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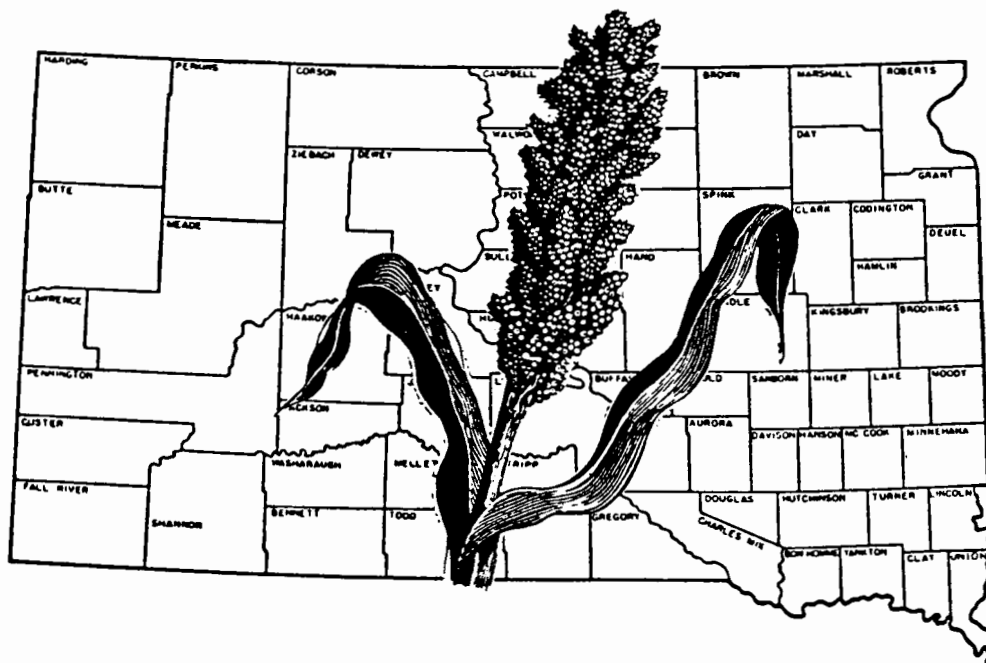
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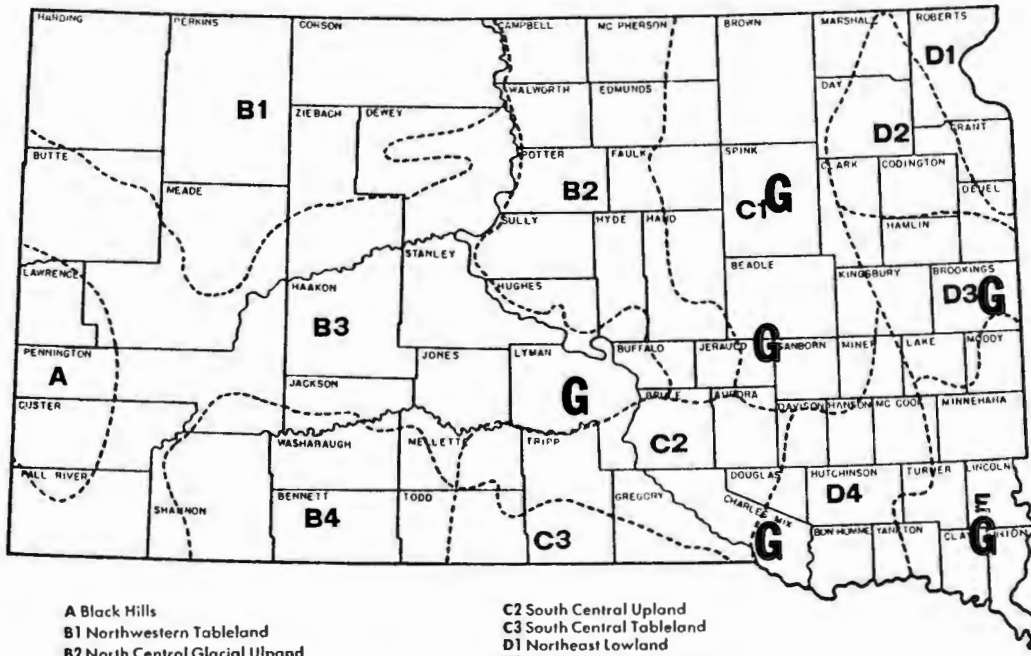
GRAIN SORGHUM PERFORMANCE TRIALS

1986



PLANT SCIENCE DEPARTMENT
AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE UNIVERSITY

CROP ADAPTATION AREAS OF
SOUTH DAKOTA
1986 GRAIN SORGHUM PERFORMANCE TRIAL SITES



- | | |
|--|-----------------------------------|
| A Black Hills | C2 South Central Upland |
| B1 Northwestern Tableland | C3 South Central Tableland |
| B2 North Central Glacial Upland | D1 Northeast Lowland |
| B3 Pierre Plain | D2 Northern Prairie Coteau |
| B4 Southwestern Tableland | D3 Central Prairie Coteau |
| C1 Northern James Valley | D4 Southern James Flatland |
| | E Southeast Prairie Upland |

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1986 GRAIN SORGHUM PERFORMANCE TRIALS

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The relative performance of grain sorghum cultivars grown under similar environmental conditions is evaluated in this report for the 1986 crop season. Performance records of all entries harvested in 1986 and the available two and three-year averages are presented. The trials were conducted under the Plant Science Department program in Crop Performance Testing, Agricultural Experiment Station, South Dakota State University.

Location of the 1986 Trials

For adequate performance evaluation, all entries must be grown under similar environmental conditions. Crop adaptation areas in which trials are conducted are based upon soil type, elevation, temperature, rainfall, and other physical differences. The exact location of each trial, row spacing, and dates of seeding and harvesting are included in Table 1. Soil classification and data from soil samples taken, cultural practices, and fertilizer applications are shown in Table 2.

Weather and Climatic Conditions

Climatic data for the 1986 grain sorghum year (Table 3) are based upon U.S. Monthly Climatological Data. Data is not available from the Geddes site so the Pickstown data is presented. Precipitation quantities vary from the actual trial sites to the recording stations but temperatures are similar over a much wider area and considered applicable to the trial area.

Field conditions were wet in the eastern South Dakota during the early part of the growing period. Field work began early, was interrupted by frequent heavy showers in mid-May, and ended by mid-June. Good moisture was available for germination. Stands were reduced at Kennebec and Redfield where the cool, saturated soil in early June retarded growth. Growth was generally behind and uneven until mid-summer especially in parts of the state where standing water became a problem. Growing degree days were above normal during the early part of the growing season, favoring rapid germination of early seeded crops with good drainage. Cool, cloudy conditions prevailed over much of the state from late July through the remainder of the growing season, delaying maturity of all standing crops. August and September averaged about 5 and 3 degrees below normal, respectively. A plant-killing temperature, 27 degrees F., occurred at Centerville on September 7; the remaining sites did not record temperatures below 32 until after October 4. September precipitation was much above normal delaying drydown and combine harvest; some farm fields are still unharvested.

