1-1972

1971 Small Grain Variety Trials

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South Dakota State University

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Variety Trials
1971

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

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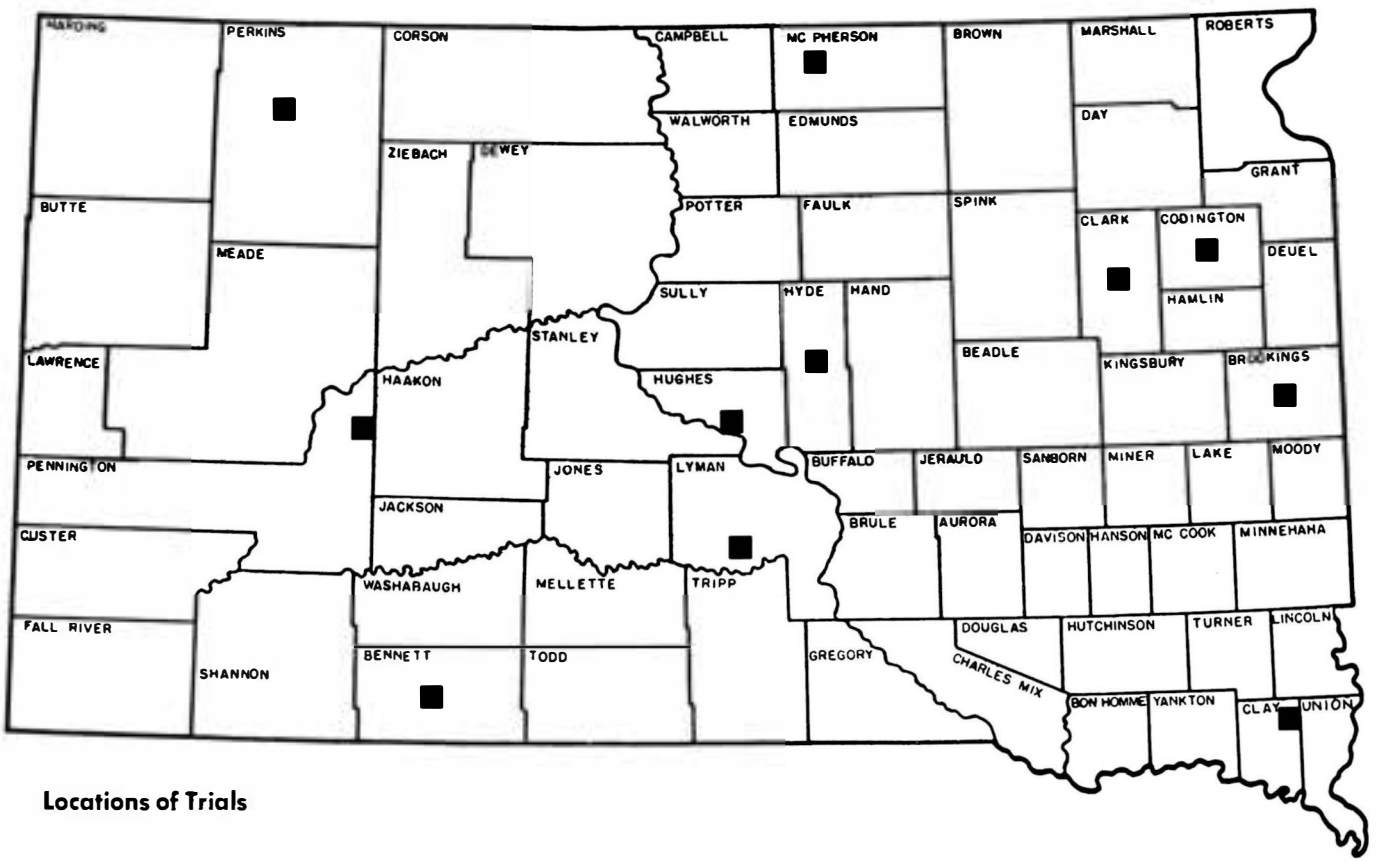

Locations of Trials

Standard Variety Small Grain Trials 1969-1971

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Small grain varieties are tested annually by the South Dakota Agricultural Experiment Station. While all entries have some good qualities, their relative performance may vary from one test or year to another. In 1971 we tested varieties currently grown by farmers, new releases not yet widely grown, and promising new selections. Of greatest interest are 1971 yields and test weights and three-year averages. The tests are made and reported by the Crop Performance Testing Activity of the Agricultural Experiment Station.

Location of Trials

Climate, soil and topography generally define certain areas or boundries across the state, but these are not absolute. Small grains are more widely adapted than are row crops in South Dakota. Testing only at Brookings is insufficient so trials are conducted at up to seven locations with some crops. The locations and dates of seeding and harvesting are presented in Table 1.

Weather and Climatic Conditions

Fall seeding was accomplished between September 3 and 17. Most seeding was done in mid-September. Precipitation during and immediately after seeding, together with some warm October weather, favored growth. Good ground cover usually developed before extremely cold weather halted fall growth. The fair weather of March and early April left many areas of the state without snow cover and the soil was quite loose. High velocity winds, common throughout the plains in early April, caused severe soil erosion and blew out large acreages of winter grains. The winter wheat trial at the Presho station was blown out and was abandoned.

The mild weather of late March and early April also permitted early working of fields and small grain seeding began in early April. High winds stopped spring seeding in mid-April. Rain and snow then delayed seeding until early May, especially in the West and North Central areas of the State. Stands were good at most of the early seeded sites in spite of the cold, wet weather of early April.

The assistance of the following individuals is acknowledged: H. A. Geise, Q. S. Kingsley, P. B. Price, D. L. Reeves and D. G. Wells of the Plant Science Department; Albert Dittman, Frank Holmes, Burton Lawrensen, Herb Lund and Albert Seer, Substation supervisors; and farmer-cooperators Floyd Sargent, Lavon Shearer and Joe Wunder.

TABLE 1. LOCATION OF TRIALS AND DATES OF SEEDING AND HARVESTING, 1971

County	Location and Post Office	Date Seeded	Date Harvested
	Winter Wheat		
Bennett	Floyd Sargent Farm, Martin	Sept. 16	July 28
Clark	West Prairie Coteau Farm, Garden City	Sept. 4	winter killed
Hughes	August Snyder Farm, Pierre	Sept. 21	July 20
Hyde	Central Substation, Highmore	Sept. 17	July 14
Lyman	South Central Research Farm, Presho	Sept. 18	blown out
Pennington	Lavon Shearer Farm, Wall	Sept. 15	July 20
Perkins	Joe Wunder Farm, Bison	Sept. 15	hailed out
	Rye		
Brookings	Agronomy Farm, Brookings	Sept. 6	July 19
Clark	West Prairie Coteau Farm, Garden City	Sept. 4	winter killed
Hyde	Central Substation, Highmore	Sept. 17	July 14
Lyman	South Central Substation, Presho	Sept. 18	July 14
	Barley		
Brookings	Agronomy Farm, Brookings	April 7	as ready
Codington	North Sioux Valley Farm, Watertown	April 5	July 23
Hyde	Central Substation, Highmore	April 12	July 14
McPherson	North Central Substation, Eureka	May 3	August 11
Pennington	Lavon Shearer Farm, Wall	May 4	July 29
Perkins	Joe Wunder Farm, Bison	May 3	hailed out
	Flax		
Brookings	Agronomy Farm, Brookings	May 6	as ready
Codington	North Sioux Valley Farm, Watertown	May 10	diseased
Hyde	Central Substation, Highmore	May 5	August 20
	Oats		
Brookings	Agronomy Farm, Brookings	April 7	as ready
Clay	Cornbelt Research Center, Beresford	April 8	July 16
Codington	North Sioux Valley Farm, Watertown	April 5	July 23
Hyde	Central Substation, Highmore	April 12	July 21
McPherson	North Central Substation, Eureka	May 3	August 11
Pennington	Lavon Shearer Farm, Wall	May 4	July 29
Perkins	Joe Wunder Farm, Bison	May 3	hailed out
	Spring Wheat and Triticales		
Brookings	Agronomy Farm, Brookings	April 7	as ready
Codington	North Sioux Valley Farm, Watertown	April 5	August 4
Hyde	Central Substation, Highmore	April 12	July 26
McPherson	North Central Substation, Eureka	May 3	August 19
Pennington	Lavon Shearer Farm, Wall	May 4	August 9
Perkins	Joe Wunder Farm, Bison	May 3	hailed out

Moisture was limited to adequate in the state during May. Low May temperatures retarded growth but conserved moisture.

