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1969 Small Grain Variety Trials

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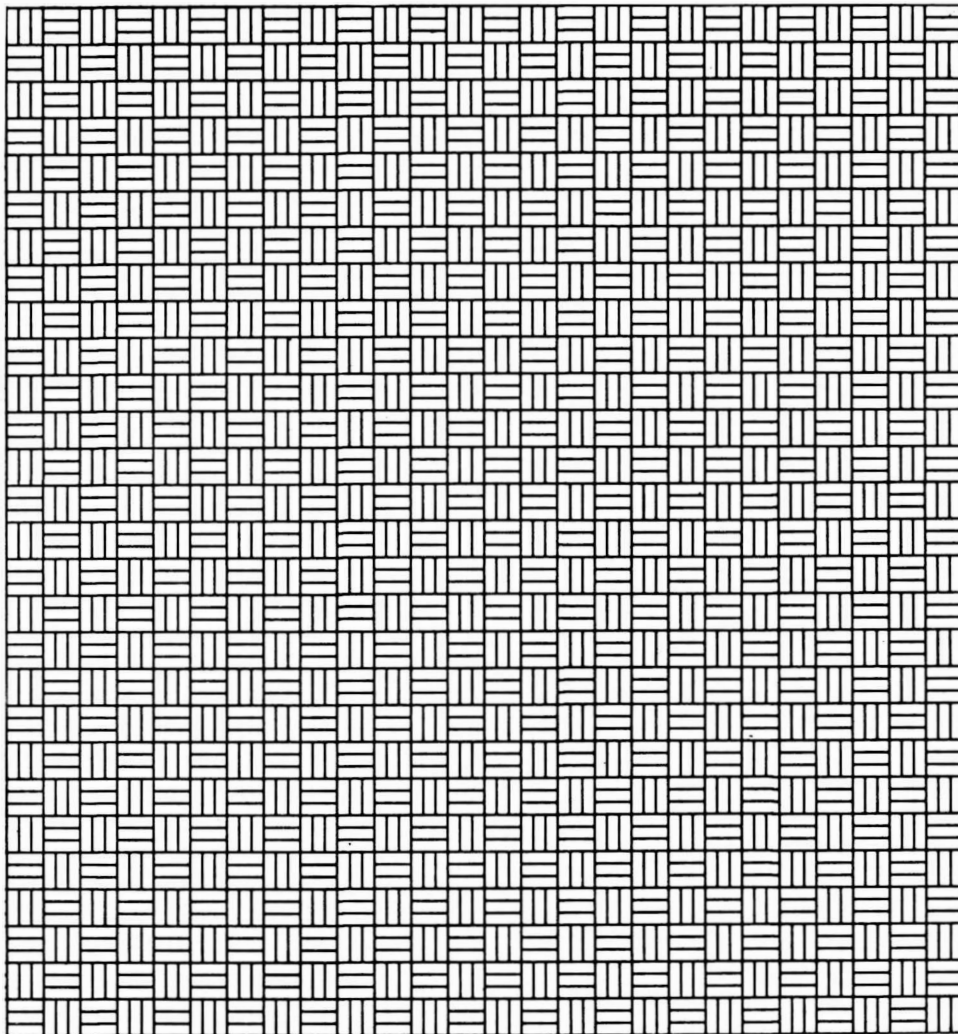
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1969 SMALL GRAIN VARIETY TRIALS



PLANT SCIENCE DEPARTMENT
AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE UNIVERSITY, BROOKINGS

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Standard Variety Small Grain Trials
1965-1969

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Variety tests with small grains are conducted annually at selected sites throughout South Dakota. The 1969 trials included varieties currently grown by farmers, newer releases not yet widely used, and experimental strains being evaluated for possible release. Reported in this circular are grain yields, test weights, available five-year averages and other supplemental data. The trials were conducted under supervision of the Crop Performance Testing Activity, Agricultural Experiment Station.

Location of Trials

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

Weather and Climatic Conditions

The fall seeding was accomplished from September 10 to September 28. Precipitation during this period delayed some seeding and aided germination of trials already seeded. The greatest total snowfall ever recorded occurred in the eastern portion of the state, especially in the southeast. The heavy snow cover and slow melt held back seeding in eastern South Dakota until late April, as floods or wet fields obstructed possible field work. Seeding began in mid-April in western South Dakota. Seeding of the experimental plot fields in eastern South Dakota was done by April 30 but they were in more favorable sites than some low-lying fields.

Fortunately for those people farming the lower areas, precipitation was usually below normal in May. The June precipitation patterns were quite the opposite as rainfall was most adequate, setting new monthly record totals at many recording

The assistance of the following individuals is acknowledged: R. S. Albrechtsen, P. B. Price and D. G. Wells of the Plant Science Department; Substation supervisors Albert Dittman, Jake Fredrikson, Harry Geise, Frank Holmes, Quentin Kingsley, Burton Lawrensen and Herb Lund; and farmer-cooperators Lavon Shearer and Joe Wunder.

TABLE 1. LOCATION OF TRIALS AND DATES OF SEEDING AND HARVESTING, 1969

County	Location and Post Office	Date Seeded	Date Harvested
<u>Barley</u>			
Brookings	Agronomy Farm, Brookings	April 26	August 4
Codington	Northeast Research Farm, Watertown	April 23	August 4
Hyde	Central Substation, Highmore	April 21	July 31
McPherson	Northcentral Substation, Eureka	April 28	August 12
Pennington	Lavon Shearer Farm, Wall	April 17	July 22
Perkins	Joe Wunder Farm, Bison	April 18	July 29
<u>Flax</u>			
Brookings	Agronomy Farm, Brookings	May 12	August 25
Codington	Northeast Research Farm, Watertown	May 14	August 26
Hyde	Central Substation, Highmore	April 28	Sept. 3
<u>Oats</u>			
Brookings	Agronomy Farm, Brookings	April 26	August 5
Clay	Southeast Experiment Farm, Beresford	April 22	Hailed out
Codington	Northeast Research Farm, Watertown	April 23	August 5
Hyde	Central Substation, Highmore	April 21	July 31
McPherson	Northcentral Substation, Eureka	April 28	August 12
Pennington	Lavon Shearer Farm, Wall	April 17	July 30
Perkins	Joe Wunder Farm, Bison	April 18	July 29
<u>Spring Wheat</u>			
Brookings	Agronomy Farm, Brookings	April 26	August 11
Codington	Northeast Research Farm, Watertown	April 23	August 14
Hyde	Central Substation, Highmore	April 21	August 8
McPherson	Northcentral Substation, Eureka	April 28	August 12
Pennington	Lavon Shearer Farm, Wall	April 17	August 8
Perkins	Joe Wunder Farm, Bison	April 18	August 7
<u>Winter Wheat</u>			
Clay	Southeast Experiment Farm, Beresford	Sept. 28	hailed out
Codington	Northeast Research Farm, Watertown	Sept. 25	poor stands
Hyde	Central Substation, Highmore	Sept. 20	July 25
Lyman	Southcentral Research Farm, Presho	Sept. 20	July 16
Pennington	Lavon Shearer Farm, Wall	Sept. 10	July 22
<u>Rye</u>			
Brookings	Agronomy Farm, Brookings	Sept. 22	August 4
Clay	Southeast Experiment Farm, Beresford	Sept. 28	hailed out
Codington	Northeast Research Farm, Watertown	Sept. 15	poor stands
Hyde	Central Substation, Highmore	Sept. 20	July 24
Lyman	Southcentral Substation, Presho	Sept. 20	July 17

stations. July was also above normal for precipitation and this two month period of adequate rainfall combined with a very cool June and cool July favored later maturing varieties. The trials at Brookings appeared to be headed for excellent yields in early July but continued cool weather and high humidity affected yield and quality adversely.