The assistance of the following individuals is appreciated: Dwayne Beck, Burton Lawrensen, Dale Sorenson, Herb Lund, Lucian Edler, and Kevin Kirby; farmer-co-operators John Biddle, James Eagle, and Harlan Halverson.

Table 1. Location of Trials, and Dates of Seeding and Harvesting of Grain Sorghum Performance Trials, South Dakota, 1986.

County	Location and Post Office	Row Spacing	Dates when Seeded	Dates when Harvested
Brookings	Plant Science Farm, Brookings	30"	May 29	October 14
Charles Mix	John Biddle Farm, Geddes	30"	May 15	October 1
Clay	Southeast Experiment Farm, Beresford	30"	May 22	October 8
Jerauld	James Eagle Farm, Wessington Springs	30"	May 28	October 6
Lyman	Harlan Halverson Farm, Kennebec	30"	June 2	October 1
Spink	James Valley Research Farm, Redfield	30"	May 21	October 6

Yields were good in all but the Brookings and Kennebec trials, though quite variable in some trials. Warm, friable field conditions favored early seeding of all trials except Kennebec in 1986. Temperatures were above normal in May and June at all stations. Cool, cloudy conditions began in mid-July delaying heading until after mid-August at the northern sites. Medium to late maturing hybrids were affected most by the cool weather from mid-August to frost. Some late entries still had pollen-shedding anthers present in late September and little or no grain was in the harvested heads, especially at Brookings and Kennebec.

Periods of excessively high temperatures occurred at several sites but did not appear to seriously affect pollination. Generally the opposite was true in the northern portion of the state where cooler than normal temperatures delayed heading and pollination of adapted hybrids until mid to late August.

Hybrid Entry Procedure

Only grain sorghums offered for sale in South Dakota or being produced for 1987 distribution were eligible for entry. A closed-pedigree hybrid was entered by the name and number under which it was sold by the participating company. All entries maintained a minimum laboratory germination of 80% as required by South Dakota Certification Standards. A nominal fee was charged for each entry in each trial. Proprietary entries included are the choice of the participating companies.

Table 2. Soil Sample Analysis and Cultural Practices, 1986 Grain Sorghum Sites.

County and crop adaptation areas	Soil Classification	Lab analysis				pH	Field preparations Methods	Field preparations pounds/A			
		Org. mat. %	P lbs/A	K lbs/A	N			P	K		
Lyman, B3	Pierre Cl	2.9	3	690	7.9	Sweeps in spring	wht.	stub.			
Chas. Mix, C2	Highmore SiCl	3.2	67	990	6.8	Sweeps(soybeans-'86)	7	21	7		
Jerauld,C1(dry)	Hou-Pros SiCl	4.0	295	1705	7.4	Plowed, '85 barley flooded out					
Spink,C1(irr.)	Beotia SiCl	2.6	37	770	6.6	Field cult	100	40	0		
Brookings, D3	Lamour SiL	3.2	19	145	6.5	Chiseled, sudan stub.	40	30	0		
Clay, E	Egan SiL	3.1	8	285	6.1	Plowed, sm grain	160	60	40		

Table 3. Temperature and Precipitation Data for the 1986 Grain Sorghum Performance Trials, South Dakota.

Location	Type of Data	Months of					Total
		May	June	July	August	Sept.	
Brookings 2 NE	Precip. (inches)	3.72	4.42	3.71	3.43	7.67	22.95
	Temp. (mean)	56.2	67.0	71.3	63.4	57.2	
	Mean departure	+0.2	+1.4	+0.6	-5.2	-1.1	
	Days 90 F. +	--	02	04	--	--	
		First freeze - 28; October 9					
Centerville 6 SE	Precip. (inches)	4.44	3.38	2.31	2.68	5.26	18.07
	Temp. (mean)	58.8	70.4	73.9	65.3	59.4	
	Mean departure	-1.5	+0.2	-1.0	-7.5	-3.5	
	Days 90 F. +	--	08	12	02	--	
		First freeze - 27; September 7					
Kennebec	Precip. (inches)	6.27	2.26	1.99	1.65	2.75	14.94
	Temp. (mean)	59.8	72.3	77.1	71.4	60.5	
	Mean departure	+0.9	+3.2	-1.3	-3.0	-3.2	
	Days 90 F. +	--	08	18	10	--	
		First freeze - 30; October 9					
Pickstown	Precip. (inches)	3.41	6.66	2.37	1.86	2.65	16.95
	Temp. (mean)	60.3	71.9	76.6	69.9	60.1	
	Mean departure	+0.1	+1.7	+0.3	-4.7	-4.0	
	Days 90 F. +	--	07	11	04	02	
		First freeze - 28; October 12					
Redfield 6 E	Precip. (inches)	3.92	3.06	2.19	4.09	4.70	17.96
	Temp. (mean)	57.5	68.5	73.1	66.8	58.5	
	Mean departure	+0.3	+1.7	0.0	-4.7	-2.2	
	Days 90 F. +	--	03	05	01	--	
		First freeze - 29; October 4					
Wess. Sprngs	Precip. (inches)	4.49	5.46	3.00	2.00	5.95	20.93
	Temp. (mean)	59.1	69.9	75.0	69.0	59.0	
	Days 90 F. +	--	04	07	03	--	
			First freeze - 26; October 12				

Experimental Procedure

Each trial consisted of four replications of two-row plots. Each plot was randomly located within each replication. All trials were seeded with 31-cell cone seeders mounted above maxi-merge units. A herbicide recommended for grassy weed control was banded over each row at seeding time. The row spacing used(30") is indicated in Table 1 and plot lengths were dependent upon the area available at each site. Seeding rates were adequate, under normal conditions, to achieve an average of 2 and 3 plants per foot of row in the central and eastern portions of the state, respectively. The trial at Redfield was irrigated by the gravity method with approximately 2 inches of water each time the tensiometer reached 40 cb at the 18-inch depth.

Moisture determinations were made from September 16-23 just prior to normal first-frost dates. This is more informative as to maturity than determinations made at harvest. Moisture and test weight of the grain realistically indicate relative maturity. Grain samples for moisture determinations were 10-12 heads, 400-500 grams, cut from each entry, placed in a polyethylene bag, tagged, and sealed. The samples were threshed, cleaned, and moisture percentages determined with an electronic moisture meter. The upper limits of the meter are 35% and the data in the tables showing 33.0% could be that or considerably higher. Data above 30.0 would generally indicate lines of later maturity for the area.

Delayed harvest can contribute to higher levels of lodging or be caught in the bad weather of the later fall so harvesting is done as soon as possible after the first frost. Harvest was completed by October 14. Harvested grain was cut from a 15-20 foot section of each 2-row plot. Heads were bagged at harvest, tagged and tied, and returned to Brookings for drying and threshing. Yields are reported in pounds per acre (x 1.121 for kg/ha) with three or four replications harvested for yield purposes and one left for observational purposes.

