



GRAIN SORGHUM PERFORMANCE TRIALS IN OKLAHOMA, 2009

PRODUCTION TECHNOLOGY CROPS

OKLAHOMA COOPERATIVE EXTENSION SERVICE
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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 ten locations in Oklahoma: Altus, Alva, Blackwell, Cherokee, Enid, Goodwell, Homestead, Keyes, Slapout, and Tipton. Dry-land trials are conducted at all locations, with an additional limited irrigation trial at Goodwell. The Cherokee, Homestead, and Slapout locations are uniquely designed trials to evaluate certain hybrids (generally early and medium maturity) for planting in late April. In 2009 trials were established at Enid and Alva to evaluate hybrids for use as a double crop. **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.

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, Enid, Alva, and Slapout 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.

Highlights

The highlight in 2009 was weather, either too much rain at planting, or lack of rain that delayed maturity and harvest. The normal late April planting for some producers was delayed due to rainfall, and they were unable to plant until late May. What sorghum was planted had delayed maturity in some areas because of the temperatures above 100°F and lack of rain fall in the last half of June. When rainfall was received in July and August the plants exerted more heads and tended to have a higher yield.

GROWING CONDITIONS

Soil moisture conditions were excellent for planting at the April planted trials, although soil temperatures were cool and delayed emergence on some fields. The planting period in April was short, and many producers were delayed until late May due to continued precipitation. There 17 days of measurable rainfall from April 16 to May 15 for the Blackwell and Cherokee locations. In the Panhandle dry-land planting was delayed until moisture from rainfall in mid June. Rainfall was sporadic in 2009 with periods of no rainfall in June and periods of high rainfall in late July for the body of the state. In the panhandle rainfall was below the long-term average but was timely, resulting in outstanding yields. Planting was delayed for double crop sorghum due to lack of rainfall. Cool wet weather through much of the fall delayed maturity for most double crop sorghum and delayed harvesting, therefore many acres were not harvested until mid December. With the delay in maturity some double crop did not have enough time to mature and test weights were affected by a freeze.

Insects were not a major concern in 2009, but due to late harvest many producers reported some bird damage

Trials at Blackwell, Altus, and Tipton were not harvest due to bird damage, also trials at Homestead and Slapout were damaged by deer and not harvested. The trial at Keyes is not reported due to damage from blowing soil after emergence, it delayed maturity and resulted in freeze damage and reduced test weights.

RESULTS

Grain yields in 2009 were lower than 2008, and producers report the highest yields obtained were on late May and early June plantings.

Grain yields are reported bushel per acre of threshed grain, adjusted to a moisture content of 14.0% (Tables 2-5). Test weight, plant population, and the number of heads per acre at harvest are reported.

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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, and Wilson Henry. Their efforts are greatly appreciated. Also would like to thank the **Oklahoma Grain Sorghum Commission and The United Sorghum Checkoff Program** for their financial support.*

Table 1. Seed source and hybrid characteristics of grain sorghum in the Oklahoma Grain Sorghum Performance Trials, 2009. All hybrids are susceptible to birds and are single cross.

