GRAIN SORGHUM PERFORMANCE TRIALS IN OKLAHOMA, 2008

PRODUCTION TECHNOLOGY CROPS

OKLAHOMA COOPERATIVE EXTENSION SERVICE
DEPARTMENT OF PLANT AND SOIL SCIENCES
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TRIAL OBJECTIVES AND PROCEDURES

Each year, performance trials for hybrid grain sorghum are conducted by the Oklahoma Cooperative Extension Service. These trials provide producers, extension educators, industry representatives, and researchers with information for hybrid grain sorghums marketed in Oklahoma.

Performance trials are conducted at eight locations in Oklahoma: Altus, Blackwell, Cherokee, Enid, Goodwell, Homestead, Keyes, and Tipton. Dryland trials are conducted at all locations, with an additional limited irrigation trial at Goodwell. The Cherokee and Homestead locations are uniquely designed trials to evaluate certain hybrids (generally early and medium maturity) for planting in late April. In 2004 a trial was established at Enid to evaluate hybrids for use as a double crop. Due to rainfall, the Enid trial was not planted in 2007. **All trial locations also have DK-37-07 and KS 585 planted with and without (WO) seed applied insecticide to determine the effect of these treatments on grain yield.**

Highlights

Double crop yields in north central Oklahoma were exceptional with producers reporting yields of 75 bu/ac. The Enid location averaged 82.9 bushels with four hybrids averaging over 90 bu/ac. Nitrogen may have been the limiting factor for double crops yields. Grain yield for the April planting were reduced due to a delay in emergence from cool soil temperatures. This delay gave an effective planting date of early May, which generally reduces yields when compared to plate April.

Grain sorghum hybrids entered (Table 1) were assigned by companies to their respective maturity groups (early, medium, and late) and trial locations therefore, all hybrids were not entered at all locations. Hybrids tested at the Cherokee, Homestead, and Enid locations were determined by Oklahoma State University. Companies submitted all hybrid characteristics presented in Table 1. This information was not determined or verified by Oklahoma State University. Company participation was voluntary therefore some hybrids marketed in Oklahoma were not included in the test. Each maturity group was tested in a randomized complete block design with four replications. Plots were two 30-inch rows by 25 feet. Plots were trimmed to 20 feet prior to harvest. Tractor powered cone planters were used to plant all trials with seeding rates adjusted for trial location. Trials were harvested with a Massey-Ferguson model, 8 plot combine.

Target populations, cooperating producers, fertilization, cultural practices, soil series, and herbicide use on all trials are listed individually in the results tables. Rainfall data from the nearest Mesonet site are also listed. Some trials are long distances from the nearest Mesonet site; therefore rainfall could be greater or less than reported. This year we only reported in-season rainfall, as compared to yearly totals, in previous reports.

GROWING CONDITIONS

Soil moisture conditions were excellent for planting at all the April planted trials, although soil temperatures were cool and delayed emergence on some fields. In the Panhandle planting was delayed until moisture from rainfall in mid June at all sites except for Cimarron county, where most sorghum was never planted. Rainfall was timely for most of the trials in Oklahoma in 2008, except for the Altus location which effected yields at that location. The late June planting of the dryland trial at OPREC affected test weights of alter maturing hybrids. These hybrids never reached full maturity before the freeze in late October. Planting was delayed for double crop sorghum due to rainfall received during wheat harvest, some producers were planting sorghum until mid July. The later planted double crop again did not have enough time to mature and test weights were also affected by a freeze.

The head worm complex for sorghum was the major insect pressure in 2008. Many producers sprayed for worms, which generally does not affect grain yield until the head is emerged.

Due to harvest delay in late August and early September from rainfall test weights were reduced. This was evident at the Homestead location, were KS 310 was being eaten by deer and was hand harvested approximately a month before the rest of the trial and test weights were at least 4 lb/bu higher than other hybrids.

RESULTS

Grain yields in 2008 were lower than 2007, although yields for trial locations were above 100 bu/ac for many hybrids utilizing the April planting date.

Grain yields are reported bushel per acre of threshed grain, adjusted to a moisture content of 14.0% (Tables 2-10). Test weight, plant population, and the number of heads per acre at harvest are reported. Bird damage and lodging are also reported when present at a location. Different plant populations at each location prevent accurate comparison between locations. Also comparisons across maturity groups were not conducted. Producers should note that late maturing hybrids will generally yield more than early and medium maturity hybrids. However, the availability of moisture at critical crop development periods often influences yield more than the yield differences associated with maturity groups.

When choosing a maturity group, the type of cropping system, planting date, planting rate and potential moisture should be taken into consideration. For more information consult **Fact Sheet No. 2034** Grain Sorghum Planting Rates and Dates, and **Fact Sheet No. 2113** Grain Sorghum Production Calendar.

Least Significant Difference (L.S.D.) is a statistical test of yield differences and is shown at the bottom of each table. Unless two hybrids differ by at least the L.S.D. shown, little confidence can be placed in one hybrid being superior to another and the difference is probably not real.

