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1971 Grain Sorghum Performance Trials

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Performance Trials

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GRAIN SORGHUM

Plant Science Department
Agricultural Experiment Station
South Dakota State University, Brookings

Listing of Tables

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The relative performance of grain sorghum hybrids grown under similar environmental conditions are evaluated in this report for the 1971 season. Performance records of the hybrids harvested in 1971 and available two-, three-, four-, and five-year averages are presented. The trials reported were under supervision of the Crop Performance Testing Activity, Agricultural Experiment Station, South Dakota State University.

Location of the 1971 Trials

To adequately evaluate performance ability of the various entries they 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. The exact location of the trials and dates of seeding and harvesting are included in Table 1. Data from soil samples taken at the various sites at time of seeding and the fertilizer applied are in Table 2.

Weather and Climatic Conditions

Climatic data for the 1971 grain sorghum growing season, May-September, are based upon Monthly Climatological Data and from reports of substation personnel at Garden City and Presho (see Table 3). Weather information was not available from the immediate Geddes site so data from the nearest recording station, Armour, are given. Heavy precipitation occurred shortly before sorghum seeding began and adequate rainfall continued through mid-July. Precipitation was then very limited and slowed growth. As precipitation became limited the greenbug infestation increased, eventually to become a major problem in southcentral South Dakota. Spraying for greenbug control was done over much of the area.

The trials were seeded from May 19 through May 28. Seedbeds were generally in good friable condition and soil moisture was adequate at all sites. Near record amounts of precipitation were recorded at most reporting stations in June. Moisture became limited at many stations in late July, delaying heading and pollination. During this same period near-record low temperatures occurred and crops

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TABLE 1. THE LOCATION OF TRIALS AND DATES OF SEEDING AND HARVESTING OF GRAIN SORGHUM PERFORMANCE TRIALS, SOUTH DAKOTA, 1971

County	Location and post office	Date seeded	Date harvested	Row spacing
				inches
Brookings	Agronomy Farm, Brookings	May 26	Sept. 29	36
Charles Mix	William Fijala Farm, Geddes	May 21	Sept. 28	40
Clark	West Prairie Coteau Farm, Garden City	May 28	Sept. 23	36
Clay	Southeast Experiment Farm, Beresford	May 19	Sept. 24	30
Hyde	Central Substation, Highmore	May 26	Sept. 16	36
Lyman	South Central Research Farm, Presho	May 20	Sept. 30	36
Spink	Redfield Development Farm, Redfield	May 27	Sept. 23	21

of tropical origin such as sorghum came to a virtual halt in growth. Precipitation was adequate in late August and September. Moisture in the grain at the time of normal first frost was high but the delay of freezing temperatures favored high test weights. Killing frosts, 28° or less, did not occur at many locations in the state until mid-October and grain quality was good at most sites.

Hybrid Entry Procedure

Grain sorghums offered for sale in South Dakota or being produced for distribution in 1972 were eligible for entry. A closed-pedigree hybrid was entered by the permanent name and number under which it was sold by the parent company only. All entries maintained minimum laboratory germination of 80% as required by South Dakota Certification Standards. A nominal fee was charged for each entry in each area except grain sorghum hybrids developed by State and Federal Experiment Stations and entered by the South Dakota Agricultural Experiment Station.

TABLE 2. SOIL CLASSIFICATION, LABORATORY ANALYSIS OF SOIL SAMPLES TAKEN PRIOR TO SEEDING GRAIN SORGHUM AND FERTILIZER APPLIED FOR THE 1971 CROP YEAR

		Laboratory analysis				Fertilizer applied	
County and area	Soil classification	Org. mat. %	P lb/A	K lb/A	pH	Method	N lb/A	P lb/A
Brookings, D3	Vienna L	3.4	32	222	6.7	soybeans '69	fallow	
Charles Mix, C2	Highmore SiCl	4.5	22	682	7.1	anhydrous	80	0
Clark, D2	Forman SiCl	3.7	22	314	6.5	plowed down	60	40
Clay, E	Egan SiCl	3.8	31	682	7.1	plowed down	100	40
Hyde, B2	Java L	2.1	34	436	7.1	disced in	46	23
Lyman, B3	Promise C	3.1	5	682	7.7	disced in	16	48
Spink, C1	Beotia SiCl	3.3	83	682	7.0	disced in	100	40