Discussion of Results

Yields were quite variable from site to site and within trials. Hundred-weight yields topped the 60's at Redfield and the 50's at Centerville, Geddes and Wessington Springs. Yields began at just over 35 at Brookings but were all under 20 at Kennebec. The lateness of heading generally favored the shorter season entries. Moisture was above 35% when sampled in many entries in all trials; the meter topping out at 35.0%.

Quality of many entries was seriously affected by lateness of the season as test weights were poor for many entries in some trials. The very late maturity entries suffered 10-12 pound reductions in test weight.

The seed moisture recorded was obtained within 24-48 hours before the anticipated first frost was expected. Quality was apparently affected, the cool temperatures during September and wet, cool conditions in October not favoring kernel fill or drydown at some sites. The harvested grain required supplemental drying in most instances.

Lodging was not a serious problem at any of the locations. Bird damage was a problem at Brookings. Trials located within larger fields of cooperators suffered little damage. Yield, quality, and test weight were affected by the stage of growth when temperature or moisture effects occurred.

Measurement of Performance

Variations in factors such as soil fertility, slope, or stand may cause varieties of equal potential to yield differently. Mathematical determinations were made to determine if yield differences were caused by variations in environment or were true varietal differences. Small yield differences have no significance.

Yields of 1986 and other agronomic data are reported in Tables 4 through 9. A listing of all entries is presented in Table 10.

TABLE 4. 1986 GRAIN SORGHUM PERFORMANCE TRIAL, AREA D3, PLANT SCIENCE FARM, BROOKINGS, BROOKINGS COUNTY, SOUTH DAKOTA.

BRAND	VARIETY	PLANTS 50 PCT MO-DAY	PLANT HEIGHT IN (CM)	EARLY MOIST PCT	STALK LODGN PCT	TEST WT. LB/BU	GRAIN YIELD LB/A (KG/HA)
ONE-YEAR							
DEKALB	DK-18	7-28	49 (124)	33.0	.	50	833 (930)
DEKALB	DK-28	8- 2	43 (109)	33.0	.	51	2501 (2800)
PIONEER BRAND	8855	8- 2	48 (122)	33.0	.	50	1718 (1920)
PIONEER BRAND	8790	8- 3	45 (114)	33.0	.	51	1585 (1770)
SEEDTEC	3103	8- 3	46 (117)	33.0	.	52	3973 (4450)
INTERSTATE	663	8- 4	48 (122)	33.0	.	50	1072 (1200)
KELTGEN	X86029	8- 4	47 (119)	33.0	.	53	3208 (3590)
SEEDTEC	3102	8- 4	47 (119)	33.0	.	50	1680 (1880)
WARNER	W-523T	8- 4	48 (122)	33.0	.	45	1457 (1630)
INTERSTATE	660	8- 6	41 (104)	33.0	.	51	2171 (2430)
MC CURDY "BIG M"	M450	8- 6	48 (122)	33.0	.	45	1538 (1720)
PIONEER BRAND	8728	8- 6	46 (117)	33.0	.	50	1602 (1790)
SIGCO	TR 46	8- 6	51 (130)	33.0	.	50	3480 (3900)
STAUFFER	515 GR	8- 6	40 (102)	33.0	.	40	1779 (1990)
WARNER	W-501T	8- 6	39 (99)	33.0	.	48	2118 (2370)
WARNER	W-545T	8- 6	40 (102)	33.0	.	50	2441 (2730)
WARNER	WX86028	8- 6	44 (112)	33.0	.	46	3570 (4000)
INTERSTATE	665	8- 7	50 (127)	33.0	.	46	3005 (3360)
KELTGEN	KG 57T	8- 7	39 (99)	33.0	.	45	2026 (2270)
KELTGEN	X86025	8- 7	54 (137)	33.0	.	46	943 (1060)
MC CURDY "BIG M"	M410	8- 7	50 (127)	33.0	.	50	3579 (4010)
SIGCO	TWO 48YG	8- 7	38 (97)	33.0	.	50	2364 (2650)
WARNER	W-560T	8- 7	47 (119)	33.0	.	48	2465 (2760)
KELTGEN	KG 58T	8- 8	47 (119)	33.0	.	46	2603 (2910)
P-A-G	2250	8- 8	42 (107)	33.0	.	49	1735 (1940)
PIONEER BRAND	8680	8- 8	45 (114)	33.0	.	49	2328 (2610)
SEEDTEC	3101	8- 8	50 (127)	33.0	.	48	2621 (2930)
STAUFFER	9525	8- 8	48 (122)	33.0	.	45	3380 (3780)
P-A-G	2285	8- 9	42 (107)	33.0	.	50	1878 (2100)
PAYMASTER	1022	8- 9	50 (127)	33.0	.	47	2080 (2330)
WARNER	W-551A	8- 9	49 (124)	33.0	.	48	3338 (3740)
INTERSTATE	668	8-10	46 (117)	33.0	.	42	1855 (2080)
KELTGEN	KG 63T	8-10	49 (124)	33.0	.	48	1456 (1630)
PAYMASTER	930	8-10	44 (112)	33.0	.	47	1891 (2120)
ENTRY AVERAGES		8/6	46	33.+		49	2243
LSD (.05)							1193
CV - %							32.7
TWO-YEAR							
DEKALB	DK-18	7-30	47 (119)	33.0	.	50	1746 (1960)
DEKALB	DK-28	8- 2	41 (104)	33.0	.	51	3035 (3400)
PIONEER BRAND	8855	8- 3	45 (114)	33.0	.	50	2285 (2560)
PIONEER BRAND	8790	8- 4	45 (114)	33.0	.	51	2116 (2370)
SEEDTEC	3103	8- 4	44 (112)	33.0	.	52	3799 (4250)
SEEDTEC	3102	8- 5	45 (114)	33.0	.	50	1992 (2230)
WARNER	W-523T	8- 5	45 (114)	33.0	.	47	1832 (2050)
SIGCO	TWO 48YG	8- 7	37 (94)	33.0	.	49	2710 (3030)
WARNER	W-545T	8- 7	39 (99)	33.0	.	49	2705 (3030)
SEEDTEC	3101	8- 8	47 (119)	33.0	.	48	3110 (3480)
SIGCO	TR 46	8- 8	47 (119)	33.0	.	50	3431 (3840)
WARNER	W-501T	8- 8	37 (94)	33.0	.	47	2171 (2430)
WARNER	W-551A	8- 9	46 (117)	33.0	.	49	3242 (3630)
PIONEER BRAND	8680	8-10	42 (107)	33.0	.	49	2157 (2420)
WARNER	W-560T	8-10	45 (114)	33.0	.	48	2415 (2700)
ENTRY AVERAGES		8/6	43	33.+		49	2583
LSD (.05)							373
CV - %							17.8
THREE-YEAR							
DEKALB	DK-18	7-31	47 (119)	28.0	.	53	2752 (3080)
DEKALB	DK-28	8- 3	41 (104)	29.0	.	53	3475 (3890)
PIONEER BRAND	8790	8- 5	45 (114)	32.0	.	53	2810 (3150)
WARNER	W-545T	8- 7	39 (99)	32.0	.	51	3148 (3530)
SIGCO	TWO 48YG	8- 8	37 (94)	31.0	.	52	3343 (3740)
PIONEER BRAND	8680	8-11	42 (107)	33.0	.	51	2335 (2610)
ENTRY AVERAGES		8/6	42	30.9		52	20.3
LSD (.05)							603
CV - %							20.3

TABLE 5. 1986 GRAIN SORGHUM PERFORMANCE TRIAL, AREA C1(IRRIGATED), JAMES VALLEY RESEARCH FARM, REDFIELD, SPINK COUNTY, SOUTH DAKOTA.

