

Hybrid Selection

The LSU AgCenter conducts yearly grain sorghum hybrid yield tests at several locations around the state. The data in Table 1 are yields of grain sorghum hybrids in 2011 from five locations along with two-year data across all locations where available. This aggregation is compiled to provide grain sorghum producers in Louisiana with unbiased information on hybrid performance under different soil types and climatic conditions.

Grain Yield

Most producers agree that grain yield is the most important characteristic on which to base hybrid selection. The data in Table 1 provide current year and two-year averages, when available. Performance of top-yielding hybrids is indicated by footnotes in Table 1. Hybrids are listed alphabetically and not in order of performance. Since hybrids do not perform the same in different environments, choose among the hybrids that performed well overall and from the location that most closely fits your growing conditions.

Maturity Group

Grain sorghum hybrids were tested in 2011 at research stations near Alexandria, Baton Rouge, Crowley, St. Joseph and Winnsboro. Grain sorghum growth and development are controlled primarily by exposure to accumulated heat units. This means that days from planting to maturity may change based on seasonal temperature variation from year to year, from location to location, and may be influenced by date of planting at a given location. By noting the heading date (days from planting to heading) and the harvest moisture in Table 2, you can determine the relative maturity of the hybrid in question. For example, if two have heading dates of 61 days, but variety A was harvested at 14 percent moisture and variety B was harvested at 12 percent moisture, variety B will probably mature earlier under normal field conditions.



Other Agronomic Characteristics

Information on plant height, head type and days to heading is found in Table 2.

Plant height is associated with how well a hybrid can resist lodging, but it is not the only factor involved. Generally, shorter hybrids have greater standability, but there are exceptions.

Days to heading, along with harvest moisture, provides a relative measure of maturity among hybrids. However, there is not a perfect correlation between heading date and final maturity date.

Head type, or compactness, is an important characteristic in Louisiana grain sorghum production. Normally, more open-headed varieties will have fewer problems with grain mold, mildew and sprouting as the grain approaches maturity. More open-headed

varieties allow more air movement through the head and thus have a lower moisture level. This is especially important when sorghum is maturing during periods of high rainfall and relative humidity, which occur frequently in Louisiana. Additionally, when it is necessary to apply an insecticide to the grain sorghum head, better control is often obtained with the more open-headed hybrids because they allow for greater penetration of the insecticide through the head.



Fertilization

The soil pH should be at least 5.8 for optimal production of grain sorghum. Nitrogen can be applied preplant or at planting, or the split application method can be adopted. Nitrogen should be applied between 100-120 pounds per acre on alluvial soils or 80-100 pounds per acre on upland soils. If split applications are made, the second application should be made by the 6-8 leaf stage of growth. Phosphate and potash should be applied preplant or at planting when it is recommended by a soil test.

Planting Rate and Depth

Grain sorghum should be planted at a rate of approximately 75,000 seed per acre. This is the equivalent of 5-6 seeds per foot of row on 40-inch rows, 4-5 seeds per foot of row on 30-36 inch rows or 3-4 seeds per foot of row on 20-inch rows. If rows are 10 inches or narrower, 3 seeds per foot of row should be adequate. It will be necessary to calibrate the planter to the proper planting rate rather than just plant a certain weight of seed per acre because hybrids can vary greatly in seed size – as much as 4 to 7 pounds of seed per acre. Seed should be placed deep enough to reach soil moisture, but no deeper than 2 inches. Best depth is $\frac{3}{4}$ - 1 $\frac{1}{2}$ inches deep.

Planting Date

Plant grain sorghum as early as possible within the recommended planting date period. In south Louisiana, the recommended planting range is between April 1 and May 1. In north Louisiana, the range is between April 15 and May 15. Early planting is one of the most important cultural practices a producer can adopt to maximize grain sorghum yields, as yields decrease greatly with later planting dates. Just as importantly, later planted crops will normally be subjected to more severe insect (especially sorghum midge) and disease pressures. When the option is to plant soybeans or grain sorghum after June 15, it is usually better to plant soybeans than grain sorghum.