TABLE 3. TEMPERATURE AND PRECIPITATION DATA FOR THE 1971 GRAIN SORGHUM GROWING SEASON IN SOUTH DAKOTA

		Temperature, degrees F.			Precipitation, inches		
Location	Month	Mean Av.	Departure from normal	Av. Departure	Month total	Departure from normal	Total departure
Armour*	May	57.3	- 3.2		2.74	- 0.06	
	June	73.0	2.5		2.76	- 1.17	
	July	71.2	- 6.4		3.33	1.26	
	Aug.	75.5	- 0.1		0.92	- 2.23	
	Sept.	63.1	- 2.4	- 1.9	2.16	0.22	-1.98
	Last freeze		May 12		11.91		
Brookings*	May	52.9	- 4.7		1.13	- 1.66	
2 NE	June	68.6	1.5		5.16	1.21	
	July	65.9	- 7.3		1.13	- 1.02	
	Aug.	68.6	- 2.6		3.00	0.03	
	Sept.	57.7	- 3.6	- 3.3	0.88	- 1.15	- 2.59
	Last freeze		May 27		11.30		
Centerville*	May	56.5			2.11		
6 SE	June	72.3			7.20		
	July	69.9			1.97		
	Aug.	73.0			0.87		
	Sept.	61.7			1.67		
	Last freeze		May 12		13.82		
Garden City	May	49.2			2.69		
	June	65.2			4.95		
	July	66.1			1.01		
	Aug.	70.5			5.81		
	Sept.	57.7			1.41		
	Last freeze		May 25		15.87		
Highmore*	May	55.8	- 1.4		1.90	- 0.43	
1 W	June	71.3	4.5		5.69	2.15	
	July	70.9	- 3.6		1.05	- 0.93	
	Aug.	76.1	3.3		3.85	1.81	
	Sept.	61.0	- 1.6	+ 0.2	2.41	1.10	3.70
	Last freeze		May 12		14.90		
Redfield*	May	55.3			1.45		
6 E	June	71.5			4.55		
	July	M			0.42		
	Aug.	74.9			3.70		
	Sept.	60.9			2.28		
	Last freeze		May 20		12.40		
Presho	May	57.8	- 1.2		1.85	- 0.53	
11 S	June	73.6	4.9		.60	- 2.51	
	July	72.9	- 4.4		1.55	- 0.11	
	Aug.	77.1	2.0		1.78	- 0.30	
	Sept.	63.2	- 1.6	- 0.1	2.07	0.62	- 2.83
	Last freeze		May 2		7.85		

*Based upon reports of Monthly Climatological Data, NOAA, EDS, Office of State Climatologist, SDSU, Brookings, SD 57006

Experimental Procedure

Each trial consisted of four or five replications. Plots of individual entries were randomly located within each replication. All trials were seeded two rows at a time, with cone-planters mounted above flexi-planter units. A herbicide was banded over the row at time of seeding. The various row spacings used are found in Table 1. The plots were two rows wide, plot lengths dependent upon the area available at the various locations.

The harvested grain was taken from two, 10-foot sections of each row in each individual plot. The heads were bagged as harvested, tagged and tied, and returned to Brookings and allowed to air dry in a pole shed for several weeks. Prior to threshing the bags were placed in driers for several days. Yields were calculated on the basis of pounds per acre. Depending upon location, either three or four replications were harvested for yield determination and one replication was left for observational purposes.

Moisture determinations made at the time of normal first-frost dates are generally more reliable and informative than determinations made at harvest time. Generally, these figures and the test weight of the grain indicate more realistically the maturity of the grain.

Moisture samples were taken at all locations during the period of September 14 through September 28. Ten to twelve heads, adequate for a 400-500 gram grain sample, were cut from each entry, placed in a polyethylene bag, tagged and sealed tightly. Upon returning to the main station the samples were threshed, cleaned and moisture percentages determined with an electronic moisture meter. The upper limit of the meter is 35 percent. Material above this level is indicated as 35.+ in the tables and normally would indicate hybrids of late maturity for this area. Because mid-summer drought and cool temperatures slowed growth plus the rains of late August and September, many samples contained 35 percent or more moisture in the grain. In the areas where large acreages of grain sorghum are grown the material was generally advanced to the stage of physiological maturity and the moisture content at harvest did not affect the quality, especially by causing reduced test weights. At several locations all samples were less than 25 percent, well within the range of harvesting and drying at a reasonable cost.

Measurement of Performance

Variations in 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.

Duncan's Multiple Range Test (5% level) was used to determine whether significant differences occurred. The line drawn between any two entry means in the 1971 yield data indicates that there is no difference between the entries above that line at the 5% level of probability.