The coefficient of variation (C.V.) is provided as an estimate of the precision of the data with respect to the mean for that location and maturity group. To provide some indication of yield stability, 2-year and 3-year means for yield and test weight are provided where trials have been conducted for more than one year with more than three entries per maturity group Producers interested in comparing hybrids for consistency of yield in a specific area should consult these tables.

*The following people have contributed to this report by assisting in crop production, data collection, and publication: Donna George, Lawrence Bohl, Rocky Thacker, Eddie Pickard, Ryan Sproul, Jeff Bedwell, Jimmy Rhodes, Tommy Puffinbarger, Michael Pettijohn and Wilson Henry. Their efforts are greatly appreciated. Also would like to thank the **Oklahoma Grain Sorghum Commission** for their financial support.*

Table 1. Seed source and hybrid characteristics of grain sorghum in the Oklahoma Grain Sorghum Performance Trials, 2008. All hybrids are susceptible to birds and are single cross.

Company Brand Name	Hybrid	Seed Color	Endo-sperm	Days to Mid-bloom	Greenbug Resistance
Early Maturity					
DEKALB	DK 28E	Bz	Hy	58	E
NC+ Hybrids	5B37	Bz	Na	58	C
Sorghum Partners Inc	KS 310	Bz	HY	57	C,E
DEKALB	DK 39Y	Y	Y	59	E
Triumph Seed Co., Inc	TR 438	Bz	Hy	58	C,E
DEKALB	Pulsar	Bz	HY	60	C,E,I
DEKALB	DKS 37-07	Bz	HY	60	C,E,I
DEKALB	DKS 37-07 (wo)	Bz	HY	61	C,E,I
DEKALB	DKS 29-28	Bz	HY	59	E
Medium Maturity					
DEKALB	DKS 44-20	BZ	HY	67	NA
DEKALB	DKS 36-16	BZ	HY	61	C,D,E
NC+ Hybrids	7C22	Cream	NA	69	None
Sorghum Partners Inc	KS 585	Bz	HY	67	C, E
Sorghum Partners Inc	KS 585 (wo)	Bz	HY	67	C, E
NC+ Hybrids	6B50	Bz	HY	62	None
Sorghum Partners Inc	NK5418	Bz	HY	67	C,E
Dyna-Gro	GXO7163	Bz	HY	64	CE
Dyna-Gro	766B	Bz	HY	65	CE
Dyna-Gro	GXO7664	Bz	HY	67	CE
Dyna-Gro	772B	Bz	HY	68	CE
Dyna-Gro	751B	Bz	HY	69	CE
NC+ Hybrids	5B90	Bz	NA	62	C
Midwest Seed Genetics	56R85	R	NA	69	NA
Pioneer HiBred Int.	85Y34	Y	Y	66	NA
Pioneer HiBred Int.	85G03	R	W	67	NA
Pioneer HiBred Int.	86G32	Y	Y	65	NA
Late Maturity					
Sorghum Partners Inc	NK7633	Bz	HY	73	C
Dyna-Gro	778B	Bz	Hy	74	CE
DEKALB	DKS 53-67	Bz	HY	71	C,E,I
DEKALB	DKS 54-00	Bz	HY	72	C,E,I
DEKALB	DKS 54-03	Bz	HY	74	NA
DEKALB	A571	Bz	N	72	None
Sorghum Partners Inc	NK6638	Bz	HY	70	C

Seed Color: Br – Brown; W – White; Y – Yellow; Bz – Bronze; R – Red; C – Cream
Endosperm: HW – heterowaxy; W – waxy; HY – Heteroyellow; Y – Yellow; N – Non-waxy
Maturity group: Early (less than 60 days to mid-bloom); Medium (60 – 70 days to mid-bloom); Late – (70+ days to mid-bloom)
Greenbug Resistance: Biotype hybrid is resistance too

Table 2. Results from Altus grain sorghum performance trial, 2008.

Company Brand Name	Entry Designation	Grain Yield bu/ac		Test weight lb/bu		Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac
		2008	Two-year	2008	Two-year			
				Early				
DEKALB	DKS 37-07	51.0	70.6	57.1	57.6	53,900	0.98	52,822
Asgrow Seed	Pulsar	53.4	68.7	57.2	57.4	45,100	1.09	49,159
NC+ Hybrids	5B37	47.9	61.8	54.5	53.6	48,900	1.06	51,834
DEKALB	DKS 29-28	44.4	60.0	55.6	55.4	37,800	1.34	50,652
Sorghum Partners Inc	KS 310	35.4	50.0	56.0	54.7	40,900	1.32	53,988
DEKALB	DK 39Y	52.2	----	55.9	----	36,100	1.36	49,096
Triumph Seed Co.	TR 438	47.2	----	55.9	----	41,100	1.07	43,977
DEKALB	DKS 37-07 (WO)	46.2	----	55.9	----	48,800	1.00	48,800
DEKALB	DK 28E	42.6	----	55.3	----	47,800	1.01	48,278
	Mean	46.7	62.2	55.9	55.7	44,500	1.14	----
	C.V.%	14.1	9.6	1.9	3.3	9.6	9.90	----
	L.S.D.	NS	6.1	NS	1.9	7,400	0.19	----

