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1978 Grain Sorghum Performance Trials

J.J. Bonnemann
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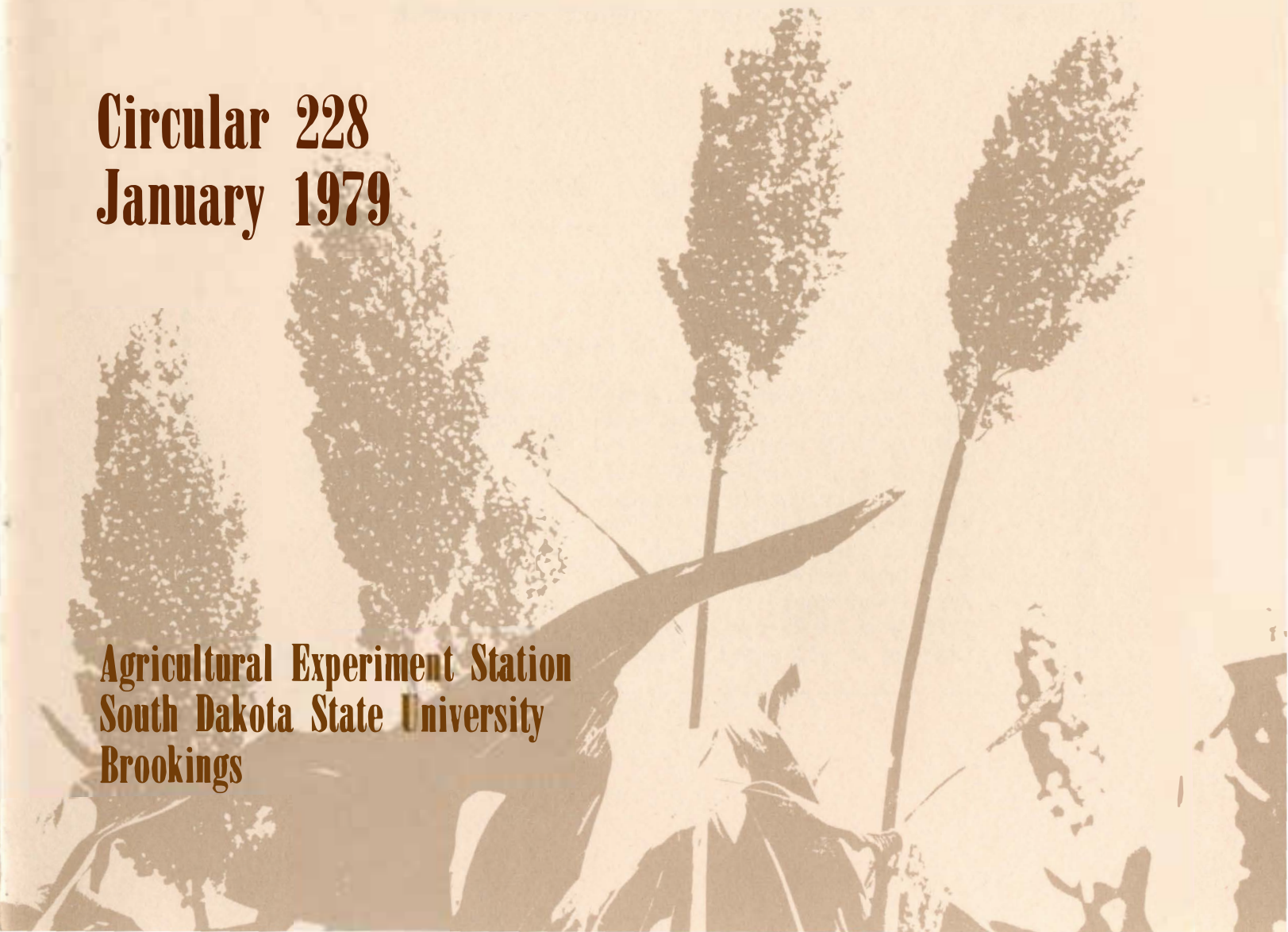

