2016 Evaluation of Grain Sorghum Varieties, Jay, Florida

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This report includes the summary of the 2016 grain sorghum replicated variety trial at West Florida Research and Education Center, Jay, Florida. It shows the performance of six grain sorghum varieties. This data represents only one year, results should be considered over several locations and years before conclusions are valid.

OVT Entries that were evaluated: (Brand/Variety)

	Brand	Variety
1	Pioneer	P83P17
2	Pioneer	P84P80
3	DeKalb	DKS 37-07
4	DeKalb	DKS 38-88
5	DeKalb	DKS 41-50
6	DeKalb	DKS 44-20
7	DeKalb	DKS 48-07
8	DeKalb	DKS 49-45
9	DeKalb	DKS 51-01
10	DeKalb	DKS 53-53
11	DeKalb	DKS 53-67
12	DeKalb	DKS 54-00
13	Asgrow	Pulsar

2016 Growing Conditions and Experimental Design:

On 20 June, 2016, grain sorghum varieties were planted 7 seed/ft. (100,000 seed/A) under conventional tillage in a Red Bay sandy loam soil which had been planted to cotton in summer 2015. Plots were 25 ft long by 12 ft (four 4rows) wide, and rows were spaced 36 in. apart. Grain sorghum varieties were replicated in four randomized complete blocks. Prior to planting granular starter fertilizer (3-27-28, 350 lb/A) was broadcast and disked in. Atrazine at 3 pt/A + Agridex at 1 at/A were applied 1 July.

Supplemental fertilizer was applied on 20 July (33-0-0, 275 lb/A). Gramoxone herbicide was applied 1 qt/A with a hooded sprayer on 27 July. Mustang insecticide was applied at 8 oz/A on 28 July.
Crop stand was determined on 25 July 2016 and crop height was measured on 5 October 2016. Plots were harvested with a plot combine on either 6 October or 25 October 2016 (depending on maturity) and test weights were determined. All data was collected from the two center rows of each plot.
Rainfall for the grain sorghum growing season at Jay, FL was below average for all months ranging from a deficit of 0.45 in. to 3.79 in. (Table 1). Average represents the mean for the past 54 years of records kept at WFREC, Jay. Even though the rainfall was less than average, the crop received enough moisture for normal growth.

Table 1. Weather conditions during 2016 Grain Sorghum trial.

Month	Total Rainfall (in)	Average minimum air temperature (°F)	Average maximum air temperature (°F)
June	5.47 (1.93 below average)	68.2	90.1
July	7.56 (0.49 below average)	73.1	91.0
August	3.83 (2.69 below average)	73.2	90.0
September	6.69 (0.45 above average)	69.9	88.9
October	0.00 (3.79 below average)	57.5	84.0

Summary

Stand count for all varieties ranged from 4.7 to 6.6 plants/ft (68,365 to 95,590 plants/A) (Table 2). All varieties except P83P17 and DKS54-00 had populations in excess of 86,000 plants/A. Grain sorghum 50% heading date ranged from 8/12/16 to 8/25/16 with DKS 37-07 and Pulsar the earliest and P84P80, DKS 53-53 and DKS 53-67 the latest.

Grain sorghum height was similar for all varieties tested and ranged from 51 to 59 inches. Grain sorghum yield ranged from 14 to 75 bu/A with P84P80 the lowest and DKS 48-07 the highest yielding. Test weights were in a range from 36.8 to 51.1 lb/bu with DKS 49-45 the lowest and DKS 51-01 the highest test weight.

Table 2: Grain Sorghum variety stand and 50% heading date, Jay, FL 2016.

	Brand	Variety	Plants/ft* (7/25/16)	Plants/A (7/25/16)	50% Heading Date
1	Pioneer	P83P17	5.5	79860	08/15
2	Pioneer	P84P80	6.2	90145	08/24
3	DeKalb	DKS 37-07	6.6	95590	08/12
4	DeKalb	DKS 38-88	6.6	95590	08/22
5	DeKalb	DKS 41-50	6.3	91960	08/17
6	DeKalb	DKS 44-20	6.0	86515	08/14
7	DeKalb	DKS 48-07	6.5	94985	08/13
8	DeKalb	DKS 49-45	6.0	87120	08/20
9	DeKalb	DKS 51-01	6.0	87120	08/19
10	DeKalb	DKS 53-53	6.0	87725	08/24
11	DeKalb	DKS 53-67	6.4	92565	08/25
12	DeKalb	DKS 54-00	4.7	68365	08/22
13	Asgrow	Pulsar	6.1	88330	08/12
		LSD	*NS*	*NS*	*3 days*
		CV			*1%*

*Determined from counts of two, 6-ft rows sections per plot.

LSD = Fisher's Protected LSD (P=0.05)

Table 3: Grain Sorghum variety height, test weight and yield, Jay, FL 2016.

	Brand	Variety	Plant Height (in.)* (10/5/16)	Test Weight (lb/bu)	Yield (bu/A) (10/6/16	Harvest Date
1	Pioneer	P83P17	59	45.5	28.0	10/25
2	Pioneer	P84P80	57	41.9	14.0	10/25
3	DeKalb	DKS 37-07	55	44.8	**54.7**	10/06
4	DeKalb	DKS 38-88	58	45.4	25.4	10/25
5	DeKalb	DKS 41-50	55	38.4	17.0	10/25
6	DeKalb	DKS 44-20	54	50.5	28.3	10/25
7	DeKalb	DKS 48-07	59	42.8	**74.7**	10/06
8	DeKalb	DKS 49-45	55	36.8	25.0	10/25
9	DeKalb	DKS 51-01	57	51.1	25.3	10/25
10	DeKalb	DKS 53-53	55	40.5	17.5	10/25
11	DeKalb	DKS 53-67	55	44.5	16.7	10/25
12	DeKalb	DKS 54-00	51	43.5	28.6	10/25
13	Asgrow	Pulsar	55	42.8	**66.3**	10/06
	LSD		*NS*	*6.6*	*11.4*	
	CV			*10.5%*	*24.4%*	

*Mean of six plants per plot.

LSD = Fisher's Protected LSD (P=0.05)