BRAND	VARIETY	PLANTS 50 PCT MO-DAY	PLANT HEIGHT IN (CM)	EARLY MOIST PCT	STALK LODGN PCT	TEST WT. LB/BU	GRAIN YIELD LB/A (KG/HA)
ONE-YEAR							
DEKALB	DK-18	7-21	46 (117)	33.0	.	60	5280 (5910)
NORTHROP KING	NK BRAND 1210	7-21	45 (114)	33.0	.	59	5332 (5970)
PIONEER BRAND	8790	7-21	45 (114)	33.0	.	60	5410 (6060)
PIONEER BRAND	8855	7-22	45 (114)	32.0	.	59	4665 (5220)
KELTGEN	X86029	7-23	46 (117)	33.0	.	58	5778 (6470)
SEEDTEC	3102	7-23	48 (122)	33.0	.	60	5667 (6350)
SEEDTEC	3103	7-23	46 (117)	33.0	.	59	5808 (6500)
WARNER	WX86028	7-23	46 (117)	33.0	.	58	6181 (6920)
STAUFFER	9525	7-24	50 (127)	33.0	.	58	6312 (7070)
WARNER	W-551A	7-24	51 (130)	33.0	.	58	6382 (7150)
INTERSTATE	663	7-25	48 (122)	33.0	.	59	5698 (6380)
KELTGEN	KG 57T	7-25	40 (102)	33.0	.	61	5817 (6510)
SEEDTEC	3101	7-25	52 (132)	33.0	.	58	5919 (6630)
SIGCO	Tk 46	7-25	50 (127)	33.0	.	59	6486 (7260)
SIGCO	TWO 48YG	7-25	41 (104)	33.0	.	60	4866 (5450)
WARNER	W-501T	7-25	40 (102)	33.0	.	60	5651 (6330)
WARNER	W-545T	7-25	42 (107)	33.0	.	59	6276 (7030)
INTERSTATE	660	7-26	40 (102)	33.0	.	60	5459 (6110)
INTERSTATE	665	7-26	50 (127)	33.0	.	58	6556 (7340)
KELTGEN	KG 58T	7-27	47 (119)	33.0	.	61	6334 (7090)
PIONEER BRAND	8728	7-27	45 (114)	33.0	.	61	5297 (5930)
STAUFFER	515 GR	7-27	42 (107)	33.0	.	60	5784 (6480)
WARNER	W-523T	7-27	47 (119)	33.0	.	60	5800 (6490)
INTERSTATE	668	7-28	45 (114)	33.0	.	60	6726 (7530)
P-A-G	2285	7-28	46 (117)	33.0	.	60	5253 (5880)
PIONEER BRAND	8680	7-28	47 (119)	33.0	.	61	5438 (6090)
WARNER	W-560T	7-28	47 (119)	33.0	.	61	6245 (6990)
DEKALB	X-651	7-29	52 (132)	33.0	.	61	6412 (7180)
KELTGEN	KG 63T	7-29	55 (140)	33.0	.	61	5131 (5750)
ASGROW	CORRAL	7-30	55 (140)	33.0	.	61	6330 (7090)
ENTRY AVERAGES		7/25	47	33.+		60	5745
LSD (.05)							1213
CV - %							12.9
TWO-YEAR							
NORTHROP KING	NK BRAND 1210	7-28	45 (114)	33.0	.	57	4943 (5540)
PIONEER BRAND	8855	7-28	45 (114)	32.0	.	58	4490 (5030)
DEKALB	DK-18	7-29	46 (117)	33.0	.	57	4699 (5260)
PIONEER BRAND	8790	7-30	45 (114)	33.0	.	58	4771 (5340)
SEEDTEC	3103	7-31	45 (114)	33.0	.	56	4989 (5590)
WARNER	W-545T	8- 2	41 (104)	33.0	.	56	5026 (5630)
WARNER	W-551A	8- 3	50 (127)	33.0	.	55	5194 (5820)
SEEDTEC	3101	8- 4	49 (124)	33.0	.	55	4772 (5340)
SEEDTEC	3102	8- 4	45 (114)	33.0	.	54	4060 (4550)
WARNER	W-501T	8- 5	39 (99)	33.0	.	54	4250 (4760)
WARNER	W-523T	8- 5	45 (114)	33.0	.	54	4364 (4890)
WARNER	W-560T	8- 7	45 (114)	33.0	.	54	4300 (4820)
ASGROW	CORRAL	8-11	54 (137)	33.0	.	53	3943 (4420)
ENTRY AVERAGES		8/2	46	33.+		55	4600
LSD (.05)							792
CV - %							19.3
THREE-YEAR							
DEKALB	DK-18	7-30	47 (119)	33.0	80	57	4975 (5570)
NORTHROP KING	NK BRAND 1210	7-30	44 (112)	32.0	10	57	5115 (5730)
PIONEER BRAND	8855	7-30	45 (114)	32.0	22	58	4872 (5460)
PIONEER BRAND	8790	8- 1	44 (112)	33.0	10	58	4980 (5580)
ENTRY AVERAGES		7/30	45	32.4		57	4985
LSD (.05)							372
CV - %							5.2

TABLE 6. 1986 GRAIN SORGHUM PERFORMANCE TIRAL, AREA B3, HARLAN HALVERSON FARM, KENNEBEC, LYMAN COUNTY, SOUTH DAKOTA..