Lodging was not as severe as might be expected under favorable conditions. Only the trials at Eureka were lodged to any degree. Hail destroyed the small grain trials at the Southeast Farm.

Freezing temperatures in mid-June slowed growth in the north-central area of the state.

Weather data are presented in Table 3 for those sites near regular reporting stations.

TABLE 2. RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES TAKEN PRIOR TO SEEDING SMALL GRAINS TRIALS AND FERTILIZER APPLIED FOR THE 1969 CROP YEAR

Location	Soil Classification	Percent Organic Matter	Lbs/A				Method	Fertilizer applied	
			P	K	pH	N		P	
Bison	Morton sil	2.1	23	490	6.4	Broadcast	39-44		
Brookings	Vienna sil	3.9	42	314	7.0	Disced in	45-0		
Eureka	Williams 1	4.2	62	682	7.0	Disced in	16-20		
Highmore	Williams 1	2.8	117	682	6.0	Disced in	40-20		
Wall	Morton sil	1.9	19	507	7.3	Disced in	22-57		
Watertown	Kranzburg sil	3.5	37	250	6.2	Plowed down	40-30		

Planting and Harvesting Procedures

Field preparation, fertility level and rotation sequence are generally the same each year at the substations and were in accordance with recommended practices. The trials at Bison and Wall were on fallowed land. The fertilizer at Wall was broadcast in the fall prior to seeding the winter grain. The trials at each location were seeded in a randomized-block design with four to six replications. There were four replications of the oats, winter wheat and rye trials; four to five replications of spring wheat and flax; and six replications of barley.

On the substations the plots were 14 feet long in four rows one foot apart. On the cooperators fields the rows were 10 inches apart. The two center rows were trimmed of border effect to 12 feet in length before harvest for yield determinations. 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 the Main Station, dried when necessary and stored in a pole shed until threshed in a Vogel-type nursery thresher. Following threshing, the samples were cleaned, weighed for yield determination and bushel weights recorded.

TABLE 3. TEMPERATURE AND PRECIPITATION DATA FOR THE SMALL GRAIN GROWING SEASON OF SOUTH DAKOTA FOR 1969

Location	Month	Temperature			Precipitation		
		Mean Average	Departure from Normal	Ave. Departure	Monthly Total	Departure from Normal	Total Departure
		Degrees F.			Inches		
Bison*	April	48.4			2.19		
	May	57.0			2.59		
	June	59.3			6.04		
	July	68.8			4.64		
	Aug.	75.2			0.18		
Last freeze June 2 - 29°					15.64		
Brookings* 2 NE	April	43.7	-1.5		1.02	-0.75	
	May	56.9	-0.7		3.02	0.23	
	June	58.5	-8.6		7.20	3.25	
	July	69.6	-3.6		3.48	1.33	
	Aug.	69.7	-1.5	-3.2	1.49	-1.48	2.58
Last freeze May 27 - 12°					16.21		
Eureka*	April	46.6	3.0		1.49	0.14	
	May	57.9	1.8		1.59	-1.00	
	June	58.9	-6.1		3.81	-0.02	
	July	69.4	-3.0		4.70	2.25	
	Aug.	73.0	2.3		1.34	-1.07	0.30
Last freeze June 20 - 30°					12.93		
Highmore* 1 W	April	49.7	4.3		0.64	-1.10	
	May	60.5	3.3		1.14	-1.19	
	June	61.2	-5.6		3.59	0.05	
	July	72.2	-2.3		3.26	1.28	
	Aug.	75.5	2.7	0.5	2.30	0.26	0.70
Last freeze June 2 - 29°					10.93		
Watertown 15 N	April	37.7	-5.5		1.52	-0.54	
	May	55.0	-1.0		3.44	0.57	
	June	56.3	-7.6		1.96	-1.74	
	July	66.7	-5.6		4.52	1.85	
	Aug.	70.2	1.2	-3.7	2.48	-0.30	0.16
Last freeze June 21					13.82		
Presho 11 S	April	52.0			0.37		
	May	60.5			2.37		
	June	65.2			3.17		
	July	74.2			3.73		
	Aug.	79.2			0.80		
					10.44		

* Based upon reports of Monthly Climatological Data, U.S. Dept. of Commerce, ESSA, Office of State Climatologist, State University, Brookings, S. D., 57006

Measurements of Performance

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

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 1969 yield data indicates that there is no difference between the entries above that line at the 5% level of probability.

Discussion of Results

A more accurate estimation of a variety's capabilities under variable conditions is obtained from several year's data. The 1969 and available five-year averages are presented in tables following in the text.

Oats: The medium late and late oat varieties were more productive at most locations during the 1969 season. One later variety, Orbit, is found near the top in most 1969 trials. The variety has not been included in recommendations because of seed perpetuation problems and consistently low test weights. Adequate amounts of fertilizer were applied at all trial sites. Specific varieties may react differently when fertility levels are low. The newly released South Dakota variety, Kota, performed quite well at most locations even though the season favored the later maturity types over those of the early or medium maturity range.

Barley: Barley yields varied but were quite good in the northern areas of the state. The 1969 season favored the later maturing entries. Dickson and Larker are good malting varieties. Primus and Primus II are excellent early maturing varieties currently used as feed types.

Flax: Only flax varieties resistant to all known North American races of flax rusts are currently recommended. Nored, Summit and Windom have the highest yields over a five-year period. If late seeding is necessary, it is recommended that one of the early maturing varieties be grown.

Rye: Several of the newer entries yielded quite well in 1969. Stand losses varied from location to location. Actual stand losses because of poor winterhardiness were difficult to ascribe in 1969. Satisfactory germination determined prior to seeding did not hold under field conditions and losses were due to the material seeded as well as winter conditions. Caribou and Frontier are two recommended varieties.

Durum: The durums performed much better than the other spring-seeded wheats grown. Leeds and Wells are two high yielding durums and are recommended. A new Canadian release, Hercules, has been added to the recommended list. It is similar to Leeds in height and has somewhat larger kernels.

Spring Wheat: Spring-seeded wheats in the trials included some semi-dwarf entries. The environment at each site favored one kind of wheat in 1969. At some sites the semi-dwarf entries of World Seeds, Inc. were superior for yield. At other sites, Chris and Manitou excelled and, at others, the durums were best. Because of noticeably poor stands, the seed source of Fortuna was rechecked and found to be very poor germinating material. The performance of Fortuna should be considered with this in mind.

Winter Wheat: The recommended varieties, Lancer and Scout, have the better long-term yield records in the major production areas. Gage has been satisfactory in the lower areas around the Black Hills and the south central areas. Hume and Winoka should be considered in areas where winters are apt to be severe.

Varietal recommendations on each of the small grains and specific areas of adaptation are shown on the back cover of this circular.

TABLE 4. STANDARD VARIETY SPRING-SEEDED WHEAT TRIALS, BROOKINGS, 1965-1969

Variety	Average Yields, Bushels per Acre						1968
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
6W01879					26.9		57.0
Chris	46.7	36.8	41.3	19.0	26.3	34.0	56.0
6W01859					25.3		54.0
Wells	45.7	47.0	45.9	29.1	25.2	38.6	57.0
Manitou	37.0	41.7	46.4	18.6	24.5	33.6	56.0
Hercules			45.7		24.4		55.0
Waldron				22.2	23.9		53.0
Polk	38.5	40.1	36.5	25.2	23.4	32.7	57.0
Sheridan	43.4	38.6	42.9	24.3	22.9	34.4	55.0
6W01812					22.1		54.0
Leeds		46.9	48.2	24.9	21.6		55.0
Neepawa					20.0		55.0
Tobari 66				31.3	17.4		50.0
Justin	35.3	40.1	38.9	14.4	16.8	29.1	54.0
Red River 68				28.7	15.1		52.0
Thatcher	27.2	39.0	34.7	21.1	14.1	27.2	51.0
Fortuna ^a		40.3	39.7	21.9	8.8		46.0
				Mean Yield	21.1		

^a Seed used was found to have very low germination.

