1988

1988 Grain Sorghum Performance Trials

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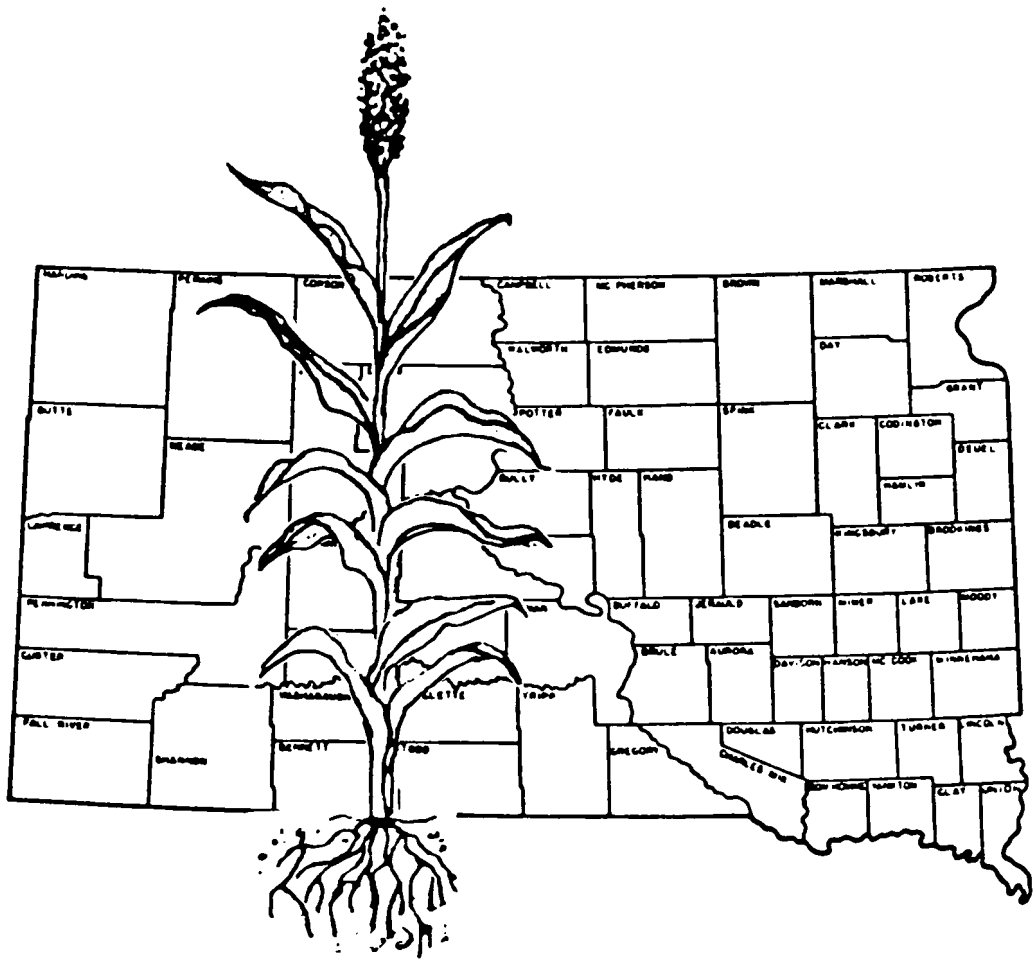

PLANT SCIENCE DEPARTMENT
AGRICULTURAL EXPERIMENT STATION
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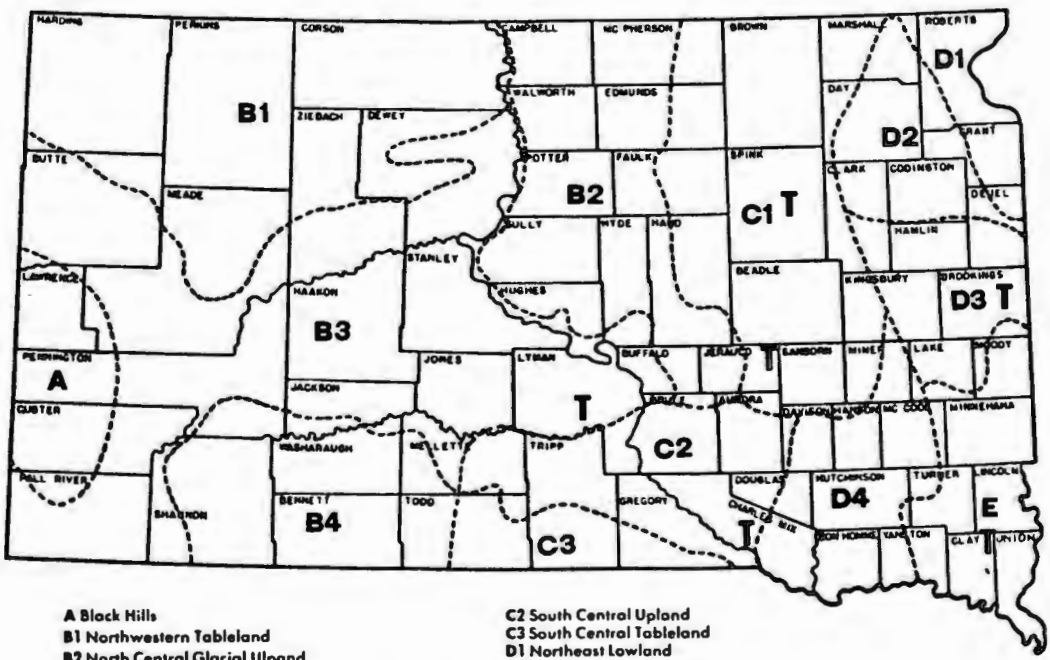
CROP ADAPTATION AREAS OF