BRAND	VARIETY	PLANTS 50 PCT MO-DAY	PLANT HEIGHT IN (CM)	EARLY MOIST PCT	STALK LODGN PCT	TEST WT. LB/BU	GRAIN YIELD LB/A (KG/HA)
ONE-YEAR							
ASGROW	DORADO E	43	(109)	32.0	.	43	1565 (1750)
ASGROW	H8407	40	(102)	33.0	.	53	1432 (1600)
CENEX	226T	40	(102)	33.0	.	56	1556 (1740)
DEKALB	DK-18	41	(104)	30.0	.	54	1426 (1600)
DEKALB	DK-28	42	(107)	33.0	.	55	1504 (1680)
KELTGEN	KG 57T	39	(99)	33.0	.	56	1542 (1730)
KELTGEN	KG 58T	38	(97)	33.0	.	54	1569 (1760)
KELTGEN	KG 63T	42	(107)	33.0	45	55	1182 (1320)
KELTGEN	KG 64T	41	(104)	33.0	.	55	1512 (1690)
KELTGEN	X86029	40	(102)	33.0	.	55	1679 (1880)
NORTHROP KING	NK BRAND 1210	40	(102)	31.0	.	53	1145 (1280)
P-A-G	2285	37	(94)	33.0	.	57	1120 (1250)
PAYMASTER	1022	39	(99)	33.0	.	54	1330 (1490)
PAYMASTER	930	41	(104)	33.0	.	56	1747 (1960)
PIONEER BRAND	8680	38	(97)	33.0	10	56	1324 (1480)
PIONFER BRAND	8728	38	(97)	33.0	.	56	1216 (1360)
PIONEER BRAND	8790	39	(99)	31.0	.	56	1470 (1650)
PIONEER BRAND	8855	39	(99)	33.0	.	54	1266 (1420)
SEEDTEC	3101	42	(107)	33.0	.	54	1672 (1870)
SEEDTEC	3102	40	(102)	33.0	.	56	1490 (1670)
SEEDTEC	3103	40	(102)	33.0	.	55	1612 (1810)
SIGCO	TR 46	43	(109)	33.0	.	54	1638 (1830)
SIGCO	TWO 48YG	36	(91)	30.0	.	57	1570 (1760)
STAUFFER	515 GR	37	(94)	33.0	.	57	1203 (1350)
STAUFFER	9525	41	(104)	33.0	.	54	1750 (1960)
WARNER	W-501T	37	(94)	31.0	.	57	1435 (1610)
WARNER	W-523T	39	(99)	31.0	.	56	1359 (1520)
WARNER	W-545T	39	(99)	33.0	.	57	1923 (2150)
WARNER	W-551A	43	(109)	33.0	.	49	1347 (1510)
WARNER	W-560T	40	(102)	33.0	.	56	1336 (1500)
WARNER	WX86028	43	(109)	33.0	.	55	1899 (2130)
ENTRY AVERAGES		40		33.+		55	1478
LSD (.05)							N.S.
CV - %							19.2
TWO-YEAR							
CENEX	226T	38	(97)	33.0	.	52	1862 (2090)
DEKALB	DK-18	40	(102)	32.0	.	50	1742 (1950)
DEKALB	DK-28	40	(102)	33.0	.	53	2019 (2260)
KELTGEN	KG 57T	39	(99)	33.0	.	52	1961 (2200)
KELTGEN	KG 63T	43	(109)	33.0	45	43	769 (860)
NORTHROP KING	NK BRAND 1210	39	(99)	32.0	.	52	1817 (2030)
P-A-G	2285	40	(102)	33.0	.	47	1134 (1270)
PAYMASTER	1022	41	(104)	33.0	.	47	1374 (1540)
PAYMASTER	930	41	(104)	33.0	.	50	1879 (2100)
PIONEER BRAND	8790	40	(102)	32.0	.	53	1778 (1990)
PIONEER BRAND	8855	41	(104)	33.0	.	51	1733 (1940)
SEEDTEC	3101	43	(109)	33.0	.	50	2087 (2340)
SEEDTEC	3102	40	(102)	33.0	.	53	1827 (2050)
SEEDTEC	3103	40	(102)	33.0	.	51	2135 (2390)
SIGCO	TR 46	43	(109)	33.0	.	49	2059 (2310)
SIGCO	TWO 48YG	37	(94)	32.0	.	52	1812 (2030)
ENTRY AVERAGES		40		32.7		50	1749
LSD (.05)							283
CV - %							20.7
THREE-YEAR							
DEKALB	DK-18	40	(102)	30.0	10	53	2671 (2990)
DEKALB	DK-28	39	(99)	31.0	.	54	2620 (2930)
NORTHROP KING	NK BRAND 1210	40	(102)	31.0	.	54	2539 (2840)
PIONEER BRAND	8790	40	(102)	31.0	.	55	2467 (2760)
PIONEER BRAND	8855	41	(104)	31.0	.	54	2631 (2950)
SIGCO	TWO 48YG	38	(97)	32.0	.	53	2714 (3040)
ENTRY AVERAGES		40		31.5		54	2606
LSD (.05)							285
CV - %							11.0

TABLE 7 GRAIN SORGHUM PERFORMANCE TRIAL, AREA C1(DRYLAND), JAMES EAGLE FARM,
WESSINGTON SPRINGS, JERAULD COUNTY, SOUTH DAKOTA.

BRAND	VARIETY	PLANTS 50 PCT MO-DAY	PLANT HEIGHT IN (CM)	EARLY MOIST PCT	STALK LODGN PCT	TEST WT. LB/BU	GRAIN YIELD LB/A (KG/HA)
ONE-YEAR							
ASGROW	DORADO E		44 (112)	24.0	.	57	4801 (5380)
ASGROW	H8407		41 (104)	33.0	.	57	3999 (4480)
CENEX	226T		43 (109)	29.0	.	58	4310 (4830)
DEKALB	DK-28		43 (109)	33.0	.	59	5445 (6100)
DEKALB	DK-39Y		45 (114)	32.0	.	58	4089 (4580)
INTERSTATE	660		38 (97)	26.0	.	57	4671 (5230)
INTERSTATE	663		43 (109)	23.0	.	57	3967 (4440)
INTERSTATE	665		49 (124)	24.0	.	56	5604 (6280)
INTERSTATE	668		45 (114)	33.0	.	58	5285 (5920)
KELTGEN	KG 57T		40 (102)	26.0	.	58	4110 (4600)
KELTGEN	KG 58T		46 (117)	33.0	.	58	5058 (5660)
KELTGEN	KG 63T		44 (112)	31.0	.	59	4709 (5270)
KELTGEN	X86029		43 (109)	24.0	.	57	5382 (6030)
P-A-G	2250		40 (102)	26.0	.	56	3877 (4340)
P-A-G	2285		41 (104)	25.0	.	58	4570 (5120)
PAYMASTER	1022		49 (124)	33.0	.	59	4948 (5540)
PAYMASTER	930		42 (107)	26.0	.	59	4254 (4760)
PIONEER BRAND	8680		43 (109)	28.0	.	59	4860 (5440)
PIONEER BRAND	8728		45 (114)	31.0	.	59	4815 (5390)
PIONEER BRAND	8790		39 (99)	21.0	.	56	4378 (4900)
PIONEER BRAND	8855		40 (102)	21.0	.	57	3125 (3500)
SEEDTEC	3101		47 (119)	30.0	.	56	5429 (6080)
SEEDTEC	3102		42 (107)	24.0	.	58	3991 (4470)
SEEDTEC	3103		45 (114)	27.0	.	57	5442 (6090)
SIGCO	TR 46		47 (119)	22.0	.	55	4256 (4770)
SIGCO	TWO 48YG		39 (99)	21.0	.	58	4073 (4560)
SIGCO	TWO 50YG		48 (122)	32.0	.	58	4747 (5320)
STAUFFER	515 GR		36 (91)	30.0	.	56	3202 (3590)
STAUFFER	9525		47 (119)	27.0	.	57	5494 (6150)
WARNER	W-501T		39 (99)	30.0	.	58	5013 (5610)
WARNER	W-523T		43 (109)	25.0	.	58	4358 (4880)
WARNER	W-545T		41 (104)	26.0	.	58	3915 (4380)
WARNER	W-551A		46 (117)	20.0	.	57	5145 (5760)
WARNER	W-560T		40 (102)	33.0	.	58	3762 (4210)
WARNER	W-X86028		45 (114)	25.0	.	56	5789 (6480)
ENTRY AVERAGES			43	27.4		57	4596
LSD (.05)							1375
CV - %							18.4
TWO YEAR							
ASGROW	DORADO E		46 (117)	29.0	.	54	4135 (4630)
CENEX	226T		41 (104)	31.0	.	55	4115 (4610)
DEKALB	DK-28		42 (107)	33.0	.	56	4891 (5480)
DEKALB	DK-39Y		44 (112)	33.0	.	52	3501 (3920)
P-A-G	2250		41 (104)	29.0	.	55	4077 (4570)
P-A-G	2285		44 (112)	29.0	.	51	3734 (4180)
PAYMASTER	1022		48 (122)	33.0	.	53	4241 (4750)
PAYMASTER	930		43 (109)	29.0	.	55	4083 (4570)
PIONEER BRAND	8680		42 (107)	31.0	.	56	4217 (4720)
PIONEER BRAND	8790		40 (102)	27.0	.	56	4442 (4970)
PIONEER BRAND	8855		42 (107)	27.0	.	56	3733 (4180)
SEEDTEC	3101		47 (119)	31.0	.	50	4353 (4870)
SEEDTEC	3102		42 (107)	28.0	.	56	4069 (4560)
SEEDTEC	3103		45 (114)	30.0	.	56	5203 (5830)
SIGCO	TR 46		46 (117)	27.0	.	54	4190 (4690)
SIGCO	TWO 48YG		39 (99)	27.0	.	56	4105 (4600)
SIGCO	TWO 50YG		48 (122)	32.0	.	55	4630 (5180)
WARNER	W-501T		38 (97)	32.0	.	54	4298 (4810)
WARNER	W-523T		44 (112)	29.0	.	55	4053 (4540)
WARNER	W-545T		39 (99)	29.0	.	55	4018 (4500)
WARNER	W-551A		47 (119)	27.0	.	54	4983 (5580)
WARNER	W-560T		42 (107)	33.0	.	53	3888 (4350)
ENTRY AVERAGES			43	29.8		54	4225
LSD (.05)							373
CV - %							13.7