Weeds were usually a major problem because of heavy rains in early June. Hail destroyed the Bison test and damaged the Eureka trial. Favorable temperatures and rainfall through mid-July stimulated rapid growth and early heading. Excellent commercial yields of winter wheat and rye were common.

Harvest conditions were ideal for fall-sown grains. Spring seeded grains were often damaged by drought in July and August. However, across the state wheat of all types produced record yields.

The taller varieties usually lodged severly at Watertown and Eureka. Hail, however, was a factor in lodging at Eureka.

Trials were abandoned at Garden City, Watertown and Presho. Winter kill reduced stands at Garden City. Winter wheat was blown out at Presho. Disease took the early seeded flax trials at Watertown. The trials at Bison were at the boot stage when nearly leveled by a hail storm.

The conditions under which the crops were grown, Tables 2 and 3, may explain differences in performance.

Planting and Harvesting Procedures

The preparation of soil, the level of fertility, and the type of crop rotation are generally the same at the test sites and agree with Agricultural Experiment Station recommendations. Trials at Bison, Martin and Wall were on summer fallow. The trials at each location were seeded in a randomized block design. There were four replications of winter and spring wheat, triticales, oats and rye and five of barley and flax.

TABLE 2. RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES TAKEN PRIOR TO SEEDING SMALL GRAIN TRIALS AND FERTILIZER APPLIED FOR THE 1971 CROP YEAR

		Laboratory Analysis				Fertilizer Applied		
		%	lb/A				lb/A	
Location	Soil Classification	Org. Mat.	P	K	pH	Method	N	P205
Beresford	Egan SiClL	4.3	34	682	7.2	plowed down	40	30
Bison	Morton SiL	2.1	23	490	6.4	fallow, w/seed	11	28
Brookings	Vienna SiL	3.5	74	275	7.0	plowed down	50	25
Eureka	Williams L	3.7	98	682	7.1	plowed down	10	T/A man.
Highmore	Glenham L	3.0	127	682	6.5	disced in	46	23
Martin	Keith SiCl	2.2	26	682	7.3	fallow, w/seed	11	28
Pierre	Eakin SiClL	3.0	54	634	6.9	fallow, w/seed	11	28
Wall	Ralph CL	1.9	19	507	7.3	fallow, w/seed	11	28
Watertown	Kranzburg SiClL	3.5	37	250	6.9	plowed down	60	40

TABLE 3. TEMPERATURE AND PRECIPITATION DATA FOR THE 1971 SMALL GRAIN GROWING SEASON OF SOUTH DAKOTA

		Temperature			Precipitation		
Location	Month	Mean Average	Departure from Normal	Ave. Departure	Monthly Total	Departure from Normal	Total Departure
		Degrees F.			Inches		
Eureka*	April	46.5	-2.9		2.19	0.84	
	May	53.3	-2.8		2.75	0.16	
	June	67.9	2.9		5.18	1.35	
	July	67.2	-5.2		2.33	-0.12	
	August	72.2	1.5	-1.3	1.07	-1.34	-0.89
	Last freeze	May 12 - 30°			13.52		
Martin*	April	48.0			4.53		
	May	54.8			3.83		
	June	69.3			1.76		
	July	70.2			1.73		
	Last freeze	May 19 - 30°			11.85		
Highmore*	April	48.7	3.3		3.44	1.70	
1W	May	55.8	-1.4		1.90	-0.43	
	June	71.3	4.5		5.69	2.15	
	July	70.9	-3.6		1.05	-0.93	
	August	76.1	3.3	+1.2	3.85	1.81	+4.30
	Last freeze	May 12 - 29°			15.93		
Pierre*	April	47.5	-0.3		4.49	2.98	
airport	May	55.5	-3.4		1.57	-1.06	
	June	70.1	1.2		5.73	2.56	
	July	70.8	-6.4	-2.2	0.49	-1.20	+3.28
	Last freeze	May 2 - 31°			12.28		
Centerville*	April	49.3			1.61		
6 SE	May	56.5			2.11		
	June	72.3			7.20		
	July	69.9			1.97		
	Last freeze	May 12 - 29°			12.89		
Brookings*	April	45.0	-0.2		1.56	-0.21	
2 NE	May	52.9	-4.7		1.13	-1.66	
	June	68.6	1.5		5.16	1.21	
	July	65.9	-7.3		1.13	-1.02	
	August	68.6	-2.6	-2.6	3.00	0.03	-1.66
	Last freeze	May 27 - 30°			11.98		
Watertown	April	43.7	0.5		1.33	-0.73	
15 N	May	52.0	-4.0		1.78	-1.19	
	June	67.9	-5.6		6.51	2.81	
	July	66.1	-7.6		1.02	-1.65	
	August	70.7	1.7	-3.0	2.83	0.15	-0.61
	Last freeze	May 26 - 30°			13.37		

* - Based upon reports of Monthly Climatological Data, U. S. Department of Commerce, NOAA, EDS, Office of State Climatologist, South Dakota State University, Brookings.

Test plots were of four rows one foot apart and 14 feet long. The two center rows were shortened to 12 feet at harvest time to remove effects of the alleys or borders. A small sickle-bar mower, equipped with catching hopper, was used to cut the grain. Any lodged grain was gleaned from the harvested area prior to bagging the sample. The samples were returned to Brookings, dried when necessary and stored in a pole-shed until threshed in a Vogel-type nursury plot thresher. Following threshing the samples were cleaned, weighed for yield determinations and bushels weights recorded.

Measurements of Performance

The yield reported for each entry in the trials is the average bushels per acre obtained from grain weights of an equal number of replications. Entries of equal potential may have yielded differently because of variations in soil fertility, slope or stand. Mathematical determinations have been made to determine if the yield differences were caused by variations in environment or were true varietal differences.

The difference in yield required for significance is shown as the LSD at the bottom of each trial. Unless the difference in yield of two varieties is greater than the figure shown, little confidence can be placed in the superiority of one entry over the other for that year at a particular trial site. These differences are at the 5% level, meaning that in only 1 trial in 20 would a difference in yield as large as that shown be due to chance alone.

Discussion of Results

The most reliable estimate of a variety's capabilities under variable conditions is obtained from several years data. The 1971 yield data and that for two previous years are presented in the tables at the end of this discussion. The varieties recommended for South Dakota in 1972 and their specific areas of adaptation are shown at the back of this circular.

Oats: Relative maturity of a variety affected its performance from location to location. Variations in weather and dates of seeding affected performances. The new South Dakota release, Chief, performed favorably at most locations.

Barley: Barley trials were adversely affected by the favorable growing conditions in 1971. High fertility and lower temperatures favored lush, rank growth which was followed by severe lodging at Highmore, Watertown, and Brookings. Lower test weights and lower yields resulted.

Flax: All flax varieties recommended or under test are resistant to known races of rust in the area. When late seeding is necessary the grower should seed an early variety. In early plantings, Nored, which is late, has done as well as the early variety, Summit.

Rye: Frontier and Cougar have performed quite well the past several years. Some others have done nicely but are more subject to winter killing. Antelope is disappearing from production even though it has done as well as Frontier.

Durums: Of the recommended varieties, Leeds and Hercules have performed satisfactorily for the past three years. The test weight of Wells is less than that of the other two recommended varieties.

Winter Wheat: Lancer and Scout 66, two of the most popular varieties, continue to be most productive in the main production area over three years tests. Eagle and Scoutland were very good in this, their first year of standard variety testing. Centurk was not outstanding but promises to compare favorably with other varieties in the future to judge from tests made the past three years. Centurk probably has the strongest gluten of any variety. Winoka, Hume, Trader, and Trapper are the most winter hardy and should be used where hardiness is limiting.

Spring Wheat: Both semi-dwarf and standard height spring bread wheats were tested. Under the most favorable growing conditions the best semi-dwarf was as much as 9 bushels ahead of the best tall variety. This is because the semi-dwarfs have been more intensively and successfully bred for higher yield under conditions consistently suited to high performance. Their shortness helps them support a high load of seed without lodging.

Bread making qualities of Neepawa and of all the semi-dwarfs have been criticized by some cereal chemists. Era has been especially low in protein.

Test weights of the semi-dwarfs were often lower than for standard height varieties, but there was one striking exception, WS 1812, which had excellent test weight.

Waldron has proven to show more ergot than is normal, apparently because it responds to low spring temperatures by becoming male sterile with attendant open florets and susceptibility to ergot.

