AG43XF2	5.5	2.6	0.0	1.0	0.0	0.0	0.0	0.0	0.0	57.0	42.5
Dyna-Gro S43XS70	2.8	1.9	0.0	0.8	2.5	0.0	0.0	0.0	0.0	62.0	53.3
Erwin-Keith/Progeny P 4431E3	2.8	2.1	0.0	2.0	0.0	0.0	0.3	0.0	0.0	54.8	47.1
Erwin-Keith/Progeny P4444RXS	1.8	2.1	0.0	1.0	0.0	0.0	0.0	0.0	0.0	57.4	46.7
Local Seed Company LS4415XF	4.3	1.5	0.0	2.3	0.0	0.0	0.0	0.0	0.0	64.2	51.0
Pioneer 42A96X	5.8	2.4	0.0	1.3	0.0	0.0	0.0	0.0	1.3	56.4	47.0
Syngenta NK S44-C7X	2.8	3.0	0.0	1.3	0.0	0.0	0.0	0.5	1.5	62.9	50.4
Syngenta NK39-A1XF	2.3	0.0	0.0	1.3	4.5	0.0	0.5	0.0	0.0	46.6	36.8
WinField United Seed Armor 44-D49	2.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	64.5	53.8
Location Average	3.6	1.5	0.0	1.2	0.8	0.0	0.1	0.0	0.4	56.6	46.3
LSD (P=.05)	2.6	0.9	NS	NS	1.0	NS	NS	NS	NS	4.3	3.8
Standard Deviation	1.8	0.6	0.0	1.2	0.7	0.0	0.4	0.3	1.3	3.0	2.6
CV	51.0	29.7	0.0	101.6	94.3	0.0	355.3	692.8	337.2	5.3	5.7

[1] Tap Root Decline (TRD)(0-9 scale): 0=no disease; 9=all plants showing symptoms.
[2] Cercospora Leaf Blight (CLB) (0-9 scale): 0=no disease; 5=20-40% foliar symptoms/20% defoliation; 9=completely defoliated.
[3] Aerial Blight (AB): (0-9) 0=no disease, 9=plants completely blighted.
[4] Target Spot (TS) (0-9 scale): 0 =no disease; 5=50% affected; 9=completely defoliated.
[5] Frogeye Leaf Spot (FE) (0-9): 0=no disease; 9=all plants showing symptoms.

Table 2A. Highest Yielding Maturity Group 4.5-4.7 Soybean Varieties From Seven LSU AgCenter Research Stations.

Variety	Central Station	Dean Lee	Iberia	Macon Ridge	Northeast 1[1]	Northeast 2[1]	Red River	Rice Station	2021 Average[2]	2-Year Average	3-Year Average
BASF CZ 4562XF	40.5	60.0	26.6	50.3	**71.4**	43.9	31.0	68.4	49.0		
BASF CZ 4742XF	43.7	56.0	28.6	49.7	**78.2**	53.1	**46.3**	62.9	52.3		
Bayer AG47XF0	**49.8**	**64.7**	21.3	61.5	71.3	48.7	**47.7**	72.3	54.7		
Bayer AG48XF2	41.4	**66.3**	29.2	59.5	**86.2**	53.4	43.3	70.8	56.3		
Delta Grow Seed DG46E10	40.1	**70.6**	25.5	**65.3**	67.6	49.4	42.0	68.5	53.6		
Delta Grow Seed DG46F17/STS	42.4	**64.6**	**30.1**	61.9	**71.9**	46.3	**49.0**	67.3	54.2		
Delta Grow Seed DG46X65RR2X	**52.2**	61.2	29.7	**66.1**	63.6	50.8	15.0	**75.5**	51.8	56.9	58.9
Delta Grow Seed DG47E20/STS	**48.3**	**64.2**	**30.4**	55.0	**83.7**	60.6	**45.0**	68.3	56.9	58.0	
Dyna-Gro S46XF31S	**54.0**	**65.5**	27.8	64.4	**71.4**	58.7	40.3	74.3	57.0		
Dyna-Gro S46XS60	**51.8**	**65.5**	26.9	**69.0**	66.9	52.5	**48.7**	**76.2**	57.2	59.1	60.7
Erwin-Keith/Progeny P 4501XFS	**47.6**	60.4	25.2	57.9	**79.6**	51.2	15.0	71.1	51.0		
Erwin-Keith/Progeny P 4505RXS	46.2	63.6	**30.1**	62.4	**88.6**	45.6	33.0	69.5	54.9	55.5	
Erwin-Keith/Progeny P 4521XFS	**55.3**	**65.0**	27.1	60.8	**74.2**	45.0	28.3	72.5	53.5		
Erwin-Keith/Progeny P 4604XFS	**52.5**	**64.2**	30.0	61.6	**88.2**	55.5	22.7	67.1	55.2		
Erwin-Keith/Progeny P 4775E3S	**49.4**	**65.9**	**33.3**	52.9	70.2	54.2	38.3	69.5	54.2	56.6	
Great Heart Seed GT-4677XS	**56.1**	**68.1**	**30.9**	61.7	**79.4**	60.5	40.7		56.8		
Local Seed Company LS4517XFS	**52.7**	62.3	25.7	62.2	70.1	40.6	32.0	70.1	51.9		
Local Seed Company LS4606XFS	**49.9**	62.7	**32.0**	61.3	64.6	60.5	29.7	72.5	54.2		
Local Seed Company LS4795XS	**52.8**	**65.6**	**30.6**	**68.0**	**81.3**	47.0	**66.3**	**75.4**	60.9	62.0	
Pioneer P45T88E	40.5	59.7	26.2	**68.3**	50.1	42.8	27.0	71.7	48.3		
Pioneer P46A86X	**49.1**	**65.6**	27.5	65.1	**75.5**	49.2	34.3	**76.5**	55.3	59.7	61.1
Pioneer P47A64X	**53.7**	**67.6**	28.6	60.2	**77.4**	54.2	19.7	**79.9**	55.2		
Syngenta NK45-P9XF	**48.7**	62.8	**31.2**	59.4	**83.2**	53.2	21.7	**74.9**	54.4		
UniSouth Genetics USG 7461XFS	**49.7**	63.3	**33.5**	62.1	**75.8**	56.8	18.3	69.8	53.6		
UniSouth Genetics USG 7472XFS	44.3	**64.8**	25.4	63.6	**79.5**	47.3	34.3	66.2	53.2		
University of Arkansas R16-253	43.9	52.1	25.1	49.3	**75.3**	54.8	35.7	61.8	49.7		
University of Arkansas UA46i20C	**52.2**	58.5	26.4	52.9	**75.6**	46.7	42.0	61.6	52.0		
University of Missouri S09-13608C	**49.6**	55.8	26.4	54.6	**76.5**	54.6	42.7	66.9	53.4		
University of Missouri S16-12137C	37.8	52.5	26.6	53.7	**73.6**	48.2	41.0	64.6	49.7		
University of Missouri S16-5540R	**52.8**	63.1	**35.3**	56.2	**85.9**	67.3	36.0		56.6	57.3	
University of Missouri S17-2193C	**49.1**	63.9	**31.8**	56.0	67.4	51.2	38.0	70.9	53.5		
University of Missouri S17-2243C	38.5	56.8	26.4	51.7	**75.0**	50.0	39.3	72.0	51.2		
WinField United Seed Armor 46-D09	**54.0**	**65.7**	28.3	**66.6**	**76.0**	54.1	37.0	**78.4**	57.5	58.8	
WinField United Seed Armor 46-F13	**49.7**	**65.5**	**31.5**	60.0	**77.0**	59.3	19.3	**75.4**	54.7		
Location Average	48.2	62.8	28.6	59.7	75.1	52.0	35.3	70.7			
Other group 4.5-4.7 soybean varieties included in Louisiana OVT trial:											
Bayer AG45XF0	38.4	60.8	26.0	60.5	59.4	45.6	40.7	72.5	50.5		
Delta Grow Seed DG46E10	41.2	62.9	16.5	60.5	57.6	44.6	26.7	68.7	47.3		
Erwin-Keith/Progeny P 4541E3S	40.2	58.3	22.9	62.5	64.8	49.0	24.0	68.1	48.7		
University of Arkansas R15-2422	37.2	50.6	24.0	54.4	64.1	55.9	43.3	69.2	49.8		
Location Average	39.2	58.1	22.4	59.5	61.5	48.8	33.7	69.6			
Soil Type	silt loam	silt loam	silty clay loam	silt loam	silt loam	Sharkey clay	sandy loam	silt loam			
LSD (P=.05)	9.6	6.6	5.3	3.8	17.3	NS	21.5	5.35			
Standard Deviation	6.9	4.7	3.8	2.7	10.6	9.8	13.2	3.8			
CV	14.5	7.6	13.5	4.5	14.4	19.0	37.6	5.4			

The 2021 OVT Trial was planted at these LSU AgCenter research stations: Dean Lee, Alexandria; Macon Ridge, Winnsboro; Northeast, St. Joseph; Red River, Bossier; Rice Research, Crowley; Iberia, New Iberia; and Central Research, Baton Rouge. Data was lost at some locations due to seed shortage from replanting.