Company Brand Name	Entry Designation	Grain Yield bu/ac		Test weight lb/bu		Plant Population plants/ac	Head Population heads/ac	Head Population heads/ac
		2008	Two-year	2008	Two-year			
				Medium and Full				
NC+ Hybrids	6B50	----	71.2	56.3	56.2	40,100	0.88	35,288
DEKALB	DKS 36-16	----	64.6	57.7	57.6	39,500	0.91	35,945
Sorghum Partners Inc	KS 585	----	61.5	56.1	57.0	40,700	0.94	38,258
Sorghum Partners Inc	KS 585 (WO)	----	59.4	58.1	58.1	42,100	0.93	39,153
NC+ Hybrids	7C22	----	59.0	56.4	56.8	39,800	1.00	39,800
Sorghum Partners Inc	NK6638	----	----	56.3	----	41,900	0.79	33,101
Dyna-Gro	778B	----	----	56.6	----	39,400	0.88	34,672
DEKALB	DKS 44-20	----	----	52.8	----	39,400	0.91	35,854
Dyna-Gro	GXO7163	----	----	55.8	----	38,800	0.99	38,412
Dyna-Gro	766B	----	----	55.1	----	36,600	0.76	27,816
Dyna-Gro	GXO7664	----	----	56.1	----	39,800	0.92	36,616
Dyna-Gro	772B	----	----	56.8	----	47,400	0.85	40,290
Dyna-Gro	751B	----	----	57.5	----	43,100	1.07	46,117
NC+ Hybrids	5B90	----	----	56.6	----	43,100	1.08	46,548
	Mean	32.8	63.1	56.3	57.1	40,800	0.92	----
	C.V.%	29.6	19.5	2.5	2.2	12.3	21.2	----
	L.S.D.		NS	2.4	NS	8,500	NS	----

Cooperator: Southwest Research and Extension Center
Conventional Tillage Practices: Sorghum-fallow-sorghum rotation
Fertilizer: N: 88 lbs/ac P: 22 K: 0
Planting Date: April 18 , 2008 Target Population: 45,000 plants/ac
Soil Series: Tillman Hollister Clay Loam
Soil Test: N: 19 P: 41 K: 1003 pH: 6.0
Herbicide: 2 qt/ac Cinch ATZ Lite Preemergence
Harvest Date: August 14, 2008

Monthly Rainfall (in.)

	Apr.	May	June	July	Aug.	**Total**
2008:	2.44	2.48	3.34	1.82	3.61	**13.69**
Long term mean:	1.92	4.23	3.51	1.76	2.45	**13.87**

Table 3. Results from Blackwell grain sorghum performance trial, 2008.

Company Brand Name	Entry Designation	Grain Yield bu/ac 2008	Test weight Lb/bu 2008	Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac
		Early				
DEKALB	DKS 37-07	115.3	52.4	48,600	1.37	66,500
NC+ Hybrids	5B37	92.9	49.0	47,000	1.38	64,900
DEKALB	DK 28E	86.7	46.7	43,000	1.58	67,400
DEKALB	DKS 37-07 (WO)	86.4	52.9	45,800	1.35	61,400
Triumph Seed Co., Inc	TR 438	83.4	49.3	44,700	1.39	61,800
Asgrow Seed	Pulsar	81.7	49.5	39,800	1.44	57,100
DEKALB	DKS 29-28	78.5	46.9	43,700	1.33	57,400
Sorghum Partners Inc	KS 310	73.8	45.8	40,600	1.50	60,900
DEKALB	DK 39Y	64.8	46.1	29,500	1.66	48,900
	Mean	84.8	48.7	42,500	1.44	60,700
	C.V.%	16.1	4.3	11.7	9.90	10
	L.S.D.	23.7	3.6	8,600	NS	10,200

Company Brand Name	Entry Designation	Grain Yield bu/ac 2008	Test weight Lb/bu 2008	Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac
		Medium and Full				
DEKALB	DKS 44-20	100.6	49.3	42,000	1.43	60,200
Dyna-Gro	778B	99.5	50.5	41,200	1.32	53,600
DEKALB	DKS 36-16	97.7	50.2	48,700	1.31	63,200
Dyna-Gro	GXO7664	95.1	47.6	40,300	1.40	55,900
Dyna-Gro	772B	92.2	50.6	53,000	1.16	61,500
Dyna-Gro	751B	89.4	49.7	41,600	1.23	51,000
Dyna-Gro	GXO7163	86.6	51.0	35,400	1.54	53,900
NC+ Hybrids	6B50	81.9	46.7	47,700	1.23	58,000
Sorghum Partners Inc	KS 585	81.5	51.2	44,600	1.46	64,500
Dyna-Gro	766B	80.1	51.7	40,200	1.33	52,200
NC+ Hybrids	7C22	78.6	49.2	37,900	1.30	49,100
Sorghum Partners Inc	NK6638	75.4	49.8	48,400	1.23	59,300
Sorghum Partners Inc	KS 585 (WO)	69.3	50.9	37,200	1.53	56,700
	Mean	87.1	49.7	43,100	1.33	56,600
	C.V.%	10.9	4.9	12.4	11.0	10.5
	L.S.D.	13.6	NS	7,700	0.21	8,500

Cooperator: Bill and Louise Rigdon Soil Series: Kirkland Silt Loam No-till Practices: Followed non harvested wheat
Soil Test: N: 8 P: 33 K: 353 pH: 6.1 Fertilizer: N: 130 lbs/ac + 5 gal/ac 10-34-0 with planter
Planting Date: April 19, 2008 Target Population: 45,000 plants/ac Herbicide: 2 qt/ac Cinch ATZ Lite (Preemergence)
Harvest Date: September 18, 2008

Monthly Rainfall (in.)