TABLE 4. STANDARD VARIETY WINTER WHEAT TRIALS, 1971, B/A

Variety	Highmore			3 Yr.	1971	Wall			3 Yr.	1971	Onida		Martin	
	1969	1970	1971	Ave.	T.W.	1969	1970	1971	Ave.	T.W.	Yield	T.W.	Yield	T.W.
Nebred	21.7	26.6	47.7	31.9	62.5	44.3	34.8	46.0	41.7	62.0	44.1	60.7	26.5	61.5
Minter	23.5	27.6	42.3	31.1	62.5	36.3	26.1	42.6	35.0	59.5	36.2	61.7	21.0	61.0
Omaha			39.5		63.2			43.4		62.2	49.9	62.2	24.2	61.2
Hume	20.1	28.0	45.3	31.1	63.7	46.7	31.3	49.6	42.5	62.5	44.8	61.0	22.9	60.5
Gage	18.2	31.5	37.4	29.0	62.7	50.5	29.9	52.0	44.1	62.0	52.3	59.5	31.5	60.5
Lancer	18.7	31.1	46.1	32.0	61.7	51.0	41.1	51.4	47.8	62.2	51.4	62.0	34.6	62.5
Froid		22.6	42.4		60.7		22.3	49.1		59.5	40.7	59.0	29.7	60.2
Sturdy		22.7	34.5		61.2		29.4	59.6		62.2	45.8	57.5	24.6	61.0
Guide	18.2	20.8	44.9	28.0	62.5	45.5	33.5	52.6	43.9	61.2	42.4	59.7	25.6	61.0
Scout 66	18.7	29.9	51.3	33.2	63.7	45.8	33.4	61.6	46.9	63.2	61.2	60.5	34.0	62.5
Trader	28.0	32.8	47.3	36.0	61.2	47.6	33.2	46.9	42.6	60.2	38.0	58.5	29.0	61.5
Trapper	18.8	35.5	51.6	35.3	62.0	49.0	32.0	49.7	43.5	60.7	42.8	60.5	33.8	61.5
Winoka	28.3	30.1	47.9	35.4	64.0	40.8	33.6	48.6	41.0	62.5	43.4	62.0	27.8	62.0
Scoutland			48.9		63.7			67.2		63.2	54.1	62.2	32.5	62.2
Santanta			29.1		60.7			51.2		63.0	22.4	63.0	29.8	63.0
Centurk		34.7	52.9		63.0		33.8	55.0		61.0	52.6	60.7	33.5	61.7
Eagle			50.5		64.0			66.5		62.7	52.4	60.5	28.9	61.5
SD 6753			49.3		63.0			47.8		61.0	48.7	61.7	30.5	60.5
Mean			44.9					52.3			46.4		28.9	
LSD-.05			9.1					7.2			9.3		6.6	
CV-%			14.7					10.1			14.6		14.0	

TABLE 5. STANDARD VARIETY RYE TRIALS, 1971, B/A

Variety	Highmore 1969	Highmore 1970	Highmore 1971	3 Yr. Av.	1971 T.W.	Brookings 1969	Brookings 1970	Brookings 1971	3 Yr. Av.	1971 T.W.	Presho 1969	Presho 1971	1971 T.W.
Antelope	25.6	49.0	67.0	47.2	56.7	50.6	37.1	50.5	46.1	55.0	18.6	33.3	54.5
Caribou	11.6	35.2	55.9	34.2	56.0	19.7	46.0	36.2	36.2	55.5	16.5	35.6	54.2
Cougar	31.8	45.6	67.6	48.3	55.5		54.2	55.2		53.5	26.5	33.1	52.7
Dakold	21.3	39.8	63.4	41.5	57.7	34.9	32.4	50.8	39.4	55.7	16.1	32.1	55.0
Dominant	13.9	41.9	77.6	44.5	56.7	34.4	43.0	57.4	44.8	54.7		31.5	53.5
Frontier	24.9	31.8	70.2	42.3	58.0	35.4	36.8	50.0	40.7	55.2		36.1	55.0
Pearl	25.0	46.4	75.7	49.0	56.0	27.4	58.5	62.7	49.5	54.0		35.9	52.2
Petkus	33.5	45.4	70.6	49.8	56.5	58.0	57.5	52.2	55.9	54.2	22.9	33.4	52.0
Sangaste	19.6	33.7	61.6	38.3	55.5	34.9	37.3	46.3	39.5	53.7		26.5	50.7
Von Lochow	17.6	49.3	75.6	47.5	56.7	28.4	69.2	67.6	55.1	56.2	23.6	30.1	54.0
Zelder	27.3	42.5	82.0	50.6	56.5	46.1	56.7	65.7	56.2	55.7	38.0	33.1	53.5
SD Sel.		36.2	64.0		57.0		51.7	56.9	56.0			38.9	53.5
Mean			69.3					55.9				33.2	
LSD-.05			6.5					10.4				N.S.	
CV-%			6.5					13.3				16.5	

TABLE 6. STANDARD VARIETY FLAX TRIALS, 1971, B/A

Variety	Brookings 1969	Brookings 1970	Brookings 1971	3 Yr. Av.	1971 T.W.	Highmore 1969	Highmore 1970	Highmore 1971	3 Yr. Av.	1971 T.W.	Watertown
B-5128	20.4	21.3	16.7	19.5	53.0	25.8	22.6	12.6	20.3	54.0	The plants were severly
Bolley	23.1	19.7	17.1	20.0	52.5	23.4	21.6	15.9	20.3	53.0	diseased so the plots
Windom	24.2	19.3	18.5	20.7	54.0	27.6	23.5	17.7	22.9	54.0	were abandoned.
Summit	28.9	22.0	18.5	23.1	53.0	26.0	23.2	17.2	22.1	53.0	
Norstar	24.4	20.2	19.0	21.2	53.5	25.0	21.9	16.2	21.0	54.0	
Nored	27.6	21.8	19.7	23.0	53.5	22.8	22.9	14.4	20.0	54.0	
CI 2444	25.8	20.6	18.5	21.6	53.5	24.3	22.1	13.0	18.9	54.0	
Linott	24.6	21.3	20.0	22.0	53.5	28.2	22.9	18.9	23.3	54.0	
Foster	25.6	20.8	15.7	20.7	52.5	28.2	19.6	13.6	20.5	53.0	
SD 669		20.0	18.2		53.5		22.8	14.6		54.0	
SD 1374		21.2	18.5		53.5		21.3	11.7		65.0	
SD 1439		20.4	20.5		53.0		23.7	16.4		54.0	
SD 2056		20.0	19.8		53.0		24.5	14.9		54.0	
Mean			18.5					12.1			
LSD-.05			2.1					3.4			
CV-%			9.0					15.9			

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TABLE 7. STANDARD VARIETY BARLEY TRIALS, SOUTH DAKOTA, 1971, B/A

Variety	Brookings 1969	Brookings 1970	Brookings 1971	3 Yr. Av.	1971 T.W.	Watertown 1969	Watertown 1970	Watertown 1971	3 Yr. Av.	1971 T.W.	Highmore 1969	Highmore 1970	Highmore 1971	3 Yr. Av.	1971 T.W.
Liberty	47.2	31.1	63.5	47.3	48.0	62.0	27.4	38.7	42.7	48.3	61.4	42.2	57.4	53.7	50.0
Firlbecks III		36.7					20.9	50.6	50.3			41.1	52.0		50.0
Larker	55.1	37.5	65.2	52.6	47.3	72.4	23.6	54.0	50.0	47.2	60.7	45.9	62.5	56.4	49.8
Dickson	47.6	34.2	70.0	50.6	48.7	68.3	24.2	42.0	44.8	50.7	59.1	30.1	48.0	45.7	48.0
Conquest	48.6	36.0	60.9	48.5	44.7	69.9	26.4	49.9	48.7	44.0	58.1	40.6	64.0	54.5	48.0
Paragon	52.5	34.7	69.1	52.1	47.5	75.7	28.8	53.7	52.4	48.8	60.2	44.9	61.1	55.4	50.0
Primus II	54.2	41.4	71.5	55.7	50.7	75.9	26.9	53.4	52.1	47.7	49.0	49.9	83.8	60.9	53.0
Bonanza		40.4	62.4		45.2		28.4	52.6		45.0		44.8	57.8		49.0
Nordic			68.1		50.0			43.8		51.0			54.9		51.0
Prilar (SD 640)			64.2		46.5			48.4		48.2			62.0		50.3
M-11			72.5		48.3			58.1		49.8			55.4		50.0
Mean			66.7					49.5					60.0		
LSD-.05			11.8					7.8					11.1		
CV-%			13.9					12.5					14.7		

Variety	Wall 1969	Wall 1970	Wall 1971	3 Yr. Av.	1971 T.W.	Eureka 1969	Eureka 1970	Eureka 1971[a]	3 Yr. Av.	1971 T.W.	Bison
Liberty	47.5	22.1	54.4	41.3	45.0	52.5	37.6	26.0	38.7	41.5	1971 trial was hailed out.
Firlbecks III		14.8	33.0		44.7		27.4	34.8		48.5	
Larker	49.7	17.8	41.5	36.3	44.2	64.6	25.5	31.2	40.4	49.5	
Dickson	44.9	16.4	38.1	33.1	40.0	65.4	19.7	43.1	42.7	45.2	
Conquest	45.6	20.1	49.5	38.4	43.5	55.5	27.9	33.0	38.8	44.2	
Paragon	49.4	16.5	40.6	35.5	41.5	68.9	24.3	34.4	42.5	44.5	
Primus II	49.5	20.8	56.1	42.1	47.2	53.6	36.4	32.1	40.7	46.5	
Bonanza		16.8	40.0		42.5		30.0	38.2		42.0	
Nordic			35.3		41.7			33.2		49.0	
Prilar (SD 640)			45.5		44.7			32.9		47.2	
M-11			42.6		39.2			43.4		41.2	
Mean			43.3					37.4			
LSD-.05			7.4					9.4			
CV-%			13.4					21.3			

[a] Plots damaged by hail in early boot stage.