All yields expressed in bushels per acre and adjusted to 13% moisture.

Bold — *Highest yielding (p=0.05) at this location in 2021.*

[1] *Northeast locations had two different soil types.*

[2] *Variety average from seven research stations and eight locations: Central, Dean Lee, Iberia, Macon Ridge, Northeast 1 (silt loam), Northeast 2 (Sharkey clay), Red River and Rice Station.*

Table 2B. MG 4.5-4.7 - Agronomic Data From Seven LSU AgCenter Research Stations.

	Dean Lee Maturity[1]	Iberia Maturity[1]	Macon Ridge Maturity[1]	Red River Maturity[1]	Rice Station Maturity[1]	Central Station Height[2]	Dean Lee Height[2]	Iberia Height[2]	Macon Ridge Height[2]	NERS Silt Height[2]	Red River Height[2]	Rice Station Height[2]	Central Station Lodging[3]	Macon Ridge Lodging[3]	Red River Lodging[3]	Rice Station Lodging[3]
BASF CZ 4562XF	103	116	113	116	106	33	44	29	44	37	39	44	3	2	1	2
BASF CZ 4742XF	105	115	111	116	107	36	37	27	40	30	32	37	4	4	1	2
Bayer AG45XF0	111	119	114	117	108	30	37	27	40	27	31	39	4	4	1	3
Bayer AG47XF0	112	117	112	119	108	30	33	23	40	29	33	39	2	1	1	0
Bayer AG48XF2	113	116	112	117	108	33	39	26	38	32	35	39	4	3	1	7
Delta Grow Seed DG46E10	108	117	113	116	107	27	33	20	33	28	30	35	3	1	1	1
Delta Grow Seed DG46E10	105	115	111	113	106	36	39	28	35	29	34	41	3	2	1	0
Delta Grow Seed DG46F17/STS	108	118	111	116	108	33	40	26	42	32	34	41	3	3	1	7
Delta Grow Seed DG46X65RR2X	112	121	111	115	108	32	35	25	42	32	30	38	3	2	1	1
Delta Grow Seed DG47E20/STS	110	117	111	116	108	34	41	26	45	32	35	44	3	2	1	2
Dyna-Gro S46XF31S	108	119	114	116	108	35	40	28	43	33	37	44	4	2	1	2
Dyna-Gro S46XS60	113	119	116	117	108	33	35	24	41	23	34	38	4	2	1	1
Erwin-Keith/Progeny P4501XFS	110	120	114	115	108	25	44	31	47	38	35	44	3	4	1	4
Erwin-Keith/Progeny P4505RXS	111	119	115	116	107	33	43	28	43	35	35	45	4	4	1	3
Erwin-Keith/Progeny P4521XFS	114	119	116	114	110	32	37	25	43	28	30	40	4	3	1	2
Erwin-Keith/Progeny P4541E3S	108	114	116	115	106	33	37	26	41	34	31	41	4	2	1	1
Erwin-Keith/Progeny P4604XFS	108	118	114	114	108	30	43	29	43	36	31	44	3	2	1	3
Erwin-Keith/Progeny P4775E3S	109	115	113	116	108	35	43	25	45	32	37	44	3	2	1	4
Great Heart Seed GT-4677XS	110	120	114	116		34	40	23	39	29	35		3	2	1	
Local Seed Company LS4517XFS	107	117	111	115	107	34	41	26	43	32	34	42	3	2	1	5
Local Seed Company LS4606XFS	112	119	115	115	108	34	39	29	44	35	34	42	3	2	1	4
Local Seed Company LS4795XS	110	120	111	117	108	31	38	26	41	30	35	38	3	2	1	1
Pioneer P45T88E	105	117	112	116	107	25	29	22	34	25	27	36	3	1	1	1
Pioneer P46A86X	106	120	114	116	108	35	41	27	45	35	36	43	4	2	1	2
Pioneer P47A64X	107	121	114	115	108	36	42	30	45	34	33	42	3	2	1	1
Syngenta NK45-P9XF	107	120	116	115	107	35	41	30	41	34	38	41	3	2	1	2
UniSouth Genetics USG 7461XFS	109	119	112	115	108	33	42	28	44	33	33	41	3	2	1	3
UniSouth Genetics USG 7472XFS	108	118	114	115	107	34	39	26	42	33	34	40	3	2	1	3
University of Arkansas R15-2422	109	117	115	116	106	35	40	28	40	34	40	45	4	5	1	3
University of Arkansas R16-253	109	122	115	118	106	33	37	28	40	32	36	41	4	2	1	2
University of Arkansas UA46i20C	109	115	115	116	106	37	38	26	42	34	34	40	3	3	1	1
University of Missouri S09-13608C	109	115	113	115	106	31	38	26	42	31	34	40	3	3	1	1
University of Missouri S16-12137C	107	119	116	115	106	36	44	32	46	39	41	48	5	3	1	3
University of Missouri S16-5540R	109	116	114	118		33	36	27	35	35	33		4	3	1	
University of Missouri S17-2193C	108	119	115	116	106	33	43	30	44	36	39	43	3	2	1	2
University of Missouri S17-2243C	109	119	111	116	107	29	40	29	41	37	38	43	3	1	1	1
WinField United Seed Armor 46-D09	111	121	115	115	108	31	37	24	42	28	30	38	3	2	1	1
WinField United Seed Armor 46-F13	111	117	113	116	108	31	42	28	44	33	30	41	3	2	1	4
Location Average	109	118	113	116	107	32	39	27	42	32	34	41	3	2	1	2
LSD (P=.05)	4.1	3.4	0.9	2.5	1.5	6.1	3.8	2.7	3.1	7.2	5.2	2.8	1.2	0.6	NS	2.0
Standard Deviation	2.5	2.4	0.5	1.5	1.1	3.0	2.7	1.7	1.9	3.5	3.2	2.0	0.6	0.4	0.1	1.4
CV	2.3	2.0	0.4	1.3	1.0	9.2	7.0	6.2	4.6	11.0	9.4	5.0	19.3	17.9	9.3	66.6

[1] Maturity (R8 - 95% brown pods; days after planting).
[2] Plant height in inches.
[3] Lodging (1-5): 1=almost all plants erect, 5=all plants down.

Table 2C: MG 4.5-4.7 - Disease Tolerance (With and Without Fungicide).