SOUTH DAKOTA

1988 GRAIN SORGHUM PERFORMANCE TRIALS



A Black Hills
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1988 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 1988 crop season. Performance records of all entries harvested in 1988 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 1988 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. The Area D3 trial was moved from Brookings to Aurora in 1987. 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 1988 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 varied in the eastern portion of South Dakota during much of the growing period. Field work began early and ended early. Good moisture was available for germination and stands were generally uniform, Kennebec being the poorest. Growth was good in the early part of the season when above-normal temperatures and ample soil moisture were present. Precipitation was near normal until mid-May in the southern portion of the state, about normal in the south-central until mid-August, and above normal from mid-September to harvest. The remainder of the sorghum growing area was below normal for precipitation until mid-August when near normal amounts were recorded through harvest, aiding in kernel fill of the grain produced. Temperatures averaged from 2-5 degrees above normal in May, 7-9 above normal in June, 1-3 degrees above in July and August and, about 1 degree below normal through September. October was warm and dry permitting rapid, early harvest of many fields. Killing temperatures were not recorded until early October, many hybrids having reached physiological maturity several weeks before a hard freeze. Winds were not a very serious

The assistance of the following individuals is appreciated: Dwayne Beck, Burton Lawrensen, Dale Sorenson, Delbert Robbins, Lucian Edler, and Kevin Kirby; farmer-cooperators 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, 1988.

County	Location and Post Office	Row Spacing	Dates when Seeded	Harvested
Brookings	Plant Science Farm, Aurora	30"	May 20	Sept. 27
Charles Mix	John Biddle Farm, Geddes	30"	May 13	Sept. 26
Clay	Southeast Experiment Farm, Beresford	30"	May 16	Sept. 26
Jerauld	James Eagle Farm, Wessington Springs	30"	May 31	Sept. 21
Lyman	Harlan Halverson Farm, Kennebec	30"	May 31	Sept. 23
Spink	James Valley Research Farm, Redfield	30"	May 18	Sept. 23

problem until mid-October so stalk lodging was not a serious harvest concern. Nearly 75 percent of the farmers' fields were harvested by mid-October.

Yields were good to excellent for the climatic conditions that prevailed. Variability was a problem, especially at Kennebec. Warm, friable field conditions favored timely seeding of all trials. Temperatures were above normal most of the 1988 cropping season. The warm weather benefitted timely heading and flowering. Precipitation during August favored kernel fill and the season was advanced enough so that adapted hybrids were physiologically mature by mid-September. The first widespread killing temperatures occurred October 4.

Periods of excessively high temperatures occurred at several sites but did not appear to seriously affect pollination, except at Kennebec. Generally heading was later in the northern portion of the state where cooler temperatures are more common. Heading was completed by August 5.

Hybrid Entry Procedure

Only grain sorghums offered for sale in South Dakota or being produced for 1989 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, 1988 Grain Sorghum Sites.

County and crop adaptation areas	Soil Classification	Lab analysis Org. mat. %	P lbs/A	K lbs/A	pH	Field preparations Methods	pounds/A N	P	K
Lyman, B3	Pierre Cl	2.7	27	875	6.6	Sweeps in spring	34	18	0
Chas. Mix, C2	Highmore SiCl	2.7	8	285	7.1	Sweeps(corn-'87)	34	18	0
Jerauld,Cl(dry)	Hou-Pros SiCl	2.7	15	410	6.5	Plowed, corn	34	18	0
Spink,Cl(irr.)	Beotia SiCl	3.1	34	625	7.3	Field cult, soys	100	40	0
Brookings, D3	Lamour SiL	3.3	21	185	5.6	Chiseled, chickpeas	34	18	0
Clay, E	Egan SiL	3.3	19	320	6.0	Plowed, soybeans	160	60	40

Table 3. Temperature and Precipitation Data for the 1988 Grain Sorghum Performance Trials, South Dakota.

Location	Type of Data	Months of May	June	July	August	Sept.	Total
Brookings	Precip. (inches)	1.54	1.42	1.75	2.94	4.70	12.35
2 NE	Temp. (mean)	61.6	72.4	72.5	70.0	58.5	
	Mean departure	+5.6	+6.8	+1.8	+1.4	-0.2	
	Days 90 F. +	00	07	11	08	00	
Centerville	Precip. (inches)	2.04	1.45	0.83	5.15	4.15	13.62
6 SE	Temp. (mean)	66.0	76.4	75.1	73.0	63.5	
	Mean departure	+5.7	+6.2	+0.2	+0.2	-0.6	
	Days 90 F. +	01	10	15	13	05	
Kennebec	Precip. (inches)	4.21	2.64	0.98	0.55	1.33	9.71
	Temp. (mean)	63.6	78.0	77.9	76.5	63.0	
	Mean departure	+4.7	+8.9	+2.1	+2.1	-0.7	
	Days 90 F. +	01	17	20	22	05	
Pickstown	Precip. (inches)	4.48	2.36	1.96	3.04	4.19	16.03
	Temp. (mean)	64.4	76.6	76.6	75.5	63.5	
	Mean departure	+4.2	+6.4	+0.3	+0.9	-0.6	
	Days 90 F. +	01	14	16	17	03	
Redfield	Precip. (inches)	3.67	1.12	1.25	3.67	3.99	13.70
6 E	Temp. (mean)	63.1	75.5	75.9	72.5	59.5	
	Mean departure	+5.9	+8.7	+2.8	+1.0	-1.2	
	Days 90 F. +	02	16	16	12	02	
Wess. Sprngs	Precip. (inches)	6.08	0.53	1.45	1.69	3.94	13.69
	Temp. (mean)	61.9	76.0	77.0	76.0	63.5	
	Days 90 F. +	00	11	18	17	05	