	Apr.	May	June	July	Aug.	**Total**
2008:	3.10	5.35	8.69	3.43	1.17	**21.74**
Long term mean:	3.28	5.83	4.05	2.68	3.19	**19.03**

Table 4. Results from Cherokee grain sorghum performance trial, 2008.

Company Brand Name	Entry Designation	Days To Midbloom	Grain Yield bu/ac			Test weight lb/bu			Plant Population plants/ac	Lodging
			2008	Two-year	Three-year	2008	Two-year	Three-year		
Sorghum Partners Inc	KS 585	67	127.0	135.1	118.5	59.8	60.4	60.0	44,700	0
NC+ Hybrids	6B50	62	104.6	125.0	115.8	54.9	56.8	56.2	49,800	27
DEKALB	DKs 37-07	60	111.7	120.2	114.9	58.9	60.0	58.9	49,400	27
Sorghum Partners Inc	KS 585	67	107.1	112.6	108.7	59.1	59.7	59.1	39,400	16
Sorghum Partners Inc	KS 310	58	95.8	91.6	90.6	56.7	57.5	56.1	38,100	0
DEKALB	DKS 36-16	61	111.3	130.5	----	57.6	58.1	----	48,300	0
DEKALB	DKS 44-20	67	127.9	----	----	59.8	----	----	41,100	0
Dyna-Gro	766B	65	122.3	----	----	57.9	----	----	35,800	0
Dyna-Gro	GXO7163	64	111.2	----	----	57.8	----	----	34,900	20
Sorghum Partners Inc	NK6638	70	104.1	----	----	58.1	----	----	42,100	30
DEKALB	DKs 37-07 (WO)	60	99.7	----	----	58.2	----	----	42,600	30
		Mean	111.1	119.2	109.7	58.1	58.8	58.0	42,400	13.6
		C.V.%	17.7	13.4	14.8	1.1	1.5	2.1	6.2	----
		L.S.D.	NS	17.4	14.0	1.1	1.0	1.0	4,500	----

Cooperator: Doug McMurtrey Soil Series: Dale Silt Loam No-till Practices: fallowed after soybean in 2007
Soil Test: N: 19 P: 72 K: 271 pH: 6.6 Fertilizer: N: 116 lbs N/ac + 5 gal/ac 10-34-0 with planter
Planting Date: April 19, 2008 Target Population: 45,000 plants/ac Herbicide 2 qt/ac Atrazine pre-plant
Harvest Date: September 4, 2008

Monthly Rainfall (in.)

	Apr.	May	June	July	Aug.	**Total**
2008:	2.36	4.56	5.84	3.20	2.06	**18.02**
2007:	3.32	6.39	10.56	2.22	0.90	**23.39**
Long term mean:	3.28	5.83	4.05	2.68	3.19	**19.03**

Table 5. Results from Chickasha grain sorghum performance trial, 2008.

Company Brand Name	Entry Designation	Grain Yield bu/ac	Test weight Lb/bu	Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac	Harvest Moisture
			Early				
Asgrow Seed	Pulsar	108.6	56.0	37,000	1.88	69,560	18.1
DEKALB	DKS 29-28	107.4	53.0	52,000	1.77	92,040	17.3
NC+ Hybrids	5B37	105.5	54.6	53,900	1.61	86,779	16.3
DEKALB	DK 28E	102.9	52.1	41,400	1.37	56,718	17.0
DEKALB.	DKS 37-07	102.6	56.8	48,800	1.37	66,856	17.6
DEKALB.	DKS 37-07 (WO)	100.0	57.1	44,900	1.37	61,513	17.6
Triumph Seed Co., Inc	TR 438	93.2	55.0	40,600	1.61	65,366	17.9
Sorghum Partners Inc	KS 310	87.3	53.1	41,300	2.45	101,185	16.7
DEKALB	DK 39Y	72.4	53.8	37,300	1.83	68,259	19.2
	Mean	97.7	54.6	----	----	----	17.5
	C.V.%	11.8	2.6	----	----	----	7.5
	L.S.D.	16.8	2.1	----	----	----	1.9