Discussion of Results

Grain sorghums are grown extensively in south central South Dakota and in varying amounts elsewhere around the state where it is too hot and dry for corn production. In 1971, moisture was above average in all areas during June and temperatures far above normal. During July and early August precipitation was limited in most areas, near drought conditions were common in major areas of grain sorghum production. Record-setting low temperatures in late July resulted in actual damage from frost in some low areas. The lack of moisture and low temperature retards growth by delaying heading and flowering. Precipitation was generous in some areas after mid-August and plants were capable of resuming growth at optimum levels when temperatures were favorable.

In the south-central area, precipitation was limited for too long and vigorous resumption of growth was not common, especially in earlier maturing varieties. Varieties of medium or later maturity were better able to take advantage of the more favorable conditions late in the growing season and produced satisfactory yields.

Stands were good at most sites. Stalk breakage was severe at Geddes and in varying degrees at other sites. Drought stresses in mid-summer contributed to the severe stalk breakage and stalk rots.

The yield and quality are good when all factors such as drought, cool temperatures and generous early September precipitation are included. The season was set back by these problems, but the warm days and absence of low or freezing night temperatures from mid-September until harvest was quite beneficial. Drying was often necessary for much of the crop as it was harvested as it matured. However, the kernel moisture did not drop because a killing frost had not occurred.

TABLE 4. 1971 GRAIN SORGHUM PERFORMANCE TRIAL, AREA C1, IRRIGATED, REDFIELD DEVELOPMENT FARM, REDFIELD

Brand and Variety	Yield, lb/A	Test weight, lb/B	Height, inches	Percent moisture 9/15/71
RS 506	7620	59	54	31.4
Pioneer 866	7165	58	52	35.+
Northrup-King 233	7030	59	54	35.+
SD 25702	7030	56	48	35.+
RS 610	6860	57	53	35.+
Pioneer 878	6800	57	45	32.3
SD 503	6770	58	58	28.7
ACCO R1010	6750	58	59	31.2
PAG 354	6720	57	45	33.6
Pioneer 883	6625	56	46	35.+
Excel's 404	6450	56	46	35.+
DeKalb B-36	6365	59	48	32.6
RS 633	6200	58	48	35.+
Frontier GX 389	6180	58	50	35.+
Pioneer 894	6080	58	38	30.4
ACCO Exp. X-7275	6040	58	43	31.8
Frontier 388A	6020	58	46	35.+
Excel's 433	5900	57	43	34.0
ACCO R1019	5890	57	46	35.0
DeKalb B-32a	5760	59	47	30.3
SD 451	5735	57	52	19.5
DeKalb C-42a	5720	58	47	35.0
ACCO R1029	5575	58	45	25.3
ACCO Exp. X-7250	5375	60	43	33.6
Northrup-King 133A	5305	60	46	35.+
DeKalb A-25	5255	56	41	28.0
Western WS102	4920	57	48	30.1
PAG EX 3849	4730	59	45	19.7
Mean	6170			

C.V. = 11.6%

TABLE 5. 1971 GRAIN SORGHUM PERFORMANCE TRIAL, AREA D3, AGRONOMY FARM, BROOKINGS

Brand and Variety	Yield, lb/A	Test wt. lb/B	Height, inches	Percent Moisture 9/17/71	Date Headed
RS 506	5875	57	47	34.0	7/28
DeKalb B-32a	5425	58	41	31.4	7/27
RS 610	5300	55	43	35.+	8/5
DeKalb A-25	5110	54	38	24.3	7/24
Western WS102	5090	56	43	24.1	7/24
SD 503	5000	57	50	30.8	7/28
DeKalb B-36	4975	55	42	32.8	7/28
ACCO R1010	4870	59	43	27.7	7/28
ACCO R920	4865	57	41	25.6	7/23
Frontier 388A	4845	56	39	33.5	7/31
SD 451	4825	57	44	23.1	7/23
SD 441	4780	56	48	25.3	7/21
SD 25702	4750	55	40	32.0	7/31
Coop SG-20	4705	56	39	27.1	7/29
PAG 354	4670	56	39	28.2	7/28
Frontier GX 389	4555	55	38	32.4	8/2
Pioneer 894	4450	57	35	25.7	7/23
Pioneer 878	4440	57	36	32.2	8/3
SD 104	4355	58	38	26.3	7/22
ACCO R1019	4270	54	38	35.+	8/9
Pioneer 883	4265	56	37	35.+	8/6
Northrup-King Mini-Milo 54BR	4260	57	38	23.0	7/19
Northrup-King X4027	3920	56	40	21.5	7/15
Frontier Grassy Grain I	3790	54	42	20.8	7/24
Mean	4725				

