

# Grain Sorghum Hybrids for Grain



## Hybrid Selection

The Louisiana Agricultural Experiment Station conducts yearly grain sorghum hybrid yield tests at several locations around the state. This is done to provide grain sorghum producers in Louisiana with unbiased information on hybrid performance under different soil types and climatic conditions.

Using this information should allow producers to choose hybrids which have displayed good yield potential and agronomic performance. Information on these characteristics is provided:

## Grain Yield

Grain yield is probably the most important characteristic on which to base hybrid selection. The data in Table 1 present two-year average yield information for hybrids recommended by the Louisiana State University Agricultural Center Grain Sorghum Committee.

Hybrid recommendations are based on two years of yield test information. Any hybrid whose two-year average yield falls within 90% of the average yield of the top three hybrids by location is given a recommendation provided it is acceptable in other agronomic characteristics.

Hybrids are listed alphabetically and not in order of performance. Since hybrids do not perform the same in different environments, choose among the recommended hybrids from the location that most closely fits your growing conditions.

## Maturity Group

In 2001 hybrids were tested at Alexandria, Bossier City, St. Joseph and Winnsboro. Two-year data were available at Alexandria, Bossier City and Winnsboro only. 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 they may be influenced by date of planting at a given location in a given year.

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 varieties have heading dates of 61 days, but variety A was harvested at 14% moisture and variety B was harvested at 12% moisture, then variety B will probably mature earlier in field conditions.

## Other Agronomic Characteristics

Information on plant height, head compactness and days to heading is 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 gives a relative measure of maturity among the hybrids. However, there is not a perfect correlation between heading date and final maturity date.

Head compactness is an important characteristic in Louisiana grain sorghum production. Normally, more open-headed sorghums 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.

Also, 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 throughout the head.

#### Fertilization

It is important that soil pH be at least 5.8 for profitable production of grain sorghum. Nitrogen can be applied before or at planting or the split application method can be used. Recommended amounts of nitrogen are 80-100 pounds per acre on upland soils, and 100-120 pounds per acre on alluvial soils. If split applications are made, the second application should be made by the 6 to 8 leaf stage of growth. Phosphate and potash should be applied preplant or at planting and should be used only if recommended by a soil test. If a second crop is to be harvested the phosphate and potash rates should be increased by 10%-12% and 30-45 pounds of N applied after first harvest.

#### Planting Rate and Depth

Grain sorghum should be planted at a rate of about 75,000 seed per acre. This equals about 5-6

seed per foot of row on 40-inch rows, 4-5 seed per foot of row on 30- to 36- inch rows or 3-4 seed per foot of row on 20-inch rows. If rows are 10 inches or narrower, 3 seed per row foot should be adequate. It is 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. Depending on seed size, this can vary from as few as 4 pounds to as many as 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  $\frac{3}{4}$ -1½ inches deep.

#### Planting Date

Plant grain sorghum as early as possible (within the planting date recommendations range). In south Louisiana, the recommended date of planting range is between April 1 and May 1. In north Louisiana, the range is April 15 to May 15. Early planting is one of the most important cultural practices used to maximize grain sorghum yields. Yield potential of sorghum is greatly decreased with later planting dates. Also, later plantings 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 better to plant soybeans than grain sorghum.



Table 1. Yields of Recommended Grain Sorghum Hybrids\*

Brand Name and Hybrid		Locations**		
		BC	WI	AL
Asgrow	A459	--	3690	5903
Dekalb	DK52	--	3804	--
Dekalb	DK53	4646	3806	--
Dyna-Grow	751B	4577	--	6273
Dyna-Grow	762B	***	4012	5933
Dyna-Grow	780B	4872	--	5546
Golden Acres	444E	--	3888	6197
Pioneer	8282	4646	3933	5742
Pioneer	83G66	5320	3871	5663
Southern States	800	4956	3698	--
Terral	TV1050	4563	3689	5602
Terral	TV9421	4870	4311	5989

\* Yields are two-year averages (1999 and 2001) in pounds per acre. A "--" indicates that hybrid is not recommended at that location.

\*\* Data from Red River Research Station, Bossier City (BC), Macon Ridge Research Station, Winnsboro (WI) and Dean Lee Research Station, Alexandria (AL), respectively.

\*\*\* Data missing from Bossier City location because of bird damage.

Table 2. Agronomic Data for Recommended Grain Sorghum Hybrids for Grain\*

Brand Name and Hybrid		Percent Moisture <sup>1</sup>	Test Weight <sup>1</sup>	Plant Height <sup>1</sup>	Heading Date <sup>1</sup>	Head Type <sup>1</sup>
Asgrow	A459	13.1	56.3	44	68	2.5
Dekalb	DK52	14.7	56.1	40	66	3.9
Dekalb	DK53	15.4	57.7	42	68	3.1
Dyna-Grow	751B	14.7	56.7	44	67	1.5
Dyna-Grow	762B <sup>2</sup>	14.4	54.4	40	67	3.5
Dyna-Grow	780B	14.3	57.8	43	69	1.5
Golden Acres	444E	14.1	53.6	38	67	4.0
Pioneer	8282	14.9	55.9	42	68	4.1
Pioneer	83G66	15.5	56.2	39	67	2.9
Southern States	800	14.0	53.4	38	67	3.1
Terral	TV1050	14.1	54.5	41	68	2.4
Terral	TV9421	14.3	53.7	38	66	3.5

\* Heading date is the number of days from planting to heading. Test weight is pounds per bushel. Plant height is in inches. Head type: 1 = most compact, 3 = intermediate and 5 = most open.

<sup>1</sup> Average of all locations 2001

<sup>2</sup> Data missing from Bossier City location because of bird damage.

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