Variety	Macon Ridge TRD[1]	Macon Ridge CLB[2]	Central Station AB[3] Fungicide	Central Station AB[3] Untreated	Central Station FE[4] Fungicide	Central Station FE[4] Untreated	Dean Lee FE[4] Fungicide	Dean Lee FE[4] Untreated	Dean Lee Yield Fungicide	Dean Lee Yield Untreated
BASF CZ 4562XF	3.8	2.9	0.0	1.3	0.0	0.0	1.0	1.3	60.0	43.5
BASF CZ 4742XF	4.0	1.0	0.0	0.8	0.0	0.0	0.3	1.3	56.0	37.4
Bayer AG45XF0	2.8	2.8	0.0	1.5	0.0	0.0	0.0	0.3	60.8	45.2
Bayer AG47XF0	2.3	4.1	0.0	2.3	0.0	0.3	0.0	0.8	64.7	50.5
Bayer AG48XF2	4.5	1.9	0.1	1.5	0.0	0.5	0.0	0.0	66.3	53.1
Delta Grow Seed DG46E10	2.8	2.3	0.0	3.0	0.0	0.0	0.3	0.5	70.6	52.8
Delta Grow Seed DG46E10	3.5	2.8	0.0	2.0	0.0	0.3	0.0	1.0	62.9	41.7
Delta Grow Seed DG46F17/STS	3.0	1.9	0.0	3.3	0.0	0.0	0.0	0.8	64.6	52.8
Delta Grow Seed DG46X65RR2X	2.3	1.3	0.0	2.8	0.0	0.0	0.0	0.0	61.2	55.9
Delta Grow Seed DG47E20/STS	3.8	3.0	0.4	3.3	0.0	0.0	0.0	1.0	64.2	50.0
Dyna-Gro S46XF31S	3.3	2.6	0.0	2.3	0.0	0.0	0.0	0.0	65.5	51.4
Dyna-Gro S46XS60	2.8	2.1	0.0	2.3	0.0	0.0	0.3	1.5	65.5	49.0
Erwin-Keith/Progeny P 4501XFS	2.8	2.3	0.0	0.3	0.0	0.0	0.0	0.8	60.4	49.2
Erwin-Keith/Progeny P 4505RXS	2.5	2.4	0.0	1.0	0.0	0.0	0.0	0.3	63.6	46.9
Erwin-Keith/Progeny P 4521XFS	3.3	1.3	0.3	1.0	0.0	0.0	0.3	1.0	65.0	51.2
Erwin-Keith/Progeny P 4541E3S	4.0	2.8	0.0	3.8	0.0	0.0	0.0	0.3	58.3	43.7
Erwin-Keith/Progeny P 4604XFS	4.0	2.6	0.3	1.0	0.0	0.0	0.0	0.3	64.2	55.3
Erwin-Keith/Progeny P 4775E3S	3.8	3.1	0.4	2.8	0.0	0.5	0.0	0.3	65.9	54.1
Great Heart Seed GT-4677XS	2.8	1.6	0.0	2.5	0.0	0.3	0.0	0.0	68.1	51.3
Local Seed Company LS4517XFS	3.8	1.4	0.0	2.8	0.0	0.0	1.3	1.3	62.3	41.2
Local Seed Company LS4606XFS	4.0	2.3	0.3	1.5	0.0	0.3	0.0	1.3	62.7	53.2
Local Seed Company LS4795XS	1.5	1.3	0.0	1.5	0.0	0.0	1.3	1.0	65.6	54.2
Pioneer P45T88E	3.3	2.5	0.0	3.3	0.0	0.0	0.0	1.0	59.7	33.1
Pioneer P46A86X	3.3	3.1	0.0	2.8	0.0	0.0	0.0	0.8	65.6	55.8
Pioneer P47A64X	5.0	2.4	0.0	1.3	0.0	0.0	0.0	1.5	67.6	56.1
Syngenta NK45-P9XF	4.0	2.3	0.1	0.8	0.0	0.0	0.0	1.0	62.8	52.2
UniSouth Genetics USG 7461XFS	3.8	2.8	0.0	1.8	0.0	0.0	0.0	0.3	63.3	54.0
UniSouth Genetics USG 7472XFS	6.3	1.9	0.0	2.8	0.0	0.0	0.0	0.8	64.8	49.3
University of Arkansas R15-2422	4.0	3.0	0.3	2.8	0.0	0.0	0.0	0.5	50.6	44.7
University of Arkansas R16-253	2.5	3.8	0.1	1.5	0.0	0.0	0.0	1.3	52.1	43.9
University of Arkansas UA46i20C	2.5	3.0	0.0	0.8	0.0	0.0	0.0	0.3	58.5	44.9
University of Missouri S09-13608C	2.8	2.4	0.5	2.3	0.0	0.0	0.0	0.0	55.8	42.5
University of Missouri S16-12137C	3.5	2.4	0.0	1.3	0.0	0.0	0.0	0.0	52.5	38.7
University of Missouri S16-5540R	3.3	2.0	0.0	1.0	0.0	0.0	0.0	0.3	63.1	54.4
University of Missouri S17-2193C	3.5	2.5	0.3	2.5	0.0	0.0	0.0	0.8	63.9	42.8
University of Missouri S17-2243C	2.5	1.4	0.0	0.5	0.0	0.3	0.0	0.8	56.8	46.4
WinField United Seed Armor 46-D09	1.8	1.9	0.1	2.8	0.0	0.0	0.0	0.0	65.7	55.8
WinField United Seed Armor 46-F13	3.5	2.6	0.0	1.8	0.0	0.0	0.0	0.3	65.5	50.2
Location Average	3.3	2.3	0.1	2.0	0.0	0.1	0.1	0.7	62.3	48.6
LSD (P=.05)	NS	1.1	NS	2.0	NS	NS	NS	NS	6.6	8.2
Standard Deviation	1.7	0.8	0.2	1.4	0.0	0.3	0.7	1.4	4.7	5.9
CV	50.5	32.4	304.6	72.1	0.0	436.5	577.7	224.8	7.6	12.1

[1] Tap Root Decline (TRD)(0-9 scale): 0=no disease; 9=all plants showing symptoms.
[2] Cercospora Leaf Blight (CLB) (0-9 scale): 0=no disease; 5=20-40% foliar symptoms/20% defoliation; 9=completely defoliated.
[3] Aerial Blight (AB)(0-9 scale): 0=no disease, 9=plants completely blighted.
[4] Frogeye Leaf Spot (FE) (0-9): 0=no disease; 9=all plants showing symptoms.

Table 3A. Highest Yielding Maturity Group 4.8-4.9 Soybean Varieties From Seven LSU AgCenter Research Stations.

Variety	Central Station	Dean Lee	Iberia	Macon Ridge	Northeast1[1]	Northeast 2[1]	Red River	Rice Station	2021 Average[2]	2-Year Average	3-Year Average
Bayer AG48X9	**54.7**	**57.3**	28.9	**68.3**	73.2	53.2	50.0	**71.6**	57.2	57.1	59.7
Bayer AG48XF0	**49.8**	54.7	28.0	61.4	60.4	50.8	46.3	64.6	52.0		
Delta Grow Seed DG48E49/STS	41.3	**58.8**	26.0	61.3	64.1	45.0	44.3	65.6	50.8	50.9	
Delta Grow Seed DG48E59	**55.8**	**57.5**	29.6	**70.2**	76.2	52.6	41.0	**74.7**	57.2		
Delta Grow Seed DG48X45RR2X	**50.4**	54.9	21.9	64.5	62.9	46.4	45.7	68.3	51.9	53.5	57.0
Delta Grow Seed DG49E20	**49.3**	**63.6**	31.8	**67.7**	60.3	53.7	47.3	66.8	55.1		
Delta Grow Seed DG49F22/STS	**48.7**	52.7	33.0	57.1	71.4	47.5	38.0	69.9	52.3		
Dyna-Gro S48XT40	42.9	**56.7**	**39.2**	62.1	**80.9**	**58.6**	62.0	**71.6**	59.3		
Dyna-Gro S48XT90	**50.8**	54.9	29.4	62.5	**83.4**	50.4	58.7	67.6	57.2	56.1	
Dyna-Gro S49XT70	47.1	**59.6**	27.5	56.5	76.6	52.1	45.7	**74.1**	54.9	55.0	58.3
Erwin-Keith/Progeny P 4806XFS	47.7	**58.2**	23.8	**67.4**	75.9	**56.9**	43.0	69.5	55.3		
Erwin-Keith/Progeny P 4816RX	**48.7**	**59.3**	24.1	64.4	62.3	48.2	48.0	70.9	53.2	55.6	58.1
Erwin-Keith/Progeny P 4821RX	47.8	**57.2**	30.1	59.4	68.5	48.5	53.7	70.9	54.5	55.8	58.5
Erwin-Keith/Progeny P 4851RX	**50.0**	54.7	27.6	59.7	77.9	43.1	44.7	58.9	52.1	52.1	55.7
Erwin-Keith/Progeny P 4921XF	46.1	**58.0**	29.8	57.1	65.1	52.2	44.7	68.4	52.7		
Erwin-Keith/Progeny P 4931E3S	**51.5**	**60.3**	34.4	**67.1**	69.2	55.4	48.3	65.0	56.4		
Erwin-Keith/Progeny P 4970RX	**50.6**	54.5	**40.6**	55.7	**84.1**	50.6	54.0	**72.4**	57.8	57.4	
Great Heart Seed GT-4828X	47.3	**58.3**	31.1	58.1	65.4	49.0	37.0	66.5	51.6	52.8	
Great Heart Seed GT-4979X	45.2	**61.0**	28.7	58.8	61.0	55.2	59.3	70.4	54.9	56.0	
Local Seed Company LS4805XFS	44.4	53.0	20.9	64.1	58.3	49.1	49.7	**71.4**	51.4		
Local Seed Company LS4806XS	**52.5**	**58.1**	31.7	64.4	**83.3**	**58.5**	50.3	**77.5**	59.5	58.8	
Local Seed Company LS4919XFS	**51.0**	**57.0**	31.5	55.1	**79.6**	53.5	46.3	**71.9**	55.7		
Pioneer P49A41L	**54.5**	**59.1**	25.8	**70.9**	77.0	50.5	55.3	**74.0**	58.4		
Syngenta NK S49-F5X	39.5	**59.0**	29.2	**71.2**	69.1	52.3	44.0	**73.0**	54.7	56.4	58.2
University of Missouri S16-5503R	44.0	55.2	**37.1**	61.9	**79.7**	**66.7**	42.7	65.8	56.6		
University of Missouri S16-7922C	**50.8**	**59.4**	**37.8**	58.4	**93.1**	**60.1**	48.7	**74.9**	60.4	58.7	
University of Missouri S16-8898C	42.2	**58.0**	**36.4**	53.1	**85.9**	**61.9**	55.0	**71.9**	58.0		
WinField United Seed Armor 48-D03	47.7	**63.8**	32.1	62.8	72.1	52.9	53.7	**75.0**	57.5		
WinField United Seed Armor 48-D25	**50.3**	**58.5**	30.0	**70.0**	68.2	47.6	54.7	**75.3**	56.8	56.9	
WinField United Seed Armor 48-F22	48.1	55.7	23.8	**66.8**	**89.1**	55.5	55.0	66.7	57.6		
Location Average	48.4	57.6	30.0	62.6	73.1	52.6	48.9	70.2			
Other group 4.8-4.9 soybean varieties included in Louisiana OVT Trial:											
BASF CZ 4892XF	39.1	50.0	21.9	54.2	78.5	55.2	46.3	63.0	51.0		
BASF CZ 4912XF	44.5	49.3	31.4	54.7	74.2	51.5	46.7	62.1	51.8		
Delta Grow Seed DG48F20	44.8	56.3	22.4	60.9	67.2	47.6	50.0	65.1	51.8		
Delta Grow Seed DG49E90	44.5	48.2	27.7	65.7	62.8	40.3	47.3	66.5	50.4		
UniSouth Genetics USG 7491XFS	45.2	51.9	22.8	59.2	63.8	51.1	42.7	66.1	50.3		
Location Average	43.6	51.1	25.2	58.9	69.3	49.1	46.6	64.6			
Soil Type	silt loam	silt loam	silty clay loam	silt loam	silt loam	Sharkey clay	sandy loam	silt loam			
LSD P=.05	7.2	7.6	5.9	5.4	14.3	10.3	NS	6.6			
Standard Deviation	5.1	5.4	4.2	3.9	8.7	7.3	11.6	4.7			
CV	10.7	9.5	14.4	6.2	12.1	14.0	23.9	6.7			