TABLE 7. (CONTINUED), WESSINGTON SPRINGS, SOUTH DAKOTA

BRAND	VARIETY	PLANTS 50 PCT MO-DAY	PLANT HEIGHT IN (CM)	EARLY MOIST PCT	STALK LODGN PCT	TEST WT. LB/BU	GRAIN YIELD LB/A (KG/HA)
THREE-YEAR							
ASGROW	DORADO E	46	(117)	25.0	45	55	4251 (4760)
DEKALB	DK-28	42	(107)	28.0	50	57	4763 (5130)
DEKALB	DK-39Y	43	(109)	29.0	11	53	3533 (3960)
P-A-G	2250	42	(107)	24.0	15	56	3876 (4340)
PIONEER BRAND	8680	42	(107)	27.0	13	57	4291 (4810)
PIONEER BRAND	8790	41	(104)	24.0	7	57	4411 (4940)
PIONEER BRAND	8855	43	(109)	22.0	20	57	3959 (4430)
SIGCO	TWO 48YG	42	(107)	24.0	27	56	3913 (4380)
SIGCO	TWO 50YG	48	(122)	28.0	35	56	4575 (5120)
WARNER	W-545T	40	(102)	26.0	11	56	4098 (4590)
ENTRY AVERAGES		43		25.6		56	4167
LSD (.05)							348
CV - %							11.9

TABLE 8. 1986 GRAIN SORGHUM PERFORMANCE TRIAL, AREA C2, JOHN BIDDLE FARM, GEDDES, CHARLES MIX COUNTY, SOUTH DAKOTA.

BRAND	VARIETY	PLANTS 50 PCT MO-DAY	PLANT HEIGHT IN (CM)	EARLY MOIST PCT	STALK LODGN PCT	TEST WT. LB/BU	GRAIN YIELD LB/A (KG/HA)
ONE-YEAR							
ASGROW	CORRAL	50	(127)	20.0	8	60	4085 (4570)
ASGROW	DORADO E	43	(109)	19.0	12	58	3713 (4180)
ASGROW	H8407	45	(114)	22.0	5	59	4845 (5430)
CENEX	226T	44	(112)	18.0	6	60	3976 (4450)
CENEX	228T	44	(112)	21.0	43	58	3170 (3550)
CENEX	310T	48	(122)	20.0	22	60	3707 (4150)
DEKALB	DK-28	41	(104)	18.0	27	58	3402 (3810)
DEKALB	DK-39Y	45	(114)	26.0	1	61	5776 (6470)
INTERSTATE	660	38	(97)	17.0	4	59	3254 (3640)
INTERSTATE	663	42	(107)	17.0	3	59	3688 (4130)
INTERSTATE	665	44	(112)	19.0	22	57	4561 (5110)
INTERSTATE	668	44	(112)	18.0	3	60	3675 (4120)
KELTGEN	KG 57T	38	(97)	17.0	12	57	3683 (4120)
KELTGEN	KG 58T	42	(107)	18.0	53	58	2546 (2850)
KELTGEN	KG 63T	47	(119)	19.0	5	60	3643 (4080)
KELTGEN	KG 64T	45	(114)	17.0	7	60	3207 (3590)
KELTGEN	X86029	42	(107)	18.0	50	56	2960 (3310)
MC CURDY "BIG M"	M410	46	(117)	19.0	38	56	3056 (3420)
MC CURDY "BIG M"	M450	45	(114)	19.0	30	59	3537 (3960)
NORTHRUP KING	NK BRAND 2030	41	(104)	18.0	3	58	4468 (5000)
NORTHRUP KING	NK BRAND 2244	42	(107)	20.0	7	59	4063 (4550)
P-A-G	2285	40	(102)	21.0	3	59	3698 (4140)
PAYMASTER	1022	44	(112)	24.0	5	61	4124 (4620)
PAYMASTER	930	46	(117)	20.0	7	58	4155 (4650)
PIONEER BRAND	8680	42	(107)	18.0	16	59	3196 (3580)
PIONEER BRAND	8728	40	(102)	19.0	17	60	2791 (3130)
PIONEER BRAND	8790	42	(107)	17.0	23	59	2997 (3360)
PIONEER BRAND	8855	42	(107)	18.0	47	57	2625 (2940)
SEEDTEC	3101	49	(124)	19.0	53	55	3935 (4410)
SEEDTEC	3102	43	(109)	18.0	24	58	3222 (3610)
SEEDTEC	3103	46	(117)	17.0	25	56	2967 (3320)
SIGCO	TR 46	42	(107)	19.0	57	56	2514 (2820)
SIGCO	TWO 48YG	37	(94)	17.0	35	58	3057 (3420)
SIGCO	TWO 50YG	43	(109)	20.0	12	60	3376 (3780)
STAUFFER	535 GR	47	(119)	23.0	3	60	3752 (4200)
STAUFFER	9525	47	(119)	18.0	12	55	4017 (4500)
WARNER	W-501T	38	(97)	18.0	6	58	3321 (3720)
WARNER	W-523T	41	(104)	18.0	3	58	3996 (4470)
WARNER	W-545T	40	(102)	18.0	8	57	3086 (3460)
WARNER	W-551A	43	(109)	19.0	43	57	3258 (3650)
WARNER	W-560T	42	(107)	17.0	7	59	3393 (3800)
WARNER	WX86028	40	(102)	18.0	22	55	3504 (3920)
ENTRY AVERAGES		43		18.9		58	3572
LSD (.05)							1236
CV - %							21.4