TABLE 8. STANDARD VARIETY SPRING-SEEDED WHEAT AND TRITICALES, 1971

Variety	Brookings 1969	Brookings 1970	Brookings 1971	3 Yr. Av.	1971 T.W.	Watertown 1969	Watertown 1970	Watertown 1971	3 Yr. Av.	1971 T.W.	Highmore 1969	Highmore 1970	Highmore 1971[a]	3 Yr. Av.	1971 T.W.
Standard Wheats - B/A															
Thatcher	14.1	16.8	30.7	20.6	58.7	17.9	9.1	31.2	19.4	58.5	28.9	19.8	28.1	25.6	55.5
Sheridan	22.9	32.6	29.6	28.4	56.5	31.6	16.9	36.6	28.4	61.2	40.1	23.3	23.3	28.9	56.0
Fortuna		33.6	29.1		55.5		18.6	35.2		57.7		26.6	31.0		58.5
Chris	26.3	32.0	32.9	30.4	58.5	32.3	18.3	36.9	29.2	60.7	37.1	23.3	24.8	28.4	56.2
Polk	23.4	36.9	36.4	32.2	62.7	29.8	21.0	35.4	28.7	64.2	34.1	25.3	20.6	26.7	59.5
Manitou	24.5	35.9	31.4	30.6	59.7	33.8	20.5	31.3	28.5	60.7	37.0	26.3	27.1	30.1	55.0
Waldron	23.9	35.8	31.3	30.3	55.2	25.8	19.7	42.9	29.5	61.7	38.8	29.8	37.3	35.3	57.2
Neepawa	20.0	29.8	34.0	27.9	59.0	28.9	17.7	37.7	28.1	62.0	36.8	28.8	32.7	32.6	56.0
Durums - B/A															
Wells	25.2	37.8	38.2	33.7	59.2	29.7	16.9	40.3	29.0	61.0	45.8	23.2	33.3	34.1	49.0
Leeds	21.6	35.3	34.8	30.6	61.5	25.3	18.1	35.6	26.3	63.0	42.7	25.5	38.5	35.6	60.5
Hercules	24.4	31.2	36.8	30.8	60.2	30.1	18.5	40.2	29.6	64.7	38.9	25.0	46.1	36.6	60.0
DT 316		30.7	36.4		62.0		15.5	45.1		59.5		26.3	31.8		55.0
Jari			28.7		53.0			34.8		54.7			39.0		50.7
Semi-dwarfs - B/A															
WS 1812	22.1	34.9	31.1	29.3	60.0	30.0	18.2	31.5	26.6	61.0	34.1	29.9	43.1	35.7	61.0
WS 1809		36.3	37.0		58.0		21.0	43.4		57.0		33.1	45.6		47.0
Lark			30.3		53.5			49.1		57.5			33.5		53.0
Bounty 208			31.2		55.5			45.6		59.0			39.2		56.0
Bonanza		34.1	30.8		53.0		18.3	47.4		58.0		23.9	40.1		53.5
Fletcher		32.7	33.1		56.7		13.1	43.7		58.7		22.8	28.2		48.5
Era		38.7	39.4		57.2		20.0	52.6		53.5		26.4	35.2		49.5
Wisc. 271		34.6	34.8		54.5		20.0	38.1		60.2		26.5	31.0		50.7
Mean			33.2					39.7					33.8		
LSD-.05			3.5					8.4					7.0		
CV-%			7.5					15.1					14.7		
Triticales - lbs/A															
Rosner		1399	1781		45.7		434	2659		49.5		1295	1775		41.0
Fas-Gro 203			1714		44.5			3155		48.5			1332		40.5
Fas-Gro 204			1742		45.5			2887		48.0			1307		39.0
Graze-Grain 70A			1598		45.7			2279		49.0			2088		46.5
Mean			1709					2745					1626		
LSD-.05			N.S.					407					495		
CV-%			11.7					9.8					20.2		

[a] Early lodging cut yield and T.W.

TABLE 8. (Cont.)

Variety	Eureka 1969	Eureka 1970	Eureka 1971	3 Yr. Av.	1971 T.W.	Wall 1969	Wall 1970	Wall 1971	3 Yr. Av.	1971 T.W.	Bison 1969	Bison 1970	Bison 1971	3 Yr. Av.	1971 T.W.
	Standard Wheats - B/A														
Thatcher	30.0	13.4	24.1	22.5	56.5	15.4	18.7	23.0	19.0	55.5	1971 trial was hailed out.				
Sheridan	36.5	13.8	31.0	27.1	60.2	22.0	19.1	21.6	20.9	55.5					
Fortuna		22.0	25.8		59.0		22.2	30.6		60.0					
Chris	39.1	14.1	32.1	28.4	59.5	22.8	18.8	26.4	22.7	56.0					
Polk	37.8	14.0	25.7	25.8	60.0	26.7	19.2	26.8	24.2	60.0					
Manitou	39.0	14.4	27.2	26.7	56.5	23.7	17.9	25.9	22.5	55.0					
Waldron	35.1	20.9	32.1	29.4	58.5	24.8	19.7	29.1	24.5	55.5					
Neepawa	39.0	20.0	36.8	31.9	58.5	22.9	20.9	32.2	25.3	57.2					
	Durums - B/A														
Wells	45.9	13.9	29.2	29.7	56.0	32.3	17.2	25.9	25.1	55.5					
Leeds	42.9	19.1	29.4	30.5	60.7	32.1	18.4	30.6	27.0	61.0					
Hercules	41.4	18.7	30.6	30.2	59.0	26.3	18.6	31.2	25.4	57.0					
DT 316		17.6	21.9		56.5		18.2	24.4		59.0					
Jari			22.0		50.5			29.3		56.0					
	Semi-dwarfs B/A														
WS 1812	31.5	20.3	37.7	29.8	59.0		22.0	28.8		58.0					
WS 1809		20.0	37.9		57.0		22.2	31.7		54.5					
Lark			31.2		55.7			28.3		53.5					
Bounty 208			31.3		55.0			29.9		55.5					
Bonanza		17.2	26.4		57.0		22.5	29.8		54.5					
Fletcher		11.8	31.3		58.2		18.3	25.0		53.0					
Era		11.0	37.1		59.7		20.6	28.2		52.5					
Wisc. 271		12.7	37.2		57.0		22.0	26.5		52.5					
Mean			30.3					27.9							
LSD-.05			10.5					3.4							
CV-%			24.7					8.8							
	Triticales - lbs/A														
Rosner		796	1920		47.2		799	1502		45.5					
Fas-Gro 203			1619		45.0			1184		48.5					
Fas-Gro 204			1931		45.5			1028		41.0					
Graze-Grain 70A			1700		48.7			1672		49.0					
Mean			1792					1346							
LSD-.05			N.S.					367							
CV-%			12.4					18.1							

[a] Plot damaged by hail as it was going into boot stage.