C.V. = 9.4%

TABLE 6. TWO-, THREE-, FOUR-, AND FIVE-YEAR AVERAGE YIELDS OF GRAIN SORGHUM HYBRIDS ENTERED AT REDFIELD, 1967-71

Brand and Variety	Average yield, pounds per acre			
	1967-71	1968-71	1969-71	1970-71
ACCO R1010				6905
ACCO R1019				6085
DeKalb A-25			5980	5605
DeKalb B-32a			6635	6145
DeKalb B-36				6360
DeKalb C-42a				6045
Northrup-King 133A				5940
Pioneer 866				7235
Pioneer 883		7040	7190	6700
Pioneer 894	6020	6070	5875	5955
RS 506				7455
RS 610	6865	7185	7275	6890
RS 633			7325	6275
SD 451	6535	6355	6055	5615
SD 503	7030	7050	7035	6685

TABLE 7. TWO-, THREE-, FOUR-, AND FIVE-YEAR AVERAGE YIELDS OF GRAIN SORGHUM HYBRIDS ENTERED AT BROOKINGS, 1967-71

Brand and Variety	Average yield, pounds per acre			
	1967-71	1968-71	1969-71	1970-71
Coop SG-20				4835
DeKalb A-25			5085	5170
DeKalb B-32a			5070	5295
Northrup-King Mini-Milo 54BR				4490
Pioneer 883		4365	4310	4375
Pioneer 894	4360	4540	4680	4505
RS 506				5660
RS 610	3955	4430	4430	5210
SD 441	4330	4395	4565	4710
SD 451	4685	4395	4980	5080
SD 503	4440	4675	4515	4840

TABLE 8. 1971 GRAIN SORGHUM PERFORMANCE TRIAL, AREA B2, CENTRAL SUBSTATION, HIGHMORE

Brand and Variety	Yield, lb/A	Test wt. lb/B	Height, inches	Lodging, percent	Moisture percent 9/14/71	Date headed
Pioneer 866	3725	57	39		27.0	7/28
Frontier GX 410	3405	57	34		23.2	7/25
Pioneer 883	3295	56	37		15.6	7/25
Frontier GX 389	3290	57	36		22.6	7/26
Northrup-King 180	3210	56	39		17.9	7/24
DeKalb B-36	3090	56	37		17.6	7/24
SD 25702	3070	56	40		21.5	7/28
Frontier Super 400A	2950	55	36		19.0	7/28
RS 610	2950	57	36	5	16.5	7/27
Frontier 400C	2905	58	39		22.2	7/27
SD 503	2885	56	39	5	17.6	7/21
Pioneer 878	2845	56	32		19.6	7/23
DeKalb B-32a	2840	56	36		16.7	7/21
ACCO R1010	2775	58	37		17.7	7/22
Northrup-King 265	2760	56	34	5	14.1	7/15
Northrup-King 121	2745	56	35		14.7	7/19
PAG Ex. 3849	2700	57	38	3	13.6	7/18
Pioneer 894	2685	54	34	5	12.7	7/19
ACCO R920	2635	54	39	10	14.3	7/18
Excel's 202B	2610	55	30		18.4	7/21
DeKalb A-25	2495	50	38	10	17.3	7/17
Western WS102	2425	52	36	10	16.7	7/18
Excel's 101	2380	53	32	5	15.3	7/20
SD 441	2370	55	44		16.7	7/18
RS 506	2295	54	39	40	21.7	7/21
Frontier GX 381	2160	55	39	5	18.0	7/19
Northrup-King 233	2085	54	32	20	12.8	7/12
SD 451	2080	53	40	17	19.5	7/18
Northrup-King Mini-Milo 50A	2065	53	33	45	14.7	7/12
SD 104	1960	55	35	5	16.3	7/18
Mean	2725					