TABLE 8. (CONTINUED), GEDDES, SOUTH DAKOTA

BRAND	VARIETY	PLANTS 50 PCT MO-DAY	PLANT HEIGHT IN (CM)	EARLY MOIST PCT	STALK LODGN PCT	TEST WT. LB/BU	GRAIN YIELD LB/A (KG/HA)
TWO-YEAR							
ASGROW	CORRAL	46	(117)	24.0	8	59	5321 (5960)
ASGROW	DORADO E	41	(104)	20.0	12	58	5029 (5630)
CENEX	226T	42	(107)	21.0	6	60	4913 (5500)
CENEX	310T	46	(117)	25.0	22	59	5096 (5710)
DEKALB	DK-28	39	(99)	19.0	27	58	4044 (4530)
DEKALB	DK-39Y	43	(109)	29.0	1	59	5595 (6270)
KELTGFN	KG 57T	38	(97)	19.0	12	58	4528 (5070)
KELTGFN	KG 63T	47	(119)	20.0	5	59	5086 (5700)
MC CURDY "BIG 1"	M410	45	(114)	25.0	38	57	4890 (5480)
MC CURDY "BIG 1"	M450	44	(112)	21.0	30	59	4832 (5410)
NORTHRUP KING	NK BRAND 2030	41	(104)	20.0	3	58	4784 (5360)
NORTHRUP KING	NK BRAND 2244	43	(109)	22.0	7	59	5265 (5900)
P-A-G	2285	42	(107)	27.0	3	58	4683 (5240)
PAYMASTER	1022	43	(109)	25.0	5	59	5162 (5780)
PAYMASTER	930	43	(109)	26.0	7	58	4614 (5170)
PIONEER BRAND	8680	42	(107)	20.0	16	59	4357 (4880)
PIONEER BRAND	8790	40	(102)	18.0	23	58	3646 (4080)
PIONEER BRAND	8855	41	(104)	18.0	47	58	3423 (3830)
SEEDTEC	3101	46	(117)	20.0	53	56	5048 (5650)
SEEDTEC	3102	43	(109)	23.0	24	59	4428 (4960)
SEEDTEC	3103	43	(109)	22.0	25	57	5015 (5620)
SIGCO	TR 46	42	(107)	19.0	57	56	4542 (5090)
SIGCO	TWO 48YG	37	(94)	20.0	35	59	4446 (4980)
SIGCO	TWO 50YG	43	(109)	21.0	12	59	4790 (5360)
WARNER	W-501T	38	(97)	21.0	6	58	4456 (4990)
WARNER	W-523T	41	(104)	19.0	3	58	4348 (4870)
WARNER	W-545T	40	(102)	25.0	8	58	4346 (4870)
WARNER	W-551A	43	(109)	22.0	43	57	4930 (5520)
WARNER	W-560T	42	(107)	22.0	7	58	4788 (5360)
ENTRY AVERAGES		42		21.8		58	4703
LSD (.05)							389
CV - %							15.1
THREE-YEAR							
ASGROW	CORRAL	49	(124)	25.0	8	59	5040 (5640)
CENEX	310T	49	(124)	26.0	22	59	5012 (5610)
DEKALB	DK-28	40	(102)	21.0	27	59	3862 (4320)
DEKALB	DK-39Y	43	(109)	24.0	1	59	4989 (5590)
NORTHRUP KING	NK BRAND 2030	41	(104)	23.0	3	58	4477 (5010)
NORTHRUP KING	NK BRAND 2244	44	(112)	24.0	7	58	4720 (5290)
PAYMASTER	1022	44	(112)	27.0	5	58	4920 (5510)
PAYMASTER	930	45	(114)	27.0	7	58	4482 (5020)
PIONEER BRAND	8680	42	(107)	22.0	16	58	4297 (4810)
PIONEER BRAND	8790	41	(104)	20.0	23	58	3560 (3990)
SIGCO	TWO 48YG	38	(97)	17.0	35	59	4267 (4780)
SIGCO	TWO 50YG	44	(112)	23.0	12	59	4676 (5240)
WARNER	W-545T	40	(102)	25.0	8	58	4200 (4700)
ENTRY AVERAGES		43		23.5		58	4500
LSD (.05)							346
CV - %							12.9

TABLE 9. 1986 GRAIN SORGHUM PERFORMANCE TRIAL, AREA E, SOUTHEAST EXPERIMENT FARM, CLAY COUNTY, SOUTH DAKOTA.