TABLE 9. STANDARD VARIETY OAT TRIALS, 1971, B/A

Variety	Brookings 1969	Brookings 1970	Brookings 1971	3 Yr. Av.	1971 T.W.	Watertown 1969	Watertown 1970	Watertown 1971	3 Yr. Av.	1971 T.W.	Beresford[a] 1968	Beresford[a] 1970	Beresford[a] 1971	3 Yr. Av.	1971 T.W.
Dupree	41.9	72.4	86.9	67.1	34.5	104.3	56.0	78.0	79.4	33.5	35.9	69.3	79.4	61.5	35.0
Burnett	41.9	75.7	90.7	69.4	35.0	106.8	60.6	85.8	84.4	35.5	39.9	79.2	93.2	70.8	35.0
Garland	48.9	67.8	95.6	70.8	35.5	89.9	64.1	78.5	77.5	35.7	28.3	76.9	84.9	63.4	36.0
Clintford	51.7	74.3	92.4	72.8	37.0	98.8	57.2	87.5	81.2	39.2	33.4	66.8	78.8	59.7	37.5
Trio			96.1		35.3			90.0		37.2			88.5		36.0
Lodi	35.8	65.8	77.8	59.8	35.5	100.4	56.6	79.4	78.8	36.0	43.9	72.2	70.7	62.3	33.5
Clintland 64	34.1	69.4	86.6	63.4	34.2	104.8	46.1	77.4	76.1	36.7	42.7	72.9	78.3	64.6	35.0
Brave	35.3	77.8	92.9	68.7	34.5	110.6	56.1	79.8	82.2	32.0	39.2	58.3	93.0	63.5	35.7
Pettis	62.6	63.6	74.0	66.7	37.2	104.0	58.1	80.2	80.8	39.0	37.6	82.5	84.1	68.1	38.5
Orbit	62.4	76.6	93.7	77.6	32.2	113.5	69.1	102.6	95.1	33.7	24.9	61.2	78.5	54.9	33.2
Jaycee	45.4	62.8	87.6	65.3	34.5	96.8	56.6	87.7	80.4	35.5	42.8	71.1	80.8	64.9	35.2
Holden	51.5	78.5	90.3	73.4	35.7	96.1	65.3	87.1	82.8	36.5	28.8	72.2	95.0	65.3	36.0
Portal	60.9	76.6	92.9	76.8	35.2	113.2	62.1	88.1	87.8	36.2	37.8	76.5	89.2	67.8	36.2
Kelsey	42.3	75.4	79.1	65.6	37.0	119.4	51.2	83.5	84.7	32.7	45.2	65.6	92.8	67.9	36.2
Sioux	32.0	74.3	93.1	66.5	34.5	125.9	56.9	75.9	86.2	34.7	37.1	62.6	86.4	62.0	35.7
Kota	47.6	70.9	94.6	71.0	34.7	126.7	52.8	76.6	85.4	34.2	44.5	74.9	89.2	69.5	35.7
Cayuse			88.0		31.2			71.7		30.5			81.0		32.5
Otter	54.8	71.1	90.3	72.1	32.0	113.3	59.2	90.2	87.7	35.7		65.1	74.5		34.5
Nodaway 70		76.0	81.4		37.5		59.7	82.2		37.2		79.2	94.6		37.0
Froker		75.5	90.4		37.5	111.5	59.4	88.1	86.3	36.0		70.3	73.9		34.7
SD 955			96.6		34.5			89.4		37.0			82.7		35.2
Chief (SD 1541)		76.2	95.4		35.0		70.2	97.0		38.2		78.1	96.0		35.2
Ill. 66-2287A			89.1		35.0			85.8		38.0			88.2		35.0
Random			77.6		29.2			74.1		30.2			70.2		30.5
Mean			88.9					84.0					84.3		
LSD-.05			9.0					14.5					7.5		
CV-%			7.1					12.1					6.2		

[a] 1969 hailed out.

TABLE 9. (Cont.).

Variety	Highmore 1969	Highmore 1970	Highmore 1971	3 Yr. Av.	1971 T.W.	Eureka 1969	Eureka 1970	Eureka 1971[a]	3 Yr. Av.	1971 T.W.	Wall 1969	Wall 1970	Wall 1971	3 Yr. Av.	1971 T.W.
Dupree	97.0	66.4	61.3	74.9	38.7	68.5	54.1	44.0	55.5	29.0	66.1	39.2	67.1	57.5	34.2
Burnett	96.6	61.3	66.6	74.8	41.7	83.9	63.0	59.9	68.9	34.2	70.4	41.0	65.4	58.9	34.2
Garland	84.4	56.1	71.1	70.5	41.0	71.3	64.7	65.8	67.3	35.0	63.0	39.6	66.6	56.4	34.5
Clintford	85.1	56.7	64.4	68.7	42.7	58.3	65.6	61.6	61.8	39.5	61.8	40.7	69.5	57.3	37.7
Trio			83.6		40.0			50.3		38.0			75.3		37.5
Lodi	108.6	55.1	74.4	79.4	38.0	76.0	58.0	68.2	67.4	36.0	82.0	38.4	58.8	59.7	27.0
Clintland 64	72.5	52.2	55.7	60.1	38.7	68.3	61.1	61.1	63.5	37.7	55.6	36.7	58.0	50.1	35.5
Brave	92.3	61.2	69.3	74.3	39.5	95.5	67.5	71.4	78.1	35.0	64.8	38.1	67.4	56.8	34.0
Pettis	98.6	62.1	61.5	74.7	42.5	71.4	58.3	26.5	52.0	39.0	59.4	35.1	69.7	54.7	36.5
Orbit	100.4	64.7	56.1	73.7	36.7	82.9	65.4	74.1	74.1	33.7	73.5	40.1	66.3	60.0	26.5
Jaycee	89.1	55.5	68.9	71.2	40.0	57.9	58.4	42.7	53.0	33.7	59.6	27.8	70.8	52.7	34.5
Holden	95.3	56.8	70.7	74.3	40.3	72.7	57.3	69.8	66.6	36.5	61.0	41.9	74.2	59.0	33.7
Portal	98.1	57.3	68.1	74.5	40.3	84.1	58.2	80.1	74.1	37.5	61.5	36.0	64.8	54.1	33.5
Kelsey	111.0	56.7	62.3	76.7	38.2	90.0	52.7	52.1	65.2	31.7	64.5	40.8	58.4	54.6	28.5
Sioux	107.5	62.7	69.1	79.8	42.2	74.6	53.4	52.4	60.1	34.0	63.7	40.8	61.0	55.2	28.0
Kota	108.4	57.6	55.8	73.9	39.2	74.6	64.3	70.6	69.8	38.5	61.4	38.2	65.2	54.9	31.5
Cayuse			92.7		38.7			59.0		32.7			59.8		23.7
Otter	95.1	62.3	63.8	73.7	39.2	78.1	65.9	67.2	70.4	31.5	75.3	47.5	67.5	63.4	31.0
Nodaway 70		60.6	71.0		41.7		74.8	67.8		35.7		36.2	72.7		36.7
Froker	101.9	53.6	56.5	70.7	41.0	70.0	53.0	73.9	65.6	35.2	65.0	34.5	60.8	53.4	30.5
SD 955			53.1		37.7			79.6		37.5			63.5		34.2
Chief (SD 1541)		57.4	65.5		40.0		69.5	77.3		37.7		43.2	64.5		33.5
Ill. 66-2287A			64.3		40.0			74.1		36.5			70.9		34.5
Random			72.6		38.2			63.6		31.7			57.1		23.7
Mean			66.6					63.0					65.6		
LSD-.05			11.8					18.4					8.3		
CV-%			12.4					20.4					8.9		

[a] Plots damaged by hail in early boot stage.

TABLE 10. SUPPLEMENTAL AGRONOMIC DATA FOR THE 1971 WHEAT TRIALS

Winter Wheat - Highmore					Spring Wheat					
	Survival		Rust			Brookings,	Highmore			
Variety	Percent 4/11[a]	Height, cm	Stem	Leaf	Variety	1/2 Flowered June	Percent Lodging[b]	Height cm.[c]	Rust, % Leaf	Stem
			Percent							
Nebred	43	93	S-100	S-100	Thatcher	19	3	102	S-100	S-25
Minter	85	110	R-0	S-100	Sheridan	20	10	106	M-40	R-0
Omaha	43	94	S-100	S-100	Fortuna	18	20	97	M-40	R-0
Hume	88	101	R-0	S-100	Chris	18	23	103	M-40	R-0
Gage	30	90	S-5	M-10	Polk	19	33	103	MR-40	R-0
Lancer	24	97	MR-5	S-100	Manitou	18	5	104	MR-65	R-0
Froid	80	106	S-5	S-65	Waldron	18	0	96	R-tr	R-0
Sturdy	22	65	S-100	M-5	Neepawa	18	3	98	M-40	R-0
Guide	24	93	M-5	S-65	Wells	20	7	104	R-0	R-0
Scout 66	53	95	R-0	MS-45	Leeds	19	3	103	R-2	R-0
Trader	43	101	S-25	S-100	Hercules	20	0	109	R-1	R-0
Trapper	23	93	S-1	S-100	DT 316	22	2	107	R-1	R-0
Winoka	80	105	S-5	S-100	WS 1812	17	0	72	MR-25	R-0
Scoutland	23	95	R-0	M-65	WS 1809	16	0	78	M-5	R-0
Satanta	2	76	S-65	S-100	Lark	17	0	74	R-tr	R-0
Centurk	28	90	R-0	M-25	Bounty 208	16	0	73	R-5	R-0
SD 6753	78	103	R-0	MR-25	Bonanza	18	7	77	R-0	R-0
Eagle	40	93	MR-10	S-100	Fletcher	21	0	82	M-10	R-0
					Era	20	0	81	R-0	R-0
a - mean of 4 reps.		R - resistant			Wisc. 271	18	0	89	R-tr	R-0
b - mean of 3 reps.		S - susceptible			Jari	17	0	69	R-0	R-0
c - mean of 2 reps.		M - mixed								
					Triticales					
					Rosner	21	0	107	R-0	R-0
					Fas-Gro 203	24	0	114	R-0	R-0
					Fas-Gro 204	24	2	114	R-0	R-0
					Graze-Grain 70A	20	2	107	R-1	R-0