TABLE 5. STANDARD VARIETY BARLEY TRIALS, BROOKINGS, 1965-1969

Variety	Average Yields, Bushels per Acre						1969
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
Larker	76.1	66.1	81.6	50.7	55.1	65.9	48.0
Primus II					54.2		45.5
CI 11864		69.7	74.7	42.3	53.5		45.0
Primus		74.5	83.3	45.6	52.8		45.0
Paragon				44.8	52.5		44.0
Conquest		73.9	84.1	47.7	48.6		42.5
Dickson	80.4	70.7	80.3	50.6	47.6	65.9	44.0
Liberty	76.1	71.4	73.7	46.5	47.2	63.0	45.0
				Mean Yield	51.4		

TABLE 6. STANDARD VARIETY OAT TRIALS, BROOKINGS, 1965-1969

Variety	Average Yields, Bushels per Acre						1969
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
Pettis				35.4	62.6		35.0
Orbit		112.3	127.4	67.5	62.4		33.0
Wisc X1181-2					62.4		33.0
Portal		98.5	121.8	43.0	60.9		33.5
Tyler	107.6	93.1	114.8	37.3	60.9	82.7	29.5
Multi E 69					56.7		31.0
CI 8304					54.8		31.0
Clintford	90.3	86.2	110.3	40.1	51.7	75.7	34.5
Holden	134.2	104.1	112.0	44.3	51.5	89.2	31.0
Tippecanoe	81.7	73.1	99.4	32.4	50.9	67.5	31.5
Wyndmere		100.3	103.7	43.6	49.6		33.5
Garland	121.8	100.0	100.3	46.8	48.9	83.6	30.0
Kota	101.1	71.8	109.6	62.8	47.6	78.6	32.5
Jaycee		94.7	109.4	39.1	45.4		30.0
SD 1596					43.7		31.0
Santee	66.5	75.8	114.9	45.8	43.1	69.2	30.0
O'Brien		103.0	101.8	33.3	42.8		32.5
Kelsey			115.5	57.2	42.3		32.0
Burnett	108.9	99.8	110.8	55.4	41.9	83.4	33.0
Dawn		86.1	108.9	24.8	41.9		31.5
Dupree	111.1	96.7	111.8	39.7	41.9	80.2	30.5
Coachman	112.3	95.3	110.1	41.2	39.1	79.6	29.0
SD 469					36.8		31.5
Lodi	90.3	113.4	105.5	46.2	35.8	78.2	30.0
Multi M 69					35.3		32.0
Brave	126.7	105.3	123.1	34.6	35.3	85.0	31.5
Clintland 64	103.9	75.8	121.8	49.6	34.1	77.0	29.5
Sioux		118.0	109.0	62.1	32.0		28.0
Rodney	124.0	77.7	105.1	50.8	29.7	77.5	33.0
Fraser					26.3		25.0
				Mean Yield	45.6		

TABLE 7. STANDARD VARIETY RYE TRIALS, BROOKINGS, 1963-1969

Variety	Average Yields, Bushels per Acre						1969
	1963	1964	1967	1968	1969	1967-69	Test Wt. lb/bu
Petkus			51.0	32.7	58.0		52.5
Cougar					54.2		50.5
Antelope	17.1	25.2	36.5	38.0	50.6	33.5	52.5
Toiva			37.5	22.2	47.0		50.5
Zelder			44.3	32.7	46.1		52.5
Elk	12.1	35.5	54.7	28.3	42.6	34.6	52.0
Frontier			41.6	42.7	35.4		52.0
Sangaste			46.9	24.7	34.9		51.5
Adams			38.0	30.4	34.6		51.5
Dominant			56.2	34.0	34.4		51.5
Dakold			33.0	34.9	32.4		52.0
Von Lochow			52.0	38.5	28.4		51.0
Guelzower			55.2	35.6	27.5		50.0
Pearl				37.7	27.4		49.0
Pierre	16.3	30.9	34.1	33.2	25.1	27.9	51.5
Caribou	22.2	30.7	37.1	31.1	19.7	28.2	50.0
				Mean Yield	37.4		

TABLE 8. STANDARD VARIETY FLAX TRIALS, BROOKINGS, 1965-1969

Variety	Average Yields, Bushels per Acre						1969
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
Summit	26.3	13.5	30.6	18.5	28.9	23.6	54.0
Nored	32.1	14.7	28.3	21.8	27.6	24.9	55.0
CI 2444			29.7	19.3	25.8		55.0
Foster					25.6		55.0
Linott			30.3	21.0	24.6		54.5
Noralta		15.6	32.8	17.6	24.5		56.0
Norstar				18.3	24.4		55.0
Windom	32.1	18.3	29.8	17.9	24.2	24.5	55.0
Redwood	30.2	15.6	28.8	19.7	23.4	23.5	55.0
Bolley		13.6	13.6	19.8	23.1		55.5
Redwood 65		11.9	33.1	20.0	21.8		54.5
B-5128	29.4	12.5	28.8	19.3	20.4	22.1	54.0
Norland	28.4	12.2	26.5	17.9	15.4	20.1	53.5
				Mean Yield	23.8		

TABLE 9. STANDARD VARIETY SPRING-SEEDED WHEAT TRIAL, WATERTOWN, 1965-1969

	Average Yields, Bushels per Acre						1969
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
Manitou	38.0	23.4	41.3	31.9	33.8	33.7	60.5
6W01859					33.5		61.0
6W01879					33.2		60.0
Chris	44.5	23.3	39.7	34.3	32.3	34.8	59.0
Tobari 66				39.1	32.3		57.0
Sheridan	42.0	18.2	35.8	33.8	31.6	32.3	60.0
Hercules			43.8		30.1		59.0
6W01812					30.0		58.0
Polk	42.9	29.4	38.1	33.0	29.8	34.6	59.5
Wells	39.4	30.1	43.3	32.6	29.7	35.0	57.0
Neepawa					28.9		59.5
Waldron				37.5	25.8		56.5
Leeds		29.0	44.6	33.5	25.3		60.0
Red River 68				36.5	23.1	28.5	56.0
Justin	28.8	23.8	38.9	30.3	20.8	28.5	56.0
Thatcher	18.0	25.1	37.6	17.5	17.9	23.2	57.0
Fortuna ^a		19.7	44.1	33.9	14.2		54.0
				Mean Yield	27.8		

TABLE 10. STANDARD VARIETY BARLEY TRIALS, WATERTOWN, 1965-1969

Variety	Average Yield, Bushels per Acre						1969
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
CI 11864		18.7	68.5	46.4	81.8		49.0
Primus II					75.9		49.0
Paragon				43.4	74.7		48.5
Primus		25.4	67.3	51.3	72.8		49.0
Larker	67.8	24.2	61.2	52.7	72.4	55.6	48.5
Conquest		25.8	66.7	43.1	69.9		49.0
Dickson	73.7	14.7	48.5	39.6	68.3	49.0	48.5
Liberty	70.1	31.4	70.8	55.2	62.0	57.9	48.0
				Mean Yield	72.2		

