MISSISSIPPI GRAIN SORGHUM

VARIETY TRIALS, 2025

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MISSISSIPPI'S OFFICIAL VARIETY TRIALS

MISSISSIPPI STATE UNIVERSITY™
MS AGRICULTURAL AND
FORESTRY EXPERIMENT STATION

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This report contains data generated as part of the Mississippi Agricultural and Forestry Experiment Station research program. Trade names of commercial products used in this report are included only for clarity and understanding.

Mississippi Grain Sorghum Variety Trials, 2025

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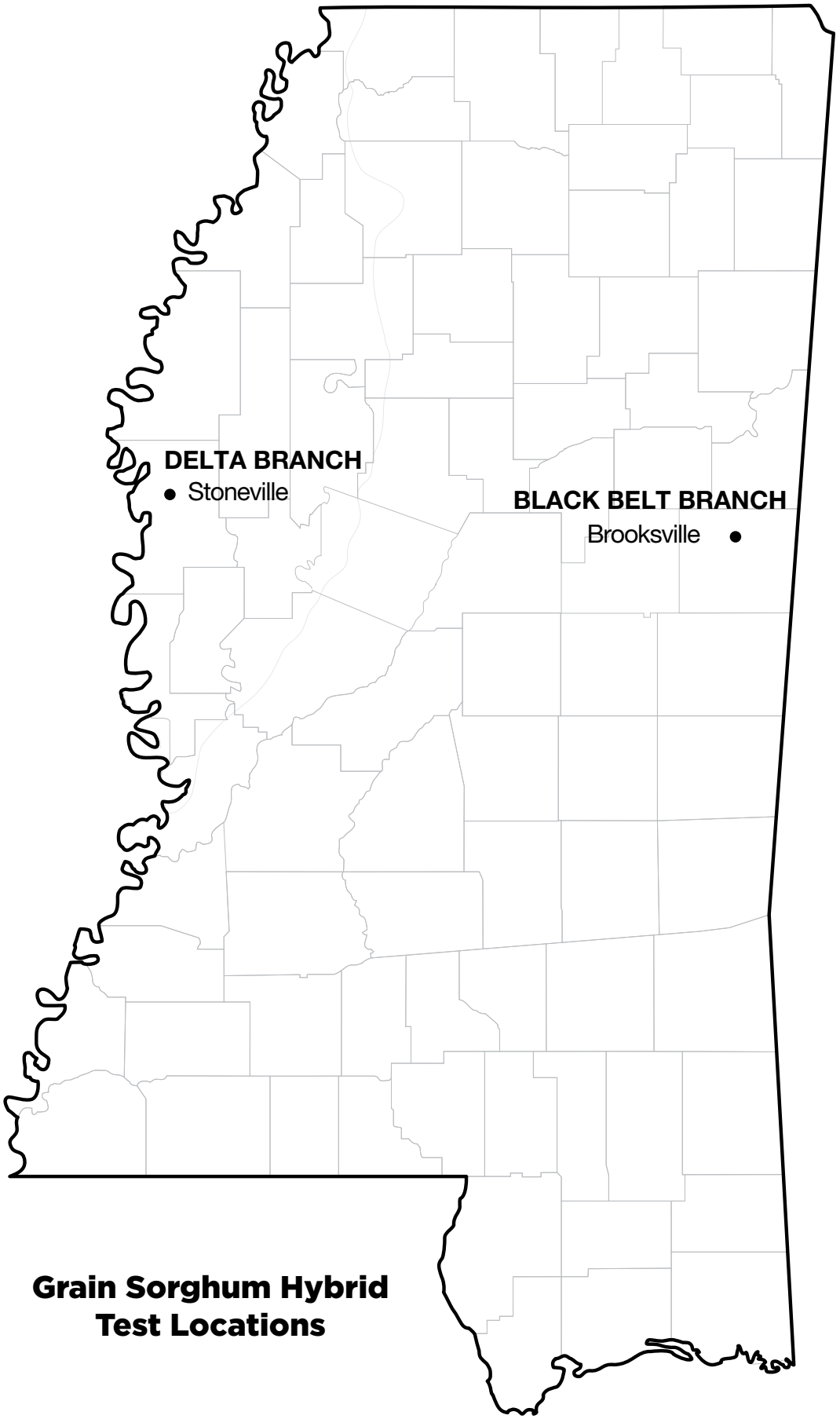
Find variety trial information online at ***mafes.msstate.edu/variety-trials.***