C.V. = 14.5%

TABLE 9. 1971 GRAIN SORGHUM PERFORMANCE TRIAL, AREA E, SOUTHEAST EXPERIMENT FARM, BERESFORD

Brand and Variety	Yield, lb/A	Test wt. lb/B	Height, inches	Lodging, percent	Moisture percent 9/17/71	Date headed
SD 25702	6320	58	41		21.0	7/27
Northrup-King 233	6260	59	48		18.6	7/27
Northrup-King 222	6135	59	42		20.0	7/27
ACCO R1010	6020	60	46	3	15.1	7/24
RS 506	5920	57	47	5	16.0	7/23
Northrup-King 265	5875	59	45		23.5	8/1
SD 503	5825	58	49		16.4	7/24
RS 633	5815	59	45		22.3	7/29
RS 610	5810	57	46		19.4	7/30
Frontier Super 400 A	5790	56	43		19.8	7/29
Pioneer 883	5785	57	43	3	15.1	7/25
Frontier GX 389	5690	59	43		16.1	7/27
ACCO R1019	5600	59	42		24.7	8/2
ACCO R1029	5565	58	45		25.4	8/2
Northrup-King 133A	5555	60	38		20.4	7/26
Pioneer 866	5555	57	48		25.3	7/29
Western WS 206	5540	60	44		21.4	7/30
ACCO Exp. X-7275	5480	57	43		16.6	7/29
DeKalb C-42a	5340	57	40		23.3	7/27
DeKalb B-36	5300	57	44		18.0	7/25
Frontier 400C	5280	57	45		23.4	7/30
SD 451	4950	56	46	5	15.0	7/20
ACCO Exp. X-7250	4830	59	39		16.4	7/24
Coop SG-10	4150	55	41		32.4	8/14
Mean	5600					
C.V. = 12.3%	N.S.					

TABLE 10. TWO-, THREE-, FOUR-, AND FIVE-YEAR AVERAGE YIELDS OF GRAIN SORGHUM HYBRIDS ENTERED AT HIGHMORE, 1967-1971

Brand and Variety	Average yield, pounds per acre			
	1967-71	1968-71	1969-71	1970-71
ACCO R920			3225	3015
ACCO R1010				3070
DeKalb A-25			3260	3030
DeKalb B-32a			3565	3000
DeKalb B-36				3240
Pioneer 894	3520	3745	3330	2945
RS 506				2615
RS 610			3225	3085
SD 441	2880	3005	2585	2020
SD 451	3315	3280	2965	2320
SD 503	3670	3990	3610	3195

TABLE 11. TWO-, THREE-, FOUR-, AND FIVE-YEAR AVERAGE YIELDS OF GRAIN SORGHUM HYBRIDS ENTERED AT THE SOUTHEAST FARM, BERESFORD, 1967-1971

Brand and Variety	Average yield, pounds per acre			
	1967-71	1968-71	1969-71	1970-71
ACCO R1010				5570
ACCO R1019				5480
ACCO R1029			6105	5500
DeKalb B-36				5170
DeKalb C-42a			5985	5390
Northrup-King 133A				4970
Northrup-King 222	5830	5855	5880	5395
Northrup-King 265		6325	6385	5975
Pioneer 866	6160	6310	6030	5360
RS 506				5365
RS 610	6130	6145	6020	5220
RS 633			6500	5780
SD 451	5395	5140	5135	4580
SD 503	5800	5740	5750	5460

TABLE 12. 1971 GRAIN SORGHUM PERFORMANCE TRIALS, AREA B3, SOUTH CENTRAL RESEARCH FARM, PRESHO

Brand and Variety	Yield, lb/A	Test weight, lb/B	Percent moisture, 9/23/71	Date headed
Frontier Super 400A	2870	52	28.9	8/6
Pride P550BR	2720	55	16.4	7/31
RS 610	2675	55	29.4	8/4
DeKalb C-42a	2670	55	27.8	8/2
SD 25702	2665	57	29.4	8/5
ACCO R1019	2640	57	31.0	8/8
ACCO R1010	2605	59	20.0	7/26
Weathermaster GS-35	2605	56	23.6	8/3
Pioneer 866	2580	55	33.1	8/4
Frontier 400C	2570	55	23.4	8/4
Northrup-King 121	2565	56	16.9	7/26
SD 503	2535	57	17.8	7/27
Pride P-500A	2530	56	14.1	7/24
Western WS206	2520	54	20.4	8/3
Pioneer 878	2490	56	21.3	7/31
Pioneer 883	2490	48	14.8	8/3
RS 506	2480	57	17.9	7/29
Pioneer 894	2410	56	13.6	7/24
Northrup-King 180	2400	54	21.1	8/4
DeKalb B-36	2395	56	19.1	7/28
Weathermaster GS-31Y	2375	56	16.0	7/31
Weathermaster GS-30A	2360	57	15.1	7/26
Northrup-King Mini-Milo 54BR	2325	52	16.9	7/27
Excel's 202B	2310	55	16.4	7/28
ACCO R920	2300	55	14.9	7/26
Coop SG-20	2275	55	18.6	7/31
DeKalb A-25	2245	53	15.2	7/25
Weathermaster GS-30B	2190	57	16.0	7/26
Northrup-King X4027	2175	56	14.5	7/16
DeKalb B-32a	2140	56	15.2	7/28
Frontier GX 410	2135	54	23.5	8/4
RS 633	2120	58	35.+	8/9
Western WS 102	2100	54	14.8	7/22
Frontier Grassy Grain I	2025	48	15.3	7/26
Frontier GX 389	2010	57	23.9	8/4
SD 451	2005	54	14.1	7/25
Pride P-200	1990	55	17.0	7/17
ACCO Exp. X-7250	1980	57	19.9	8/4
PAG Ex. 3849	1975	57	14.1	7/23
Excel's 101	1940	54	14.8	7/25
Northrup-King Mini-Milo 50A	1710	56	14.3	7/15
Mean	2345			