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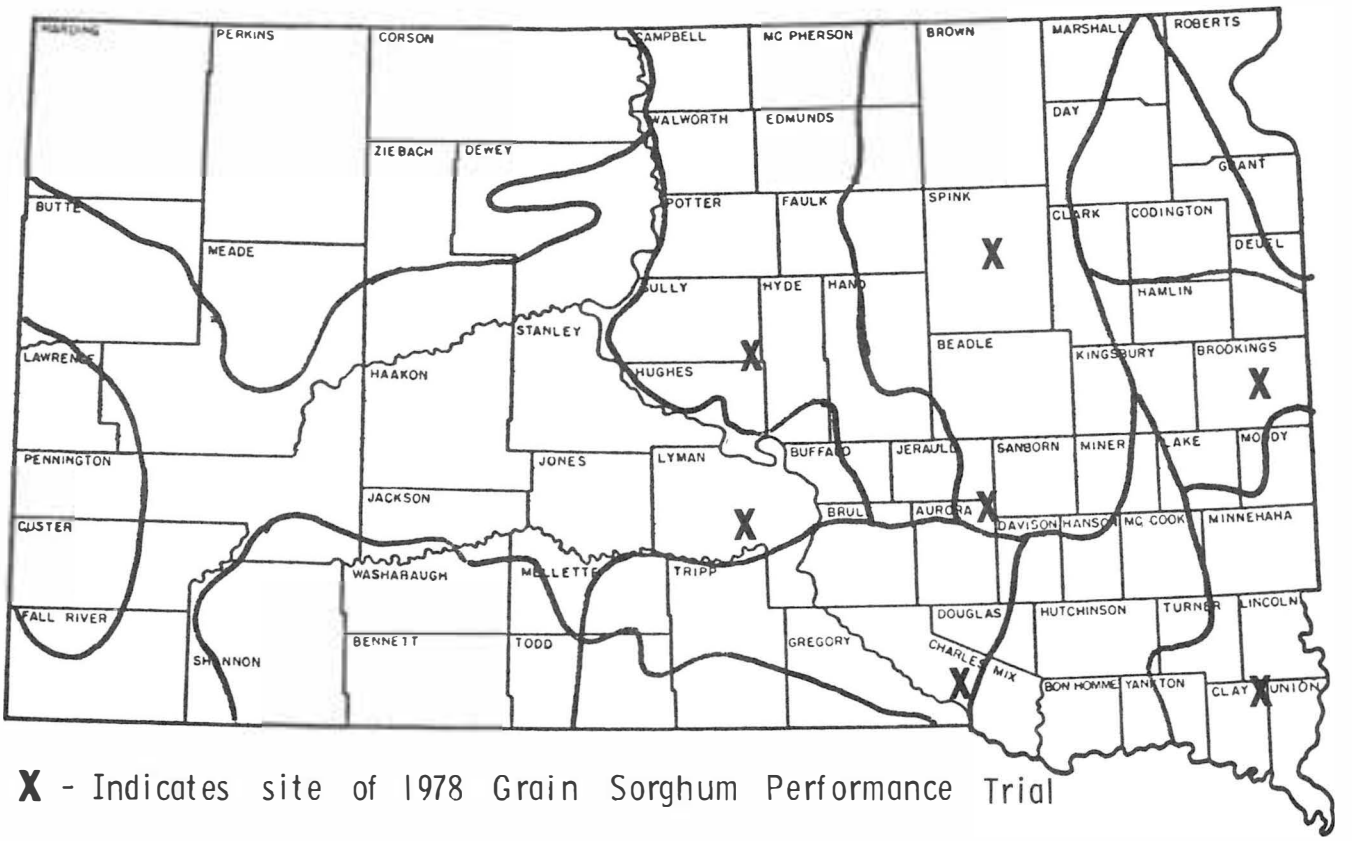
CROP ADAPTATION AREAS



X - Indicates site of 1978 Grain Sorghum Performance Trial

Listing of Tables

1978 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 1978 crop season. Performance records of all entries harvested in 1978 and available two- through five-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 1978 Trials

For adequate performance evaluation, all entries must be grown under similar environmental conditions. Crop adaptation areas in which the trials are conducted are based upon soil type, elevation, temperature, rainfall and other physical differences. A new B2 location was established with a farmer-cooperator near Harrold in 1978. The exact location of each trial, dates of seeding and harvest are included in Table 1. Soil classification and data from soil samples taken, cultural practices and fertilizer applications are shown in Table 2.

Climatic data (Table 3) for the 1978 grain sorghum year, May-September, are based upon U.S. Monthly Climatological Data. Weather information from the Geddes and Letcher sites is not available so data from a station between the sites, Armour, is included for reference. The temperatures from this station are very indicative of the season for both sites and the precipitation data suggest rainfall patterns during the year, though not the actual amounts for either site.

Rainfall was limited during early May but precipitation late in the month delayed seeding of some trials until early June. Germination was good at the trials seeded prior to the rains, except at Redfield where some crusting occurred. Limited amounts of precipitation fell in June and caused reduced stands in late seeded trials. Above normal precipitation was recorded at most locations in July, the major portion occurring in early July. Hail damage was severe at Centerville and some wash-outs occurred at Geddes. Temperatures were high in the Harrold and Kennebec areas and precipitation was limited until late August which caused delayed growth, heading, and pollination. Brookings and Centerville temperatures were below normal which also slowed development of the crop. Timely precipitation and near normal temperatures favored an excellent crop at Geddes.

September was dry and warm at all locations. A killing frost did not occur until early October. The favorable fall permitted many normally late entries to fully develop.

The assistance of the following individuals is acknowledged: G. W. Erion and Q. S. Kingsley of the Plant Science Department; farmer-cooperators William Fijala, Harlan Halverson, Marvis Barnes and Oscar Thompson; and Station personnel J. F. Giles, B. E. Lawrensen, Herb Lund, Lucian Edler and Kevin Kirby.