TABLE 11. STANDARD VARIETY OAT TRIAL, WATERTOWN, 1965-1969

Variety	Average Yields, Bushels per Acre					1965-69	1969
	1965	1966	1967	1968	1969		Test Wt. lb/bu
Kota	121.4	48.5	99.0	76.5	126.7	94.4	37.5
Sioux		51.4	99.4	68.4	125.9		34.5
Kelsey			101.9	64.1	119.4		36.5
Orbit		51.4	104.7	65.1	113.5		35.0
CI 8304					113.3		36.5
Portal		54.2	101.9	64.7	113.2		36.0
Wisc. X1181-2					111.5		36.5
Brave	118.5	47.1	99.6	66.9	110.6	88.5	37.0
Rodney	98.5	47.3	86.7	58.0	109.6	80.0	35.0
Wyndmere		48.7	80.7	65.6	107.6		36.0
Burnett	104.8	60.3	101.7	83.2	106.8	91.4	38.0
Clintland 64	100.9	58.8	104.1	72.8	104.8	88.3	34.5
Dupree	115.0	48.1	91.0	75.6	104.3	86.8	34.0
Pettis				60.9	104.0		39.0
SD 469					103.0		36.0
Multi M 69					102.9		35.0
SD 1596					101.7		36.5
Coachman	110.4	40.9	93.4	63.1	100.7	81.7	39.0
Lodi	96.0	52.0	83.5	65.0	100.4	79.4	36.0
O'Brien		48.6	104.9	62.4	99.4		37.0
Tyler	119.9	43.5	91.8	63.3	99.2	83.5	35.0
Clintford	100.9	58.8	104.1	72.8	98.8	87.1	38.0
Jaycee		47.1	100.1	69.4	96.8		36.0
Holden	124.6	54.5	83.3	77.7	96.1	87.2	35.0
Tippecanoe	106.3	48.2	102.5	67.5	94.5	83.8	36.0
Fraser					93.1		30.0
Dawn		41.9	86.8	54.1	90.7		35.0
Garland	120.4	52.5	76.4	54.7	89.9	80.8	37.5
Santee	122.8	53.0	101.0	55.0	88.0	86.2	33.5
Multi E 69					70.8		35.0
					Mean Yield	103.2	

TABLE 12. STANDARD VARIETY SPRING-SEEDED WHEAT TRIALS, HIGHMORE, 1965-1969

Variety	Average Yields, Bushels per Acre						1969
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
Wells	38.4	15.3	46.0	50.6	45.8	39.2	60.0
Leeds		15.8	54.1	56.4	42.7		62.0
Sheridan	44.3	13.9	41.6	46.6	40.1	37.3	60.0
Hercules			50.7		38.9		59.0
Waldron				48.7	38.8		58.0
Chris	35.1	16.2	48.9	46.9	37.1	36.8	57.0
Manitou	40.1	16.9	48.4	51.3	37.0	38.7	59.0
Neepawa					36.8		57.5
6W01859					35.6		59.0
6W01879					35.5		59.0
Polk	41.4	16.0	43.3	47.1	34.1	36.4	60.0
6W01812					34.1		59.0
Tobari 66				49.8	33.1		56.0
Justin	37.1	15.0	40.2	40.0	31.1	32.7	56.0
Red River 68				48.7	31.0		56.0
Thatcher	26.0	17.3	35.0	38.8	28.9	29.2	55.5
Fortuna ^a		17.6	53.3	51.1	24.8		56.5
				Mean Yield	35.6		

^a Seed used had low germination.

TABLE 13. STANDARD VARIETY BARLEY TRIAL, HIGHMORE, 1965-1969

Variety	Average Yields, Bushels per Acre						1969
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
CI 11864		22.8	71.8	65.2	64.1		48.0
Liberty	81.9	35.5	71.8	78.3	61.4	65.8	48.0
Larker	84.4	26.8	69.5	74.2	60.7	63.1	49.0
Paragon				69.5	60.2		47.0
Dickson	90.4	21.7	61.8	53.4	59.1	57.3	48.5
Conquest		22.8	71.8	65.2	58.1		46.0
Primus II					49.0		48.5
Primus		36.2	85.9	73.4	45.9		49.0
				Mean Yield	57.3		

TABLE 14. STANDARD VARIETY OAT TRIALS, HIGHMORE, 1965-1969

Variety	Average Yields, Bushels per Acre					1954-69	1969
	1965	1966	1967	1968	1969		Test Wt. lb/bu
Rodney	75.8	22.0	71.9	76.0	113.9	71.9	35.5
Kelsey			79.3	77.5	111.0		34.5
Lodi	92.2	30.8	61.8	79.8	108.6	74.6	32.0
Kota	85.8	37.2	69.4	87.4	108.4	77.6	37.0
Fraser					108.4		34.0
Sioux		33.1	76.9	74.5	107.5		36.0
Wisc. X1181-2					101.9		36.0
Orbit		45.8	92.7	76.8	100.4		33.0
Pettis				93.8	98.6		38.0
Portal		44.1	71.7	98.2	98.1		35.0
Dupree	87.2	44.2	89.5	84.4	97.0	80.6	35.0
Burnett	85.6	48.8	85.3	92.9	96.6	81.8	35.0
Tippecanoe	68.0	40.2	81.0	93.7	96.3	75.9	37.0
Holden	106.1	45.9	62.6	90.4	95.3	80.1	35.0
CI 8304					95.1		34.0
Coachman	80.1	36.9	69.5	89.3	94.1	74.0	37.0
Brave	98.7	46.4	92.2	95.7	92.3	85.1	35.0
SD 469					91.1		35.5
Santee	66.3	51.9	81.2	93.1	89.8	76.5	34.0
Jaycee		52.7	70.0	93.8	89.1		36.5
Multi E 69					88.1		36.0
Tyler	83.1	42.2	90.8	91.5	87.9	79.1	35.0
Wyndmere		44.4	65.2	99.5	87.0		35.0
Dawn		37.1	80.3	59.7	86.7		34.5
Clintford	70.4	47.0	92.3	71.5	85.1	73.3	38.0
SD 1596					84.7		34.5
Garland	108.6	43.0	42.0	91.7	84.4	73.9	34.5
Multi M 69					83.3		35.0
O'Brien		49.8	76.5	86.2	81.0		37.0
Clintland 64	74.0	43.7	75.8	92.8	72.5	71.8	35.0
				Mean Yield	94.5		

TABLE 15. STANDARD VARIETY RYE TRIALS, HIGHMORE, 1965-1969

Variety	Average Yields, Bushels per Acre					1965-69	1969 Test Wt. lb/bu
	1965	1966	1967	1968	1969		
Petkus			61.2	52.6	33.5		53.0
Cougar					31.8		54.5
Zelder			59.6	58.2	27.3		51.0
Elk	51.8	21.8	62.5	33.7	26.2	39.2	52.0
Antelope	42.8	20.6	44.6	47.9	25.6	36.3	54.5
Pearl				41.8	25.0		50.5
Frontier			52.4	48.3	24.9		55.0
Toiva			49.7	37.1	22.8		49.5
Dakold			32.9	39.3	21.3		56.0
Sangaste			52.9	33.9	19.6		47.0
Von Lochow	61.0	34.8	57.8	53.0	17.6	44.8	49.5
Guelzower			54.0	46.9	15.3		46.5
Pierre	41.0	12.8	31.5	37.5	15.2	27.6	52.0
Adams			42.4	33.6	14.4		49.0
Dominant			65.9	52.3	13.9		49.5
Caribou	47.2	23.9	45.5	42.3	11.6	34.1	48.5
				Mean Yield	21.6		