Company Brand Name	Entry Designation	Grain Yield bu/ac	Test weight Lb/bu	Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac	Harvest Moisture
			Medium and Full				
Pioneer HiBred Int.	85G03	116.5	58.1	43,900	1.63	71,557	16.9
NC+ Hybrids	6B50	116.0	55.1	47,300	1.4	66,220	15.7
Dyna-Gro	772B	113.5	57.1	43,200	1.41	60,912	17.5
Dyna-Gro	GXO7163	111.8	57.4	41,900	1.45	60,755	16.1
DEKALB	DKS 36-16	110.8	58.1	45,700	1.42	64,894	17.1
Dyna-Gro	766B	110.2	56.7	48,600	1.22	59,292	16.9
Sorghum Partners Inc	NK6638	108.0	57.6	47,200	1.35	63,720	17.4
Sorghum Partners Inc	KS 585	107.5	58.7	42,300	1.65	69,795	15.8
Dyna-Gro	GXO7664	106.9	53.0	45,500	1.36	61,880	16.6
Dyna-Gro	751B	106.9	58.0	44,500	1.26	56,070	16.2
DEKALB	DKS 44-20	106.3	58.0	47,100	1.34	63,114	16.8
NC+ Hybrids	5B90	101.5	55.0	45,100	1.57	70,807	16.1
Sorghum Partners Inc	KS 585 (WO)	99.8	58.2	43,500	1.66	72,210	15.9
NC+ Hybrids	7C22	94.2	56.4	38,900	1.47	57,183	18.4
Dyna-Gro	778B	82.4	55.2	44,300	1.27	56,261	20.5
	Mean	106.1	56.8	44,600	1.43	----	16.9
	C.V.%	7.0	2.5	10.4	11.7	----	6.4
	L.S.D.	10.6	2.0	NS	0.24	----	1.5

Cooperator: South Central Research Center
Conventional Tillage Practices: Wheat-fallow-sorghum
Fertilizer: N: 122 lbs/ac P: 22 K: 0
Planting Date: April 18 , 2008 Target Population: 45,000 plants/ac

Soil Series: Tuttle Silt Loam
Soil Test: N: 13 P: 144 K: 566 pH: 7.1
Herbicide: 2 qt/ac Cinch ATZ Lite Preemergence
Harvest Date: August 15, 2008

Monthly Rainfall (in.)

	Apr.	May	June	July	Aug.	**Total**
2008:	4.26	4.33	5.61	0.94	3.94	**18.57**
Long term mean:	3.40	5.30	3.80	2.00	2.40	**16.90**

Table 6. Results from Enid double crop grain sorghum performance trial, 2008.

Company Brand Name	Entry Designation	Grain Yield bu/ac 2008	Test weight Lb/bu 2008	Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac	Bird Damage
Sorghum Partners Inc	NK6638	103.1	58.7	30,800	1.12	35,300	8
NC+ Hybrids	5B90	100.1	59.0	31,100	1.52	46,100	13
DEKALB	DKS 44-20	99.3	60.2	24,200	1.59	38,800	11
Dyna-Gro	GXO7163	92.5	58.8	28,600	1.35	37,500	5
Sorghum Partners Inc	KS 585	87.9	60.0	26,200	1.66	43,100	14
Sorghum Partners Inc	KS 585 (wo)	86.4	60.6	25,600	1.41	35,300	15
DEKALB	DKS 36-16	83.9	57.3	31,000	1.27	38,800	6
DEKALB	DKs 37-07 (wo)	83.0	60.4	27,900	1.42	39,200	9
DEKALB	DKs 37-07	82.4	59.4	30,900	1.18	36,600	5
Dyna-Gro	766B	75.6	57.9	29,400	1.40	39,700	5
NC+ Hybrids	6B50	74.5	58.3	33,200	1.22	40,100	28
Sorghum Partners Inc	KS 310	26.4	49.2	28,200	2.33	65,500	70
	Mean	82.9	58.3	28,900	1.46	41,300	----
	C.V.%	16.4	3.4	16.9	18.7	18.6	----
	L.S.D.	19.6	2.8	NS	0.39	11,000	----

Cooperator: Richard and James Wuerflein
No-till Practices: Sorghum-Wheat-Double crop sorghum
Fertilizer: N: 105 lbs N/ac P: 20 lb P_2O_5 K: 0
Planting Date: June 26, 2008 Target Population: 45,000 plants/ac

Soil Series: Kirkland Silt Loam
Soil Test: N: NA P: NA K: NA pH: NA
Herbicide: 2 qt/ac Cinch ATZ Lite Preemergence
Harvest Date: November 8, 2008

Monthly Rainfall (in.)

	June	July	Aug	Sept	Oct	**Total**
2008:	8.37	5.74	1.25	2.42	3.96	**21.74**
Long term mean:	4.26	2.89	3.35	3.39	3.17	**17.06**

Table 7. Results from Homestead grain sorghum performance trial, 2008.