Data for this table furnished by D. G. Wells and G. W. Buchenau

TABLE 11. CHARACTERISTICS OF WHEAT VARIETIES TESTED OR BEING GROWN IN SOUTH DAKOTA

Variety	Parentage	Released	Maturity	Straw Strength	Plant Height	Milling & Baking Qualities	Yielding Ability	Disease Reaction LR	SR	WSM	Winter Hardiness SW	NW	SE	NE
Winter Wheat														
Bison	Chiefkan//Oro/Tenmarq	KS '56	M-early	Strong	S-MT	Excel.	High	S	S	Tol	G	P	F	P
Centurk	Ky 58/2/Nth/3/Hope/2*Turkey/4/Cnn/5/Parker	NB '71	Early	Strong	Short	Excel.	High	MR	R	S	G	P	F	P
Eagle	Selection from Scout	KS '70	Early	Medium	Short	Excel.	High	S	R	S	G	P	F	P
Gage	Ponca/3/Mediterranean/Hope//Pawnee	NB '63	Early	Strong	Short	Good	High	R	R	S	G	P	G	P
Guide	Cheyenne*2//Kenya/Mentena	NB '68	Early	Strong	Short	Excel.	Good	S	R	S	G	P	P	F
Hume	Minter, Nebred, Kharkof, etc.	SD '65	Medium	Strong	S-MT	Excel.	Good	S	R	S	G	P	F	P
Lancer	Turkey/Cheyenne//Hope/2*Cheyenne	NB '63	M-early	Strong	Short	Excel.	High	S	R	S	G	F	G	P
Minter	Minturki*2/Hope	M&SD '48	Late	Poor	M-tall	Excel.	Good	S	R	S	G	F	G	F
Nebred	Selected from Turkey	NB '38	Medium	Poor	S-MT	Excel.	Good	S	S	S	G	F	G	P
Omaha	Pawnee/Nebred	NB '60	Early	Medium	Short	Good	High	S	S	S	G	P	G	P
Scout 66	Nebred//Hope/Turkey//Cnn/Ponca	NB '66	Early	Medium	Short	Excel.	High	S	R	Tol	G	P	F	P
Scoutland	Selection from Scout	NB '70	M-early	Medium	S-MT	Excel.	High	S	R	Tol	G	P	F	P
Trader	Warrior//Selkirk/2*Cheyenne	NB '68	Medium	Medium	M-tall	Good	Good	S	R	S	G	F	F	P
Trapper	Warrior//Selkirk/2*Cheyenne	NB '68	Medium	Medium	M-tall	Good	Good	S	R	S	G	F	F	P
Winoka	Winalta selection	SD '69	Medium	Medium	M-tall	Excel.	Good	S	R	S	G	F	F	F
Spring Wheat														
Chris	Ftn/3*Thatcher//Kenya 58/Nth/3/2*Tc	MN '65	Medium	Medium	M-tall	Excel.	High	MS	R					
Fortuna	Rescue/Chinook/3/Frontana//K58/Nth	ND '66	Early	Good	M-tall	Good	High	MS	R					
Manitou	Tc/Ftn/Cth/3/Tc*6/PI170925	Can. '65	M-early	Fair	M-tall	Good	High	MS	R					
Neepawa	Thatcher, Frontana, Kenya Farmer	Can. '69	Early	Medium	M-tall	Fair	Good	MR	R					
Polk	Tc/Supreza/3/Ky58/Nth//Frontana	MN '68	Medium	Fair	Medium	Excel.	High	MS	R					
Rushmore	Rival/Thatcher	SD '49	Early	Good	M-tall	Good	High	S	MR					
Sheridan	Frontana/II-41-29//Pilot	MT&SD '66	M-late	Fair	Tall	Fair	High	MS	R					
Waldron	K388A//Lee/Mida/3/Justin	ND '69	Early	Good	Medium	Good	High	R	R					
Durum														
Hercules	RL 3097/RL 3304//Stewart/RL 3380	Can. '68	Early	Good	Short	Good	High	R	R					
Leeds	Ld 357*4//St464/Ld347/3/Wells	ND '66	Early	Good	Short	Good	High	R	R					
Wells	Sentry//Ld 379/Ld 357	ND '60	Early	Good	Short	Good	High	R	MR					

Data furnished by D. G. Wells. Abbreviations used: M-early, medium early; M-late, medium late; S-MT, short to mid-tall; M-tall, mid-tall; LR, Leaf Rust; SR, Stem Rust; WSM, wheat streak mosaic; R, resistant; S, susceptible; G, good; F, fair; P, poor

TABLE 12. CHARACTERISTICS OF OATS VARIETIES RECOMMENDED OR ACCEPTABLE FOR SOUTH DAKOTA IN 1972

Variety	Parentage	Released	Agronomic Characteristics					Disease Reaction*			
			Yielding Ability	Plant Height	Maturity	Lodging Resistance	Bushel Weight	Stem Rust	Leaf Rust	Smut	Red Leaf
	Recommended										
Burnett	Victoria//Hijara/Banner//Colo	IA '57	High	M-tall	Medium	Good	High	MR	MS	R	S
Chief	Clintland 64/Garland	SD '72	High	Medium	Medium	Good	High	MR	MR	R	S
Diana	Purdue 549B3-1-1/Purdue 543C2-132P	IN '66	Medium	Medium	Early	Good	High	R	R	R	MS
Froker	Jp/2/Bcn//Hwk/Vtra/3/Cld/2/Gy//Hwk/Vtra	WI '70	High	Medium	Late	Good	High	MR	MR	R	S
Holden	Clintland/2/Garry//Hawkeye/Vtra	WI '67	High	Medium	Medium	Good	High	MR	MR	R	S
Kota	Clinton*6/Lh//RL 2120/Garry	SD '69	High	Medium	Medium	Medium	High	MR	MR	R	MS
Nodaway 70	Selection from Nodaway	MO '70	Medium	Medium	Early	Medium	High	R	MS	R	MS
Portal	PI 174544/Cld//Garland	WI '67	High	Medium	Medium	Good	High	MR	MR	R	S
	Acceptable										
Brave	Putnam/LMJHA	IL '65	High	Medium	Medium	Medium	Medium	MS	MS	R	MS
Clintland 64	Cld*5/LMJHA/2/Cld//Ctn*6/Grey Alg.	IN '64	Medium	Medium	M-early	Good	High	MR	MR	R	S
Dupree	Anthony/Bond//Richland/Fulghum	SD '54	Medium	Short	Early	Medium	Medium	S	S	R	S
Garland	Clintland/2/Garry//Hwk/Vtra	WI '62	Medium	Medium	High	Good	High	MR	MS	R	S
Kelsey	Vtra//Hj/Bnr/2/Rxt/3/Bcn/4/Vtra	Can. '67	V-high	Tall	Late	Medium	Medium	MR	MR	R	S
Lodi	Richland/Bond/2/Gy//Hwk/Vtra	WI '64	High	Tall	Late	Good	Medium	MR	MR	R	S
Trio	Imp. Gy/LMHJA	NB '71	Medium	M-tall	Early	Medium	High	MR	MS	R	MS

* R-resistant, MR-Moderately resistant, MS-Moderately susceptible, S-susceptible

TABLE 13. CHARACTERISTICS OF FLAX VARIETIES RECOMMENDED FOR SOUTH DAKOTA, 1972

Variety	Parentage	Released	Agronomic Characteristics								Disease Reaction*		
			Yielding Ability	Plant Height	Maturity	Lodging Resistance	Seed Size	Flower Color	Oil Content	Oil Quality	Rust Race 300	Wilt	Pasmo
B-5128	Golden/Rio	ND '43	Medium	Tall	Late	Good	M-L	Blue	Good	Fair	I	MS	S
Linott	Ottawa 77B1/Argentine SL//Arrow/ CI 1975	Can. '67	High	Medium	Early	Good	Med.	Blue	High	Good	I	R	MR
Nored	B-5128/Redson	MN '68	High	M-tall	Late	Good	Med.	Blue	High	Good	I	R	MR
Norstar	Redwood/Crystal	MN '69	Medium	Medium	M-late	Good	Med.	Blue	Good	Fair	I	MR	MS
Summit	CI 980/Zenith	SD '64	High	Medium	Early	Good	Med.	Blue	Med.	Med.	I	R	MS
Windom	Renew/Bison//Kota/Redwing/2/Redwood	MN '63	High	Medium	Early	Good	M-S	Blue	Med.	High	I	R	S

* R-Resistant, MR-Moderately resistant, MS-Moderately susceptible, S-Susceptible, I-Immune.