BRAND	VARIETY	PLANTS 50 PCT MO-DAY	PLANT HEIGHT IN (CM)	EARLY MOIST PCT	STALK LODGN PCT	TEST WT. LB/BU	GRAIN YIELD LB/A (KG/HA)
ONE-YEAR							
STAUFFER	9525	7-24	52 (132)	30.0	.	57	5060 (5670)
SEEDTEC	3102	7-25	48 (122)	30.0	.	60	4953 (5550)
SEEDTEC	3103	7-25	48 (122)	28.0	.	58	5658 (6340)
ASGROW	DORADO E	7-26	52 (132)	29.0	.	59	4993 (5590)
INTERSTATE	663	7-26	48 (122)	30.0	.	59	5434 (6080)
PIONEER BRAND	8790	7-26	47 (119)	30.0	.	58	5013 (5610)
PIONEER BRAND	8855	7-26	48 (122)	28.0	.	58	5505 (6160)
WARNER	W-501T	7-26	43 (109)	31.0	.	58	5283 (5920)
WARNER	W-523T	7-26	48 (122)	30.0	.	58	5166 (5780)
WARNER	WX86028	7-26	50 (127)	29.0	.	56	5021 (5620)
INTERSTATE	660	7-27	41 (104)	30.0	.	56	5028 (5630)
INTERSTATE	665	7-27	53 (135)	30.0	.	55	5136 (5750)
SEEDTEC	3101	7-27	54 (137)	30.0	.	58	5840 (6540)
WARNER	W-545T	7-27	42 (107)	31.0	.	58	4877 (5460)
MC CURDY "BIG M"	M410	7-28	53 (135)	31.0	.	56	5081 (5690)
MC CURDY "BIG M"	M450	7-28	50 (127)	33.0	.	59	5276 (5910)
PIONEER BRAND	8728	7-28	47 (119)	31.0	.	52	5058 (5660)
WARNER	W-560T	7-28	47 (119)	33.0	.	59	5420 (6070)
DEKALB	DK-39Y	7-29	47 (119)	33.0	.	57	4323 (4840)
INTERSTATE	668	7-29	47 (119)	31.0	.	58	4271 (4780)
PAYMASTER	930	7-29	50 (127)	32.0	.	58	4981 (5580)
PIONEER BRAND	8680	7-29	49 (124)	33.0	.	60	5312 (5950)
SIGCO	TWO 50YG	7-29	48 (122)	33.0	.	59	4925 (5510)
WARNER	W-551A	7-29	52 (132)	30.0	.	56	4708 (5270)
ASGROW	H8407	7-31	51 (130)	33.0	.	56	4856 (5440)
DEKALB	X-651	7-31	50 (127)	33.0	.	60	5387 (6030)
STAUFFER	535 GR	7-31	57 (145)	33.0	.	58	5060 (5670)
PAYMASTER	1022	8- 1	50 (127)	33.0	.	60	5249 (5880)
STAUFFER	530 GR	8- 2	54 (137)	33.0	.	60	5424 (6070)
ENTRY AVERAGES		7/28	49	31.3		58	5113
LSD (.05)							N.S.
CV - %							11.2
TWO-YEAR							
PIONEER BRAND	8855	7-23	46 (117)	26.0	.	58	5756 (6450)
SEEDTEC	3102	7-24	46 (117)	27.0	.	59	5181 (5800)
SEEDTEC	3103	7-24	46 (117)	24.0	.	57	5362 (6000)
WARNER	W-523T	7-25	46 (117)	27.0	.	58	5760 (6450)
WARNER	W-545T	7-25	40 (102)	28.0	.	58	4969 (5560)
ASGROW	DORADO E	7-26	48 (122)	25.0	.	59	5217 (5840)
MC CURDY "BIG M"	M410	7-26	50 (127)	27.0	.	56	5635 (6310)
PAYMASTER	930	7-26	47 (119)	31.0	.	58	5487 (6140)
PIONEER BRAND	8790	7-26	44 (112)	25.0	.	58	4922 (5510)
SEEDTEC	3101	7-26	50 (127)	27.0	.	57	5896 (6600)
WARNER	W-501T	7-26	40 (102)	28.0	.	58	5280 (5910)
MC CURDY "BIG M"	M450	7-27	48 (122)	31.0	.	59	5378 (6020)
PIONEER BRAND	8680	7-28	46 (117)	31.0	.	59	5503 (6160)
SIGCO	TWO 50YG	7-28	48 (122)	32.0	.	58	5433 (6080)
WARNER	W-551A	7-29	50 (127)	26.0	.	56	4862 (5440)
WARNER	W-560T	7-29	44 (112)	28.0	.	59	5505 (6160)
DEKALB	DK-39Y	7-30	46 (117)	33.0	.	56	4422 (4950)
PAYMASTER	1022	8- 1	48 (122)	33.0	.	59	5610 (6280)
ENTRY AVERAGES		7/27	46	28.4		58	5343
LSD (.05)							240
CV - %							6.2
THREE-YEAR							
PIONEER BRAND	8790	7-28	43 (109)	28.0	10	58	5026 (5630)
ASGROW	DORADO E	7-29	47 (119)	28.0	88	57	5316 (5950)
PIONEER BRAND	8680	7-31	45 (114)	32.0	15	59	5259 (5890)
SIGCO	TWO 50YG	7-31	47 (119)	32.0	40	57	5582 (6250)
ENTRY AVERAGES		7/29	46	29.9		58	5295
LSD (.05)							564
CV - %							7.0

Table 10. Entries Included in the 1986 Grain Sorghum Trials and Tables Where Results Appear.

Company and Brand	Entry	Tables	Company and Brand	Entry	Tables
Asgrow Seed Company 7000 Portage Road Kalamazoo, MI 49001 "Asgrow"	Corral	5,8	PAG Seeds PO Box 9480 Minneapolis MN 55440 "PAG"	2250	4,7
	Dorado E	6,7,8,9		2285	4,5,6,7,8
	H8407	6,7,8,9			
CENEX Box 64089 St. Paul, MN 55164 "Cenex"	226T	6,7,8	Paymaster Seed PO Box 9493 Minneapolis, MN 55440 "Paymaster"	930	4,6,7,8,9
	228T	8		1022	4,6,7,8,9
	310T	8			
DeKalb-Pfizer Genetics Rt. 1, Box 18 Glenvil, NB 68941 "DeKalb"	DK-18	4,5,6	Pioneer Hi-Bred, Int. 7000 Pioneer Parkway Johnston, IA 50134 "Pioneer"	8680	4,5,6,7,8,9
	DK-28	4,6,7,8		8728	4,5,6,7,8,9
	DK-39y	7,8,9		8790	4,5,6,7,8,9
	X-651	5,9		8855	4,5,6,7,8,9
Interstate Seed Co. P.O. Box 470 Fargo, ND 58107 "Interstate"	660	4,5,7,8,9	SeedTec, Int'l Box 5692 Fargo, ND 58064 "SeedTec"	3101	4,5,6,7,8,9
	663	4,5,7,8,9		3102	4,5,6,7,8,9
	665	4,5,7,8,9		3103	4,5,6,7,8,9
	668	4,5,7,8,9			
Keltgen Seed Co. Box A Olivia, MN 56277 "Keltgen"	KG57T	4,5,6,7,8	Sigco Research, Inc. Box 289 Breckenridge, MN 56520 "Sigco"	TR 46	4,5,6,7,8
	KG58T	4,5,6,7,8		Two 48yG	4,5,6,7,8
	KG63T	4,5,6,7,8		Two 50yG	5,7,8,
	KG64T	6,8	Stauffer Seed Co. 911 Squire Lane Aberdeen, SD 57401 "Stauffer"	515GR	4,5,6,7
	X86025	4		530GR	9
	X86029	4,5,6,7,8		535GR	8,9
McCurdy Seed Co. PO Box 66 Fremont, IA 52561 "McCurdy"	M410	4,8,9		9525	4,5,6,7,8,9
	M450	4,8,9			
Northrup King Co. 1754 Park Blvd. Fargo, ND 58103 "Northrup King"	NK 1210	5,6	Warner Seed Co. PO Box 1448 Hereford, TX 79045 "Warner"	W-501T	4,5,6,7,8,9
	NK 2030	8		W-523T	4,5,6,7,8,9
	NK 2244	8		W-545T	4,5,6,7,8,9
				W-551T	4,5,6,7,8,9
			W-560T	4,5,6,7,8,9	
			X86028	4,5,6,7,8,9	

Published in accordance with an act passed in 1881 by the 14th Legislative Assembly, Dakota Territory, establishing the Dakota Agricultural College and with the act of re-organization passed in 1887 by the 17th Legislative Assembly, which established the Agricultural Experiment Station at South Dakota State University.