Company Brand Name	Entry Designation	Days To Midbloom	Grain Yield bu/ac		Test weight lb/bu		Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac
			2008	Two-year	2008	Two-year			
DEKALB	DKS 36-16	61	93.9	124.9	50.0	55.7	34,200	1.81	58,500
NC+ Hybrids	6B50	62	92.4	123.1	49.4	55.5	40,300	1.39	55,500
Sorghum Partners Inc	KS 585	67	91.1	117.4	52.3	57.8	37,600	1.76	64,700
Sorghum Partners Inc	KS 585 (WO)	67	83.4	113.6	51.8	57.3	40,300	1.49	59,900
DEKALB	DKs 37-07	60	101.6	103.1	52.6	57.3	42,400	1.44	59,600
Sorghum Partners Inc	KS 310	58	28.8	49.8	58.5	58.4	32,700	1.54	50,100
DEKALB	DKS 44-20	67	99.3	----	53.7	----	36,500	1.42	50,300
DEKALB	DKs 37-07 (WO)	60	98.2	----	50.9	----	27,600	2.22	55,700
Dyna-Gro	GXO7163	64	97.8	----	50.5	----	32,000	1.99	59,400
Dyna-Gro	766B	65	80.8	----	47.7	----	38,300	1.38	51,900
Sorghum Partners Inc	NK6638	70	74.9	----	50.7	----	28,600	1.76	48,900
		Mean	85.7	105.3	51.6	57.0	35,500	1.65	55,900
		C.V.%	11.8	13.4	2.7	4.1	20.1	19.80	9.7
		L.S.D.	17.2	15.4	2.4	2.6	NS	NS	9,300

Note: KS 310 was only hybrid with damage due to deer in 2007 and 2008. It was harvested after deer had removed approximately 60% of grain, this is also reason for higher test weight in 2008

Cooperator: Brook Strader
No-till tillage Practices: Fallowed forage sorghum in 2007
Fertilizer: N: 130 lbs N + 5 gal/ac 10-34-0 with planter
Planting Date: April 18, 2008 Target Population: 45,000 plants/ac

Soil Series: Pratt Loamy Fine Sand
Soil Test: N: 4 P: 37 K: 4963 pH: 6.5
Herbicide: Cinch ATZ Lite 1.5 qts/ac (Preemergence)
Harvest Date: September 19, 2008

Monthly Rainfall (in.)

	Apr.	May	June	July	Aug.	**Total**
2008:	2.14	3.24	7.98	2.88	0.94	**15.04**
2007:	2.46	5.18	11.87	3.79	1.55	**24.85**
Long term mean:	2.50	4.20	3.20	2.70	2.80	**15.40**

Table 8. Results from OPREC dryland grain sorghum performance trial, 2008.

Company Brand Name	Entry Designation	Grain Yield bu/ac		Test weight lb/bu		Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac
		2008	Two-year	2008	Two-year			
				Early				
DEKALB	DKS 37-07	74.5	66.5	54.1	56.7	20,100	1.56	32,300
NC+ Hybrids	5B37	74.2	66.4	55.4	56.7	19,700	1.70	33,300
Sorghum Partners Inc	KS 310	68.9	63.6	56.3	57.4	16,200	1.88	30,400
DEKALB	Pulsar	71.3	63.1	55.8	56.6	15,500	1.47	22,800
DEKALB	DKS 29-28	61.1	59.3	56.9	57.3	12,400	1.90	22,900
DEKALB	DKS 37-07 (WO)	74.8	----	53.8	----	19,000	1.42	26,700
DEKALB	DK 28E	59.1	----	57.0	----	16,200	1.78	29,000
	Mean	69.1	63.8	55.6	56.9	17,100	1.67	28,200
	C.V.%	9.5	11.6	1.7	2.1	10.1	17.0	18.8
	L.S.D.	9.8	NS	1.4	NS	2,600	NS	NS

Company Brand Name	Entry Designation	Grain Yield bu/ac		Test weight lb/bu		Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac
		2008	Two-year	2008	Two-year			
				Medium and Full				
Sorghum Partners Inc	KS 585	82.4	70.9	54.6	57.5	17,600	2.15	37,500
NC+ Hybrids	6B50	72.7	68.6	52.4	54.6	18,800	1.69	31,700
Sorghum Partners Inc	KS 585 (WO)	74.1	67.6	51.4	55.6	20,300	1.87	37,000
DEKALB	DKS 36-16	72.1	64.3	52.4	55.1	18,400	1.76	31,900
Sorghum Partners Inc	NK5418	77.6	64.1	55.1	56.3	23,600	1.52	35,100
NC+ Hybrids	7C22	63.4	53.4	54.9	56.3	14,500	1.99	29,800
Pioneer HiBred Int.	86G32	82.2	----	52.8	----	17,400	2.22	34,400
NC+ Hybrids	5B90	72.6	----	52.3	----	18,200	1.86	33,800
Pioneer HiBred Int.	85Y34	71.5	----	52.1	----	15,700	2.21	34,600
Dyna-Gro	GXO7664	67.4	----	50.8	----	15,900	2.09	33,100
Pioneer HiBred Int.	85G03	66.6	----	52.4	----	16,800	2.33	38,600
DEKALB	DKS 44-20	65.4	----	51.5	----	15,200	1.85	28,000
Dyna-Gro	751B	61.6	----	51.1	----	16,000	1.70	26,300
Dyna-Gro	766B	60.9	----	52.5	----	18,700	1.64	30,300
Midwest Seed Genetics	56R85	59.6	----	52.6	----	15,400	2.35	35,800
Sorghum Partners Inc	NK6638	57.4	----	52.2	----	17,600	2.03	35,900
Dyna-Gro	778B	56.0	----	51.1	----	16,000	2.00	31,500
Dyna-Gro	GXO7163	53.0	----	51.9	----	12,400	2.40	29,000
Dyna-Gro	772B	52.7	----	51.7	----	18,700	1.51	28,300
	Mean	66.8	64.8	52.4	55.9	17,200	1.96	32,900
Note: Trial location information is listed with irrigated results	C.V.%	12.7	12.1	4.0	3.7	12.4	16.2	13.2
	L.S.D.	12.0	8.0	NS	2.1	3,000	0.45	6,200

Table 9. Results from OPREC limited irrigation grain sorghum performance trial, 2008.