C.V. = 12.0%

TABLE 13. TWO-, THREE-, FOUR-, AND FIVE-YEAR AVERAGE YIELDS OF GRAIN SORGHUM HYBRIDS ENTERED AT PRESHO, 1967-1971

Brand and Variety	Average yield, pounds per acre			
	1967-71	1968-71	1969-71	1970-71
ACCO R920	3150	2935	2555	2565
ACCO R1010				2820
ACCO R1019				2630
DeKalb A-25			2635	2565
DeKalb B-32a			2665	2530
DeKalb B-36				2620
Frontier GX 389				2500
Frontier GX 410				2615
Frontier Super 400A				2970
Frontier Grassy Grain I		2710	2360	2380
Northrup-King Mini-Milo 54BR				2785
Pioneer 883		3380	2985	2950
Pioneer 894	3125	3110	2660	2680
Pride P-200				2090
Pride P-500A				2705
Pride P-550BR				3010
RS 506				2945
RS 610	3100	3100	2745	2880
RS 633			2485	2335
Weathermaster GS-30A				2705
Weathermaster GS-30B				2555
Weathermaster GS-31Y				2610
SD 451	3105	2775	2370	2285
SD 503	3325	3170	2720	2715

TABLE 14. 1971 GRAIN SORGHUM PERFORMANCE TRIAL, AREA C2, WILLIAM FIJALA FARM, GEDDES

Brand and Variety	Yield, lb/A	Test weight, lb/B	Height, inches	Percent Lodging	Percent Moisture 9/28/71
ACCO X-7275	3480	54	39	9	25.4
Pioneer 866	3235	56	43	25	26.9
Northrup-King 233	2985	58	42	7	23.5
Frontier Super 400A	2930	55	39	12	24.3
Northrup-King 180	2540	56	33	16	20.3
RS 506	2505	55	42	38	18.6
PAG Ex. 3849	2300	58	41	12	16.2
Northrup-King 265	2220	57	35	15	19.0
RS 610	2165	56	41	5	22.8
Excel's 433	2155	57	31	8	17.1
SD 451	2155	53	41	58	15.2
PAG 354	2120	55	34	13	15.7
ACCO R1010	2105	57	41	33	17.5
ACCO R1019	2100	59	33	7	21.7
Northrup-King 222	2060	57	34	7	17.2
ACCO Exp. X-7250	2055	58	32	11	19.0
Frontier 400C	2050	56	38	15	20.7
Pride P-550BR	2035	56	38	13	16.4
DeKalb B-36	2035	57	39	12	17.3
Pride P-200	2020	54	40	45	16.8
Excel's 404	1900	51	34	12	18.6
Pioneer 883	1880	52	36	25	15.6
Pride 800Y	1855	56	34	7	17.7
Western WS 206	1715	53	35	32	18.3
Northrup-King 133A	1585	57	33	28	16.4
SD 25702	1515	56	37	5	22.2
DeKalb C-42a	1510	57	30	9	18.8
Western WS102	1490	53	37	42	17.8
Frontier GX 389	1435	55	34	22	17.9
SD 503	1435	54	39	52	17.6
RS 633	1225	54	34	10	17.1
Mean	2090				

C.V. = 36%

TABLE 15. TWO-, THREE-, FOUR-, AND FIVE-YEAR AVERAGE YIELDS OF GRAIN SORGHUM HYBRIDS ENTERED AT GEDDES, 1967-1971

Brand and Variety	Average yield, pounds per acre			
	1967-71	1968-71	1969-71	1970-71
ACCO R1010				2240
ACCO R1019				2195
DeKalb B-36				2120
DeKalb C-42a			2925	1915
Frontier Super 400A				2795
Frontier 400C			3025	2350
Northrup-King 222	3110	2950	2935	2000
Northrup-King 265				2410
Pioneer 866			3745	2910
Pioneer 883				2330
Pride P-550BR				2305
RS 506				2620
RS 610	3485	3220	3230	2360
RS 633			2880	1810
SD 503	3050	2750	2850	1910