TABLE 16. STANDARD VARIETY FLAX TRIALS, HIGHMORE, 1964-1969

Variety	Average Yields, Bushels per Acre					1964-69	1969 Test Wt. lb/bu
	1964	1965	1967	1968	1969		
Linott			21.2	20.4	28.2		54.5
Foster					28.2		54.0
Windom	15.3	21.2	21.2	23.4	27.6	21.7	54.0
Summit	17.1	23.5	20.5	20.6	26.0	21.5	54.0
B-5128	11.9	20.2	19.7	18.7	25.8	19.3	55.0
Norstar				19.2	25.0		54.5
CI 2444				18.6	24.3		54.0
Norland	12.1	16.3	21.4	18.3	24.0	18.4	54.0
Redwood 65			18.7	20.2	23.9		55.0
Redwood	11.1	21.0	22.7	19.2	23.7	19.5	55.0
Bolley	16.1		21.2	22.9	23.4		52.0
Noralta			20.1	19.3	23.1		54.0
Nored				23.5	22.8		54.0
				Mean Yield	25.1		

TABLE 17. STANDARD VARIETY SPRING-SEEDED WHEAT TRIALS, EUREKA, 1965-1969

Variety	Average Yields, Bushels per Acre					1965-69	1969
	1965	1966	1967	1968	1969		Test Wt. lb/bu
Wells	35.8	14.3	29.0	35.6	45.9	32.1	61.5
Leeds		16.1	32.3	34.9	42.9		63.0
Hercules			32.1		41.4		61.0
Chris	31.6	14.1	27.2	41.7	39.1	30.7	59.5
Manitou	32.7	17.0	33.5	35.6	39.0	31.6	60.0
Neepawa					39.0		60.0
6W01879					37.9		60.0
Polk	37.0	18.2	28.0	32.8	37.8	30.8	61.0
6W01859					36.6		60.5
Sheridan	31.6	15.4	20.0	36.9	36.5	28.1	61.0
Waldron				36.9	35.1		58.0
Tobari 66				42.0	35.1		58.0
Red River 68				35.5	33.9		57.5
6W01812					31.5		59.5
Thatcher	21.7	17.1	28.1	26.1	30.0	24.6	59.0
Justin	24.3	14.6	24.0	36.0	27.9	25.4	57.5
Fortuna ^a		17.3	40.8	43.8	25.1		57.0
				Mean Yield	36.1		

^a Seed used was found to have low germination.

TABLE 18. STANDARD VARIETY BARLEY TRIALS, EUREKA, 1965-1969

Variety	Average Yields, Bushels per Acre					1965-69	1969
	1965	1966	1967	1968	1969		Test Wt. lb/bu
CI 11864		17.3	41.5	55.8	70.7		49.0
Paragon				49.5	68.9		47.0
Dickson	72.1	14.0	38.6	63.1	65.4	50.6	48.0
Larker	78.0	27.8	45.7	51.1	64.6	53.4	50.0
Conquest		24.0	34.7	47.9	55.5		46.0
Primus		27.0	48.9	47.0	54.8		48.0
Primus II					53.6		48.0
Liberty	83.6	24.1	38.1	52.9	52.5	50.2	46.0
				Mean Yield	60.7		

TABLE 19. STANDARD VARIETY OAT TRIALS, EUREKA, 1965-1969

Variety	Average Yield, Bushels per Acre					1965-69	1969
	1965	1966	1967	1968	1969		Test Wt. lb/bu
Brave	108.1	25.2	67.6	85.3	95.5	76.3	34.0
Kelsey			73.9	82.7	90.9		35.5
Wyndmere		25.1	81.2	102.1	84.8		35.5
Portal		15.1	59.3	99.3	84.1		35.5
Burnett	112.1	21.2	74.9	94.4	83.9	77.3	34.5
Orbit		12.5	88.3	86.0	82.9		32.0
Fraser					82.3		37.0
Rodney	96.3	15.5	64.0	90.7	80.2	69.3	37.5
Tyler	99.8	22.4	91.0	93.9	79.7	77.4	34.5
CI 8304					78.1		34.5
SD 469					76.8		35.5
Coachman	102.7	17.0	58.8	91.8	76.1	69.3	35.0
Lodi	102.7	12.1	92.1	110.0	76.0	78.6	35.5
Kota	111.9	13.1	67.7	103.8	74.6	74.2	35.0
Sioux		17.5	79.2	96.3	74.6		33.0
SD 1596					72.8		35.0
Holden	108.0	18.4	77.6	96.8	72.7	74.7	33.5
Pettis				73.7	71.4		38.0
Garland	116.4	18.1	73.8	72.9	71.3	70.5	34.0
Wisc. X 1181-2					70.0		36.0
Multi M 69					69.6		36.0
Dupree	112.8	19.5	84.3	102.4	68.5	77.5	34.5
Clintland 64	103.3	17.4	76.1	88.5	68.3	70.7	35.0
Santee	98.2	25.4	91.2	103.3	65.1	76.6	34.0
O'Brien		20.2	69.3	77.0	63.0		34.5
Tippecanoe	98.8	19.2	80.9	89.6	61.5	70.0	35.5
Multi E 69					60.4		34.5
Dawn		10.5	56.5	85.6	59.5		35.5
Clintford	102.5	24.5	89.1	87.7	58.3	72.3	36.5
Jaycee		15.7	78.2	71.2	57.9		35.0
					Mean Yield	73.7	

TABLE 20. STANDARD VARIETY SPRING-SEEDED WHEAT TRIALS, WALL, 1965-1969

Variety	Average Yields, Bushels per Acre						1969
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
Wells		24.1	42.5	25.0	32.3		62.5
Leeds		21.3	42.9	32.7	32.1		63.0
Tobari 66				36.3	28.0		60.5
Polk	21.0	21.0	43.1	28.4	26.7	28.0	61.0
Hercules			46.0		26.3		61.0
Waldron				32.4	24.8		57.0
Manitou	23.1	23.8	31.2	29.5	23.7	26.3	58.5
Neepawa					22.9		57.0
Chris	25.1	24.7	37.9	26.3	22.8	27.4	58.0
Sheridan	28.9	22.6	35.4	23.3	22.0	26.4	59.0
Red River 68				37.0	21.6		59.0
Justin	13.2	21.5	34.0	27.4	19.8	23.2	56.0
Fortuna ^a		22.9	44.3	34.9	15.6		56.0
Thatcher	7.1	21.7	19.9	25.9	15.4	18.0	55.0
				Mean Yield	23.8		

^a Seed used was found to have low germination.

TABLE 21. STANDARD VARIETY BARLEY TRIALS, WALL, 1965-1969

Variety	Average Yields, Bushels per Acre						1969
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
Larker	33.4	53.8	63.1	56.2	49.7	51.3	50.0
Primus II					49.5		49.0
Paragon				44.8	49.4		48.0
CI 11864			59.9	44.2	47.5		46.5
Liberty	13.5	53.4	63.3	56.4	47.5	46.8	48.0
Primus			65.9	60.2	47.4		49.0
Conquest			59.2	45.3	45.6		47.0
Dickson		56.5	75.7	35.6	44.9		45.0
				Mean Yield	47.7		