Company Brand Name	Entry Designation	Grain Yield bu/ac		Test weight lb/bu		Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac	Bird Damage %
		2008	Two-year	2008	Two-year				
				Early					
DEKALB	Pulsar	133.2	112.3	57.6	58.3	46,700	1.43	66,500	6
DEKALB.	DKS 37-07	139.9	112.0	58.5	59.1	47,300	1.34	63,300	0
Sorghum Partners Inc	KS 310	112.4	97.7	56.4	57.8	45,500	1.27	57,800	5
DEKALB	DKS 29-28	106.6	95.0	56.3	57.3	45,500	1.39	62,600	5
NC+ Hybrids	5B37	105.7	93.9	56.1	57.4	56,100	1.25	70,100	0
DEKALB.	DKS 37-07 (WO)	139.4		57.8		52,300	1.21	63,300	0
DEKALB	DK 39Y	106.1		57.1		39,100	1.54	60,300	8
DEKALB	DK 28E	101.6		55.0		49,200	1.41	69,500	0
		118.1	102.2	56.8	58.0	47,700	1.36	64,200	
		3.9	12.2	2.2	1.4	6.9	7.4	6.7	
		6.7	12.8	1.9	0.8	4,800	0.15	6,300	

Company Brand Name	Entry Designation	Grain Yield bu/ac 2008	Test weight Lb/bu 2008	Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac	Bird Damage %
			Full				
Sorghum Partners Inc	NK6638	109.3	57.3	46,700	1.24	56,500	9
Sorghum Partners Inc	NK7633	114.4	56.9	41,400	1.43	58,400	9
Dyna-Gro	778B	102.9	56.6	46,300	1.17	53,900	19
DEKALB	DKS 53-67	122.1	56.5	52,400	1.24	64,300	6
DEKALB	DKS 54-00	109.4	55.7	48,600	1.05	51,100	8
DEKALB	DKS 54-03	121.1	56.2	51,400	1.17	59,700	8
DEKALB	A571	124.9	56.3	49,600	1.10	54,200	10
	Mean	114.9	56.5	48,000	1.20	56,900	
	C.V.%	8.6	3.1	11.8	14.30	7.1	
	L.S.D.	14.7	NS	NS	NS	NS	

Table 9. Continued.

Company Brand Name	Entry Designation	Grain Yield bu/ac		Test weight lb/bu		Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac	Bird Damage %
		2008	Two-year	2008	Two-year				
				Medium					
Sorghum Partners Inc	KS 585	134.9	119.9	58.6	59.8	49,300	1.30	62,700	10
NC+ Hybrids	6B50	131.2	116.0	56.9	58.0	50,900	1.22	62,100	15
Sorghum Partners Inc	KS 585 (WO)	131.2	115.9	58.3	59.7	47,400	1.30	61,400	13
Sorghum Partners Inc	NK5418	131.9	114.6	58.2	58.8	47,800	1.30	61,900	10
DEKALB	DKS 36-16	124.8	111.4	57.2	58.9	47,500	1.44	68,500	10
NC+ Hybrids	7C22	122.3	99.7	55.0	57.2	44,700	1.31	58,100	5
Pioneer HiBred Int.	85G03	132.0		58.8		47,500	1.38	64,900	15
NC+ Hybrids	5B90	131.0		57.8		51,500	1.28	65,300	10
Dyna-Gro	772B	126.2		56.2		43,100	1.33	57,300	13
Dyna-Gro	GXO7664	123.9		54.8		45,500	1.33	60,500	10
Dyna-Gro	GXO7163	122.9		56.7		45,000	1.27	56,100	10
Dyna-Gro	751B	116.3		58.5		45,400	1.27	57,600	18
DEKALB	DKS 44-20	114.8		59.4		48,200	1.31	32,700	13
Pioneer HiBred Int.	86G32	114.6		57.3		47,300	1.27	59,100	23
Midwest Seed Genetics	56R85	110.6		58.6		45,200	1.41	63,600	13
Pioneer HiBred Int.	85Y34	110.5		53.8		46,900	1.53	71,700	25
Dyna-Gro	766B	106.0		56.6		45,900	1.34	61,200	23
		122.7	112.9	57.2	58.7	47,000	1.33	62,100	
		7.8	8.2	3.4	2.7	8.7	12.3	9.1	
		13.6	9.4	2.8	1.6	NS	NS	NS	