Acknowledgements

- John S. Kruse, Assistant Professor/Specialist (Dean Lee Research Station)
- H.J. “Rick” Mascagni, Professor and Coordinator (Northeast Research Station)
- Sterling “Brooks” Blanche, Assistant Professor (Dean Lee Research Station)
- Mille DeLoach, Research Associate (Dean Lee Research Station)
- Steve Harrison, Professor, School of Plant, Environmental & Soil Sciences (Baton Rouge)
- Clayton Hollier, Professor, Department of Plant Pathology & Crop Physiology (Baton Rouge)
- Dustin Harrell, Assistant Professor (Rice Research Station)
- B. Rogers Leonard, Professor (Macon Ridge Research Station)
- Boyd Padgett, Professor (Macon Ridge Research Station)



Table 1. Yields of grain sorghum hybrids in 2011 among five locations.¹

Brand/Hybrid	Alexandria	Baton Rouge	Crowley	bu/acre		Average	2-year AVG
				St. Joseph	Winnsboro		
Dekalb DKS49-45	152*	90	90	85*	76*	98	97
Dekalb DKS53-67	152*	101*	98*	88*	79*	103	102
Dyna-Gro DG771B	144	77	94*	70	63	90	89
Dyna-Gro DG772B	142	95*	74	74	66	90	
Dyna-Gro DG780B	133	68	90	86*	61	87	92
Pioneer 84G62	159*	93	103*	75	78*	102	100
Terral TV94S91	135	82	88	68	65	88	
Terral TV96H81	149	97*	87	77	66	95	93
Terral TV96H95	142	82	90	69	65	90	87
Terral TV93S16	146	85	94*	75	63	92	
Average	145	87	91	77	68		

¹Table includes 2011 yield data by location with two-year average, where available.

*Highest yielding (P=0.10) at this location in 2011.

Table 2. Agronomic data for grain sorghum hybrids in 2011.¹

Brand/hybrid	Harvest Moisture (%)	Test Weight (lbs./bu.)	Mid-Head²	Plant Height³	Head Type⁴	Head Exertion⁵	Bird⁶
	%	lb/bu	DAP	in	1-5	in	%
Dekalb DKS49-45	17.8	59.4	61	52	3	6	5
Dekalb DKS53-67	19.6	59.9	63	51	2.5	6	5
Dyna-Gro DG771B	17.3	56.6	60	49	3	6	10
Dyna-Gro DG772B	17.9	58.2	61	48	4	7	5
Dyna-Gro DG780B	20.7	60.1	68	55	1	6	5
Pioneer 84G62	18.1	59.6	62	49	3	4	5
Terral TV93S16	18.7	57.8	61	48	3.5	6	5
Terral TV94S91	18.4	56.1	62	50	3.5	8	5
Terral TV96H81	17.2	57.8	60	51	1.5	5	10
Terral TV96H95	17.5	56.4	59	48	3	6	5
Average	18.3	58.2	62	50	3	6	5
CV, %	5.9	0.9	2.7	5.0	16.7	31.1	71.4
LSD (0.10)	0.9	0.7	2	2	1	2	5

¹Data from Northeast Research Station, St. Joseph, for 2011. Trial furrow-irrigated once, June 6.

²Mid-head is the date of head emergence in number of days after planting.

³Plant height from ground to top of head, inches.

⁴Head type: 1=most compact 3=intermediate 5=most open

⁵Head exertion is distance between flag leaf and base of head in inches.

⁶Bird damage reported as percentage of seed head damage.

Louisiana State University Agricultural Center

William B. Richardson, Chancellor

Louisiana Agricultural Experiment Station

John S. Russin, Vice Chancellor and Director

Louisiana Cooperative Extension Service

Paul D. Coreil, Vice Chancellor and Director

Pub. 2831

11/11 Rev.

The LSU AgCenter is a statewide campus of the LSU System and provides equal opportunities in programs and employment.

Visit our website:
www.lsuagcenter.com