Company Brand Name	Hybrid	Seed Color	Endosperm	Days to Mid-bloom	Greenbug Resistance
Less than 60 days to mid-bloom					
Johnston Seed Co.	JS 207	Bz	Hy	58	C
DEKALB	DK 39Y	Y	Y	59	E
DEKALB	DKS 28-05	Bz	HY	58	----
Frontier Hybrids	F 303C	W	Y	60	E
Frontier Hybrids	F 505E	R	Y	60	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	60	C,E,I
Frontier Hybrids	F 270E	Bz	Y	55	E
DEKALB	DKS 29-28	Bz	HY	59	E
60 to 69 days to mid-bloom					
DEKALB	DKS 44-20	BZ	HY	67	NA
Syngenta Seeds	5464	Bz	Na	69	C, E
Sorghum Partners Inc	KS 585	Bz	HY	67	C, E
Sorghum Partners Inc	KS 585 (wo)	Bz	HY	67	C, E
Dyna-Gro	771	Bz	Na	65	----
Dyna-Gro	742C	W	Na	62	----
Sorghum Partners Inc	NK5418	Bz	HY	67	C,E
Syngenta Seeds	5613	Bz	Na	65	C,D,E
Syngenta Seeds	5556	R	Na	67	C
Syngenta Seeds	H-486	R	Na	68	----
Dyna-Gro	766B	Bz	HY	65	CE
Dyna-Gro	772B	Bz	HY	68	CE
NC+ Hybrids	5B90	Bz	NA	62	C
Pioneer Hi-Bred Int.	85G03	R	W	69	Na
Pioneer Hi-Bred Int.	86G32	R	W	65	Na
Sorghum Partners Inc	X445	Bz	Hy	67	----
Johnston Seed Co.	JS 222	Bz	Hy	68	C, E
Johnston Seed Co.	JS 753	Bz	Hy	66	C
Johnston Seed Co.	JS 005	W	Hy	69	C, E
Johnston Seed Co.	JS - 056	R	N	65	C
Johnston Seed Co.	JS - 524	R	N	65	C
DEKALB	DKS 36-06	Bz	Hy	63	----
Pioneer Hi-Bred Int.	87P06	R	W	63	Na
NC+ Hybrids	6B10	Bz	Hy	61	Na
NC+ Hybrids	7B11	Bz	Hy	67	E,I
Triumph Seed	TR 452	R	HY	65	C,E
Triumph Seed	TRX 95003	R	HY	69	Na

Table 1. continued.

Company Brand Name	Hybrid	Seed Color	Endosperm	Days to Mid-bloom	Greenbug Resistance
70 day and greater to mid-bloom					
Sorghum Partners Inc	SP6680	Bz	Hy	70	E
Sorghum Partners Inc	X 698	Bz	Hy	70	E
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
Pioneer Hi-Bred Int.	84G62	Bz	Y	72	NA
Sorghum Partners Inc	NK6638	Bz	HY	70	C
Pioneer Hi-Bred Int.	84P74	R	W	70	NA
Frontier Hybrids	F 700E	R	Y	70	E

Table 2. Results from Cherokee grain sorghum performance trial, 2009.

Company Brand Name	Hybrid	Days to Mid- bloom	Grain Yield bu/ac		Test weight lb/bu		Harvest Moisture	Plant Population plants/ac	Head Population heads/plant
			2009	Two-year	2009	Two-year			
Sorghum Partners Inc	KS 585	67	78	99.0	59.0	59.2	14.6	27,400	2.10
DEKALB	DKS 44-20	67	75	98	58.7	59.2	14.7	29,200	1.54
Dyna-Gro	766B	65	72	94	57.2	57.5	14.3	22,300	1.97
DEKALB	DKS 37-07	60	76	91	58.1	58.5	14.6	33,400	1.52
Sorghum Partners Inc	KS 585 (wo)		70	86	59.2	59.2	14.5	24,600	2.02
Sorghum Partners Inc	NK6638	70	.4	84	57.1	57.5	15.6	23,600	1.83
DEKALB	DKS 37-07 (wo)		66	80	59.0	58.7	14.6	34,000	1.45
Pioneer Hi-Bred Int.	85G03	69	95	----	57.8	----	15.2	30,400	2.06
NC+ Hybrids	5B90	62	85	----	59.0	----	14.2	38,000	1.71
Syngenta Seeds	H-486	68	77	----	56.2	----	15.5	31,800	1.43
Frontier Hybrids	F 505E	60	76	----	55.4	----	17.1	25,800	1.55
Johnston Seed Co.	JS - 056	65	73	----	57.9	----	15.0	31,800	1.50
DEKALB	DKS 36-06	63	73	----	57.6	----	15.3	30,500	1.48
Triumph Seed	TR 452	65	72	----	57.9	----	14.6	23,700	1.78
Johnston Seed Co.	JS 222	68	72	----	56.4	----	15.9	27,900	1.48
Dyna-Gro	742C	62	71	----	56.0	----	14.6	31,400	1.44
Syngenta Seeds	5613	65	67	----	57.3	----	14.4	30,100	1.51
DEKALB	DKS 28-05	58	62	----	57.1	----	13.6	36,000	1.79
Pioneer Hi-Bred Int.	87P06	63	61	----	56.4	----	14.0	28,400	2.06
Sorghum Partners Inc	X445	65	52	----	55.3	----	15.4	29,100	1.37
Johnston Seed Co.	JS 207	58	41	----	55.9	----	13.6	30,800	1.62
Mean			70	90	57.3	58.5	14.8	29,500	1.67
C.V.%			12.4	13.2	1.9	1.3	6.7	19.4	13.0
L.S.D.			12	13	1.6	0.8	1.4	8,100	0.31