TABLE 22. STANDARD VARIETY OAT TRIALS, WALL, 1965-1969

Variety	Average Yields, Bushels per Acre						1969
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
Lodi	80.7	35.1	100.1	65.4	82.0	72.7	32.0
CI 8304					75.3		31.5
Orbit		31.2	126.0	93.3	73.5		29.0
Rodney	48.4	41.1	89.9	57.0	72.1	61.7	34.5
Burnett	67.1	44.0	97.8	86.3	70.4	73.1	35.5
Fraser					67.2		37.5
Dupree	72.4	33.5	102.7	78.2	66.1	70.6	33.0
Wisc. X1181-2					65.0		35.5
Brave	70.8	44.0	110.0	84.1	64.8	74.7	34.5
Dawn		40.9	74.0	56.9	64.6		33.0
Kelsey			109.5	68.0	64.5		31.5
Sioux		31.5	101.7	72.9	63.7		34.0
Garland	75.6	37.3	89.3	82.0	63.0	69.4	35.0
Santee	75.2	40.1	78.1	76.9	62.7	66.6	34.0
Clintford	78.9	38.8	60.2	80.9	61.8	64.1	38.0
SD 1596					61.6		34.5
Portal		33.2	95.5	81.9	61.5		34.0
Kota	63.8	38.0	91.7	66.7	61.4	64.3	34.5
Tyler	76.6	42.8	89.4	75.9	61.3	69.2	35.0
Holden	77.7	37.8	100.0	83.3	61.0	72.0	35.0
SD 469					59.8		35.0
Wyndmere		40.6	101.2	75.2	59.7		32.0
Jaycee		44.1	80.3	82.2	59.6		35.0
Pettis				80.2	59.4		37.5
Multi E 69					57.5		36.5
Coachman	59.5	33.0	93.2	69.7	57.3	62.5	35.0
Multi M 69					57.1		34.0
O'Brien		40.5	81.8	73.2	56.2		36.0
Tippecanoe	65.0	35.2	70.1	69.3	56.2	59.2	36.5
Clintland 64	75.9	39.9	72.0	71.3	55.6	62.9	35.5
				Mean Yield	63.4		

TABLE 23. STANDARD VARIETY SPRING-SEEDED WHEAT TRIALS, BISON, 1966-1969

Variety	Average Yields, Bushels per Acre					1969
	1966	1967	1968	1969 ^b	1965-69	Test Wt. lb/bu
6W01879			hailed	28.4		56.0
Leeds	18.2	24.1	out	28.3	23.5	59.0
Wells	19.2	28.7		26.1	24.7	55.5
Chris	15.0	21.9		24.9	20.6	55.5
Neepawa				24.9		52.0
Manitou	14.9	24.9		24.6	21.5	54.0
6W01859				24.3		54.5
Sheridan	12.1	26.8		23.6	20.8	53.5
Hercules		28.9		22.6		55.0
6 WO 1812				22.5		49.5
Tobari 66				22.2		51.0
Polk	15.7	24.1		20.2	20.0	55.5
Thatcher	14.2	26.9		19.5	20.2	52.0
Waldron				18.4		53.5
Red River 68				18.1		51.0
Justin	12.8	28.7		14.7	18.7	48.0
Fortuna ^a	16.7	25.8		9.6	17.4	47.0
			Mean Yield	21.9		

^a Seed used was found to have low germination.

^b Infected by mosaic which was severe in adjacent fields and wheat crop turned under.

TABLE 24. STANDARD VARIETY BARLEY TRIALS, BISON, 1965-1969

Variety	Average Yields, Bushels per Acre				1969
	1967	1968	1969	1967-69	Test Wt. lb/bu
Dickson	37.1	hailed	82.2	59.6	48.0
Larker	34.9	out	76.5	55.7	49.0
CI 11864	29.1		76.2	52.6	49.0
Paragon			73.8		47.0
Conquest	38.1		71.3	54.7	47.5
Primus	39.9		70.9	55.4	49.0
Primus II			65.0		50.0
Liberty	40.8		62.7	51.7	49.0
			Mean Yield	72.3	

TABLE 25. STANDARD VARIETY OAT TRIALS, BISON, 1966-1969

Variety	Average Yields, Bushels per Acre					1969
	1966	1967	1968	1969	1966-69	Test Wt. lb/bu
Orbit	29.8	72.6	hailed	120.9	74.4	33.5
Kelsey		59.1	out	117.3		35.5
Lodi	28.5	57.4		110.0	65.3	35.0
Sioux	30.7	63.7		107.0	67.1	35.5
Kota	24.9	64.4		104.5	64.6	35.5
Coachman	24.2	76.9		104.2	68.4	35.5
SD 469				101.0		36.0
Burnett	21.4	67.0		100.7	63.0	36.5
Wyndmere	26.9	63.8		99.3	63.3	34.0
SD 1596				98.2		34.0
CI 8304				97.0		35.0
Dupree	23.6	77.1		96.8	65.8	36.0
Portal	19.0	58.3		96.7	58.0	38.0
Rodney	17.9	62.6		96.5	59.0	34.0
Fraser				96.2		30.5
Pettis				95.7		38.0
Wisc. X1181-2				95.1		34.5
Brave	30.7	71.3		93.5	65.2	36.0
Jaycee	18.3	58.8		93.1	56.7	35.0
Tyler	15.2	73.3		92.9	60.5	35.0
O'Brien	23.1	60.5		92.2	58.6	36.0
Garland	22.1	59.2		90.0	57.4	35.0
Clintford	17.7	65.9		90.1	57.9	35.0
Dawn	20.6	59.1		89.5	56.4	34.0
Holden	24.0	72.6		88.7	61.8	33.5
Tippecanoe	9.2	60.3		88.5	52.7	37.0
Multi M 69				86.4		36.5
Clintland 64	17.5	48.7		86.3	50.8	33.5
Santee	25.3	72.1		86.3	61.2	32.5
Multi E 69				78.4		33.5
			Mean Yield	96.4		

TABLE 26. STANDARD VARIETY WINTER WHEAT TRIAL, PRESHO, 1967-1969

Variety	Average Yields, Bushels per Acre				1969
	1967	1968	1969	1967-69	Test Wt. lb/bu
SD 6689			37.6		59.0
Winalta	51.5	40.6	34.8	42.3	60.5
SD 66108			34.1		60.0
SD 66117			32.7		60.0
Trapper	53.0	38.3	32.3	41.2	61.0
Scout 66			32.1		60.5
Lancer	48.2	38.8	31.9	39.6	61.0
Trader	49.9	37.7	30.4	39.3	60.5
Nebred	48.1	34.4	30.0	37.5	60.5
Gage	48.1	42.9	29.9	40.3	59.5
Scout	50.7	40.3	29.3	40.1	60.0
Winoka	49.8	34.1	28.7	37.5	61.0
SD 66171			28.1		61.5
Hume	44.9	32.6	25.6	34.4	59.5
Guide		29.9	25.2		60.0
Minter	47.9	30.2	24.5	34.2	59.5
		Mean Yield	30.4		

TABLE 27. STANDARD VARIETY RYE TRIALS, PRESHO, 1967-1969

Variety	Average Yields, Bushels per Acre				1969
	1967	1968	1969 ^a	1967-69	Test Wt. lb/bu
Zelder	51.1	61.7	38.0	50.3	55.0
Cougar			26.5		54.0
Von Lochow	48.7	57.0	23.6	43.1	55.0
Petkus	47.8	51.8	22.9	40.8	53.0
Antelope	39.2	49.0	18.6	35.6	55.0
Caribou	37.9	46.3	16.5	33.6	56.0
Dakold	35.3	46.0	16.1	32.5	57.0
Toiva	39.9	45.8	14.4	33.4	53.0
		Mean Yield	22.1		

^aStand losses were erratic and quite severe. Data from 8 better varieties presented as a matter of record.