Table 1. Location of Trials and Dates of Seeding and Harvesting of Grain Sorghum Performance Trials, South Dakota, 1978

County	Location and Post Office	Row Spacing	Dates Seeded	Dates Harvested
Aurora	Oscar Thompson Farm, Letcher	36"	May 23	Sept. 26
Brookings	Plant Science Farm, Brookings	36"	June 5	Sept. 25
Charles Mix	William Fijala Farm, Geddes	40"	May 23	Oct. 2
Clay	Southeast Experiment Farm, Beresford	36"	May 25	Sept. 29
Sully	Marvin Barnes Farm, Harrold	38"	June 7	Sept. 27
Lyman	Harlan Halverson Farm, Kennebec	36"	June 6	Oct. 2
Spink	James Valley Research Farm, Redfield	36"	May 24	Sept. 28

Lodging was a serious problem only at Letcher and was drouth induced. The trials at Brookings were harvested before killing frost because birds were causing quite severe losses to late maturing entries (Table 13). The stage of growth at the onset of hot, dry weather or extended periods of cooler temperatures had varying effects on grain quality, test weight and varietal response.

Hybrid Entry Procedure

Grain sorghum offered for sale in South Dakota or being produced for distribution in 1979 was eligible for entry. A closed-pedigree hybrid was entered by the permanent name and number under which it was sold by the parent 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 area, except for grain sorghum entries developed by State and Federal Experiment Stations and entered by the South Dakota Agricultural Experiment Station.

Experimental Procedure

Each trial consisted of four or five replications of two-row plots. Each plot was randomly located within each replication. All trials were seeded with 31-cell cone-seeders mounted above flexi-planter units. A recommended herbicide for grassy weed control and an insecticide for green bug control were banded over the row at seeding time. The various row spacings used are indicated in Table 1 and plot lengths were dependent upon the area available at each location.

Table 2. Soil sample analysis and cultural practices at 1978 Grain Sorghum Sites

County and crop adaptation areas	Soil classification	Laboratory analysis Org. mat. %	P lbs/A	K lbs/A	pH	Field preparations Methods	Fert. N	Fert. P	Fert. K
Sully, B2	Gl-Hn-JV SiL	2.7	28	1000	7.1	Disced from stubble			
Lyman, B3	Pierre clay	2.7	10	1000	7.8	Chiseled from stubble			
Aurora, C1	Hou. Pros. SiL	2.3	36	710	6.1	Disced & harrowed			
Spink, C1(irr.)	Beotia SiCl	2.4	51	900	7.2	Disced & harrowed	80	-0	-0
Chas. Mix., C2	Highmore SiCl	3.2	200	999	6.7	Plowed & disced			
Brookings, D3	Lismore SiL	3.1	44	410	6.6	Plowed & disced	40	-20	-0
Clay, E	Egan SiCl	3.5	28	750	7.1	Plowed & disced	30	-15	-0

Table 3. Temperature and Precipitation Data for the 1978 Grain Sorghum Growing Season in South Dakota

		Temperatures, Degrees F				Precipitation, inches		
District	Month	Mean Av.	Departure from normal	Av. departure	Days 90°+	Month total	Departure from normal	Total departure
Armour[a]	May	59.4	-0.3		-	4.84	+1.96	
	June	70.0	+0.9		7	1.80	-2.47	
C2	July	75.0	-0.5		15	6.20	+3.51	
	August	73.5	-0.6		11	3.21	+0.28	
	Sept.	67.9	+4.6	+0.8	11	2.48	+0.21	3.49
	First freeze		10/7 - 28°			18.53		
Brookings	May	55.9	-0.3			4.17	+0.97	
2 NE	June	64.4	+2.0		2	2.50	-1.73	
	July	69.3	-1.8		5	4.03	+1.19	
D3	August	68.4	-1.2		3	2.25	-0.61	
	Sept.	63.2	+4.2	+0.6	6	2.44	+0.20	0.02
	First freeze		10/7 - 27°			15.39		
Centerville	May	58.5	-2.2			3.08	-0.40	
6 SE	June	67.6	-2.6		7	1.94	-2.76	
	July	71.5	-3.8		7	10.61	+7.50	
E	August	70.6	-3.3		5	2.96	-0.08	
	Sept.	66.4	+2.7	-1.8	6	1.59	-1.09	3.17
	First freeze		10/7 - 24°			20.18		
Harrold	May	57.1	b	b		1.74	b	
12 SW	June	67.6			7	1.14		
	July	73.3			16	3.36		
B2	August	72.0			16	3.01		
	Sept.	66.8			12	0.57		
	First freeze		10/6 - 23°			9.82		
Kennebec	May	60.5	2.4			1.35	-1.34	
	June	71.1	3.6		10	2.47	-1.38	
B3	July	76.0	1.1		15	3.03	+0.98	
	August	75.6	1.7		20	3.25	+0.91	
	Sept.	71.9	9.1	+3.6	12	0.75	-0.77	-1.60
	First freeze		10/6 - 23°			10.85		
Redfield	May	58.3	b	b		5.42	b	
6 E	June	66.4			2	2.42		
	July	71.2			7	1.85		
C1 (irr.)	August	71.8			13	2.27		
	Sept.	67.0			12	0.64		
	First freeze		10/7 - 24°			12.60		

a - based upon reports of Monthly Climatological Data, National Weather Service, Ashville, NC.

b - Departures are figures from 30 years data. This station has not been in operation for that period of time.