Cooperator: Doug McMurtrey Soil Series: Pond Creek Silt Loam No-till Practices: fallowed after soybean in 2008 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 24, 2009 Target Population: 45,000 plants/ac

Herbicide 2 qt/ac Atrazine pre-plant Harvest Date: September 9, 2009

Monthly Rainfall (in.)	Apr.	May	June	July	Aug.	Total
2009:	5.04	2.02	2.66	1.86	4.75	16.33
Long term mean:	3.28	5.83	4.05	2.68	3.19	19.03

Table 3. Results from Enid double crop grain sorghum performance trial, 2009.

Company Brand Name	Hybrid	Grain Yield bu/ac		Test weight lb/bu		Harvest Moisture	Plant Population plants/ac	Lodging %
		2009	Two-year	2009	Two-year			
Sorghum Partners Inc	NK6638	53	81	55.5	57.3	15.1	33,700	55
DEKALB	DKS 44-20	53	80	56.7	58.7	15.1	35,300	45
NC+ Hybrids	5B90	39	74	54.9	57.2	15.4	33,100	60
DEKALB	DKS 37-07	43	65	55.5	57.7	14.9	43,700	65
Johnston Seed Co.	JS - 056	56	----	55.6	----	15.9	38,200	45
Syngenta Seeds	H-486	55	----	54.5	----	15.4	27,200	15
Dyna-Gro	772B	54	----	55.1	----	15.6	31,200	55
NC+ Hybrids	6B10	54	----	53.0	----	14.8	38,900	20
Sorghum Partners Inc	NK5418	53	----	54.5	----	15.4	32,500	20
Syngenta Seeds	5464	49	----	54.7	----	14.9	29,500	65
Frontier Hybrids	F 505E	48	----	58.2	----	14.5	29,500	15
Johnston Seed Co.	JS 222	47	----	56.1	----	15.2	40,700	35
Pioneer Hi-Bred Int.	87P06	46	----	55.5	----	15.2	33,500	35
Triumph Seed	TR 452	46	----	56.3	----	14.7	32,200	45
Triumph Seed	TRX 95003	44	----	55.0	----	15.4	38,900	75
Pioneer Hi-Bred Int.	86G32	44	----	54.6	----	16.5	28,500	80
Dyna-Gro	742C	38	----	56.0	----	14.5	28,200	10
Frontier Hybrids	F 303C	36	----	55.4	----	14.6	30,500	25
	Mean	48	75	55.4	57.7	15.2	33,600	40
	C.V.%	18.4	17.7	3.3	1.9	6.0	19.8	----
	L.S.D.	15	15	NS	1.3	NS	11,000	----

Cooperator: Richard and James Wuerflein
 No-till Practices: Corn-Wheat-Double crop sorghum
 Fertilizer: N: 105 lbs N/ac P: 20 lb P₂O₅ K: 0
 Planting Date: June 24, 2009 Target Population: 45,000 plants/ac

Soil Series: Grant Silt Loam
 Soil Test: N: NA P: NA K: NA pH: NA
 Herbicide: 2 qt/ac Cinch ATZ Lite Preemergence
 Harvest Date: December 14, 2009

Monthly Rainfall (in.)	June	July	Aug	Sept	Oct	Total
2009:	2.32	2.57	7.57	0.51	4.98	17.95
Long term mean:	4.26	2.89	3.35	3.39	3.17	17.06

Table 4. Results from OPREC dry-land grain sorghum performance trial, 2009.