TABLE 28. STANDARD VARIETY WINTER WHEAT TRIAL, HIGHMORE, 1964-1969

Variety	Average Yields, Bushels per Acre					1969 Test Wt. lb/bu	
	1964	1965	1966	1967	1969		
SD 66108					28.8	63.5	
Winoka			26.0	45.0	28.3	64.5	
Trader				45.4	28.0	63.5	
SD 66117					27.6	64.0	
SD 6689					27.6	63.5	
SD 66171					24.3	63.0	
Minter	15.3	22.8	25.0	44.9	23.5	26.3	65.0
Winalta	18.3	25.7	28.9	47.5	22.6	28.6	64.0
Nebred	22.2	15.7	30.9	41.0	21.7	26.3	63.5
Hume	16.0	33.9	25.5	41.3	20.1	27.4	63.0
Trapper				44.8	18.8		62.5
Scout 66					18.7		62.0
Lancer	21.7	39.7	29.7	43.4	18.7	30.6	62.5
Guide					18.2		63.5
Gage	27.4	29.2	31.3	43.0	18.2	29.8	63.0
Scout	27.1	35.4	30.7	44.8	17.7	31.1	62.5
				Mean Yield	22.7		

TABLE 29. STANDARD VARIETY WINTER WHEAT TRIAL, WALL, 1967-1969

Variety	Average Yields, Bushels per Acre				1969 Test Wt. lb/bu
	1967	1968	1969	1967-69	
Winalta	49.9	58.9	54.0	55.3	64.5
Lancer	50.8	63.2	51.0	55.0	64.0
Gage	54.2	64.0	50.5	56.2	63.5
Scout	53.0	65.3	49.0	55.8	64.0
Trapper	45.2	57.9	49.0	50.7	64.0
Trader	51.0	59.1	47.6	52.6	64.0
Hume	49.4	49.8	46.7	48.6	64.0
Scout 66		63.9	45.8		64.0
Guide		50.8	45.5		64.0
SD 66171			44.9		65.0
Nebred	51.5	61.9	44.3	52.6	64.0
SD 66108			42.7		64.5
Winoka	45.6	50.8	40.8	45.7	64.5
SD 66117			39.6		64.0
SD 6689			36.9		62.5
Minter	39.9	46.7	36.3	41.0	63.5
			Mean Yield	45.3	

TABLE 30. STANDARD VARIETY FLAX TRIALS, WATERTOWN, 1965-1969

Variety	Average Yields, Bushels per Acre						1969
	1965	1966	1967	1968	1969	1965-69	Test Wt. lb/bu
Foster					23.2		53.5
Summit	32.9	17.2	21.7	18.5	22.8	22.6	53.0
Nored	30.4	18.1	19.5	21.8	21.8	22.3	54.0
Linott			19.2	21.7	21.2		54.0
Redwood	29.5	16.3	21.6	19.4	21.2	21.6	53.5
Redwood 65		16.8	22.0	19.7	20.7		53.0
B-5128	28.2	14.8	21.2	16.8	20.1	20.2	55.0
CI 2444			20.8	19.8	20.0		53.5
Noralta		15.1	23.3	16.7	19.0		53.0
Windom	33.8	16.6	18.2	18.3	18.8	21.1	55.0
Norstar				20.9	18.5		54.0
Norland	26.5	13.8	22.4	18.4	17.0	19.6	53.0
Bolley		15.7	20.7	19.5	13.7		53.0
				Mean Yield	19.8		

TABLE 31. SPRING SMALL GRAIN VARIETY TRIALS AT THE SOUTH CENTRAL RESEARCH FARM, PRESHO, 1967-1969

Variety	Test Wt. lbs/bu	Oat		Variety	Test Wt. lbs/bu	Spring Wheat		Variety	Test Wt. lbs/bu	Barley	
		Grain Yield-Bushel/Acre 1969	Av 1967-69			Grain Yield-Bushel/Acre 1969	Av 1967-69			Grain Yield-Bushel/A 1969	Av 1967-69
Burnett	36.2	67.8	87.1	Waldron	56.5	30.8	----	Liberty	47.5	55.7	62.2
Rodney	34.8	66.6	75.5	Fortuna	57.0	30.6	33.8	Dickson	48.2	54.1	69.1
Lodi	33.2	65.3	82.4	Manitou	57.2	29.5	32.8	Paragon	45.5	54.1	
E68	38.2	65.0		Sheridan	56.8	28.4	30.0	Trophy	46.0	51.6	56.4
Garry	37.7	64.7	76.5	Crim	56.0	27.0	30.9	Conquest	46.0	48.0	52.4
Clintford	38.5	62.9	72.8	Chris	57.2	26.9	29.1	Spartan	49.0	46.2	
Portal	37.0	61.1	83.6	Red River 68	56.8	26.8	----	Larker	48.5	42.7	60.1
Ortley	35.8	59.5	75.0	Rushmore	56.0	26.4	27.8	Primus II	48.0	38.7	60.4
Dupree	38.0	59.2		Selkirk	53.5	25.8	22.3			Mean 48.9	
M68	36.8	58.4		BH 631	57.0	25.4	29.3			LSD (.05) 5.0	
Wyndmere	37.0	55.5	87.7	BH 632	57.0	25.4	26.6				
O'Brien	39.2	55.3	77.8	Polk	57.2	24.6	29.4				
Garland	37.5	55.3	71.0	Justin	53.8	23.4	24.4				
Brave	36.8	55.0	87.2			Mean 27.0					
Jaycee	37.5	55.0	74.2			LSD (.05) 3.3					
Kota	38.2	54.4									
Tyler	36.5	53.2	86.1								
Kelsey	37.0	52.9									
Clintland 64	37.5	51.4	65.7								
Tippecanoe	37.2	48.6	83.9								
Holden	37.0	48.3	76.3								
Pettis	38.5	47.7									
Sioux	38.5	46.2									
	Mean	56.9									
	LSD (.05)	8.9									

Oat Variety Trial (Forage Type)			
Variety	Test Wt. lbs/bu	Grain Yield Bu/Acre	Forage Yield* % D.M. Ton/A
Rodney	34.8	66.6	46.8 2.6
Garry	37.7	64.7	51.2 2.6
Kelsey	37.0	52.9	53.8 2.4
Sioux	38.5	46.2	56.4 2.3
Ortley	35.8	59.5	56.5 2.3
	Mean	59.2	

*Forage Yields on dry matter per acre.

Data furnished by H. A. Geise. Harvested area was 4 x 25 feet. All yields reported are the average of four replications. Seeded 4-11-69.