Cooperator: OPREC
Soil Series: Richfield Clay Loam
Herbicide: Cinch ATZ Lite 2 qts/ac (Preemergence)
Dryland no-till following wheat in 2007
Soil Test: N: 48 P: 34 K: 1,059 pH: 74
Fertilizer: N: 50 lbs N + 5 gal/ac 10-34-0 with planter
Irrigated strip-till following soybean in 2007
Soil Test: N: 25 P: 30 K: 963 pH: 7.2
Fertilizer: N: 125 lbs N + 5 gal/ac 10-34-0 with planter
Planting Date: Dryland June 24, 2008 Target Population: 22,000 plants/ac
Irrigated June 9, 2008 Target Population 50,000 plants/ac
Harvest Date: Dryland November 6, 2008
Irrigated November 7, 2008

Monthly Rainfall (in.)	May	June	July	Aug.	Sep.	**Total**	------- Irrigation (in.) -------				
							Jun.	Jul.	Aug.	Sept.	Oct.
2008:	0.93	1.51	3.77	5.64	0.36	**12.21**					
Long term mean:	3.25	2.86	2.58	2.28	1.77	**12.74**	2.5	2.5	1.25	0.0	0.0

Mean
C.V. %
L.S.D.

Table 10. Results from Tipton grain sorghum performance trial, 2008.

Company Brand Name	Entry Designation	Grain Yield bu/ac		Test weight lb/bu		Plant Population plants/ac	Head Population heads/plant	Head Population heads/ac
		2008	Two-year	2008	Two-year			
				Early				
DEKALB	DKS 37-07	89.2	106.7	58.1	56.2	46,000	1.25	57,300
DEKALB	DKS 29-28	86.0	98.7	52.0	54.8	40,800	1.73	69,700
Asgrow Seed	Pulsar	73.1	97.1	55.3	57.1	41,700	1.61	66,700
NC+ Hybrids	5B37	73.5	81.7	51.5	53.8	42,100	1.93	79,400
Sorghum Partners Inc	KS 310	68.1	74.7	53.4	55.2	40,500	1.97	78,900
Triumph Seed	TR 438	93.6		54.9		41,000	1.39	55,600
DEKALB	DK 28E	78.3		50.7		44,200	1.72	75,700
DEKALB	DK 39Y	67.6		53.9		37,500	1.55	57,800
DEKALB	DKS 37-07 (WO)	60.7		57.5		42,500	1.43	60,500
	Mean	76.7		54.1		41,800	1.62	66,800
	C.V.%	12.0		1.9		12.0	19.7	14.5
	L.S.D.	13.4		1.5		NS	NS	14,200

Company Brand Name	Entry Designation	Grain Yield bu/ac		Test weight lb/bu		Plant Population plants/ac	Head Population heads/ac	Head Population heads/ac
		2008	Two-year	2008	Two-year			
				Medium and Full				
Sorghum Partners Inc	KS 585	116.2	116.8	57.3	59.0	46,800	1.24	57,900
NC+ Hybrids	6B50	106.9	116.7	53.7	55.6	50,600	1.04	52,500
DEKALB	DKS 36-16	99.6	104.2	55.6	57.2	50,800	1.09	55,600
Sorghum Partners Inc	KS 585	103.5	103.9	57.4	58.4	44,000	1.26	55,600
NC+ Hybrids	7C22	88.5	99.5	54.0	56.3	37,200	1.39	51,900
DEKALB	DKS 44-20	100.4		57.2		44,000	1.15	50,200
Dyna-Gro	772B	100.3		56.5		42,300	1.26	51,900
Dyna-Gro	GXO7163	100.1		56.0		40,000	1.29	51,000
Dyna-Gro	766B	98.4		55.4		46,900	1.16	54,400
Dyna-Gro	GXO7664	94.8		51.9		45,800	1.18	54,400
NC+ Hybrids	5B90	92.3		54.6		45,800	1.08	49,000
Sorghum Partners Inc	NK6638	90.6		56.6		45,800	1.12	50,800
Dyna-Gro	751B	90.0		56.4		46,100	1.02	47,100
Dyna-Gro	778B	82.1		56.8		52,000	0.98	50,900
	Mean	97.4		55.7		45,600	1.16	52,400
	C.V.%	8.1		1.8		9.2	12.9	10.9
	L.S.D.	11.3		1.4		6,000	0.21	NS

Cooperator: Southwest Research and Extension Center
Soil Series: Tipton Silt Loam
Conventional Tillage Practices: Sorghum-fallow-sorghum rotation
Soil Test: N: 26 P: 48 K: 563 pH: 6.6
Fertilizer: N: 80 lbs/ac P: 20 lbs P_2O_5 K: 0
Herbicide: 2 qt/ac Cinch ATZ Lite Preemergence
Planting Date: April 17, 2008 Target Population: 45,000 plants/ac
Harvest Date: August 28, 2008

Monthly Rainfall (in.)

	Apr.	May	June	July	Aug.	**Total**
2008:	2.78	2.92	2.98	2.28	4.19	**15.15**
Long term mean:	2.30	4.30	3.45	2.08	2.71	**14.84**