Company Brand Name	Hybrid	Grain Yield bu/ac		Test weight lb/bu		Harvest Moisture	Plant Population plants/ac	Head Population heads/plant
		2009	Two-year	2009	Two-year			
Less than 60 days to mid-bloom								
DEKALB	DKS 37-07	92	83	58.3	56.2	15.0	22,700	2.07
DEKALB	DKS 37-07 (wo)	85	80	57.9	55.8	15.1	19,200	2.28
DEKALB	Pulsar	77	74	56.7	56.2	15.5	15,500	2.52
DEKALB	DKS 29-28	79	70	56.4	56.7	15.4	20,300	2.34
DEKALB	DKS 28-05	89	----	57.4	----	14.8	17,700	2.94
Frontier Hybrids	F 270E	79	----	56.7	----	15.0	21,600	1.64
Frontier Hybrids	F 303C	72	----	56.2	----	16.1	19,100	1.92
Johnston Seed Co.	JS 207	67	----	56.9	----	14.7	19,100	1.89
DEKALB	DK 39Y	67	----	57.9	----	15.1	15,700	2.21
Frontier Hybrids	F 505E	67	----	50.0	----	16.5	18,400	1.79
	Mean	77	79	56.4	56.2	15.3	18,900	2.16
	C.V.%	8.6	9.2	4.1	4.2	6.1	11.8	11.5
	L.S.D.	10	7	3.4	NS	NS	3,200	0.36

Company Brand Name	Hybrid	Grain Yield bu/ac 2009	Test weight lb/bu 2009	Harvest Moisture	Plant Population plants/ac	Head Population heads/plant
70 days and greater to mid-bloom						
Sorghum Partners Inc	X 698	67	58.8	14.5	20,100	2.04
Frontier Hybrids	F 700E	65	54.9	15.5	20,300	1.74
Sorghum Partners Inc	NK6638	62	53.5	14.0	18,800	2.09
Sorghum Partners Inc	SP6680	42	46.7	18.4	19,700	1.78
	Mean	59	53.5	15.6	19,700	1.91
	C.V.%	5.0	4.4	4.4	7.4	9.2
	L.S.D.	6	4.7	1.4	NS	NS

Table 4. Continued.

Company Brand Name	Hybrid	Grain Yield bu/ac		Test weight lb/bu		Harvest Moisture	Plant Population plants/ac	Head Population heads/plant
		2009	Two- year	2009	Two-year			
60 to 69 days to mid-bloom								
Sorghum Partners Inc	NK5418	87	82	57.4	56.2	15.1	17,400	2.84
Pioneer Hi-bred Int.	86G32	81	81	57.2	55.0	15.0	18,500	2.50
Sorghum Partners Inc	KS 585	79	81	58.0	56.3	14.8	17,900	2.53
NC+ Hybrids	5B90	84	79	59.4	55.8	15.1	21,400	2.35
Sorghum Partners Inc	KS 585 (wo)	79	76	57.8	54.6	15.0	21,300	2.04
DEKALB	DKS 44-20	82	74	58.3	54.9	15.2	19,700	2.06
Pioneer Hi-bred Int.	85G03	79	73	54.6	53.5	15.5	18,200	2.69
Dyna-Gro	766B	80	70	57.4	55.0	15.3	17,500	2.27
Dyna-Gro	772B	78	65	56.6	54.2	15.3	16,700	2.35
NC+ Hybrids	6B10	86	----	56.6	----	15.6	21,100	2.08
DEKALB	DKS 36-06	84	----	56.3	----	15.1	21,900	1.97
Pioneer Hi-bred Int.	87P06	83	----	56.7	----	14.1	16,700	3.31
NC+ Hybrids	7B11	82	----	57.4	----	15.4	19,400	2.11
Johnston Seed Co.	JS - 056	78	----	57.3	----	15.2	20,600	2.05
Triumph Seed	TR 452	77	----	57.3	----	14.7	19,200	1.94
Syngenta Seeds	5613	77	----	58.5	----	14.6	18,400	2.07
Johnston Seed Co.	JS - 524	76	----	56.0	----	14.7	20,600	2.08
Johnston Seed Co.	JS 222	76	----	56.7	----	15.2	18,000	1.99
Syngenta Seeds	5556	75	----	57.8	----	14.7	15,200	2.30
Sorghum Partners Inc	X445	73	----	55.2	----	14.2	16,200	2.45
Dyna-Gro	742C	73	----	56.5	----	15.2	17,300	2.06
Syngenta Seeds	5464	72	----	56.3	----	15.3	18,200	2.00
Johnston Seed Co.	JS 753	71	----	55.0	----	15.0	17,500	2.28
Syngenta Seeds	H-486	64	----	53.0	----	15.6	20,000	1.64
Johnston Seed Co.	JS 005	62	----	56.6	----	14.1	16,300	2.28
Triumph Seed	TRX 95003	60	----	54.3	----	15.5	18,200	1.82
	Mean	77	75.6	56.7	55.0	15.0	18,700	2.23
	C.V.%	9.3	12.6	2.7	3.2	3.7	14.1	14.0
	L.S.D.	10	10	2.2	1.8	0.8	NS	0.44