Grain Sorghum Hybrid Test Locations

Mississippi Grain Sorghum Variety Trials, 2025

PROCEDURES

Trials were conducted on Mississippi Agricultural and Forestry Experiment Station branches in two geographical areas: Area I, located in the hill region of Mississippi; and Area II, located in the Delta region of Mississippi. Commercial seed companies were given the opportunity to enter hybrids in the trial.

Plots consisted of various row patterns, depending on the location. Plot sizes were one of the following: (1) two 40-inch-wide, 16-foot-long rows; or (2) three 19-inch-wide, 16-foot-long rows. These planting patterns were used to accommodate the producer at each location.

Weeds were controlled by cultivation and/or herbicides. Only herbicides currently registered for use on grain sorghum were used in these studies, with strict adherence to all label instructions.

Experimental design was a randomized complete block with four replications at each location.

Seed of all entries were supplied by participating companies. All seed were packaged for planting at seeding rates suggested by the participating company and planted with a cone planter. Fertilizer was applied according to soil test recommendations.

GRAIN SORGHUM PERFORMANCE MEASUREMENTS

YIELD

An Almaco plot combine was used to harvest the total area of each plot. Harvested grain was weighed, moisture was determined, and yields were converted to bushels per acre at 14% moisture.

HEAD EXERTION

This measurement is the average distance in inches from the flag leaf to the base of the panicle.

GRAIN MOISTURE

This measurement is expressed as a percent moisture of grain at harvest.

PLANT HEIGHT

This measurement is the average height in inches from the soil surface to the top of the grain head.

HEAD COMPACTNESS

This variable was measured on a 1–5 scale: 1 = head short and oval; 2 = head long and slender; 3 = head elongated and oval; 4 = head elongated and rectangular; and 5 = head elongated and open.

USE OF DATA TABLES AND SUMMARY STATISTICS

The yield potential of a given hybrid cannot be measured with complete accuracy. Consequently, replicate plots of all hybrids are evaluated for yield, and the yield of a given hybrid is estimated as the mean of all replicate plots of that hybrid. Yields vary somewhat from one replicate plot to another, which introduces a certain degree of error to the value. As a result, although the mean yields of some hybrids are numerically different, the two hybrids may not be significantly different from each other within the range of natural variation. That is, the ability to measure yield is not precise enough to determine what the small differences are, other than what might be observed purely by chance. The least significant difference (LSD) is an estimate of the smallest difference between two hybrids that can be declared to be the result of something other than random variation in a particular trial. Consider the following example for a given trial:

Hybrid	Yield
A	90 bu/A
B	85 bu/A
C	81 bu/A
LSD	7 bu/A

The difference between hybrid A and hybrid B is 5 bu/A (i.e., 90 - 85 = 5). This difference is smaller than the LSD (7 bu/A). Consequently, we would conclude that hybrid A and hybrid B have the same yield potential, since we are unable to say that the observed difference did not occur purely due to chance. However, the difference between hybrid A and hybrid C is 9 bu/A (i.e., 90 - 81 = 9), which is larger than the LSD (7bu/A). We would therefore conclude that the yield potential of hybrid A is superior to that of hybrid C.

The coefficient of variation (CV) is a measure of the relative precision of a given trial and is used to compare the relative precision of different trials. The CV is generally considered an estimate of the amount of unexplained variation in a given trial. This unexplained variation can be the result of variation between plots with respect to soil type, fertility, insects, diseases, moisture stress, etc. Overall, as the CV increases, the precision of a given trial decreases.