The harvested grain was taken from a 10-foot section of each row for 20 running feet in each individual plot. The heads were bagged at harvest, tagged and tied, and returned to Brookings for drying and threshing. Yields were reported in pounds per acre (multiply by 1.121 for kg/ha) with three or four replications harvested for yield and one left for observational purposes.

Moisture determinations made at time of normal date of killing frost are generally more reliable and informative than determinations made at harvest. Generally moisture and test weight of the grain realistically indicate relative maturity. Grain moisture samples were taken from all observation plots at all locations during the period of September 14 to 26. Ten to twelve heads, or 400-500 grams, were cut from each entry, placed in a polyethylene bag, tagged and sealed tightly. The samples were threshed and cleaned and moisture percentages determined with an electronic moisture meter. The upper limit of the meter is 35% and material above this level, reported as 35.+ in the tables, would generally indicate lines of late maturity for this area.

The entries in many of the trials were high in kernel moisture when sampled so a normal season of cooler fall daytime temperatures and earlier killing frosts would have more seriously affected good yield, quality and test weight. Because of the very nice, warmer fall of 1978 most entries reached physiological maturity and quality was good to excellent.

Greenbugs were present at some sites even though a granular insecticide was applied at seeding for greenbug control. The most noticeable was at the Letcher site.

The irrigated trial at Redfield received applications of water on July 24 and August 12. Both applications were by the gravity method and about 3 inches of water were applied each time.

Measurements 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 for 1978 and other agronomic data are reported in Tables 4 through 13. Two- to five-year averages are reported in Tables 8, 10, 12 and 13.

Bird damage was a problem at the Brookings site as noted in column 9 of Table 13. The trials located within larger fields of farmer-cooperators were not as subject to the concentrated picking of a small area and losses incurred were slight, if any.

Discussion of Results

Trials in the southern and central areas of the state were most affected by the hot temperatures and unfavorable precipitation patterns of June, July and August. Letcher suffered the most damage and the quality was poorest of all locations. Quality was good at the other sites, Harrold and Kennebec, because the late killing frost permitted more surviving plants to mature.

The trial at Geddes produced excellent yields and high quality. The Redfield trial produced good quality grain and yields were good in spite of the late May rainstorm which crusted the soil and reduced the stands. A rotary hoe was used to break the crust but was too late to aid some germinated seedlings because the field could not be entered when it was too wet.

The most surprising yields are those at the Southeast Farm. The trial was literally "mowed-off" when a severe rain, wind and hailstorm passed over the farm area on July 6. All other cropland was reseeded or fallowed but because of sorghum's known ability for regrowth and the obvious presence of many viable tillers on the remaining stumps of plants a "wait and see" attitude was taken. Surviving tillers were able to grow rapidly on the well established root system already present. Favorable temperatures and precipitation the remainder of the season, especially a very warm September, permitted plants to reach near normal growth and produce very acceptable yields, 70 plus bushels per acre, by early October. It provided evidence that letting damaged sorghum fields recover and cultivating as necessary would probably often be an excellent management decision.

The Brookings trial was behind from the delayed seeding time until harvest. The late seeding and below normal temperatures of July and August were not favorable to the semi-tropical plant and late entries were barely in the soft dough stage when the time for first frost (September 22) was reached.

Table 4. 1978 Grain Sorghum Performance Trial, Area B3, Marvin Barnes Farm, Harrold, Sully County, South Dakota

Brand & Variety	Yield, lb/A 1978	Yield, lb/A 1977-78	Test Wt. lb/B	Height, inches	Percent Moisture, 9/18/78
Northrup-King NK 1580	3190	2350	58	40	35.+
ACCO R 920	3060	2600	56	41	34.6
Western WS-201	3015		56	45	30.8
SDAES RS 506	2935	2260	57	46	35.+
DeKalb A-25a+	2885	2455	57	36	35.+
Growers GSA 1060	2830		58	40	35.+
Northrup-King NK 121A	2790	2190	56	37	35.+
DeKalb A-28+	2785	2205	57	36	35.+
RS 671	2740		52	40	35.+
Funks HW 3840	2690		57	34	35.+
NB 505	2660	2055	58	43	34.0
Funks G-251	2585	1970	57	36	30.6
Northrup-King NK 129	2585		58	43	35.+
Warner W-55T	2560	1965	52	41	35.+
Growers E110	2535	1920	58	42	34.6
RS 626	2525		60	38	35.+
SDAES RS 455	2370	2065	56	49	31.2
Cenex 322T	2335		52	43	35.+
SDAES SD 106	2170	1840	55	41	35.+
Martin B	2160		56	39	35.+
Cenex 333	2130		53	42	35.+
SDAES SD 104	1965	1530	56	39	31.1
Mean	2615				
LSD (.05)	645			CV - % = 17.5	