The 2021 OVT Trial was planted at these LSU AgCenter research stations: Dean Lee, Alexandria; Macon Ridge, Winnsboro; Northeast, St. Joseph; Red River, Bossier; Rice Research, Crowley; Iberia, New Iberia; and Central Research, Baton Rouge.

All yields expressed in bushels per acre and adjusted to 13% moisture.

Bold — *Highest yielding (p=0.05) at this location in 2021.*

[1] *Northeast locations had two different soil types.*

[2] *Variety average from seven research stations and eight locations: Central, Dean Lee, Iberia, Macon Ridge, Northeast 1 (silt loam), Northeast 2 (Sharkey clay), Red River and Rice Station.*

Table 3B. MG 4.8-4.9 - Agronomic Data From Seven LSU AgCenter Research Stations.

Variety	Dean Lee Maturity[1]	Iberia Maturity[1]	Macon Ridge Maturity[1]	Red River Maturity[1]	Rice Station Maturity[1]	Central Station Height[2]	Dean Lee Height[2]	Iberia Height[2]	Macon Ridge Height[2]	NERS Silt Height[2]	Red River Height[2]	Rice Station Height[2]	Central Station Lodging[3]	Dean Lee Lodging[3]	Macon Ridge Lodging[3]	Red River Lodging[3]	Rice Station Lodging[3]
BASF CZ 4892XF	106	121	117	112	107	36	36	23	43	32	33	36	4	2	3	1	1
BASF CZ 4912XF	107	119	119	112	109	36	41	27	49	37	35	40	4	2	3	1	2
Bayer AG48X9	111	122	118	112	112	35	39	24	51	31	35	38	3	1	2	1	1
Bayer AG48XF0	114	119	119	112	112	28	39	24	45	31	31	39	3	2	2	1	2
Delta Grow Seed DG48E49/STS	110	118	116	112	110	32	36	21	41	30	33	36	3	2	2	1	0
Delta Grow Seed DG48E59	112	120	120	111	111	30	32	21	38	32	33	35	3	2	2	1	4
Delta Grow Seed DG48F20	112	120	119	112	110	31	35	24	42	27	34	36	3	2	2	1	1
Delta Grow Seed DG48X45RR2X	113	124	120	112	112	30	33	21	40	27	29	34	3	1	2	1	1
Delta Grow Seed DG49E20	115	120	119	112	111	34	40	26	43	29	35	37	4	3	3	1	3
Delta Grow Seed DG49E90	112	117	119	112	111	35	33	21	43	28	31	37	3	2	2	1	1
Delta Grow Seed DG49F22/STS	115	118	119	112	112	32	33	24	42	28	33	34	3	2	4	1	2
Dyna-Gro S48XT40	114	118	118	111	109	33	38	27	44	37	35	37	3	2	2	1	3
Dyna-Gro S48XT90	115	124	119	112	110	34	33	25	40	30	34	36	3	2	4	1	2
Dyna-Gro S49XT70	113	122	120	111	113	36	37	26	49	32	35	40	3	2	2	1	2
Erwin-Keith/Progeny P 4806XFS	113	123	119	112	110	29	36	24	43	29	32	37	3	2	2	1	1
Erwin-Keith/Progeny P 4816RX	113	121	120	112	113	32	31	22	40	29	33	38	3	2	1	1	1
Erwin-Keith/Progeny P 4821RX	113	119	119	112	111	35	35	24	40	28	35	37	3	2	2	1	4
Erwin-Keith/Progeny P 4851RX	113	122	120	111	110	36	37	24	44	39	38	41	5	3	5	1	7
Erwin-Keith/Progeny P 4921XF	113	118	119	112	113	31	33	22	41	31	31	35	3	2	4	1	1
Erwin-Keith/Progeny P 4931E3S	116	120	119	112	110	33	40	26	42	30	35	37	3	3	3	1	3
Erwin-Keith/Progeny P 4970RX	117	120	119	112	111	31	34	25	42	32	34	37	3	2	2	1	3
Great Heart Seed GT-4828X	116	119	119	111	112	34	38	25	48	30	33	38	3	2	2	1	2
Great Heart Seed GT-4979X	116	121	119	112	112	33	38	24	44	30	36	40	4	2	3	1	3
Local Seed Company LS4805XFS	112	122	118	112	111	33	35	23	40	27	33	36	3	2	2	1	0
Local Seed Company LS4806XS	111	121	119	112	111	36	36	23	43	33	32	37	4	2	1	1	1
Local Seed Company LS4919XFS	113	119	121	112	110	32	37	24	41	28	32	35	4	2	4	1	3
Pioneer P49A41L	110	123	120	111	110	36	39	26	44	33	35	40	5	2	2	1	3
Syngenta NK S49-F5X	108	119	120	111	109	30	34	23	38	27	32	35	4	2	3	1	4
UniSouth Genetics USG 7491XFS	112	118	119	112	110	34	33	21	40	32	32	36	3	2	1	1	0
University of Missouri S16-5503R	112	116	120	112	107	36	36	23	37	37	32	35	4	4	4	3	3
University of Missouri S16-7922C	111	119	122	112	110		40	24	42	32	34	38		4	4	4	3
University of Missouri S16-8898C	110	116	120	112	107	34	36	21	39	33	36	36	5	3	4	4	3
WinField United Seed Armor 48-D03	114	120	119	111	111	33	38	26	43	30	35	40	3	3	2	1	2
WinField United Seed Armor 48-D25	113	122	117	112	113	33	34	22	43	30	34	35	3	2	1	1	0
WinField United Seed Armor 48-F22	113	122	119	112	110	32	34	23	42	34	34	37	3	1	2	1	0
Location Average	113	120	119	112	110	33	36	24	42	31	34	37	3	2	2	1	2
LSD (P=.05)	3.5	2.6	0.9	NS	1.6	4.2	4.6	2.8	3.8	NS	NS	2.4	1.0	0.7	0.9	0.5	1.9
Standard Deviation	2.2	1.9	0.4	0.6	1.2	2.9	3.3	1.7	2.4	4.2	2.4	1.7	0.7	0.5	0.6	0.3	1.4
CV	1.9	1.5	0.4	0.5	1.1	8.9	9.1	7.3	5.5	13.5	7.2	4.7	21.0	24.5	23.2	26.0	70.9

[1] Maturity (R8 - 95% brown pods; days after planting).
[2] Plant height in inches.
[3] Lodging (1-5): 1=almost all plants erect, 5=all plants down.

Table 3C: MG 4.8-4.9 - Disease Tolerance (With and Without Fungicide).