Cooperator: OPREC

Herbicide: Cinch ATZ Lite 2 qts/ac (Preemergence)

Soil Test: N: 60 P: 105 K: 1,391 pH: 7.9

Planting Date: June 23, 2009

Harvest Date: November 3, 2009

Monthly Rainfall (in.)

	May	June	July	Aug.	Sep.	Total
2009:	0.55	1.74	2.58	1.36	0.45	6.68
Long term mean:	2.76	2.92	2.85	2.55	1.97	13.05

Soil Series: Richfield Clay Loam

No-till following wheat in 2008

Fertilizer: N: 50 lbs N + 5 gal/ac 10-34-0 with planter

Target Population: 22,000 plants/ac

Table 5. Results from OPREC limited irrigation grain sorghum performance trial, 2009.

Company Brand Name	Hybrid	Grain Yield bu/ac		Test weight lb/bu		Harvest Moisture	Plant Population plants/ac	Head Population heads/plant
		2009	Two-year	2009	Two-year			
Less than 60 days to mid-bloom								
DEKALB	DKS 37-07 (wo)	164	152	60.0	58.9	12.6	42,900	1.41
DEKALB	DKS 37-07	159	149	59.6	59.1	12.5	51,200	1.17
DEKALB	Pulsar	149	141	57.8	57.7	12.5	45,200	1.37
DEKALB	DK 39Y	137	122	58.8	57.9	11.9	35,000	1.57
DEKALB	DKS 29-28	125	116	57.2	56.7	11.4	47,700	1.31
Frontier Hybrids	F 303C	159	----	59.2	----	11.8	46,500	1.21
Frontier Hybrids	F 505E	152	----	56.6	----	12.3	44,500	1.18
Johnston Seed Co.	JS 207	145	----	56.6	----	11.5	43,500	1.43
Frontier Hybrids	F 270E	144	----	58.4	----	12.1	47,200	1.17
DEKALB	DKS 28-05	144	----	57.5	----	11.4	45,700	1.64
	Mean	148	136	58.2	58.1	12.0	44,900	1.34
	C.V.%	6.7	5.5	1.9	2.3	3.5	9.1	11.9
	L.S.D.	14	8	1.6	1.4	0.6	5,900	0.23

Company Brand Name	Hybrid	Grain Yield bu/ac 2009		Test weight lb/bu 2009		Harvest Moisture	Plant Population plants/ac	Head Population heads/plant
70 days and greater to mid-bloom								
DEKALB	DKS 53-67	153	138	60.1	58.3	12.9	49,300	1.23
DEKALB	DKS 54-03	148	135	57.2	56.7	12.2	45,300	1.23
DEKALB	DKS 54-00	144	126	58.7	57.2	12.1	46,400	1.20
Sorghum Partners Inc	NK6638	139	124	58.6	58.0	11.3	47,300	1.22
Sorghum Partners Inc	SP6680	169	----	58.9	----	13.0	45,800	1.27
Pioneer Hi-Bred Int.	84G62	154	----	58.8	----	12.1	41,100	1.25
Frontier Hybrids	F 700E	153	----	58.3	----	12.3	42,400	1.26
Pioneer Hi-Bred Int.	84P74	142	----	57.7	----	13.0	41,700	1.32
Sorghum Partners Inc	X 698	139	----	58.5	----	12.2	47,900	1.20
	Mean	149	131	58.5	57.5	12.3	45,200	1.24
	C.V.%	7.5	7.6	2.6	3.2	2.8	8.7	7.2
	L.S.D.	16	10	NS	NS	0.5	5,700	0.13

Table 5. Continued.