The coefficient of determination (R^2) is another measure of the level of precision in a trial and is also used to compare the relative precision of different trials. The R^2 is a measure of the amount of variation that is explained, or accounted for, in a given trial. For example, an R^2 value of 90 percent indicates that 90 percent of the observed variation in the trial has been accounted for in the trial, with the remaining 10 percent being unaccounted for. The higher the R^2 value, the more precise the trial. The R^2 is generally considered a better measure of precision than the CV for comparison of different trials.

RESULTS

Table 1. 2025 MAFES OVT grain sorghum locations and dates.

Location	Soil Type	Planting Date	Harvest Date	Soil pH	Soil Fertility	Fertilizer, Herbicide & insecticide Applications
Stoneville	Bosket very fine sandy loam	6/3/25	9/16/25	6.5	P-M, K-M	Preemerge- Atrazine @ 48 oz/A, Dual Magnum @ 24 oz/A on June 3. Postemergence- Atrazine @ 48 oz/A, Dual Magnum @ 22 oz/A on July 1. Sidedress- N @ 120 lbs/A (32% UAN) on July 15. Insecticide(s)- Alias @ 2 oz/A on June 21; Vantacor @ 1.2 oz/A, Karate @ 1.5 oz/A on July 8; Warrior II @ 1.5 oz/A on July 28; Transform @ 1.5 oz/A on Aug. 1.
Brooksville	Brooksville silty clay	5/2/25	10/3/25	6.7	P-M, K-M	Preemerge- Lexar @ 2 qt/A, Gramoxone @ 1 qt/A on May 2. Postemergence- Atrazine @ 1 qt/A and Dual Mag @ 24 oz/A. Topdress- 33-0-0-12S @ 300 lbs/A on June 23.

Table 2. Hybrids entered in MAFES grain sorghum hybrid trials, 2025.

Brand	Hybrid #	Plant Population (x1000)	Days to Maturity
DEKALB	DKC51-01	90K	114
DEKALB	DKC54-07	90K	116
DEKALB	DKC50-07	90K	113
DEKALB	DKC44-07	90K	110
Dyna-Gro Seed	M72GB71	90K	115
Dyna-Gro Seed	M66GR32	90K	106
Dyna-Gro Seed	M62GB36	90K	100
Dyna-Gro Seed	M70GR37	90K	112

Table 3. 2025 Yield summary of MAFES grain sorghum hybrid trials in Mississippi.				
Brand	**Hybrid**	**Stoneville Delta (loam)**	**Brooksville Hills (clay)**	**Overall Average**
		bu/A	**bu/A**	**bu/A**
DeKalb	DKC51-01	86.1	49.8	68.0
DeKalb	DKC54-07	104.9	32.0	68.4
DeKalb	DKC50-07	74.6	41.7	58.1
DeKalb	DKC44-07	87.6	38.3	62.9
Dyna-Gro	M72GB71	91.7	29.4	60.5
Dyna-Gro	M66GR32	88.7	46.9	67.8
Dyna-Gro	M62GB36	83.7	45.3	64.5
Dyna-Gro	M70GR37	83.1	40.7	61.9
MEAN		87.5	40.5	64.0
CV		15.6	5.2	
R^2		36	95	
LSD (0.05)		NS	8.48	
Error DF		21	7	

Table 4. Two-year summary of MAFES grain sorghum hybrid trials in Mississippi.				
Brand	**Hybrid**	**Stoneville**	**Brooksville**	**Overall Average**
		bu/A	**bu/A**	**bu/A**
DeKalb	DKC51-01	104.1	75.9	90.0
DeKalb	DKC54-07	124.9	82.1	103.5
DeKalb	DKC50-07	96.6	76.0	86.3
Dyna-Gro	M72GB71	109.9	78.6	94.2
Dyna-Gro	M66GR32	102.2	69.9	86.1
Dyna-Gro	M62GB36	94.3	68.5	81.4
Dyna-Gro	M70GR37	109.5	81.3	95.4
OVERALL MEAN		105.9	76.0	91.0