TABLE 16. 1971 GRAIN SORGHUM PERFORMANCE TRIAL, AREA D2, WEST PRAIRIE COTEAU RESEARCH FARM, GARDEN CITY

Brand and Variety	Yield, lb/A	Test wt. lb/B	Height, inches	Percent moisture, 9/15/71	Date headed
RS 506	4620	57	48	35.+	8/1
Pioneer 894	4235	56	37	31.7	8/1
Western WS102	4170	55	45	32.2	8/1
Coop SG-20	4165	53	43	35.+	8/8
SD 503	4145	56	51	35.+	8/4
SD 451	3975	55	48	35.+	8/1
DeKalb B-32a	3955	54	42	34.7	8/6
SD 441	3745	56	49	28.4	7/28
DeKalb A-25	3710	53	39	35.+	8/2
PAG 354	3690	54	38	35.+	8/8
DeKalb B-36	3465	53	43	35.+	8/6
SD 104	3350	57	38	31.0	7/28
Pioneer 878	2855	54	37	35.+	8/8
RS 610	2555	48	44	35.+	8/10
SD 25702	1845	51	38	35.+	8/9
Coop SG-10	1640	41	41	35.+	8/15
Mean	3505				

C.V. = 14.0%

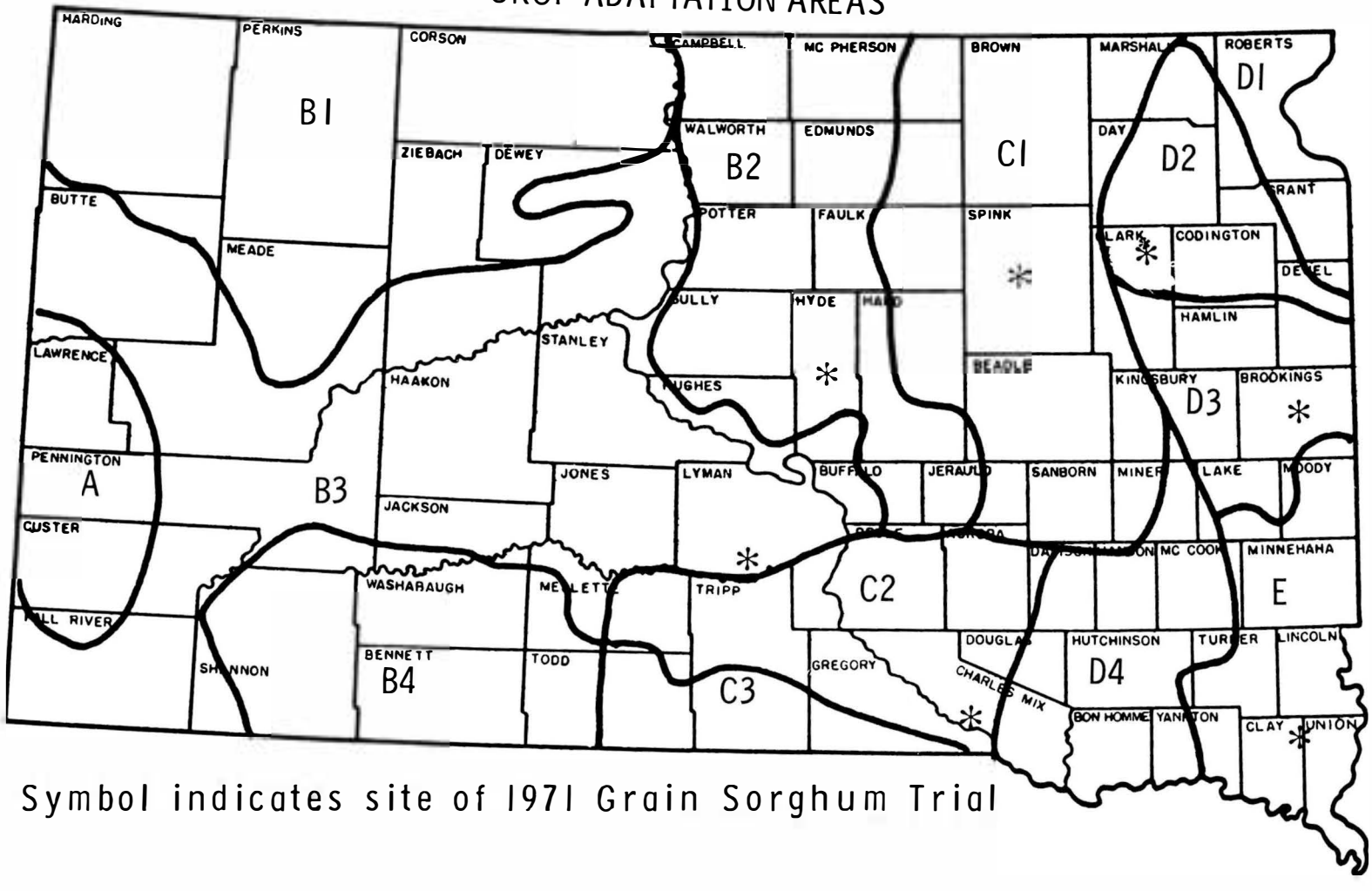
TABLE 17. TWO-, THREE-, FOUR-, AND FIVE-YEAR AVERAGE YIELDS OF GRAIN SORGHUM HYBRIDS ENTERED AT GARDEN CITY, 1967-1971