Variety	Macon Ridge TRD[1]	Macon Ridge CLB[2]	Central Station AB[3] Fungicide	Central Station AB[3] Untreated	Central Station FE[4] Fungicide	Central Station FE[4] Untreated	Dean Lee FE[4] Fungicide	Dean Lee FE[4] Untreated	Dean Lee Yield Fungicide	Dean Lee Yield Untreated
BASF CZ 4892XF	3.0	2.5	0.0	2.0	0.0	0.0	0.0	1.0	50.0	40.4
BASF CZ 4912XF	3.5	1.4	0.0	1.8	0.0	0.0	0.0	0.0	49.3	37.5
Bayer AG48X9	3.0	3.5	0.0	2.3	0.0	0.0	0.1	1.3	57.3	43.2
Bayer AG48XF0	2.0	2.5	0.0	1.5	0.0	0.4	0.0	0.5	54.7	43.1
Delta Grow Seed DG48E49/STS	3.3	2.8	0.0	4.0	0.0	0.0	0.0	1.8	58.8	43.2
Delta Grow Seed DG48E59	4.0	1.6	0.0	1.5	0.0	0.4	0.0	0.0	57.5	46.9
Delta Grow Seed DG48F20	2.5	4.0	0.0	1.5	0.3	0.5	0.0	1.3	56.3	36.6
Delta Grow Seed DG48X45RR2X	3.0	1.8	0.0	2.8	0.0	0.0	0.3	0.7	54.9	43.9
Delta Grow Seed DG49E20	3.5	2.9	0.0	2.3	0.0	0.0	0.0	0.3	63.6	42.0
Delta Grow Seed DG49E90	3.8	1.5	0.0	2.0	0.0	0.0	0.0	0.0	48.2	29.6
Delta Grow Seed DG49F22/STS	2.3	1.8	0.0	1.8	0.0	0.1	0.0	0.5	52.7	43.7
Dyna-Gro S48XT40	4.0	2.8	0.0	3.0	0.0	0.0	0.0	0.7	56.7	42.3
Dyna-Gro S48XT90	3.5	1.3	0.0	3.0	0.0	0.0	0.0	0.0	54.9	41.6
Dyna-Gro S49XT70	1.3	1.0	0.0	1.3	0.0	0.0	0.0	0.0	59.6	54.4
Erwin-Keith/Progeny P 4806XFS	3.3	4.4	0.0	2.3	0.3	0.0	0.0	3.0	58.2	41.6
Erwin-Keith/Progeny P 4816RX	2.8	2.8	0.0	2.5	0.0	0.0	0.0	0.0	59.3	46.2
Erwin-Keith/Progeny P 4821RX	2.3	2.1	0.0	2.3	0.0	0.0	0.0	0.5	57.2	47.5
Erwin-Keith/Progeny P 4851RX	2.3	3.9	0.0	1.5	0.0	0.0	0.0	0.0	54.7	43.6
Erwin-Keith/Progeny P 4921XF	3.3	1.4	0.0	1.5	0.0	0.0	0.0	0.3	58.0	40.8
Erwin-Keith/Progeny P 4931E3S	1.8	2.0	0.0	2.0	0.0	0.0	0.0	0.0	60.3	44.5
Erwin-Keith/Progeny P 4970RX	3.0	1.1	0.0	1.3	0.0	0.0	0.0	0.0	54.5	45.9
Great Heart Seed GT-4828X	4.0	1.8	0.0	1.5	0.0	0.0	0.0	0.0	58.3	41.3
Great Heart Seed GT-4979X	2.5	1.8	0.0	1.8	0.0	0.0	0.0	0.3	61.0	39.0
Local Seed Company LS4805XFS	2.0	5.1	0.0	2.8	0.5	0.4	0.0	2.0	53.0	34.1
Local Seed Company LS4806XS	1.3	3.0	0.0	2.0	0.0	0.1	0.0	1.5	58.1	43.9
Local Seed Company LS4919XFS	1.8	1.5	0.0	1.5	0.0	0.0	0.0	1.0	57.0	44.8
Pioneer P49A41L	3.0	4.4	0.0	1.8	0.0	0.0	0.0	0.0	59.1	45.2
Syngenta NK S49-F5X	2.3	3.8	0.0	1.8	0.0	0.3	0.1	2.3	59.0	47.1
UniSouth Genetics USG 7491XFS	2.8	4.5	0.0	2.8	0.0	0.0	0.0	2.7	51.9	36.5
University of Missouri S16-5503R	3.0	2.1	0.0	0.8	0.0	0.0	0.1	0.0	55.2	49.2
University of Missouri S16-7922C	2.5	1.1	0.0	1.0	0.0	0.0	0.0	0.3	59.4	51.1
University of Missouri S16-8898C	2.3	2.0	0.0	2.0	0.0	0.0	0.0	0.5	58.0	46.1
WinField United Seed Armor 48-D03	2.3	2.4	0.0	0.5	0.3	0.0	0.0	0.0	63.8	43.1
WinField United Seed Armor 48-D25	2.5	2.5	0.0	2.0	0.0	0.0	0.0	1.5	58.5	47.2
WinField United Seed Armor 48-F22	3.5	3.4	0.0	1.5	0.0	0.0	0.0	2.0	55.7	42.2
Location Average	2.8	2.5	0.0	1.9	0.0	0.1	0.0	0.7	56.7	43.1
LSD (P=.05)	NS	0.9	NS	NS	0.3	NS	NS	1.7	7.6	7.5
Standard Deviation	1.5	0.7	0.0	1.2	0.2	0.2	0.1	1.2	5.4	5.3
CV	53.1	26.4	0.0	62.5	498.2	331.8	627.0	161.3	9.5	12.4

[1] Tap Root Decline (TRD)(0-9 scale): 0=no disease; 9=all plants showing symptoms.
[2] Cercospora Leaf Blight (CLB) (0-9 scale): 0=no disease; 5=20-40% foliar symptoms/20% defoliation; 9=completely defoliated.
[3] Aerial Blight (AB)(0-9 scale): 0=no disease, 9=plants completely blighted.
[4] Frogeye Leaf Spot (FE) (0-9): 0=no disease; 9=all plants showing symptoms.

Table 4A. Highest Yielding Maturity Group 5.0-5.3 Soybean Varieties From Seven LSU AgCenter Research Stations.

Variety	Central Station	Dean Lee	Iberia	Macon Ridge	Northeast 1[1]	Northeast 2[1]	Red River	Rice Station	2021 Average[2]	2-Year Average	3-Year Average
Bayer AG53XF2	45.9	63.7	32.7	**61.3**	82.0	55.7	37.0	**66.3**	55.6		
Delta Grow Seed DG52E22	40.5	62.1	33.5	56.1	65.7	44.9	**47.7**	61.5	51.5	52.8	55.2
Delta Grow Seed DG52E80	**48.8**	64.0	36.6	54.2	64.7	42.6	34.0	64.2	51.1		
Delta Grow Seed DG52X05RR2X	**55.3**	61.4	**41.4**	55.2	71.0	59.9	44.3	59.3	56.0	53.5	55.7
Delta Grow Seed DG53E30	**49.9**	**68.8**	32.0	51.0	57.3	47.9	38.7	59.7	50.7		
Dyna-Gro S52XT91	**47.6**	**68.3**	36.4	**61.2**	74.6	46.1	**51.7**	**71.9**	57.2		
Erwin-Keith/Progeny P 5003XF	41.7	64.2	33.8	**64.0**	80.2	50.6	44.0	59.3	54.7		
Erwin-Keith/Progeny P 5121E3S	43.7	62.9	32.5	**65.3**	70.6	48.0	**51.7**	60.9	54.4		
Erwin-Keith/Progeny P 5252RX	**52.8**	62.9	**42.7**	52.7	78.9	55.5	**47.0**	**66.7**	57.4	55.2	56.5
GDM DONMARIO DM51F62S	40.4	59.1	32.5	**63.8**	74.0	63.6	40.3	59.1	54.1		
Local Seed Company LS5009XS	**46.9**	64.6	38.0	**63.9**	74.0	56.0	**52.3**	**68.9**	58.1	58.1	
Local Seed Company LS5119XF	46.6	60.8	34.6	**62.3**	59.8	54.5	**57.7**	62.3	54.8		
Local Seed Company LS5386X	**48.1**	**68.3**	36.0	56.9	68.8	53.6	39.0	**69.0**	55.0	54.5	55.7
Syngenta NK S53-F7X	**47.2**	**71.0**	37.6	60.9	67.1	51.4	37.0	**67.3**	54.9	54.0	56.3
University of Missouri S16-11651C	42.3	65.2	**40.7**	**63.7**	**94.0**	59.8	**51.0**		59.5		
University of Missouri S16-14801C	**48.8**	**68.1**	**39.4**	59.0	**88.2**	**80.2**	**49.3**	**65.3**	62.3		
University of Missouri S16-3747RY	**51.2**	**65.7**	31.6	57.3	**97.6**	**69.1**	**52.0**	**66.6**	61.4	58.2	
University of Missouri S16-7840C	**54.0**	**68.3**	36.7	58.3	**89.5**	**71.7**	42.3	60.3	60.1		
University of Missouri S16-9090C	**49.3**	65.3	32.7	59.6	**88.1**	**71.0**	**50.3**	**66.8**	60.4		
University of Missouri S16-9478C	44.0	64.4	**39.2**	59.5	72.9	52.5	**55.0**	**70.3**	57.2		
Location Average	47.2	64.9	36.0	59.3	75.9	56.7	46.1	64.5			
Other group 5.0-5.3 soybean varieties in Louisiana OVT trial:											
BASF CZ 5282XF	42.8	60.2	38.2	49.0	58.0	46.6	36.0	57.7	48.6		
Delta Grow Seed DG50E10	41.8	57.2	34.9	48.7	62.8	52.0	36.7	55.0	48.6		
GDM DONMARIO DM51E62S	44.3	58.3	31.1	54.7	71.8	55.1	39.7	60.6	52.0		
Location Average	43.0	58.6	34.7	50.8	64.2	51.2	37.5	57.8			
Soil Type	silt loam	silt loam	silty clay loam	silt loam	silt loam	Sharkey clay	sandy loam	silt loam			
LSD (P=.05)	8.7	5.7	4.1	4.2	14.1	13.0	11.0	6.8			
Standard Deviation	6.2	4.0	2.9	2.9	8.6	9.2	6.7	4.8			
CV	13.2	6.3	8.1	5.1	11.5	16.4	14.9	7.6			

The 2021 OVT Trial was planted at these LSU AgCenter research stations: Dean Lee, Alexandria; Macon Ridge, Winnsboro; Northeast, St. Joseph; Red River, Bossier; Rice Research, Crowley; Iberia, New Iberia, and Central Research, Baton Rouge. Data was lost at some locations due to seed shortage due from replanting.