Table 5. Three-year summary of MAFES grain sorghum hybrid trials in Mississippi.				
Brand	**Hybrid**	**Stoneville**	**Brooksville**	**Overall Average**
		bu/A	**bu/A**	**bu/A**
DeKalb	DKC51-01	113.5	76.1	94.8
DeKalb	DKC54-07	125.6	91.1	108.4
DeKalb	DKC50-07	109.8	86.7	98.2
Dyna-Gro	M72GB71	109.4	81.7	95.5
Dyna-Gro	M66GR32	109.1	85.0	97.1
Dyna-Gro	M62GB36	106.1	70.6	88.3
Dyna-Gro	M70GR37	119.1	90.5	104.8
OVERALL MEAN		113.2	83.1	98.2

Table 6. 2025 Grain sorghum plant heights, head exertion, and head compactness.							
		Stoneville			**Brooksville**		
Brand	**Hybrid**	**Plant Height**	**Head Exertion**	**Head Compactness**	**Plant Height**	**Head Exertion**	**Head Compactness**
		in	**in**	**(1-5)**	**in**	**in**	**(1-5)**
DeKalb	DKC51-01	51	5	2	47	5	1
DeKalb	DKC54-07	51	2	3	51	8	2
DeKalb	DKC50-07	50	4	1	51	5	3
DeKalb	DKC44-07	50	3	1	50	4	2
Dyna-Gro	M72GB71	72	6	2	47	3	1
Dyna-Gro	M66GR32	54	4	1	50	6	4
Dyna-Gro	M62GB36	47	5	4	48	1	3
Dyna-Gro	M70GR37	52	5	2	48	2	2

Table 7. Performance results of 8 hybrids grown at MAFES Delta Branch, Stoneville, 2025.							
Brand	**Hybrid**	**2025 Yield**	**2-year Average**	**3-Year Average**	**Plant Height**	**Head Exertion**	**Head Compactness**
		bu/A	**bu/A**	**bu/A**	**in**	**in**	**(1-5)**
DeKalb	DKC54-07	104.9	124.9	125.6	51	2	3
Dyna-Gro	M72GB71	91.7	109.9	109.4	72	6	2
Dyna-Gro	M66GR32	88.7	102.2	109.1	54	4	1
DeKalb	DKC44-07	87.6	-	-	50	3	1
DeKalb	DKC51-01	86.1	104.1	113.5	51	5	2
Dyna-Gro	M62GB36	83.7	94.3	106.1	47	5	4
Dyna-Gro	M70GR37	83.1	109.5	119.1	52	5	2
DeKalb	DKC50-07	74.6	96.6	109.8	50	4	1
MEAN		87.5					
CV		15.6					
R^2		36					
LSD (0.05)		NS					
Error DF		21					

MAFES BLACK BELT STATION, BROOKSVILLE

Table 8. Performance results of 8 hybrids grown at MAFES Black Belt Station, Brooksville, 2025.							
Brand	**Hybrid**	**2025 Yield**	**2-year Average**	**3-Year Average**	**Plant Height**	**Head Exertion**	**Head Compactness**
		bu/A	**bu/A**	**bu/A**	**in**	**in**	**(1-5)**
DeKalb	DKC51-01	49.8	75.9	76.1	47	5	1
Dyna-Gro	M66GR32	46.9	69.9	85.0	50	6	4
Dyna-Gro	M62GB36	45.3	68.5	70.6	48	1	3
DeKalb	DKC50-07	41.7	76.0	86.7	51	5	3
Dyna-Gro	M70GR37	40.7	81.3	90.5	48	2	2
DeKalb	DKC44-07	38.3	-	-	50	4	2
DeKalb	DKC54-07	32.0	82.1	91.1	51	8	2
Dyna-Gro	M72GB71	29.4	78.6	81.7	47	3	1
MEAN		40.5					
CV		5.2					
R^2		95					
LSD (0.05)		8.48					
Error DF		7					

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The mission of the Mississippi Agricultural And Forestry Experiment Station and the College Of Agriculture And Life Sciences is to advance agriculture and natural resources through teaching and learning, research and discovery, service and engagement which will enhance economic prosperity and environmental stewardship, to build stronger communities and improve the health and well-being of families, and to serve people of the state, the region and the world.

Scott Willard, Director

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