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 applied each time the tensiometer reached 40 cb at the 18-inch depth. Moisture determinations were made from September 12-16, about a week prior to normal first-frost dates. This was 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 usually done as soon as possible after the first frost. Harvest was completed by September 27. The trials were harvested by small-plot combine in 1988 as all plots were mature enough to shell out readily. The harvested samples were returned to Brookings for drying and processing. Yields are reported in pounds per acre (x 1.12 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 70's at Geddes and Redfield, the 60's at Aurora and Centerville, and the 40's at Kennebec and Wessington Springs. Moisture averages ranged from 17 to 21 percent across all trial sites; some later maturity entries were over 30 percent. The quality and test weight of most entries was very good as most entries reached physiological maturity several weeks before a hard freeze. All trials had test weight averages above 58 pounds per bushel.

The seed moisture recorded was obtained about a week before the anticipated first frost was expected. Few entries were above the 35% level, the maximum the electronic moisture meter reads with any accuracy. Very little farm-harvested grain required supplemental drying following harvest in 1988.

Lodging was not a serious problem at any of the locations. Bird damage had been a problem at Brookings so the trial was moved to the Aurora unit. No bird damage was apparent. Trials located within larger fields of cooperators suffered little damage. Though not a serious problem in 1988, 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 1988 and other agronomic data are reported in Table 4 through Table 9. A listing of all entries is presented in Table 10.

Table 4. Grain Sorghum Performance Trials, Area D3, Plant Science Farm, Aurora, Brookings County, South Dakota.

Company/ Brand	Hybrid/ Variety	Headed 50 Pct Mo-Day	Plant Height In (cm)	Early Moist Pct.	Stalk Lodgn Pct.	Test Wt. Lb/Bu	Grain Yield Lb/A (Kg/Ha)
			1988				
Warner	WX88101	7-20	40 (102)	19.0	1	58	4480 (5020)
ContiSeed	Hasty	7-21	45 (114)	19.0	1	61	5272 (5900)
Warner	WX88102	7-21	35 (89)	20.0	1	55	3969 (4440)
Cargill	X77001	7-22	46 (117)	18.0	1	59	5442 (6090)
Interstate	663	7-22	43 (109)	22.0	1	60	4729 (5300)
SeedTec	WS203	7-22	45 (114)	18.0	1	58	5330 (5970)
Warner	W-523T	7-22	43 (109)	19.0	1	59	4759 (5330)
Warner	W-545T	7-22	38 (97)	19.0	1	57	4800 (5370)
Warner	WX88104	7-22	41 (104)	20.0	1	58	4216 (4720)
Interstate	856	7-23	41 (104)	18.0	1	58	5099 (5710)
ContiSeed	EX 8105	7-24	44 (112)	19.0	1	59	4995 (5590)
ContiSeed	EX 8201	7-27	46 (117)	20.0	1	60	5020 (5620)
Interstate	665	7-28	46 (117)	21.0	1	56	5225 (5850)
SeedTec	ST3101	7-28	45 (114)	20.0	1	57	5761 (6450)
Warner	WX88103	7-28	38 (97)	24.0	1	57	5264 (5890)
Cargill	2285	7-29	38 (97)	29.0	1	58	4897 (5480)
Cargill	1022	7-30	44 (112)	26.0	1	59	5999 (6720)
Cargill	630	7-30	43 (109)	26.0	1	60	5828 (6530)
Cargill	3385	7-31	42 (107)	31.0	1	59	5763 (6450)
Cargill	40	8- 1	40 (102)	33.0	1	57	5640 (6320)
Entry Averages		7-24	42	22.00	1	58	5124
LSD (.05)							483
CV - %							5.9
			1987-1988				
Warner	W-523T	7-25	44 (112)	17.0	1	57	5394 (6040)
Interstate	665	7-29	48 (122)	18.0	1	54	5541 (6200)
Cargill	1022	8- 1	47 (119)	26.0	1	57	5561 (6230)
Cargill	2285	8- 1	41 (104)	28.0	1	56	4249 (4760)
Cargill	3385	8- 3	46 (117)	29.0	1	55	5282 (5910)
Cargill	40	8- 3	45 (114)	28.0	1	55	5048 (5650)
Entry Averages		7-31	45	24.3	1	56	5179
LSD (.05)							1041
CV - %							25.4
			1986-1988				
Warner	W-523T	7-28	45 (114)	22.0	1	53	4082 (4570)
Interstate	665	8- 1	48 (122)	23.0	1	51	4696 (5260)
Cargill	1022	8- 4	48 (122)	28.0	1	53	4401 (4930)
Cargill	2285	8- 4	41 (104)	30.0	1	54	3459 (3870)
Entry Averages		8- 1	45	25.7	1	53	4159
LSD (.05)							1002
CV - -%							29.1

Table 5. Grain Sorghum Performance Trials, Area C2, John Biddle Farm, Geddes, Charles Mix County, South Dakota.