All yields expressed in bushels per acre and adjusted to 13% moisture.

Bold — *Highest yielding (p=0.05) at this location in 2021.*

[1] *Northeast locations had two different soil types.*

[2] *Variety average from seven research stations and eight locations: Central, Dean Lee, Iberia, Macon Ridge, Northeast 1 (silt loam), Northeast 2 (Sharkey clay), Red River and Rice Station.*

Table 4B. MG 5.0-5.3 - Agronomic Data From Seven LSU AgCenter Research Stations.

Variety	Dean Lee Maturity[1]	Iberia Maturity[1]	Macon Ridge Maturity[1]	Red River Maturity[1]	Rice Station Maturity[1]	Central Station Height[2]	Dean Lee Height[2]	Iberia Height[2]	Macon Ridge Height[2]	NERS Silt Height[2]	Red River Height[2]	Rice Station Height[2]	Central Station Lodging[3]	Dean Lee Lodging[3]	Macon Ridge Lodging[3]	Red River Lodging[3]	Rice Station Lodging[3]	Dean Lee Greenstem[4]
BASF CZ 5282XF	115	120	124	112	113	35	45	29	50	29	32	38	4	2	2	1	0	1
Bayer AG53XF2	114	123	121	112	114	34	44	27	44	35	35	39	3	2	1	1	0	1
Delta Grow Seed DG50E10	110	117	121	112	111	36	40	26	46	30	31	37	4	3	3	1	0	2
Delta Grow Seed DG52E22	113	122	121	112	113	31	39	24	40	29	31	36	3	3	3	1	1	1
Delta Grow Seed DG52E80	116	119	124	112	114	34	36	22	38	27	30	35	3	2	2	1	0	1
Delta Grow Seed DG52X05RR2X	110	120	120	112	112	36	42	25	43	29	29	36	4	4	3	1	1	1
Delta Grow Seed DG53E30	112	120	122	112	113	36	38	23	43	28	29	36	4	3	1	1	0	1
Dyna-Gro S52XT91	114	120	120	112	114	29	39	22	42	31	34	37	3	2	2	1	0	1
Erwin-Keith/Progeny P 5003XF	109	119	120	112	111	33	39	23	36	36	30	36	5	3	3	1	2	2
Erwin-Keith/Progeny P 5121E3S	109	122	120	112	111	33	36	23	39	27	33	34	4	4	4	2	3	2
Erwin-Keith/Progeny P 5252RX	114	120	122	112	112	37	39	28	45	33	30	36	3	3	4	1	0	2
GDM DONMARIO DM51E62S	107	118	118	112	111	36	36	22	41	26	29	35	5	4	4	1	2	1
GDM DONMARIO DM51F62S	107	119	118	112	110	32	41	25	42	31	35	38	4	4	2	1	2	2
Local Seed Company LS5009XS	112	123	122	112	114	38	44	28	43	33	36	39	5	4	3	1	3	3
Local Seed Company LS5119XF	110	119	119	112	112	32	40	22	41	30	38	36	3	2	2	1	1	2
Local Seed Company LS5386X	116	121	124	112	115	30	40	25	44	28	35	38	3	2	1	1	1	1
Syngenta NK S53-F7X	117	121	124	112	115	34	45	24	45	36	35	38	4	2	2	1	1	1
University of Missouri S16-11651C	112	120	124	113		30	39	23	37	34	33		5	4	2	1		4
University of Missouri S16-14801C	110	118	121	112	110	29	38	22	37	34	30	32	5	5	4	3	2	2
University of Missouri S16-3747RY	110	118	122	113	110	28	36	22	34	36	30	32	4	3	4	2	2	4
University of Missouri S16-7840C	111	118	123	112	110	32	47	27	39	35	34	36	5	4	4	4	2	4
University of Missouri S16-9090C	113	122	123	112	112	32	39	21	36	37	33	36	5	4	4	3	1	2
University of Missouri S16-9478C	113	121	121	114	112	33	40	23	34	32	31	33	5	4	3	2	2	4
Location Average	112	120	121	112	112	33	40	24	41	31	32	36	4	3	3	1	1	2
LSD (P=.05)	3.0	2.5	0.7	1.0	1.5	4.5	4.1	2.9	4.1	NS	3.7	3.0	1.1	0.9	0.6	1.2	1.8	1.4
Standard Deviation	1.8	1.8	0.3	0.6	1.1	2.2	2.9	1.8	2.5	3.8	2.3	2.1	0.5	0.6	0.4	0.8	1.3	1.0
CV	1.6	1.5	0.3	0.6	1.0	6.6	7.3	7.3	6.0	12.1	7.0	5.9	13.8	20.0	14.5	52.6	124.6	55.7

[1] *Maturity (R8 - 95% brown pods; days after planting).*
[2] *Plant height in inches.*
[3] *Lodging (1-5): 1=almost all plants erect, 5=all plants down.*
[4] *Greenstem (1-5): 1= < 5% greenstem, 5= > 95% greenstem.*

Table 4C: MG 5.0-5.3 - Disease Tolerance (With and Without Fungicide).

Variety	Macon Ridge TRD[1]	Macon Ridge CLB[2]	Dean Lee FE[3] Fungicide	Dean Lee FE[3] Untreated	Dean Lee Yield Fungicide	Dean Lee Yield Untreated
BASF CZ 5282XF	2.8	0.6	0.0	0.8	60.2	45.9
Bayer AG53XF2	2.3	3.0	0.3	2.8	63.7	39.1
Delta Grow Seed DG50E10	4.3	2.4	0.0	0.8	57.2	42.5
Delta Grow Seed DG52E22	3.3	3.4	0.0	0.8	62.1	44.8
Delta Grow Seed DG52E80	1.8	1.3	0.0	3.3	64.0	40.6
Delta Grow Seed DG52X05RR2X	3.3	1.6	0.0	0.3	61.4	49.5
Delta Grow Seed DG53E30	2.0	1.5	0.0	2.0	68.8	52.3
Dyna-Gro S52XT91	2.3	2.8	0.0	2.0	68.3	47.4
Erwin-Keith/Progeny P 5003XF	2.8	4.0	0.0	2.3	64.2	39.6
Erwin-Keith/Progeny P 5121E3S	1.8	1.9	0.0	2.3	62.9	48.5
Erwin-Keith/Progeny P 5252RX	4.5	3.6	0.0	4.5	62.9	42.6
GDM DONMARIO DM51E62S	3.0	2.9	0.0	1.5	58.3	42.5
GDM DONMARIO DM51F62S	2.5	4.4	0.0	3.5	59.1	42.5
Local Seed Company LS5009XS	0.8	2.6	0.0	1.0	64.6	53.7
Local Seed Company LS5119XF	2.5	5.3	0.0	1.3	60.8	48.6
Local Seed Company LS5386X	1.8	2.5	0.0	1.8	68.3	51.4
Syngenta NK S53-F7X	2.8	4.0	0.0	2.8	71.0	54.0
University of Missouri S16-11651C	1.8	1.9	0.0	1.8	65.2	53.3
University of Missouri S16-14801C	2.3	3.6	0.0	1.8	68.1	53.9
University of Missouri S16-3747RY	2.5	4.5	0.0	1.0	65.7	49.0
University of Missouri S16-7840C	1.5	2.6	0.0	2.5	68.3	53.4
University of Missouri S16-9090C	1.3	2.4	0.0	2.3	65.3	56.9
University of Missouri S16-9478C	2.5	4.3	0.0	0.3	64.4	48.5
Location Average	2.5	2.9	0.0	1.9	64.1	47.8
LSD (P=.05)	NS	0.8	NS	NS	5.7	6.7
Standard Deviation	1.4	0.6	0.1	2.1	4.0	4.7
CV	56.6	20.4	981.3	113.9	6.3	9.9

[1] Tap Root Decline (TRD)(0-9 scale): 0=no disease; 9=all plants showing symptoms.
[2] Cercospora Leaf Blight (CLB) (0-9 scale): 0=no disease; 5=20-40% foliar symptoms/20% defoliation; 9=completely defoliated.
[3] Frogeye Leaf Spot (FE) (0-9): 0=no disease; 9=all plants showing symptoms.