Data furnished by D. L. Reeves

TABLE 14. CHARACTERISTICS OF BARLEY VARIETIES GROWN IN THE 1971 TRIALS

Variety	Parentage	Released	Agronomic Characteristics: Yielding Ability	Plant Height	Maturity	Lodging Resistance	Bushel Weight	Seed Size	Malting Quality	Aluerone Color	Disease Reactions: SR	SB	S
Conquest	Vantage/Jet/Vantmore/2/Br. 4635/3/Swan /4/Parkland	Man. '65	Medium	Tall	Medium	Good	Med.	Med.	Good	Blue	R	SR	R
Dickson	Traill*2/Kindred/C.I. 7117-77	N.D. '65	High	Med.	Medium	Good	Med.	Med.	Good	White	R	SR	R
Firlbecks III	Multi-parent line	Ger. '53	High[I]	Med.	Late	Good	High	M-L	Good	White	S	S	S
Larker	Traill/Swan	N.D. '61	High	Med.	Medium	Good	Med.	M-L	Good	White	R	MS	S
Liberty	LMC-A/Titan	S.D. '57	High	Med.	Medium	Good	Med.	Med.	Poor	White	R	S	S
Paragon	Brandon 7212/2*Parkland	Man. '68	High	Tall	Late	Good	Med.	Med.	≠	Blue	R	SR	R
Primus II	Reselected from Primus	S.D. '68	High	Med.	Early	Good	High	Med.	≠	White	R	S	S
Prilar	Primus/Larker	S.D. '71	High	Med.	Early	Good	High	Med	≠	White	R	S	S

I High yielding under irrigation, not recommended for dryland production
≠ Malting reports favorable, further testing being completed
Conquest and Paragon are blue aleurone types, acceptable for malting in Canada, but primarily for feed in U.S.A.
Data furnished by P. B. Price

SR = Stem Rust
SB = Spot Blotch
S = Smut

TABLE 15. CHARACTERISTICS OF RYE VARIETIES FOR SOUTH DAKOTA

Variety	Released by	Year	Yielding Ability	Plant Height	Seed Color	Maturity	Lodging Resistance	Bushel Weight	Winter Hardiness
Caribou	Canada	1953	High	Tall	Mixed	Medium	Medium	High	Excellent
Cougar	Canada	1967	High	Medium	Green-Tan	Medium	Good	High	Good
Elk	Minnesota	1959	High*	Medium	Green	Late	Medium	Medium	Fair-Good
Frontier	Canada	1965	High	Tall	Blue-Gray	Medium	Medium	High	Excellent
Pearl	Denmark	1952	High*	Tall	Brown-Green	Late	Medium	Medium	Fair
Von Lochow	Germany	--	High*	M-short	Green	Late	Good	High	Fair

* High yield potential when winter injury is not serious; severity of South Dakota winter conditions causes proportionate reduction in stands and accompanying low yields.
Data furnished by D. L. Reeves.

TABLE 16. SMALL GRAIN VARIETY DRILL STRIP TRIALS AT THE SOUTH CENTRAL RESEARCH FARM, PRESHO, 1971

Oats			Spring Wheat			Winter Wheat		
Variety	Test Wt. lb/B.	Yield B/A	Variety	Test Wt. lb/B.	Yield B/A	Variety	Test Wt. lb/B.	Yield B/A
			Semi-dwarfs					
Cayuse	28.6	70.8	Cargill Bounty 208	57.9	32.0	Scout 66	59.0	42.7
Dupree	26.8	63.5	Era	59.4	31.1	Scoutland	61.0	38.8
Burnett	33.8	63.0	Fletcher	58.6	29.4	Lancer	59.6	38.4
Otter	30.9	60.7	WS 1809	57.1	28.2	Weathermaster 106	59.8	37.6
Kelsey	34.1	59.8	DeKalb Bonanza	56.0	28.2	Winoka	59.5	36.0
Pettis	37.2	57.6	Standard			Centurk	57.2	35.8
			Waldron	56.0	29.8			
Kota	33.9	57.6	Sheridan	59.8	28.0	Eagle	58.6	34.7
Chief (SD 1541)	30.5	56.9	Neepawa	55.8	27.9	Minter	58.5	33.8
Diana	34.8	56.5	Polk	60.2	26.3	Trader	55.2	33.0
Portal	34.4	55.0	BH 631	57.5	24.8	Hume	59.8	32.8
Garland	38.5	54.7	Chris	57.1	24.7	Omaha	58.8	32.8
Holden	36.8	54.4	Manitou	55.5	24.5	Gage	59.1	31.9
			Fortuna	58.9	22.4			
Froker	36.6	53.2	Durums			Trapper	56.2	31.4
Lodi	34.9	53.0	Hercules	58.9	29.2	Froid	56.1	30.8
Nodaway 70	40.0	50.7	Wells	59.8	28.0	SD 6753	54.5	30.8
Ortley	34.5	49.1	Leeds	60.8	26.0	Guide	60.2	27.6
Mammoth	37.4	45.9	Triticales		lb/A	Sturdy	56.9	26.8
Clintland 64	37.2	44.5	Fas-Gro 204	46.0	1044	Satanta	58.4	7.8
Rodney	30.5	39.7	Fas-Gro 203	47.2	996			
			Rosner	46.2	948			
			Graze-Grain 70A	50.2	912			
Seeded 4/15/71; 15 lb/A phosphorus with seed			Seeded 4/15/71; 15 lb/A phosphorus with seed			Seeded 9/23/70; 15 lb/A phosphorus with seed		

Barley			Rye		
Variety	Test Wt. lb/B.	Yield B/A	Variety	Test Wt. lb/B.	Yield B/A
Primus II	45.6	39.2	Pearl	54.3	59.1
Liberty	45.2	33.6	Cougar	53.5	58.6
Conquest	44.5	31.5	Frontier	55.5	49.1
Paragon	44.8	31.2			
Larker	46.2	30.6	Von Lochow	56.0	47.2
			Coloma	54.0	47.1
SD 640 (Prilar)	45.8	30.4			
Nordic	45.0	30.3			
M-11	41.8	29.1			
Dickson	44.8	28.9			
Seeded 4/15/71; 15 lb/A phosphorus with seed			Seeded 9/23/70; 15 lb/A phosphorus with seed		

Winter grain yields are 4 rep. averages
Spring grain yields are 3 rep. averages

This data is furnished by H. A. Geise

TABLE 17. SMALL GRAIN VARIETY DRILL STRIPS AT THE WEST PRAIRIE COTEAU RESEARCH FARM, GARDEN CITY, 1971

Oats		
Variety	Test Wt. lb/B.	Yield B/A
Cayuse	32.0	127.0
Kelsey	36.0	119.7
Kota	37.0	111.3
Lodi	37.0	110.2
Froker	37.5	106.6
Chief (SD 1541)	36.0	106.3
Burnett	37.0	104.7
Holden	36.0	100.1
Otter	35.0	98.3
Mammoth	36.5	95.4
Garland	36.0	93.9
Portal	37.0	93.4
Clintland 64	36.0	85.0
Nodaway 70	38.0	63.2
Diana	37.5	62.3
Triticales		
Rosner	49.0	3835
Fas-Gro	46.0	3304
Fas-Gro	46.5	3198
Graze Grain 70A	47.5	2650

Barley		
Variety	Test Wt. lb/B.	Yield B/A
Cree	45.0	71.1
Dickson	47.5	69.8
Nordic	46.5	66.1
SD 640 (Prilar)	45.5	62.9
Primus II	46.0	62.4
Larker	45.0	62.0
Conquest	44.0	34.9
Flax		
B 5128	50.0	28.0
Nored	50.0	26.7
Linott	52.5	26.0
Windom	53.5	25.7
Norstar	50.5	24.8
Summit	52.5	24.4
Foster	50.0	23.7
Bolley	52.5	22.6