Company/ Brand	Hybrid/ Variety	Plant Height In (cm)	Early Moist Pct.	Stalk Lodgn Pct.	Test Wt. Lb/Bu	Grain Yield Lb/A (Kg/Ha)
		1988				
AgriPro	AP910G	40 (102)	13.0	1	58	4417 (4950)
AgriPro	AP925G	38 (97)	12.0	1	59	4906 (5490)
Asgrow	XP2057	36 (91)	12.0	1	59	5246 (5870)
Asgrow	XP3137	37 (94)	13.0	1	61	5883 (6590)
Asgrow	XP4147	35 (89)	13.0	1	62	5323 (5960)
Cargill	X77001	42 (107)	13.0	1	58	5706 (6390)
Cargill	1022	39 (99)	12.0	1	61	5711 (6400)
Cargill	2285	34 (86)	12.0	1	61	4951 (5540)
Cargill	3385	41 (104)	12.0	1	61	5951 (6660)
Cargill	40	37 (94)	12.0	1	59	4583 (5130)
Cargill	630	40 (102)	13.0	1	61	5529 (6190)
ContiSeed	EX 8105	38 (97)	13.0	1	59	4406 (4930)
ContiSeed	EX 8201	42 (107)	12.0	1	61	3993 (4470)
ContiSeed	Hasty	42 (107)	12.0	1	60	5216 (5840)
ContiSeed	Pronto	40 (102)	13.0	1	61	5298 (5930)
Dahlgren	DG-27B	39 (99)	11.0	1	59	4745 (5310)
Danlgren	DG-33B	40 (102)	13.0	1	59	5752 (6440)
DeKalb	DK-39Y	39 (99)	13.0	1	61	3998 (4480)
DeKalb	X-638	42 (107)	13.0	1	60	6829 (7650)
Garst	R5681	39 (99)	12.0	1	61	5119 (5730)
Garst	5517	38 (97)	14.0	1	61	5738 (6430)
Garst	5613	40 (102)	13.0	1	60	5683 (6360)
Interstate	663	39 (99)	13.0	1	61	5218 (5840)
Interstate	665	42 (107)	12.0	1	58	5121 (5730)
Interstate	668	41 (104)	12.0	1	59	4679 (5240)
Interstate	856	38 (97)	12.0	1	58	4732 (5300)
McCurdy	M410	42 (107)	12.0	1	58	5430 (6080)
McCurdy	M450	40 (102)	14.0	1	60	5009 (5610)
McCurdy	M689	37 (94)	13.0	1	60	4416 (4940)
NC+	155	38 (97)	13.0	1	58	5322 (5960)
NC+	55X	39 (99)	13.0	1	60	4671 (5230)
Northrup King	NK 1410	41 (104)	12.0	1	59	5202 (5830)
Pioneer Brand	8728	37 (94)	13.0	1	61	5101 (5710)
Pioneer Brand	8791	38 (97)	12.0	1	60	4697 (5260)
Pioneer Brand	8855	41 (104)	12.0	1	60	5105 (5720)
SeedTec	ST3101	44 (112)	16.0	1	57	5583 (6250)
SeedTec	ST3258	41 (104)	13.0	1	61	4865 (5450)
SeedTec	ST3308	41 (104)	13.0	1	62	4492 (5030)
SeedTec	WS203	40 (102)	12.0	1	60	4856 (5440)
SeedTec	652G	40 (102)	13.0	1	59	4952 (5550)
Sigco	X1061	36 (91)	12.0	1	58	4482 (5020)
Sigco	1070	41 (104)	13.0	1	60	5661 (6340)
Warner	W-523T	38 (97)	12.0	1	60	4628 (5180)
Warner	W-545T	34 (86)	12.0	1	60	4941 (5530)
Warner	WX88101	35 (89)	12.0	1	59	3995 (4470)
Warner	WX88102	32 (81)	12.0	1	60	4500 (5040)
Warner	WX88103	37 (94)	12.0	1	60	4715 (5280)
Warner	WX88104	38 (97)	13.0	1	57	3098 (3470)
Entry Averages		39	19.5	1	60	5009
LSD (.05)						1052
CV - %						13.1

Table 5. (continued), Geddes, SD

Company/ Brand	Hybrid/ Variety	Plant Height In (cm)	Early Moist Pct.	Stalk Lodgn Pct	Test Wt. Lb/Bu	Grain Yield Lb/A (Kg/Ha)
		1987-1988				
Cargill	1022	42 (107)	18.0	1	60	6106 (6840)
Cargill	2285	40 (102)	17.0	1	59	5187 (5810)
Cargill	3385	43 (109)	17.0	1	59	6069 (6800)
Cargill	40	41 (104)	18.0	1	59	5489 (6150)
DeKalb	DK-39Y	42 (107)	18.0	1	58	4894 (5480)
DeKalb	X-638	46 (117)	16.0	1	58	6867 (7690)
Garst	5517	40 (102)	19.0	1	59	6111 (6840)
Garst	5613	45 (114)	18.0	1	59	6100 (6830)
Interstate	663	41 (104)	15.0	1	57	5677 (6360)
Interstate	665	45 (114)	14.0	1	57	5890 (6600)
Interstate	668	43 (109)	15.0	1	58	5336 (5980)
McCurdy	M410	45 (114)	15.0	1	57	5915 (6620)
McCurdy	M450	44 (112)	17.0	1	58	5683 (6360)
McCurdy	M689	41 (104)	20.0	1	59	5791 (6480)
NC+	55X	43 (109)	15.0	1	58	5683 (6360)
Northrup King	NK 1410	44 (112)	14.0	1	58	5608 (6280)
Pioneer Brand	8728	41 (104)	15.0	1	60	5082 (5690)
Pioneer Brand	8791	41 (104)	15.0	1	58	5083 (5690)
Pioneer Brand	8855	41 (104)	14.0	1	58	5635 (6310)
SeedTec	ST3101	46 (117)	16.0	1	55	5927 (6640)
SeedTec	ST3308	46 (117)	16.0	1	61	5541 (6200)
SeedTec	WS203	43 (109)	15.0	1	57	5702 (6390)
SeedTec	652G	43 (109)	17.0	1	58	5797 (6490)
Sigco	1070	43 (109)	15.0	1	57	6143 (6880)
Warner	W-545T	37 (94)	17.0	1	56	5333 (5970)
Entry Averages		38	1939	1	56	5705
LSD (.05)						205
CV - %						10.9
		1986-1988				
Cargill	1022	42 (107)	20.0	2	60	5446 (6100)
Cargill	2285	40 (102)	18.0	1	59	4691 (5250)
DeKalb	DK-39Y	43 (109)	21.0	1	59	5188 (5810)
Interstate	663	42 (107)	16.0	1	58	5014 (5610)
Interstate	665	45 (114)	16.0	8	57	5447 (6100)
Interstate	668	43 (109)	16.0	1	58	4783 (5360)
McCurdy	M410	45 (114)	16.0	13	56	4962 (5560)
McCurdy	M450	44 (112)	18.0	10	58	4968 (5560)
Pioneer Brand	8728	41 (104)	17.0	6	60	4319 (4840)
Pioneer Brand	8855	42 (107)	15.0	16	58	4632 (5190)
SeedTec	ST3101	47 (119)	17.0	18	55	5263 (5890)
Warner	W-545T	38 (97)	17.0	3	56	4584 (5130)
Entry Averages		43	17.3	10	58	4941
LSD (.05)						337
CV - %						16.5