Table 5A. Highest Yielding Maturity Group 5.4-5.9 Soybean Varieties From Seven LSU AgCenter Research Stations.

Variety	Central Station	Dean Lee	Iberia	Macon Ridge	Northeast 1[1]	Northeast 2[1]	Red River	Rice Station	2021 Average[2]	2-Year Average	3-Year Average
BASF CZ 5552XF	47.5	57.2	28.9	52.4	69.2	44.6	**20.0**	46.5	45.8		
Bayer AG56XF2	52.3	**69.0**	28.8	**60.0**	**79.7**	45.4	**29.3**	55.8	52.5		
Delta Grow Seed DG54F20	52.7	**68.9**	30.6	53.3	**79.7**	51.3	16.3	56.7	51.2		
Dyna-Gro S56XT99	53.1	66.7	**32.7**	**63.4**	**74.0**	52.1	**29.7**	**63.2**	54.3	52.7	55.4
Erwin-Keith/Progeny P 5424XF	**55.2**	**68.6**	27.1	54.8	67.1	46.0	9.0	52.8	47.6		
Erwin-Keith/Progeny P 5521E3	48.8	**72.7**	28.4	56.2	**73.4**	49.9	**20.0**	49.3	49.8		
Erwin-Keith/Progeny P 5554RX	52.3	66.7	31.3	55.3	**72.1**	47.8	**27.3**	59.0	51.5	51.8	54.8
Erwin-Keith/Progeny P5604XF	**56.4**	66.6	29.8	**59.0**	**77.4**	48.9	**19.3**	57.2	51.8		
Local Seed Company LS5418XFS	52.5	59.8	31.7		65.3	46.2	**22.7**	58.9	48.2		
Local Seed Company LS5614XF	49.8	**72.5**	**38.1**	**60.1**	66.7	50.2	3.3	53.6	49.3		
Local Seed Company LS5909XFS		51.8	**34.9**		50.3	39.8	**18.5**	42.4	39.6		
Pioneer P54A54X	**60.5**	63.6	**34.0**	**62.1**	60.3	54.4	**21.7**	54.2	51.3	55.7	59.1
Pioneer P59A11SX	52.1	**69.1**	**37.1**	**62.4**	62.9	49.0	17.3	**64.0**	51.7		
Syngenta NK57-A3XF	51.4	**69.0**	**36.3**	**59.8**	**71.6**	46.6	9.0	57.7	50.2		
University of Arkansas R13-13997	50.6	64.7	32.4	**59.9**	**80.1**	49.4	13.3	**63.9**	51.8	54.4	
University of Arkansas R15-1587	51.6	**67.6**	31.3	**59.0**	**84.8**	60.1	**21.7**	**63.6**	55.0		
University of Arkansas UA54i19GT	46.5	63.4	27.7	**59.1**	68.0	49.1	**22.5**	57.6	49.2		
Location Average	52.1	65.7	31.8	58.4	70.7	48.9	18.9	56.3			
Soil Type	silt loam	silt loam	silty clay loam	silt loam	silt loam	Sharkey clay	sandy loam	silt loam			
LSD P=.05	6.5	5.2	5.6	4.7	13.4	NS	11.4	5.0			
Standard Deviation	4.6	3.7	3.9	3.3	8.0	7.7	6.8	3.5			
CV	8.8	5.6	12.3	5.7	11.3	15.9	36.1	6.2			

The 2021 OVT Trial was planted at these LSU AgCenter research stations: Dean Lee, Alexandria; Macon Ridge, Winnsboro; Northeast, St. Joseph; Red River, Bossier; Rice Research, Crowley; Iberia, New Iberia; and Central Research, Baton Rouge. Data was lost at some locations due to late maturity of some varieties at harvest.

All yields expressed in bushels per acre and adjusted to 13% moisture.

Bold — *Highest yielding (p=0.05) at this location in 2021.*

[1] *Northeast locations had two different soil types.*

[2] *Variety average from seven research stations and eight locations: Central, Dean Lee, Iberia, Macon Ridge, Northeast 1 (silt loam), Northeast 2 (Sharkey clay), Red River and Rice Station.*

Table 5B. MG 5.4-5.9 - Agronomic Data From Seven LSU AgCenter Research Stations.

Variety	Dean Lee Maturity[1]	Iberia Maturity[1]	Macon Ridge Maturity[1]	Red River Maturity[1]	Rice Station Maturity[1]	Central Station Height[2]	Dean Lee Height[2]	Iberia Height[2]	Macon Ridge Height[2]	NERS Silt Height[2]	Red River Height[2]	Rice Station Height[2]	Central Station Lodging[3]	Dean Lee Lodging[3]	Macon Ridge Lodging[3]	Red River Lodging[3]	Rice Station Lodging[3]	Dean Lee Greenstem[4]
BASF CZ 5552XF	111	122	128	119	112	25	37	22	40	28	35	27	3	3	2	1	0	0
Bayer AG56XF2	110	121	126	119	111	30	38	20	37	33	33	28	4	3	1	1	0	3
Delta Grow Seed DG54F20	113	119	128	118	112	27	33	18	35	33	30	26	3	2	1	1	0	1
Dyna-Gro S56XT99	111	121	122	119	113	31	37	19	36	31	33	26	4	2	1	1	0	4
Erwin-Keith/Progeny P 5424XF	114	118	128	117	112	28	32	17	34	29	30	27	4	2	1	1	0	2
Erwin-Keith/Progeny P 5521E3	116	132	130	117	117	44	52	34	50	35	38	41	5	4	4	1	1	2
Erwin-Keith/Progeny P 5554RX	107	120	127	119	113	28	35	19	36	31	30	27	4	3	1	1	0	4
Erwin-Keith/Progeny P5604XF	112	121	122	119	114	31	36	19	37	30	31	27	3	3	1	1	0	3
Local Seed Company LS5418XFS	117	124	122	117	118	38	50	33	52	39	42	40	4	3	2	1	1	0
Local Seed Company LS5614XF	117	119	123	116	115	26	32	21	32	26	24	23	2	2	1	1	0	0
Local Seed Company LS5909XFS	129	131		122	120	45	59	42	61	40	44	41	5	5	4	1	3	5
Pioneer P54A54X	111	119	122	118	111	27	35	21	35	32	31	22	4	3	3	1	0	2
Pioneer P59A11SX	128	130	130	119	120	32	38	25	42	29	32	27	3	3	2	1	0	5
Syngenta NK57-A3XF	113	120	124	116	116	24	35	18	36	27	29	26	3	2	2	1	0	0
University of Arkansas R13-13997	112	123	129	117	112	28	36	21	36	33	33	29	5	3	2	2	0	3
University of Arkansas R15-1587	110	122	128	118	112	26	34	21	35	30	32	26	4	2	2	1	0	2
University of Arkansas UA54i19GT	111	126	128	118	112	35	43	29	45	35	37	35	3	2	1	1	1	4
Location Average	114	123	126	118	114	31	39	24	40	32	33	29	3	3	2	1	0	2
LSD (P=.05)	3.5	2.7	0.8	1.8	1.3	6.4	3.5	3.1	3.4	7.3	4.4	3.3	1.2	0.7	0.4	NS	0.8	1.1
Standard Deviation	2.1	1.9	0.4	1.1	0.9	3.0	2.4	1.9	2.0	3.4	2.7	2.3	0.6	0.5	0.2	0.6	0.6	0.8
CV	1.8	1.5	0.3	0.9	0.8	9.7	6.3	7.9	5.1	10.9	8.0	8.1	16.7	17.0	12.8	51.9	208.1	34.9

[1] Maturity (R8 - 95% brown pods; days after planting).
[2] Plant height in inches.
[3] Lodging (1-5): 1=almost all plants erect, 5=all plants down.
[4] Greenstem (1-5): 1= < 5% greenstem, 5= > 95% greenstem.

Table 5C: MG 5.4-5.9 - Disease Tolerance (With and Without Fungicide).