Company Brand Name	Hybrid	Grain Yield bu/ac		Test weight lb/bu		Harvest Moisture	Plant Population plants/ac	Head Population heads/plant
		2009	Two-year	2009	Two-year			
60 to 69 days to mid-bloom								
Sorghum Partners Inc	KS 585	172	153	58.6	58.6	12.4	45,100	1.33
NC+ Hybrids	5B90	151	141	58.7	58.3	12.0	39,600	1.54
Sorghum Partners Inc	KS 585 (wo)	151	141	59.3	58.8	12.5	47,500	1.18
Dyna-Gro	772B	153	140	59.3	57.7	12.7	44,100	1.23
Sorghum Partners Inc	NK5418	147	139	56.9	57.5	11.6	42,800	1.36
DEKALB	DKS 44-20	155	135	58.5	58.9	12.4	41,600	1.39
Dyna-Gro	766B	149	128	57.7	57.2	12.1	39,000	1.39
Pioneer Hi-bred Int.	86G32	162	---	57.9	---	11.8	44,300	1.35
Johnston Seed Co.	JS - 056	162	---	58.8	---	12.4	44,400	1.41
Syngenta Seeds	5556	161	---	57.9	---	12.3	44,900	1.25
Sorghum Partners Inc	X445	159	---	58.0	---	11.9	47,200	1.42
Johnston Seed Co.	JS - 524	159	---	56.3	---	12.5	43,000	1.33
Johnston Seed Co.	JS 222	156	---	58.2	---	12.2	45,100	1.16
Syngenta Seeds	5613	156	---	58.7	---	12.5	42,400	1.35
NC+ Hybrids	6B10	155	---	58.3	---	12.3	42,600	1.24
Pioneer Hi-bred Int.	85G03	154	---	57.9	---	12.1	40,100	1.37
Dyna-Gro	742C	154	---	56.5	---	11.8	43,000	1.29
Syngenta Seeds	5464	152	---	59.5	---	12.4	45,500	1.23
Triumph Seed	TR 452	152	---	58.4	---	11.9	43,900	1.34
NC+ Hybrids	7B11	148	---	59.2	---	12.3	42,400	1.37
DEKALB	DKS 36-06	145	---	58.6	---	12.2	42,500	1.26
Johnston Seed Co.	JS 005	143	---	57.6	---	12.0	41,200	1.35
Pioneer Hi-bred Int.	87P06	139	---	58.7	---	12.0	45,200	1.34
Triumph Seed	TRX 95003	138	---	58.3	---	11.7	45,300	1.22
Johnston Seed Co.	JS 753	136	---	57.8	---	11.8	44,800	1.25
Syngenta Seeds	H-486	135	---	57.4	---	11.9	41,200	1.46
	Mean	152	140	58.2	58.1	12.1	43,400	1.32
	C.V.%	7.0	8.2	2.7	2.9	3.7	9.6	12.3
	L.S.D.	15	12	NS	NS	0.6	NS	NS

Cooperator: OPREC
 Herbicide: Cinch ATZ Lite 2 qts/ac (Preemergence)
 Soil Test: N: 36 P: 15 K: 833 pH: 7.8
 Fertilizer: N: 150 lbs N and 50 lbs P2O5 with strip-till + 5 gal/ac 10-34-0 with planter
 Planting Date: May 28, 2009
 Harvest Date: November 6, 2009

Soil Series: Richfield Clay Loam
 Strip-till following wheat and double crop sunflower in 2008
 Target Population: 50,000 plants/ac

Monthly Rainfall (in.)	May	June	July	Aug.	Sep.	Total
2009:	0.55	1.74	2.58	1.36	0.45	6.68
Long term mean:	2.76	2.92	2.85	2.55	1.97	13.05

----- Irrigation (in.) -----

Jun.	Jul.	Aug.	Sept.	Oct
2.2	3.3	3.3	0.0	0.0