Table 6. Grain Sorghum Performance Trials, Area B3, Harlon Halverson Farm, Kennebec, Lyman County, South Dakota.

Company/ Brand	Hybrid/ Variety	Plant Height In (cm)	Early Moist Pct.	Stalk Lodgn Pct.	Test Wt. Lb/Bu	Grain Yield Lb/A (Kg/Ha)
		1988				
AgriPro	AP910G	42 (107)	18.0	1	56	2927 (3280)
AgriPro	AP925G	42 (107)	20.0	1	58	3735 (4180)
Asgrow	XP2057	33 (84)	25.0	1	62	3143 (3520)
Asgrow	XP3137	33 (84)	28.0	1	63	3982 (4460)
Asgrow	XP4147	33 (84)	24.0	1	63	3260 (3650)
Cargill	X77001	42 (107)	23.0	1	56	3356 (3760)
Cargill	1022	35 (89)	24.0	1	61	2511 (2810)
Cargill	22	39 (99)	20.0	1	57	2528 (2830)
Cargill	2285	34 (86)	21.0	1	59	2859 (3200)
Cargill	3385	31 (79)	22.0	1	63	3045 (3410)
Cargill	630	35 (89)	24.0	1	60	3449 (3860)
ContiSeed	EX 8105	37 (94)	25.0	1	60	3301 (3700)
ContiSeed	EX 8201	35 (89)	25.0	1	61	3583 (4010)
ContiSeed	Hasty	39 (99)	23.0	1	56	2822 (3160)
Dahlgren	DG-27B	39 (99)	20.0	1	55	3008 (3370)
Dahlgren	DG-33B	39 (99)	22.0	1	56	3074 (3440)
DeKalb	DK-18	38 (97)	23.0	1	56	3042 (3410)
DeKalb	DK-28	39 (99)	22.0	1	56	2648 (2970)
DeKalb	P-818	38 (97)	24.0	1	56	2862 (3200)
DeKalb	X-828	37 (94)	22.0	1	56	2520 (2820)
Garst	R5681	39 (99)	24.0	1	58	3306 (3700)
Garst	5715	39 (99)	22.0	1	56	2923 (3270)
Interstate	665	40 (102)	20.0	1	56	3389 (3790)
Interstate	668	38 (97)	22.0	1	59	3123 (3500)
Interstate	856	41 (104)	19.0	1	59	3796 (4250)
McCurdy	M410	40 (102)	19.0	1	56	3188 (3570)
McCurdy	M450	38 (97)	20.0	1	58	2963 (3320)
NC+	155	38 (97)	24.0	1	58	3228 (3610)
NC+	55X	40 (102)	24.0	1	56	3155 (3530)
Northrup King	NK 1410	40 (102)	21.0	1	57	3019 (3380)
Pioneer Brand	8790	37 (94)	19.0	1	58	3467 (3880)
Pioneer Brand	8791	36 (91)	21.0	1	59	4099 (4590)
Pioneer Brand	8855	35 (89)	23.0	1	60	2773 (3110)
Pioneer Brand	894	36 (91)	21.0	1	58	3107 (3480)
SeedTec	ST3103	41 (104)	19.0	1	58	2839 (3180)
SeedTec	WS203	39 (99)	23.0	1	56	3288 (3680)
Sigco	X1061	39 (99)	20.0	1	56	3066 (3430)
Sigco	1070	38 (97)	23.0	1	56	2754 (3080)
Warner	W-523T	40 (102)	22.0	1	59	3315 (3710)
Warner	W-545T	35 (89)	18.0	1	57	3054 (3420)
Warner	WX88101	39 (99)	22.0	1	58	2495 (2790)
Warner	WX88102	33 (84)	21.0	1	55	3141 (3520)
Warner	WX88103	32 (81)	18.0	1	57	2557 (2860)
Warner	WX88104	37 (94)	19.0	1	59	2584 (2890)
Entry Averages		37	21.8	1	58	3097
LSD (.05)						N.S.
CV - %						19.3

