

Final Report

TEXAS GRAIN SORGHUM BOARD

Project Title:

Dryland Grain Sorghum Trials in the Texas Panhandle and South Plains 2016 Cropping Season

Principal Investigator: Calvin Trostle, Professor & Extension Agronomist, Texas A&M AgriLife Research & Extension Center, 1102 East FM 1294, Lubbock, TX 79403; 806-746-6101, ctrostle@ag.tamu.edu

Summary

Companies were solicited for interest and entries in the 2016 High Plains grain sorghum hybrid trial tests. Companies were allotted two slots per company and we received participation from 11 companies for 22 entries, and I added two additional entries from personal interest. The hybrids are listed below. AgriLife stipulated that maturities should be medium or shorter, which is appropriate for High Plains dryland.

Trial sites were dryland as follows:

- Parmer Co. on-farm, planted June 29, with poor stand as of July 15; the site was abandoned as expected.
- Lubbock Co., July 1. This site was of moderate quality with some skips in stand, but was harvestable. Unfortunately, the AgriLife Center farm staff, upon receiving word the sorghum breeding group was finished with their adjacent tests, bulk harvested the trial in mid-November (Table 1).
- Dawson Co., July 8 (this site was moved from another location in Lynn Co. where the farmer finally told us he wouldn't be able to plant)
- NMSU-Clovis (a set of packaged seed was provided to New Mexico State counterparts to duplicate our efforts at their research station 11 miles north of Clovis; no Texas funds were used to support the site). The trial was harvested with exceptional yields (Table 2). In analyzing the data, I have questions about the reported test weight (low), and will see if they have the samples to verify data.
 - Trials like these with a substantial number of entries sometimes provide interesting comparisons between maturity groups or other parameters. In this case the medium maturity hybrids as a group yielded 4,765 lbs./A, medium-early 4,384, and true early maturity hybrids (4) yielded only 3,822 lbs./A. AgriLife Extension often recommends that producers crowd the suggested last recommended cut-off dates with a medium-early and take the freeze and maturation risk but retain higher yield potential.

An additional site was to be planted in Ochiltree Co. but was canceled due to dry conditions.

Sites were planted at 28,000-32,000 seeds per acre; Parmer & Clovis on 30" rows; Lubbock and Dawson sites on 40" rows). Lubbock and Clovis sites were sprayed once with Sivanto at 5-6 oz./A.

Table 1. AgriLife Lubbock dryland sorghum hybrid trial, 2016. Planted July 1. Trial was inadvertently bulk harvested by colleagues thus no yield data. Sugarcane aphid sprayed once.

Company or Brand	Hybrid	Company Rated Maturity	Days to Half Bloom	Plant Height (in.)	Population (Plts/A)	Lodging (%)	Test Weight (Lb/bu)	Yield (Lbs./A)
Advanta	AG1101	Early	60	26	24,300	D	D	D
Advanta	AG1201	Early	60	29	22,200	a	a	a
Channel	5B90	ME	64	29	23,600	t	t	t
Channel	6B60	ME	62	38	25,400	a	a	a
Dekalb	37-07	ME	65	31	20,800	L	L	L
Dekalb	44-20	Med	65	29	23,600	o	o	o
Dyna-Gro	M60GB31	Med	66	32	23,700	s	s	s
Dyna-Gro	M60GB88	Med	66	28	22,800	t	t	t
Frontier	279	ME	61	29	23,300	P	P	P
Frontier	305C	Med	65	28	22,700	r	r	r
Golden Acres	3960B	Med	66	27	22,500	e	e	e
Golden Acres	H-390W	Med	64	32	24,100	m	m	m
Hoegemeyer	671	Med	65	31	24,600	a	a	a
Hoegemeyer	6020	ME	63	28	23,000	t	t	t
Pioneer	85P05	Med	68	33	22,400	u	u	u
Pioneer	85Y40	Med	64	34	34,000	r	r	r
Pioneer	86P20	ME	63	24	23,800	e	e	e
Pioneer	87P06	ME	62	30	25,000	B	B	B
Richardson	RS 215	ME	67	34	26,100	u	u	u
Richardson	Swift	Early	56	23	20,500	l	l	l
Sorghum Part.	K35-Y5	ME	62	28	20,900	k	k	k
Sorghum Part.	KS 585	Med	63	34	19,800	H	H	H
Sorghum Part.	KS310	Early	58	30	20,400	a	a	a
Sorghum Part.	SP 34A19	ME	64	37	21,000	r	r	r
Sorghum Part.	SP31A15	ME	62	27	20,800	v	v	v
Warner	W 625-Y	Med	63	35	25,000	e	e	e
Warner	W 632-W	Med	66	32	18,800	s	s	s
Average			63	30	23,200	t	t	t