Table 5. 1978 Grain Sorghum Performance Trial, Area B3, Harlon Halverson Farm, Kennebec, Lyman County, South Dakota

Brand & Variety	Yield, lb/A 1978	Yield, lb/A 1977-78	Test Wt. lb/B	Height, inches	Percent Moisture, 9/26/78
NB 505	2510	3440	58	44	17.7
RS 626	2490		58	42	27.9
SDAES RS 506	2410	2720	57	43	21.4
Frontier 395R	2380		58	38	32.0
Cenex 221	2325	2720	55	46	13.2
Western WS-201	2305		55	43	15.3
ACCO R 920	2285	3045	57	43	13.7
Cenex 300T	2265	3685	56	42	28.7
Warner W-55T	2230	3390	56	40	29.3
Cenex 12178T	2220		57	39	25.2
Growers GSA 1180	2140	3665	57	39	32.9
Northrup-King NK 180	2120	3760	57	41	28.5
ACCO R 1014	2105	3530	57	40	28.4
Cenex 333	2095	3585	54	34	35.+
Frontier 400R	2095	3060	56	35	30.6
Western WS-206	2090		59	39	26.1
SDAES RS 455	2085	2860	56	50	15.6
DeKalb B-38+	2070		58	40	18.9
ACCO R 980	2030		59	37	27.2
Growers GSA 1060	2005		58	41	21.4
Cenex 322T	2005	3085	56	41	34.8
DeKalb A-25a+	1975	2955	56	34	28.4
Northrup-King NK1580	1975	3275	58	41	25.9
Frontier 389R	1970	3245	57	40	25.7
Pride P158GB	1945		56	38	17.2
Growers E110	1870	3470	58	39	27.4
Pride P508GB	1755	2980	59	39	30.1
DeKalb A-28+	1755	3030	57	37	26.3
Northrup-King NK121A	1745	3075	56	33	16.2
Martin B	1720		58	39	31.2
SDAES SD 106	1700	2445	55	37	14.7
Frontier 4000R	1640		57	41	28.7
RS 671	1615		55	40	32.2
Northrup-King NK 129	1500		58	46	20.8
Warner W-561T	1455		56	37	32.9
SDAES SD 104	1340	2020	56	37	17.5
Mean	2005				
LSD (.05)	N.S.			CV - % = 21.9	

Table 6. 1978 Grain Sorghum Performance Trial, Area C2, William Fijala Farm, Geddes, Charles Mix County, South Dakota

Brand & Variety	Yield, lb/A 1978	Yield, lb/A 1977-78	Test Wt. lb/B	Height, inches	Percent Moisture, 9/18/78
Asgrow Corral	7145		61	55	35.+
Cenex 333	6675	4655	55	54	31.8
Asgrow Bug-Off E	6605	4465	59	54	33.5
DeKalb C-42a+	6360	4475	57	50	35.+
Frontier 4000R	6070		59	54	35.+
P-A-G 3387	5980		56	44	35.+
Funks G-393	5915		54	41	35.+
Growers GSA 1060	5805		57	48	22.8
Asgrow Dorado E	5770	4115	60	48	31.0
Cenex 322T	5715	3975	58	49	33.0
SDAES RS 506	5625	3795	56	53	24.5
Young Oro Recio	5615		58	48	29.5
Asgrow H7610	5610		58	48	30.5
ACCO GR 1018	5610	3945	58	49	33.9
DeKalb B-38+	5570	3960	59	51	32.6
Cenex 300T	5550	3815	58	55	31.8
ACCO R 1019	5540	3900	58	49	34.6
Northrup-King NK 2233	5490		59	53	28.0
Western WS-215	5465		57	44	35.+
Warner W-561T	5465	3890	58	53	35.+
Frontier 385R	5460		57	45	28.0
Warner W-55T	5405	3795	57	50	30.2
Growers GSA 1180	5395	3925	58	42	35.+
Northrup-King NK 2022	5380		59	55	30.8
Growers E110	5365	3890	58	52	31.1
P-A-G 4432	5340	3980	57	44	35.+
Funks G-499 GBR	5315		57	42	35.+
Northrup-King NK 1580	5285	3970	59	49	33.6
DeKalb A-28+	5280	3760	58	46	29.9
Northrup-King NK 121A	5275	3665	57	43	22.7
Pride P808GB	5230	3895	59	52	31.0
Frontier 395R	5220		60	50	30.7
ACCO GR 1028	5165	3745	58	46	35.+
Western WS-206	5165		58	49	28.3
Pride P508GB	5155	3445	59	45	34.4
ACCO R 1014	5145	3715	57	45	32.4
SDAES RS 455	4535	2900	57	57	22.4
Funks HW3840	4355		56	42	26.4
SDAES SD 104	4140	2605	56	42	23.1
SDAES SD 106	3980	2835	55	44	24.5
Mean	5480				
LSD (.05)	1150			CV - % = 12.9	

Table 7. 1978 Grain Sorghum Performance Trial, Area C1 (irrigated), James Valley Research Farm, Redfield, Spink County, South Dakota