Table 6. (continued), Kennebec, SD

Company/ Brand	Hybrid/ Variety	Plant Height In (cm)	Early Moist Pct.	Stalk Lodgn Pct	Test Wt. Lb/Bu	Grain Yield Lb/A (Kg/Ha)
		1987-1988				
AgriPro	AP910G	41 (104)	21.0	1	57	4075 (4560)
Cargill	1022	38 (97)	28.0	1	61	4038 (4520)
Cargill	22	38 (97)	25.0	1	58	3791 (4250)
Cargill	2285	35 (89)	25.0	1	60	3696 (4140)
Cargill	3385	36 (91)	27.0	1	61	4213 (4720)
DeKalb	DK-28	38 (97)	22.0	1	58	3857 (4320)
Garst	5715	41 (104)	21.0	1	57	4403 (4930)
Interstate	665	42 (107)	23.0	1	56	4101 (4590)
McCurdy	M410	40 (102)	21.0	1	56	4303 (4820)
McCurdy	M450	39 (99)	24.0	1	58	3991 (4470)
NC+	55X	40 (102)	26.0	1	56	4293 (4810)
Northrup King	NK 1410	40 (102)	24.0	1	58	4053 (4540)
Pioneer Brand	8791	37 (94)	23.0	1	59	4204 (4710)
Pioneer Brand	8855	36 (91)	22.0	1	59	3735 (4180)
SeedTec	ST3103	40 (102)	22.0	1	59	3909 (4380)
SeedTec	WS203	39 (99)	24.0	1	57	4322 (4840)
Sigco	1070	39 (99)	25.0	1	56	4040 (4520)
Warner	W-545T	36 (91)	25.0	1	57	3947 (4420)
Entry Averages		39	23.8	1	58	4054
LSD (.05)						198
CV - %						10.6
		1986-1988				
Cargill	1022	38 (97)	30.0	1	59	3135 (3510)
Cargill	2285	36 (91)	27.0	1	59	2838 (3180)
DeKalb	DK-28	39 (99)	26.0	1	57	3072 (3440)
Pioneer Brand	8855	37 (94)	26.0	1	58	2912 (3260)
SeedTec	ST3103	40 (102)	25.0	1	58	3143 (3520)
Warner	W-545T	37 (94)	27.0	1	57	3272 (3660)
Entry Averages		38	26.8	1	58	3062
LSD (.05)						255
CV - %						11.9

Table 7. Grain Sorghum Performance Trials, Area C1(dry), James Eagle Farm, Wessington Springs, Jerauld County, South Dakota.

Company/ Brand	Hybrid/ Variety	Plant Height In (cm)	Early Moist Pct.	Stalk Lodgn Pct.	Test Wt. Lb/Bu	Grain Yield Lb/A (Kg/Ha)
		1988				
Asgrow	XP2057	35 (89)	22.0	1	56	3211 (3600)
Asgrow	XP3137	35 (89)	26.0	1	54	3005 (3360)
Asgrow	XP4147	35 (89)	24.0	1	60	3372 (3780)
Cargill	X77001	40 (102)	16.0	1	60	3964 (4440)
Cargill	1022	38 (97)	22.0	1	59	4318 (4840)
Cargill	22	38 (97)	16.0	1	58	3837 (4300)
Cargill	3385	38 (97)	24.0	1	58	3754 (4200)
Cargill	40	37 (94)	29.0	1	51	3154 (3530)
Cargill	630	36 (91)	21.0	1	61	3386 (3790)
ContiSeed	EX 8105	33 (84)	17.0	1	60	3246 (3630)
ContiSeed	EX 8201	36 (91)	19.0	1	59	1905 (2130)
ContiSeed	Hasty	38 (97)	15.0	1	59	3175 (3560)
Dahlgren	DG-27B	37 (94)	19.0	1	57	3245 (3630)
Dahlgren	DG-33B	32 (81)	14.0	1	59	3800 (4260)
DeKalb	DK-18	38 (97)	14.0	1	58	3714 (4160)
DeKalb	DK-28	37 (94)	15.0	1	59	3201 (3580)
DeKalb	P-818	36 (91)	13.0	1	58	3426 (3840)
DeKalb	X-828	39 (99)	15.0	1	58	3615 (4050)
Interstate	665	38 (97)	17.0	1	58	3765 (4220)
Interstate	856	37 (94)	14.0	1	59	4053 (4540)
Pioneer Brand	8791	33 (84)	15.0	1	58	3789 (4240)
Pioneer Brand	8855	37 (94)	20.0	1	59	3544 (3970)
Pioneer Brand	894	33 (84)	14.0	1	59	2862 (3200)
SeedTec	ST3101	41 (104)	17.0	1	58	3404 (3810)
SeedTec	ST3308	36 (91)	25.0	1	55	3378 (3780)
SeedTec	WS203	38 (97)	16.0	1	60	3620 (4050)
Sigco	X1061	36 (91)	13.0	1	58	3476 (3890)
Sigco	1070	35 (89)	16.0	1	59	3809 (4270)
Entry Averages		36	18.1	1	58	3465
LSD (.05)						834
CV - %						14.8
		1987-1988				
Cargill	1022	39 (99)	21.0	1	60	4722 (5290)
Cargill	22	38 (97)	16.0	1	59	3977 (4450)
Cargill	3385	39 (99)	25.0	1	59	4298 (4810)
Cargill	40	38 (97)	28.0	1	56	4538 (5080)
DeKalb	DK-28	36 (91)	15.0	1	58	3344 (3740)
Inetrstate	665	40 (102)	16.0	1	57	4192 (4690)
Pioneer Brand	8855	37 (94)	17.0	1	58	4077 (4570)
Sigco	1070	38 (97)	17.0	1	60	3876 (4340)
Entry Averages		38	19.4	1	58	4128
LSD (.05)						675
CV - %						23.1
		1986-1988				
Cargill	1022	42 (107)	25.0	1	60	4798 (5370)
DeKalb	DK-28	38 (97)	21.0	1	58	4044 (4530)
Inetrstate	665	43 (109)	19.0	1	57	4663 (5220)
Pioneer Brand	8855	38 (97)	18.0	1	58	3760 (4210)
Entry Averages		40	20.8	1	58	4316
LSD (.05)						1151
CV - %						26.3