P-Value (treatments)	<0.0001	<0.0001	<0.0001
Least Significant Difference (0.05)	3	3	2,600
Coefficient of Variation (%CV)	12.2	8.6	16.8

Table 2. NMSU-Clovis dryland sorghum hybrid trial. Planted June 21 @ 29,000 seeds/A. Harvested Nov. 22, yields adjusted to 13.5% moisture. Test weights are being rechecked. Test was conducted on fallow ground with good deep soil moisture at planting & 11" rainfall.

Company or Brand	Hybrid	Company Rated Maturity	Field Days to Heading	Canopy Height (in.)	Head Exsertion (in.)	Lodging (%)	Test Weight (Lbs/bu)	Yield (Lbs./A)
Pioneer	85P05	Med	67	20	3	3	54.8	5,913
Channel	6B60	ME	64	22	6	0	54.1	5,890
Sorghum Part.	KS 585	Med	61	22	2	0	52.0	5,818
Dekalb	37-07	ME	66	17	5	0	52.7	5,427
Dekalb	44-20	Med	64	19	1	0	57.3	5,244
CPS	M60GB31	Med	65	18	5	0	53.1	5,147
Sorghum Part.	SP 34A19	ME	63	22	6	0	54.1	5,890
Pioneer	85Y40	Med	59	21	4	0	54.3	4,936
Warner	W 625-Y	Med	58	20	7	0	50.6	4,897
Golden Acres	3960B	Med	66	16	3	0	52.0	4,808
Sorghum Part.	SP31A15	ME	61	16	3	0	49.4	4,649
Sorghum Part.	KS310	Early	62	17	5	8	52.7	4,633
Frontier	279	ME	62	16	5	0	50.6	4,343
Hoegemeyer	671	Med	60	18	5	0	50.1	4,319
CPS	M60GB88	Med	64	16	4	0	52.7	4,298
Golden Acres	H-390W	Med	60	20	4	1	47.6	4,168
Sorghum Part.	K35-Y5	ME	61	14	6	0	52.4	4,106
Advanta	AG1201	Early	65	18	4	0	51.9	4,082
Richardson	RS 215	ME	60	20	6	2	53.9	4,048
Hoegemeyer	6020	ME	59	15	5	1	54.4	3,979
Advanta	AG1101	Early	60	15	4	0	53.9	3,929
Frontier	305C	Med	64	17	3	2	47.9	3,774
Pioneer	86P20	ME	63	14	2	0	51.4	3,425
Channel	5B90	ME	66	16	6	25	48.4	3,313
Pioneer	87P06	ME	63	17	5	2	51.8	3,151
Richardson	Swift	Early	56	13	4	0	53.5	2,645
Warner	W 632-W	Med	63	22	3	25	40.5	2,348
Average			62	18	4	3	51.8	4,414

P-Value (treatments)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Least Significant Difference (0.05)	3	3	2	20	3.2	1122
Coefficient of Variation (%CV)	15.8	9.9	35.5	0.0869	3.7	15.8