Spring Wheat		
Variety	Test Wt. lb/B.	Yield B/A
Semi-dwarfs		
Era	62.5	62.8
Fletcher	61.0	54.1
World Seeds 1809	61.0	51.5
DeKalb Bonanza	60.0	49.3
Cargill Bounty 208	61.5	45.9
Standard		
Neepawa	60.0	56.1
Manitou	59.5	49.1
Chris	61.0	48.8
Waldron	59.5	48.8
Polk	63.0	48.2
Sheridan	61.0	44.6
Fortuna	57.0	31.0
Durum		
Wells	63.0	53.9
Leeds	64.5	51.0
Hercules	63.0	41.5
Speltz		
Speltz	39.5	65.7

Data furnished by Q. S. Kingsley

Seeded: April 6, 1971
Harvested: August 17, 1971
Fertilizer: 60-40-0 lbs/A, plowed down

Precipitation, inches

April	1.83
May	2.69
June	4.95
July	1.01
August	5.81

TABLE 18. SMALL GRAIN VARIETY DRILL STRIP TRIALS AT THE WHETSTONE VALLEY RESEARCH UNIT, MILBANK, 1971

Oats		
Variety	Test Wt. lb/B.	Yield B/A
Cayuse	34.5	122.7
Chief (SD 1541)	34.0	115.7
Lodi	37.0	112.7
Mammouth	37.5	110.9
Kelsey	36.5	106.9
Froker	36.5	106.7
Garland	35.5	105.9
Holden	36.0	102.6
Portal	37.5	96.2
Otter	37.0	93.9
Kota	37.0	91.0
Burnett	38.0	80.5
Triticales		
Graze Grain 70A	41.5	2366
Rosner	44.5	2333
Fas-Gro 203	43.5	2269
Fas-Gro 204	43.5	2235

Barley		
	Test Wt. lb/B.	Yield B/A
Primus II	45.0	81.2
Dickson	45.0	79.2
Cree	43.5	68.4
Nordic	45.0	63.0
SD 640 (Prilar)	42.5	58.9
Conquest	44.5	57.4
Larker	43.0	46.6
Flax		
Summit	51.0	21.8
B-5128	52.0	19.5
Bolley	52.0	18.6
Nored	51.0	18.4
Foster	53.0	16.7
Norstar	53.0	16.4
Linott	54.0	15.9
Windom	53.0	14.2

Spring Wheat		
	Test Wt. lb/B.	Yield B/A
Semi-dwarfs		
Cargill Bounty 208	57.5	59.0
DeKalb Bonanza	58.5	55.1
Fletcher	58.5	52.9
Era	56.0	49.3
World Seeds 1809	57.0	41.1
Standard		
Neepawa	58.5	55.1
Manitou	57.0	47.7
Chris	58.0	46.1
Waldron	55.0	44.3
Polk	57.0	41.2
Sheridan	58.0	38.5
Fortuna	54.0	35.1
Durum		
Hercules	55.0	54.2
Leeds	56.5	45.2
Wells	51.0	37.9
Speltz		
Speltz	34.0	43.6

Data supplied by Q. S. Kingsley

Seeded; April 6, 1971
Fertilizer; 60-40-0 lbs/A, plowed down

Precipitation inches;

April	0.20
May	2.53
June	9.30
July	2.19
August	3.20

TABLE OF METRIC VALUES, EQUIVALENTS AND CONVERSION FACTORS

To Convert Column 1 Into Column 2, Multiply By:	Column 1	Column 2	To Convert Column 2 Into Column 1, Multiply By:
		Length	
0.621	kilometer, km	mile, mi	1.609
1.094	meter, m	yard, yd	0.914
0.394	centimeter, cm	inch, in	2.540
		Area	
0.386	kilometer^2, km^2	mile^2, mi^2	2.590
247.1	kilometer^2, km^2	acre, acre	0.00405
2.471	hectar, ha (0.01 km^2)	acre, acre	0.405
		Volume	
0.00973	meter^3, m^3	acre-inch	102.8
3.532	hectoliter, hl	cubic foot, ft^3	0.2832
2.838	hectoliter, hl	bushel, bu	0.352
1.057	liter	quart (liquid), qt	0.946
		Mass	
1.102	ton (metric)	ton (English)	0.9072
220.5	quintal, q	pound, lb	0.00454
2.205	kilogram, kg	pound, lb	0.454
		Yield or Rate	
0.446	ton (metric)/hectare	ton (English)/acre	2.242
0.892	kg/ha	lb/acre	1.121
0.892	quintal/hectar	hundredweight/acre	1.121
		Temperature	
1.80C + 32	Celsius, C	Fahrenheit, F	0.555(F-32)

Field Crop Varieties Recommended in South Dakota for 1972

By Ralph A. Cline and Elmer E. Sanderson, Extension Agronomists—Crops

Crop adaptation areas of the state, shown on the map, are based on soil type, elevation, temperature, and rainfall. These factors largely determine the type of agriculture within these areas.

Varieties are recommended on the basis of length of growing season, average rainfall, disease frequency, and farming practices. Often an individual farm, due to its location or the management practiced by the operator, may more closely resemble conditions of an area other than the one in which the farm is located. Recommendations listed here should be considered in the light of this information.

SMALL GRAIN

variety — area of best adaptation

Winter Wheat

Centurk	A, B2*, B3, B4, C2, C3, D4, E
Gage	A, B4, C2, C3
Hume	All winter wheat areas
Lancer	A, B2*, B3, B4, C2, C3, D4, E
Scout 66	B3, B4, C2, C3
Scoutland	B3, B4, C2, C3
Trapper	A, B2*, B3, B4, C2, C3, D4, E
Winoka	All winter wheat areas

Winter wheat production under the high risk conditions of areas B1, B2, and C1 means selecting the most hardy varieties.

Spring Wheat

Chris‡	Statewide
Fortuna	B1, B2, C1
Manitou	Statewide
Polk	Statewide
Sheridan	A, B1, B2, B3, C1

Durum

Hercules	All durum wheat areas
Leeds	All durum wheat areas
Wells	All durum wheat areas

Oats

Recommended

Burnett‡	Statewide
Chief	Statewide
Diana	B4, C2, C3, D3, D4, E
Froker	C1†, D1, D2, D3
Holden	B2, C1, D1, D2, D3, D4, E
Kota	Statewide
Nodaway 70	Statewide
Portal	B2, D1, D2, D3, D4, E

Acceptable

Brave	A, B1, B2, B3, B4, C3
Clintland 64	C2, C3, D2, D3, D4, E
Dupree	B1, B2, B3, B4, C2, C3
Garland	B2, C1, D1, D2, D3, D4, E
Kelsey	B2†, C1†, D1, D2, D3
Lodi	C1†, D1, D2, D3
Trio	B4, C2, C3, D4, E

Barley

Conquest	Statewide
Dickson	C1†, D1, D2
Larker	A, B2, C1, D1, D2, D3
Prilar	Statewide
Primus II‡	Statewide

Conquest, Larker, and Dickson approved for malting.

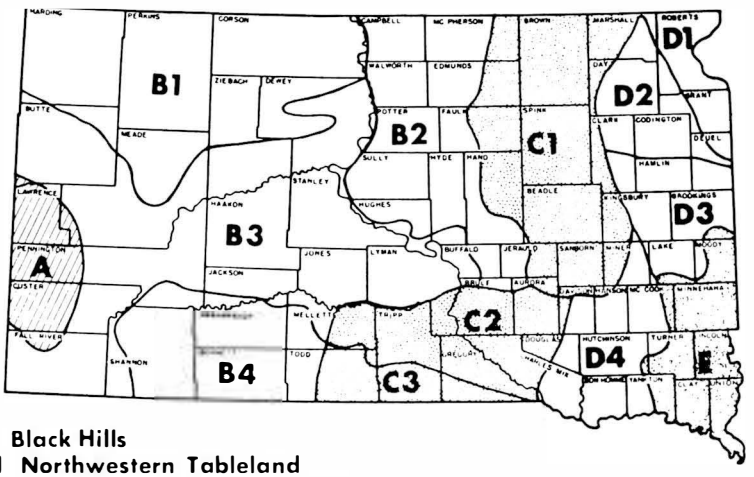
Flax

B-5128	C1†, D1, D2, D3
Linott	All flax areas
Nored	All flax areas
Norstar	C1†, D1, D2, D3
Summit	All flax areas
Windom	All flax areas

Rye

Cougar	Statewide
Frontier	Statewide

CROP ADAPTATION AREAS



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