Brand & Variety	Yield, lb/A	Test Wt. lb/B	Height, inches	Percent Moisture, 9/14/78	Date Headed
Pride P508GB	5195	57	46	35.+	8/9
SDAES RS 455	5040	56	58	25.6	7/29
Frontier 385R	4825	56	44	35.+	8/10
Asgrow Corral	4765	59	49	35.+	8/14
Frontier 4000R	4760	57	47	35.+	8/14
Northrup-King NK 2233	4710	59	49	35.+	8/13
Growers E110	4655	57	47	35.+	8/12
Warner W-601T	4635	57	50	35.+	8/15
Western WS-206	4565	58	47	35.+	8/14
Asgrow Dorado E	4520	58	49	35.+	8/14
ACCO R 1019	4505	57	42	35.+	8/16
Funks G-251	4505	56	39	34.3	8/6
Growers GSA 1180	4420	55	43	35.+	8/16
Frontier 395R	4340	58	47	35.+	8/18
Growers GSA 1210A	4280	56	48	35.+	8/13
ACCO R 920	4275	55	45	32.1	8/2
Cenex 333	4265	54	46	35.+	8/13
Northrup-King NK 2022	4215	59	46	35.+	8/13
Warner W-561T	4215	55	48	35.+	8/15
ACCO GR 1018	4200	56	44	35.+	8/14
DeKalb B-38+	4145	58	45	35.+	8/9
DeKalb A-28+	4135	57	43	31.9	8/5
SDAES RS 506	4110	55	52	35.+	8/7
Northrup-King NK 1580	4085	59	46	35.+	8/13
Growers GSA 1060	4040	58	47	35.+	8/12
Cenex 322T	4035	54	49	35.+	8/16
Pride P158GB	3960	54	41	33.6	8/9
Cenex 300T	3905	57	53	35.+	8/16
ACCO R 1014	3790	56	43	35.+	8/13
ACCO R 980	3640	59	40	35.+	8/14
SDAES SD 104	3405	55	41	25.9	7/26
SDAES SD 106	3390	54	48	24.1	7/29
Funks HW3840	3380	56	37	33.1	8/6
Mean	4270				
LSD (.05)	675			CV - % = 11.0	

Table 8. Two-, Three-, Four-, and Five-Year Average Yields of Grain Sorghum Hybrids Entered at Redfield, SD, 1974-1978

Brand & Variety	Average yield, pounds per acre			
	1974-78	1975-78	1976-78	1977-78
ACCO R 920	4840	4490	4570	4530
ACCO R 1014	4960	4815	4710	4375
ACCO GR 1018				3980
ACCO R 1019	4555	4765	4735	4030
Asgrow Dorado E			5015	4460
Cenex 300T				4185
Cenex 322T				4550
DeKalb A-28+				4400
Frontier 385R				4660
Funks G-251	4475	4105	4180	4305
Growers E110				4585
Growers GSA 1180				4165
Growers GSA 1210A				4560
Northrup-King NK 1580				4500
Pride P508GB				4640
SDAES RS 455				3900
SDAES RS 506	5020	4695	4655	4290
SDAES SD 104				3025
SDAES SD 106	4735	3470	3445	3490
Warner W-561T				4360
Warner W-601T				4395

Table 9. 1978 Grain Sorghum Performance Trial, Area C1, Oscar Thompson Farm, Letcher, Aurora County, South Dakota

Brand & Variety	Yield, lb/A	Test Wt. lb/B	Height, inches	Stalk Lodging %	Percent Moisture, 9/19/78
Asgrow Corral	3475	57	44	2	23.5
DeKalb B-38+	3460	57	41	2	20.8
Pride P508GB	3290	58	40	0	20.8
Pride P158GB	3200	56	36	2	18.5
DeKalb A-25a+	2970	54	31	2	20.5
Northrup-King NK 2233	2965	58	42	5	19.4
Warner W-55T	2825	53	42	2	21.3
Warner W-561T	2805	54	41	2	20.4
Warner W-601T	2785	53	40	2	22.7
DeKalb A-28+	2780	55	38	4	21.6
Cenex 300T	2720	54	42	7	22.0
Growers GSA 1180	2635	54	37	0	23.6
SDAES RS 455	2610	55	47	3	19.6
Cenex 322T	2590	54	42	3	24.0
ACCO R 1014	2570	50	39	10	18.5
Growers GSA 1060	2530	55	44	2	18.0
Growers GSA 1210A	2500	54	39	4	21.9
Cenex 333	2440	49	42	3	19.8
Asgrow Bug-Off E	2425	52	41	6	19.5
Northrup-King NK 1580	2305	56	39	22	19.0
ACCO R 980	2255	52	37	3	17.9
Northrup-King NK 129	2225	55	41	2	19.0
ACCO R 920	2125	51	40	21	18.9
Western WS-201	1985	51	42	21	19.6
SDAES SD 106	1940	52	37	2	20.6
Western WS-206	1935	45	39	11	24.5
SDAES RS 506	1925	51	45	65	24.4
SDAES SD 104	1760	55	37	3	19.6
Mean	2575				
LSD (.05)	475				CV - % = 13.1