Brand and Variety	Average yields, pound per acre			
	1967-71	1968-71	1969-71	1970-71
DeKalb A-25			3580	2925
DeKalb B-32a			3380	2975
Pioneer 894	3045	3555	3650	3240
RS 506				3140
RS 610			2870	2315
SD 441	2915	3080	3255	2840
SD 451	2910	3355	3460	2900
SD 503	2885	3330	3440	2895

TABLE 18. ENTRIES SUBMITTED FOR THE 1971 GRAIN SORGHUM PERFORMANCE TRIALS AND TABLES WHERE RESULTS APPEAR

Company & Brand	Variety	Tables
ACCO Seed Co.	ACCO R 920	5,8,10,12,13
Box 1630	ACCO R 1010	4,5,6,8,9,10,11,12,13,14,15
Plainview, Texas	ACCO R 1019	4,5,6,9,11,12,13,14,15
	ACCO R 1020	4,9,11
	ACCO Ex X-7250	4,9,12,14
	ACCO Ex X-7275	4,9,14
DeKalb Ag Research	DeKalb A-25	4,5,6,7,8,10,12,13,16,17
Box 8	DeKalb B-32a	4,5,6,7,8,10,12,13,16,17
Glenvil, Nebr.	DeKalb B-36	4,5,6,8,9,10,11,12,13,14,15,16
	DeKalb C-42a	4,6,9,11,12,14,15
Frontier Hybrids GX	381	8
Inc., Box 42,	Grassy Grain I	5,12,13
Hutchinson, KS	388A	4,5
	389	4,5,8,9,12,13,14
	400C	8,9,12,14,15
	Super 400A	8,9,12,13,14,15
	GX 410	8,12,13
Pioneer Seed Div.	866	4,6,8,9,11,12,14,15
1206 Mulberry St.,	883	4,5,6,7,8,9,12,13,14,15
Des Moines, Iowa	894	4,5,6,7,8,10,12,13,16,17
	878	4,5,8,12,16
Agr. Exp. Sta.	SD 441	5,7,8,10,16,17
Plant Science Dept.	SD 451	4,5,6,7,8,9,10,11,12,13,14,15,16,17
SDSU	SD 503	4,5,6,7,8,9,10,11,12,13,14,15,16,17
Brookings, SD	RS 506	4,5,6,7,8,9,10,11,12,13,14,15,16,17
	SD 104	5,8,16
	SD 25702	4,5,8,9,12,14,16
	RS 610	4,5,6,7,8,9,10,11,12,13,14,15,16,17
	RS 633	4,6,9,11,12,13,14,15
Excel Seed Co.	101	9,16
Box 1629	202B	8,12
Plainview, Texas	404	4,14
"Excel's"	433	4,14
Farmland Industry	Coop SG-10	9,16
Kansas City, Mo.	Coop SG-20	5,7,12,16
Midwest Research	GS-30A	12,13
Associates,	GS-30B	12,13
Dassel, Minn.	GS-31Y	12,13
"Weathermaster"	GS-35	12
King's Western	WS 102	4,5,8,12,14,16
Seed Co.	WS 206	9,12,14
Wessington, SD		
Pride Co., Inc.	P-200	12,13,14
Glen Haven, WI	P-500A	12,13
	P-550BR	12,13,14,15
	P-800Y	14
Northrup-King	NK 222	9,11,14,15
Box 959,	NK 265	8,9,11,14,15
Minneapolis, MN	NK MM54BR	5,7,12,13
	NK 133A	4,6,9,11,14
	NK 121	8,12
	NK 180	8,12,14
	NK 233	4,8,9,14
	NK MM50A	8,12
	NK X 4027	5,12
P-A-G Division	P-A-G 354	4,5,14,16
Aurora, Ill.	P-A-G X3849	4,8,12,14

CROP ADAPTATION AREAS



Symbol indicates site of 1971 Grain Sorghum Trial