Table 8. Grain Sorghum Performance Trials, Area E, Southeast Experiment Farm, Beresford, Clay County, South Dakota.

Company/ Brand	Hybrid/ Variety	Headed 50 Pct Mo-Day	Plant Height In (cm)	Early Moist Pct.	Stalk Lodgn Pct.	Test Wt. Lb/Bu	Grain Yield Lb/A (Kg/Ha)
			1988				
Interstate	856	7-15	39 (99)	15.0	1	59	5371 (6010)
Interstate	665	7-17	41 (104)	15.0	1	59	5831 (6530)
SeedTec	ST3101	7-17	41 (104)	15.0	1	59	5680 (6360)
Cargill	X77001	7-18	39 (99)	15.0	1	61	5355 (6000)
Dahlgren	DG-27B	7-18	40 (102)	15.0	1	60	4953 (5550)
SeedTec	WS203	7-18	42 (107)	16.0	1	62	5520 (6180)
Dahlgren	DG-33B	7-19	39 (99)	16.0	1	61	5291 (5920)
Cargill	2285	7-20	34 (86)	17.0	1	61	5122 (5740)
Interstate	668	7-20	38 (97)	15.0	1	61	5168 (5790)
Cargill	1022	7-21	39 (99)	17.0	1	62	5008 (5610)
Cargill	3385	7-21	41 (104)	17.0	1	62	5917 (6630)
Cargill	630	7-21	40 (102)	18.0	1	62	5776 (6470)
Cargill	40	7-28	39 (99)	24.0	1	61	3964 (4440)
ContiSeed	Silverado	8- 5	37 (94)	27.0	1	60	4179 (4680)
Entry Averages		7-20	39	17.3	1	60	5223
LSD (.05)							513
CV - %							6.0
			1987-1988				
Interstate	665	7-18	47 (119)	14.0	1	57	6419 (7190)
SeedTec	ST3101	7-18	48 (122)	14.0	1	57	6510 (7290)
SeedTec	WS203	7-18	48 (122)	14.0	1	60	6503 (7280)
Cargill	2285	7-22	41 (104)	18.0	1	59	6164 (6900)
Cargill	3385	7-22	46 (117)	21.0	1	60	7068 (7910)
Cargill	40	7-27	45 (114)	23.0	1	60	6207 (6950)
Cargill	1022	7-28	46 (117)	17.0	1	61	6645 (7440)
Entry Averages		7-22	46	17.3	1	59	6502
LSD (.05)							591
CV - %							10.7
			1986-1988				
Interstate	665	7-21	49 (124)	19.0	1	56	5991 (6710)
SeedTec	ST3101	7-21	50 (127)	20.0	1	57	6286 (7040)
Cargill	1022	7-29	47 (119)	23.0	1	60	6179 (6920)
Entry Averages		7-24	49	20.6	1	58	6152
LSD (.05)							885
CV - %							10.4

Table 9. Grain Sorghum Performance Trials, Area C1(irrigated), James Valley Research Center, Redfield, Spink County, South Dakota.