Table 10. Two-, Three-, Four-, and Five-Year Average Yields of Grain Sorghum Hybrids at Letcher, SD, 1974-1978

Brand & Variety	Average yield, pounds per acre			
	1974-78	1975-78	1976-78	1977-78
ACCO R 920	1665	1840	1735	1950
ACCO R 1014		2560	2305	2715
Cenex 300T			2580	3205
Cenex 322T				2855
Cenex 333			2345	2440
DeKalb A-25a+		2620	2535	3045
DeKalb A-28+				3160
DeKalb B-38+			2825	3450
Growers GSA 1180				2835
Growers GSA 1210A				3035
Pride P508GB				3360
SDAES RS 455				2135
SDAES RS 506	1515	1610	1360	1325
SDAES SD 104				1450
SDAES SD 106	1310	1400	1320	1490
Warner W-55T			2270	2645
Warner W-561T				3060
Warner W-601T			2535	3075

Table 11. 1978 Grain Sorghum Performance Trial, Area E, Southeast Experiment Farm, Centerville, Clay County, South Dakota[a]

Brand & Variety	Yield, lb/A	Test Wt. lb/B	Height, inches	Percent Moisture, 9/19/78
DeKalb C-42a+	4115	57	36	35.+
Asgrow Corral	4075	59	47	35.+
SDAES RS 455	4035	57	51	34.2
P-A-G 3387	3950	56	44	35.+
SDAES RS 506	3865	57	50	35.+
ACCO R 1019	3700	59	42	34.6
Pride P808GB	3690	58	44	35.+
Cenex 333	3680	57	42	35.+
P-A-G 4432	3680	57	43	35.+
Growers GSA 1060	3650	57	43	33.7
ACCO R 1014	3625	58	43	34.4
Warner W-55T	3480	59	42	35.+
Growers E110	3435	60	44	35.+
DeKalb B-38+	3385	59	41	35.+
ACCO GR 1018	3345	58	41	35.+
ACCO GR 1028	3340	58	41	35.+
Northrup-King NK 2266	3290	58	45	35.+
Warner W-561T	3255	58	42	35.+
Northrup-King NK 1580	3250	58	40	35.+
Cenex 322T	3230	58	43	35.+
RS 626	3190	57	42	35.+
NB 505	3170	59	45	31.5
Funks G-499GBR	3155	57	38	35.+
Western WS-215	3130	57	40	35.+
RS 671	3080	57	44	35.+
Northrup-King NK 2233	3075	59	42	35.+
Growers GSA 1180	3060	59	41	35.+
Martin B	2990	59	43	35.+
Funks G-393	2930	56	38	35.+
Northrup-King NK 2022	2865	59	42	35.+
Funks HW3840	2840	59	37	35.+
SDAES SD 104	2840	57	44	35.+
Asgrow Mustang	2760	58	41	35.+
SDAES SD 106	2565	56	42	35.+
Mean	3335			
LSD (.05)	N.S.		CV - % = 17.9	

a - Hail storm on July 6 literally "mowed-off" all vegetation. The results presented are from the regrowth and should be interpreted as such.

Table 12. Two-, Three-, Four-, and Five-Year Average Yields of Grain Sorghum Hybrids Entered at Centerville, SD, 1974-1978

Brand & Variety	Average yield, pounds per acre			
	1974-78	1975-78	1976-78	1977-78
ACCO R 1014	3825	3675	4155	4860
ACCO GR 1018				4675
ACCO R 1019	4400	4260	4590	5165
ACCO GR 1028				4785
DeKalb B-38+			4000	4690
DeKalb B-42a+	4535	4525	4905	5570
Growers E110				4795
Growers GSA 1180				4750
Northrup-King NK 1580				4860
P-A-G 4432				5290
SDAES RS 455				4740
SDAES RS 506	3895	3660	4200	4675
SDAES SD 104				3790
SDAES SD 106	2960	2735	3030	3835
SDAES NB 505				4260
Warner W-561T	3980	3755	4200	4500

Table 13. 1978 Grain Sorghum Performance Trial, Area D3, Plant Science Farm, Brookings, Brookings County, South Dakota