Variety	Macon Ridge TRD[1]	Macon Ridge CLB[2]	Dean Lee FE[3] Fungicide	Dean Lee FE[3] Untreated	Dean Lee Yield Fungicide	Dean Lee Yield Untreated
University of Arkansas UA54i19GT	2.3	1.9	0.3	1.0	63.4	41.4
University of Arkansas R15-1587	1.0	3.3	0.0	1.3	67.6	50.2
University of Arkansas R13-13997	1.0	3.1	0.0	0.3	64.7	51.4
Local Seed Company LS5418XFS	2.0	1.0	0.0	0.0	59.8	50.0
Syngenta NK57-A3XF	3.0	3.0	0.0	2.3	69.0	54.4
Local Seed Company LS5909XFS	1.8	1.1	0.0	0.5	51.8	42.4
Dyna-Gro S56XT99	3.5	3.1	0.0	0.3	66.7	53.0
Pioneer P54A54X	3.5	2.4	0.0	0.3	63.6	46.7
Delta Grow Seed DG54F20	1.3	3.9	0.0	0.5	68.9	49.7
Local Seed Company LS5614XF	0.8	2.4	0.3	1.0	72.5	51.4
BASF CZ 5552XF	2.5	2.8	0.0	0.0	57.2	40.5
Erwin-Keith/Progeny P 5554RX	2.0	3.6	0.0	0.3	66.7	50.5
Erwin-Keith/Progeny P5604XF	3.3	2.4	0.3	1.5	66.6	54.4
Erwin-Keith/Progeny P 5424XF	2.3	4.0	0.0	0.0	68.6	50.5
Erwin-Keith/Progeny P 5521E3	1.5	2.1	0.0	0.3	72.7	51.8
Bayer AG56XF2	3.0	2.3	0.0	2.0	69.0	57.5
Pioneer P59A11SX	2.8	2.8	0.0	0.0	69.1	53.7
Location Average	2.2	2.7	0.1	0.7	65.7	50.0
LSD (P=.05)	1.4	NS	NS	NS	5.2	7.1
Standard Deviation	1.0	1.4	0.2	1.3	3.7	5.0
CV	45.2	51.8	485.9	189.8	5.6	10.0

[1] Tap Root Decline (TRD)(0-9 scale): 0=no disease; 9=all plants showing symptoms.
[2] Cercospora Leaf Blight (CLB) (0-9 scale): 0=no disease; 5=20-40% foliar symptoms/20% defoliation; 9=completely defoliated.
[3] Frogeye Leaf Spot (FE) (0-9): 0=no disease; 9=all plants showing symptoms.

Table 6A. Summary of 2021 On-farm MG 3.8-4.4 Soybean Core-Block Demonstrations at Two Locations. Yields Are in Bushels per Acre Adjusted to 13% Moisture.

Variety	Franklin	Rapides
Bayer AG38XF1	52	57
Bayer AG40XF1	49	50
Pioneer P42A96X	56	51
Syngenta NK S44-C7X	59	59
Location Average	**54**	**54**
Soil Type	Silt loam	Silt loam
Planting Date	5/25/21	6/10/21

Table 6B. Summary of 2021 On-farm MG 4.5-4.9 Soybean Core-Block Demonstrations at Eight Locations. Yields Are in Bushels per Acre Adjusted to 13% Moisture.

Variety	Avoyelles	East Baton Rouge	Franklin	Pointe Coupee	Rapides	Richland	Tensas	West Carroll
Bayer AG45XF0	46	52	42	62	55	87	39	62
Bayer AG48X9	36	54	42	63	56	81	50	66
Delta Grow 48X45	43	43	53	66	59	98	41	65
Delta Grow DG46X65RR2X	55	52	53	62	61	85	50	68
Dyna-Gro S48XT90	45	51	48	58	59	85	53	63
Pioneer P46A86X	45	49	53	64	60	99	52	71
Pioneer P47A64X	46	58	54	66	63	97	52	69
Progeny P4806XFS	47	52	47	61	55	90	59	65
Progeny P4821RX	56	46	47	62	55	90	43	67
Syngenta - NK S47-Y9X			52	61	64		41	67
Syngenta - NK S49-F5X	59	39	50	64	61	91	50	66
University of Missouri S14-15146GT	42	49		55	51			
Location Average	**47**	**49**	**49**	**62**	**58**	**90**	**48**	**66**
Soil Type	Clay loam	Silt loam	Silt loam	Silt loam	Silt loam	Silt loam	Silt loam	Silt clay
Planting Date	5/29/21	6/12/21	5/25/21	5/31/21	6/10/21	5/7/21	5/18/21	4/27/21

Table 6C. Summary of 2021 O-farm MG 5.0-5.6 Soybean Core-Block Demonstrations at Four locations. Yields Are in Bushels per Acre Adjusted to 13% Moisture.

Variety	Avoyelles	East Baton Rouge	Franklin	Rapides
Bayer AG53XF2	55	47	50	64
Bayer AG56XF2	51	49	54	62
Delta Grow 52E22		44	35	54
Delta Grow DG 52X05R-R2X	66	50	43	59
Dyna-Gro S56XT99	59	52	58	66
Pioneer P54A54X	60	52	62	57
Progeny P5424XF	57	48	53	59
Progeny P5554RX		51	60	61
Syngenta - NK S53-F7X	59	52	48	61
Location Average	**58**	**49**	**52**	**60**
Soil Type	Clay loam	Silt loam	Silt loam	Silt Loam
Planting Date	5/29/21	6/12/21	5/25/21	6/10/21

Table 7A. Summary of 2021 Soybean Nematode Resistance Demonstration in Concordia. Yields are Expressed in Bushels per Acre (13% Moisture).

R/T1 or Susceptible		Nematode Assay at Planting				In Season Nematode Assay - August 25, 2021		Yield
Variety	Root-Knot	Root-Knot	Reniform	Stunt	Lesion	Root-Knot juveniles / 500 mL soil	Root-Knot eggs / plant	Bu/A
Dyna Grow 48XT-40	R/T	160	0	320	80	2,240	4,278	74
Syngenta S47Y9X	Susceptible	320	0	80	0	15,360	7,770	62
Syngenta S45J3X	R/T	3,040	160	40	80	19,520	3,302	79
Pionner P46A35X	R/T	0	0	80	40	2,880	520	76
1R/T - Resistant or Tolerant								

Table 7B. Summary of 2021 Soybean Nematode Resistance Demonstration in Morehouse. Yields are Expressed in Bushels per Acre (13% Moisture).

R/T1 or Susceptible		Nematode Assay at Planting						Nematode Assay at Harvest						Yield
Sample ID	Root-Knot	Root-Knot	Lesion	Stunt	Spiral	Ring	Reniform	Root-Knot	Lesion	Stunt	Spiral	Ring	Reniform	Bu/A
Syngenta S45-J3X	R/T	200	0	300	0	0	0	0	40	440	0	0	0	62
Syngenta S47-Y9X	Susceptible	200	0	850	0	0	0	640	40	200	0	0	0	64
Dyna-Gro 48XT40	R/T	400	0	550	0	0	0	0	40	200	0	0	0	64
Pioneer P46A35X	R/T	0	0	250	0	0	0	960	0	200	0	0	0	67
1R/T - Resistant or Tolerant														

Seed Companies and Varieties.

BASF	Bayer Crop-Science	Delta Grow Seed	Dyna-Gro	GDM-Seeds	Great Heart Seed	Local Seed	NK (Syngenta)	Pioneer	Progeny Ag	UniSouth Genetics	University of Arkansas	University of Missouri	WinField United
CZ 4202XF	AG38XF1	DG46E10	S43XS70	DONMARIO DM51F62S	GT-4677XS	LS4415XF	NK39-A1XF	P42A96X	P 4431E3	USG 7461XFS	R13-13997	S09-13608C	Armor 44-D49
CZ 4562XF	AG40XF1	DG46X65RR2X	S46XS60	DONMARIO DM51E62S	GT-4828X	LS4517XFS	S44-C7X	P46A35X	P 4444RXS	USG 7472XFS	R15-2422	S14-15146GT	Armor 46-F13
CZ 4742XF	AG43XF2	DG46E10	S46XF31S		GT-4979X	LS4606XFS	NK45-P9XF	P46A86X	P 4541E3S	USG 7491XFS	R15-1587	S16-12137C	Armor 46-D09
CZ 4892XF	AG45XF0	DG46F17/STS	S48XT40			LS4795XS	S45J3X	P47A64X	P 4501XFS		R16-253	S16-5540R	Armor 48-F22
CZ 4912XF	AG47XF0	DG47E20/STS	S48XT90			LS4805XFS	NKS47-Y9X	P49A41L	P 4505RXS		UA46i20C	S16-5503R	Armor 48-D25
CZ 5282XF	AG48XF0	DG48E49/STS	S49XT70			LS4806XS	S49-F5X	P54A54X	P 4521XFS		UA54i19GT	S16-8898C	Armor 48-D03
CZ 5552XF	AG48X9	DG48X45RR2X	S52XT91			LS4919XFS	S53-F7X	P59A11SX	P 4604XFS			S16-7922C	
	AG48XF2	DG48E59	S56XT99			LS5009XS	NK57-A3XF		P 4775E3S			S16-3747RY	
	AG53XF2	DG48F20				LS5119XF			P 4816RX			S16-14801C	
	AG56XF2	DG49F22/STS				LS5386X			P 4821RX			S16-7840C	
		DG49E20				LS5418XFS			P 4851RX			S16-9090C	
		DG49E90				LS5614XF			P 4806XFS			S16-9478C	
		DG50E10				LS5909XFS			P 4921XF			S16-11651C	
		DG52X05RR2X							P 4931E3S			S17-2243C	
		DG52E22							P 4970RX			S17-2193C	
		DG52E80							P 5003XF				
		DG53E30							P 5121E3S				
		DG54F20							P 5252RX				
									P 5424XF				
									P5424XF				
									P 5521E3				
									P 5554RX				
									P5604XF				

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