Company/ Brand	Hybrid/ Variety	Headed 50 Pct Mo-Day	Plant Height In (cm)	Early Moist Pct.	Stalk Lodgn Pct.	Test Wt. Lb/Bu	Grain Yield Lb/A (Kg/Ha)
			1988				
AgriPro	AP910G	7-16	40 (102)	14.0	1	59	6189 (6930)
Cargill	X77001	7-16	48 (122)	19.0	1	60	6038 (6760)
ContiSeed	Hasty	7-16	44 (112)	18.0	1	62	6712 (7520)
DeKalb	DK-18	7-16	39 (99)	15.0	1	60	5271 (5900)
Interstate	856	7-16	41 (104)	16.0	1	58	6318 (7070)
Warner	WX88104	7-17	42 (107)	16.0	1	57	4751 (5320)
AgriPro	AP925G	7-18	39 (99)	14.0	1	57	5646 (6320)
ContiSeed	EX 8105	7-18	39 (99)	17.0	1	62	6226 (6970)
Warner	W-523T	7-18	42 (107)	17.0	1	60	6280 (7030)
Warner	W-545T	7-18	33 (84)	18.0	1	61	6121 (6850)
Warner	WX88101	7-18	35 (89)	16.0	1	60	5043 (5650)
Dahlgren	DG-27B	7-19	41 (104)	17.0	1	60	6403 (7170)
Interstate	665	7-19	45 (114)	16.0	1	60	6281 (7030)
Warner	WX88102	7-19	36 (91)	16.0	1	58	4290 (4800)
SeedTec	652G	7-20	46 (117)	20.0	1	60	6101 (6830)
Cargill	2285	7-21	39 (99)	21.0	1	59	5917 (6630)
Northrup King	NK 1410	7-21	43 (109)	16.0	1	60	5770 (6460)
Warner	WX88103	7-22	38 (97)	16.0	1	61	4984 (5580)
ContiSeed	EX 8201	7-23	45 (114)	15.0	1	62	6302 (7060)
Cargill	630	7-24	43 (109)	23.0	1	61	6026 (6750)
AgriPro	AP940G	7-25	49 (124)	22.0	1	60	6053 (6780)
Cargill	1022	7-25	42 (107)	23.0	1	62	6886 (7710)
Cargill	3385	7-25	42 (107)	25.0	1	59	6647 (7440)
ContiSeed	Pronto	7-26	46 (117)	24.0	1	62	6746 (7550)
SeedTec	ST3308	7-29	47 (119)	25.0	1	61	6933 (7760)
Cargill	40	7-31	42 (107)	28.0	1	61	6495 (7270)
SeedTec	ST3258	7-31	46 (117)	26.0	1	59	6311 (7070)
Entry Averages		7-20	42	19.0	1	60	6027
LSD (.05)							1157
CV - %							11.8
			1987-1988				
Warner	W-545T	7-21	35 (89)	23.0	1	59	6384 (7150)
Cargill	2285	7-22	39 (99)	25.0	1	60	6193 (6930)
DeKalb	DK-18	7-22	40 (102)	20.0	1	59	5705 (6390)
Interstate	665	7-23	45 (114)	21.0	1	59	6264 (7010)
SeedTec	652G	7-23	47 (119)	25.0	1	60	6405 (7170)
Cargill	1022	7-24	44 (112)	26.0	1	62	6826 (7640)
Northrup King	NK 1410	7-24	44 (112)	22.0	1	60	6025 (6750)
Cargill	3385	7-26	43 (109)	29.0	1	58	6719 (7520)
Cargill	40	7-29	43 (109)	30.0	1	60	6068 (6790)
Entry Averages		7-23	42	24.5	1	59	6287
LSD (.05)							305
CV - %							8.2
			1986-1988				
DeKalb	DK-18	7-21	42 (107)	24.0	1	59	5563 (6230)
Warner	W-545T	7-22	37 (94)	26.0	1	59	6348 (7110)
Cargill	2285	7-24	41 (104)	28.0	1	60	5880 (6580)
Interstate	665	7-24	46 (117)	25.0	1	59	6361 (7120)
Entry Averages		7-23	41	25.7	1	59	6038
LSD (.05)							559
CV - %							9.7

Table 10. Entries Included in 1988 Trials and Tables where the Results Appear.

Company and Brand	Entry	Tables
Agripro/Sokota	AP910G	5,6,7,9
PO Box 250	AP925G	5,6,7,9
Brookings, SD 57006	AP940G	9
"Agripro"		
Asgrow Seed Company	XP2057	5,6,7
PO Box 1945	XP3137	5,6,7
Plainview, TX 79072	XP4147	5,6,7
"Asgrow"		
Cargill Hybrid Seeds	22	6,7
PO Box 5645	40	4,5,7,8,9
Minneapolis, MN 55440	1022	4,5,6,7,8,9
"Cargill"	2285	4,5,6,8,9
	3385	4,5,6,7,8,9
	630	4,5,6,7,8,9
	X77001	4,5,6,7,8,9
ContiSeed	Hasty	4,5,6,7,9
PO Box 1296	Pronto	5,9
702 3rd St., SW	Silverado	8
Huron, SD 57350	X8105	4,5,6,7,9
"ContiSeed"	X8201	4,5,6,7,9
Dahlgren Co., Inc.	DG-27B	5,6,7,8,9
PO Box 609	DG-33B	5,6,7,8
Crookston, MN 56716		
"Dahlgren"		
DeKalb-Pfizer Genetics	DK-18	6,7,9
Rt. 1, Box 225	DK-28	6,7
Glenvil, NE 68941	DK-39y	5
"DeKalb"	X-638	5
	P-818	6,7
	X-828	6,7
Garst Seed Co.	5517	5
R.R. 1	5613	5
Inman, NE 68742	5715	6
"Garst"	X5681	5,6
Interstate Seed Co.	663	4,5
PO Box 338	665	4,5,6,7,8,9
W. Fargo, ND 58078	668	5,6
"Interstate"	856	4,5,6,7,8,9
McCurdy Seed Company	M410	5,6
E. Main St.	M450	5,6
Fremont, IA 52561	M689	5
"McCurdy"		
NC+ Hybrids	55X	5,6
PO Box 4408	155	5,6
Lincoln, NE 68504		
"NC+"		
Northrup King Co.	NK 1410	5,6,9
1754 Park Blvd.		
Fargo, ND 58103		
"Northrup King"		
Pioneer Hi-Bred,Int'l	8728	5
130 SE Willmar Ave.	8791	5,6,7
Willmar, MN 56201	8855	5,6,7
"Pioneer Brand"	894	6,7
SeedTec International	WS203	4,5,6,7,8
PO Box 2212	652G	5,9
Hereford, TX 79045	ST3101	4,5,7,8
"SeedTec"	ST3103	6
	ST3308	5,7,9
	ST3258	5,9
Sigco Research, Inc.	1070	5,6,7
PO Box 289	X1061	5,6,7
Breckenridge, MN 56520		
"Sigco"		
Geo. Warner Seed Co.	W-523T	4,5,6,9
PO Box 1448	W-545T	4,5,6,9
Hereford, TX 79045	WX88101	4,5,6,9
"Warner"	WX88102	4,5,6,9
	WX88103	4,5,6,9
	WX88104	4,5,6,9

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