Brand & Variety	Yield, lb/A 1978	1976-78	1977-78	Test Wt. lb/B	Height, inches	Date Headed	Percent Moisture 9/20/78	Bird Damage %
Northrup-King NK 121A	5800			55	46	8/8	35.+	0
SDAES RS 455	5670		4330	57	56	7/28	29.2	0
SDAES RS 506	5400	3950	3685	56	56	8/4	35.+	2
Growers GSA 1060	5245			57	51	8/8	35.+	23
Northrup-King NK 180	5125	4760	4340	57	52	8/10	35.+	2
Growers E110	5090			57	50	8/9	35.+	8
Northrup-King NK 1580	5055		3555	58	48	8/11	35.+	6
Funks G-251	4720			58	43	8/3	35.+	5
Funks HW2840	4600			58	38	8/3	35.+	0
Funks G-499GBR	4535		3400	53	42	8/14	35.+	9
ACCO R 1014	4480	3695	3285	56	46	8/12	35.+	10
Growers GSA 1180	4470			57	48	8/13	35.+	15
SDAES SD 104	4430		3565	55	42	7/27	35.+	0
DeKalb A-25a+	4365			54	37	8/2	35.+	0
Cenex Exp. 12178T	4355			57	47	8/11	35.+	16
ACCO R 980	4090			59	46	8/12	35.+	2
Funks G-343	4080	3445	2920	51	45	8/18	35.+	9
DeKalb A-28+	4010		3635	55	46	8/3	35.+	10
NB 505	3950		2385	57	56	8/5	35.+	23
Western WS-206	3950			54	52	8/10	35.+	26
Western WS-201	3910			55	56	8/2	32.3	2
Cenex 221	3845			54	52	7/29	32.3	0
ACCO R 920	3635	3870	3790	54	48	8/3	32.4	5
Northrup-King NK 2022	3605			56	49	8/11	35.+	16
Warner W-501	3540	3295	2955	55	55	7/30	32.2	2
Warner W-55T	3355			52	48	8/13	35.+	25
RS 626	3080			45	54	8/12	35.+	66
Northrup-King NK 2233	3045			54	51	8/11	35.+	52
SDAES SD 106	2710	3165	3240	55	45	8/1	35.+	0
RS 671	2580			47	55	8/14	35.+	60
Martin B	2005			53	51	8/13	35.+	61
Mean	4155							
LSD (.05)	965						CV - % = 14.3	

Table 14. Entries Submitted for the 1978 Grain Sorghum Performance Trials and Tables Where Results Appear

Company & Brand	Variety	Tables
ACCO Seed Box 1630 Plainview, TX 79072 "ACCO"	R 920 R 980 R 1014 R 1019 GR 1018 GR 1028	4,5,7,8,9,10,13 5,7,9,13 5,6,7,8,9,10,11,12,13 6,7,8,11,12 6,7,8,11,12 6,11,12
Asgrow Seed Co. PO Box 1059-Clive Des Moines, IA 50053 "Asgrow"	Corral Bug-Off E Dorado E Mustang H7610	6,7,9,11 6,9 6,7,8 11 6
Cenex Seeds Box 964 Sioux Falls, SD 57101 "Cenex"	221 300T 322T 333 Ex. 12178T	5,13 5,6,7,8,9,10 4,5,6,7,8,9,10,11 4,5,6,7,9,10,11 5,13
DeKalb AgResearch, Inc. Rt. 1, Box 225 Glenvil, NE 68941 "DeKalb"	A-25a+ A-28+ B-38+ C-42a+	4,5,9,10,13 4,5,6,7,8,9,10,13 5,6,7,9,10,11,12 6,11,12
Disco Seeds PO Box 640 Mitchell, SD 57301 "Frontier"	385R 389R 395R 400R 4000R	6,7,8 5 5,6,7 5 5,6,7
Funk Seeds Int'l 719-26th St. Lubbock, TX 79404 "Funks"	G-251 G-393 G-499-GBR HW3840	4,7,8,13 6,11,13 6,11,13 4,6,7,11,13
Growers Seed Assn. PO Box 1656 Lubbock, TX 79408 "Growers"	E110 GSA 1060 GSA 1180 GSA 1210A	4,5,6,7,8,11,12,13 4,5,6,7,9,11,13 5,6,7,8,9,10,11,12,13 7,8,9,10
King's Western Seeds 205 Wyoming Ave. SW Huron, SD 57350 "Western"	WS-201 WS-206 WS-215	4,5,9,13 5,6,7,9,13 6,11
Northrup, King & Co. PO Box 959 Minneapolis, MN 55440 "NK"	121A 129 180 1580 2022 2233 2266	4,5,6,13 4,5,9 5,13 4,5,6,7,8,9,11,12,13 6,7,11,13 6,7,9,11,13 11
P-A-G Seeds PO Box 9480, D 16 Minneapolis, MN "P-A-G"	3387 4432	6,11 6,11,12
Pride Company, Inc. Glen Haven, WI 53810	P158GB P508GB P808GB	5,9 5,6,7,8,9,10 6,7,11
Agricultural Experiment Station S. Dak. State Univ. Brookings, SD 57007 "SDAES"	RS 455 RS 506 SD 104 SD 106 NB 505 RS 626 RS 671 Martin B	4,5,6,7,8,9,10,11,12,13 4,5,6,7,8,9,10,11,12,13 4,5,6,7,8,9,10,11,12,13 4,5,6,7,8,9,10,11,12,13 4,5,11,12,13 4,5,11,13 4,5,11,13 4,5,11,13
Geo. Warner Seed Co. Box 1448 Hereford, TX 79045 "Warner"	W-55T W-501 W-561T W-601T	4,5,6,9,10,11,13 13 5,6,7,8,9,10,11,12 7,8,9,10
R. C. Young Co. 624 27th St. Lubbock, TX 79404	Oro Recio	6

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