TABLE 33. CHARACTERISTICS OF WHEAT VARIETIES TESTED OR BEING GROWN IN SOUTH DAKOTA

Variety	Parentage	Released	Maturity	Straw Strength	Plant Height	Milling & Baking					Yielding			Disease Reaction			Winter Hardiness			
						Qualities	Ability	LR	SR	WSM	LR	SR	WSM	SW	NW	SE	NE			
Winter Wheat																				
Bison	Chiefkan x Oro-Tenmarq	Kan.	'56	M-early	Strong	S-MT	Excel.	High	S	S	Tol.	G	P	F	P					
Gage	Ponca x Mediterranean-Hope-Pawnee	Nebr.	'63	Early	Strong	Short	Good	High	R	R	S	G	P	G	P					
Guide	Cheyenne ² x (Kenya x Mentana)	Nebr.	'68	Early	Strong	Short	Excel.	Good	S	R	S	G	P	P	P					
Hume	Parents were Khorkof, Minter, Nebred, etc.	S.D.	'65	Medium	Strong	S-MT	Excel.	High	S	R	S	G	F	G	P					
Lancer	Turkey-Cheyenne x Hope-Cheyenne ²	Nebr.	'63	M-early	Strong	Short	Excel.	High	S	R	S	G	F	G	P					
Minter	Minturki ² x Hope	M.&SD	'48	Late	Poor	M-tall	Excel.	Good	S	R	S	G	F	G	F					
Nebred	Selected from Turkey	Nebr.	'38	Medium	Poor	S-MT	Excel.	Good	S	S	S	G	F	G	P					
Omaha	Pawnee x Nebred	Nebr.	'60	Early	Medium	Short	Good	High	S	S	S	G	P	G	P					
Scout 66	(Nebred-Hope-Turkey) x (Cheyenne-Ponca)	Nebr.	'66	Early	Medium	Short	Excel.	High	S	R	Tol.	G	P	F	P					
Trader	Warrior x (Selkirk x Cheyenne ²)	Nebr.	'68	Medium	Medium	M-tall	Good	Good	S	R	S	G	F	F	P					
Trapper	Warrior x (Selkirk x Cheyenne ²)	Nebr.	'68	Medium	Medium	M-tall	Good	Good	S	R	S	G	F	F	P					
Winoka	Winalta section	S.D.	'69	Medium	Medium	M-tall	Excel.	Good	S	R	S	G	F	F	F					
Spring Wheat																				
Chris	Ftn-Thatcher ³ x (K58 x Nth) x Thatcher ²	Minn.	'65	Medium	Medium	M-tall	Excel.	High	R	R										
Fortuna	Rescue-Chinook x (Frontana x K58-Nth)	N.D.	'66	Early	Good	M-tall	Good	High	R	R										
Justin	(That. x K. Farmer) x (Lee x Mida) x Cly	N.D.	'63	Medium	Good	M-tall	Excel.	Good	S	R										
Manitou	(Tc-Ftn x Canthatch) x (Tc ⁶ x P1 170925)	Can.	'65	M-early	Fair	M-tall	Good	High	MR	R										
Polk	M2824 ² x II-50-72	Minn.	'68	Medium	Fair	Medium	Excel.	High	R	R										
Rushmore	Rival x Thatcher	S.D.	'49	Early	Good	M-tall	Good	High	S	MR										
Selkirk	(McMurachy-Exchange) x Redman	Can.	'55	M-early	Good	M-tall	Fair	Good	S	R										
Sheridan	(Frontana x II-44-29) x Pilot	Mnt-SD	'66	M-late	Fair	Tall	Fair	High	R	R										
Waldron	(Kenya 388 A x (Lee x Mida) x Lee) x Justin	N.D.	'69	Early	Good	Medium	Good	High	R	R										
Durum																				
Hercules	(RL 3097 x RL 3304) x (Stewart x RL 3380)	Can.	'68	Early	Good	Short	Good	High	R	R										
Leeds	(Ld 357 ⁴ x St. 464 - Ld 357) x Wells	N.D.	'66	Early	Good	Short	Good	High	R	R										
Wells	Sentry x (Ld 379-Ld357)	N.D.	'60	Early	Good	Short	Good	High	R	MR										

Data furnished by D. G. Wells. Abbreviations Used: M-early, Medium early S-Mt, short to mid-tall LR, Leaf Rust R, resistant G, good
M-late, Medium late M-tall, mid-tall SR, Stem Rust S, susceptible F, fair
WSM, wheat streak mosaic

TABLE 34. CHARACTERISTICS OF OAT VARIETIES RECOMMENDED FOR SOUTH DAKOTA, 1970

Variety	Parentage	Released	Agronomic Characteristics						Disease Reaction*			
			Yielding Ability	Plant Height	Maturity	Lodging Resistance	Bushel Weight	Stem Rust	Leaf Rust	Smut	Red Leaf	
Brave	Putnam x LMJHA	Ill. '65	High	Medium	Medium	Medium	Medium	MS	MS	R	MS	
Burnett	Victoria x Hajira-Banner 2x Colo	Iowa '57	High	M-Tall	Medium	Good	High	MR	MS	R	S	
Clintland 64	Clt ⁵ x LMJHA 3 x Cltd 2 x Cltn ⁶ x Grey Alg.	Ind. '64	Medium	Medium	M-Early	Good	High	MR	MR	R	S	
Dupree	Anthony x Bond 2x Richland x Fulgham	S.D. '54	Medium	Short	Early	Medium	Medium	S	S	R	S	
Garland	Clintland 2x Garry x Hawkeye-Victoria	Wisc. '62	Medium	M-Short	Medium	Good	High	MR	MS	R	S	
Holden	Clintland 3x Garry 2x Hawkeye x Victoria	Wisc. '67	High	Medium	Medium	Good	High	MR	MR	R	S	
Kelsey	Vtra 2x Hj-Bnr x Bnr 3x RxT 4x Bcn 5x Rdy	Can. '67	V-High	Tall	Late	Medium	Medium	MR	MR	R	S	
Jaycee	Clt ³ x Garry 2x Hawkeye x Victoria 4x Putnam	Ill. '67	Medium	M-Short	Early	Good	High	MR	MS	R	MS	
Kota	Clinton 6 x Landhofer 2x RL2120 ex Garry	S.D. '69	High	Medium	M-Early	Medium	High	MR	MR	R	MS	
Lodi	Richland x Bond 3x Garry 2x Hawkeye x Victoria	Wisc. '64	High	Tall	Late	Good	Medium	MR	MR	R	S	
Portal	P.I. 174544 x Clintland 2x Garland	Wisc. '67	High	Medium	Medium	Good	High	MR	MR	R	S	
Sioux	Garry x Rex	Can. '67	V-High	Medium	Late	Medium	Medium	MR	MS	R	S	

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

TABLE 35. CHARACTERISTICS OF FLAX VARIETIES RECOMMENDED FOR SOUTH DAKOTA, 1970

Variety	Parentage	Released	Agronomic Characteristics							Disease Reaction*			
			Yielding Ability	Plant Height	Maturity	Lodging Resis-	Seed Size	Flower Color	Oil Con-	Oil Con-	Rust Race	Wilt	Pasmo
B-5128	Golden x Rio	N.D. '43	Medium	Tall	Late	Good	M-L	Blue	Good	Fair	I	MS	S
Bolley	Birio x C.I. 1134	N.D. '47	Medium	Medium	Medium	Good	Med.	Blue	High	High	I	MR	S
Linott	(Ottawa 77BlxArgentine SL) (Arrow x CII975)	Can. '67	High	Medium	Early	Good	Med.	Blue	High	Good	I	R	MR
Nored	B-5128 x Redson	Minn. '68	High	M-Tall	Late	Good	Med.	Blue	High	Good	I	R	MR
Norstar	Redwood + Crystal	Minn. '64	Medium	Medium	M-Late	Good	Med.	Blue	Good	Fair	I	MR	MS
Summit	C.I. 980 x Zenith	S.D. '64	High	Medium	Early	Good	Med.	Blue	Med.	Med.	I	R	MS
Windom	Renew x Bison 2x Koto x Redwing 3x Redwood	Minn. '63	High	Medium	Early	Good	M-S	Blue	Med.	High	I	R	S

* R-resistant, MR-moderately resistant, MS-moderately susceptible, S-susceptible
Data furnished by R. S. Albrechtsen

TABLE 36. CHARACTERISTICS OF BARLEY VARIETIES GROWN IN THE 1969 TRIALS

Variety	Parentage	Released	Agronomic Characteristics										Disease Reaction		
			Yielding Ability	Plant Height	Maturity	Lodging Resistance	Bushel Weight	Seed Size	Malting Quality	Aluerone Color	SR	SB	S		
Conquest*	Vantage x Jet 2x Vantmore 3x Br. 4635 4x Swan 5x Parkland	Man. '65	Medium	Tall	Medium	Good	Medium Med.	†	Blue	R	SR	R			
Dickson*	Traill ² x Kindred x C.I. 7117-77	N.D. '65	High	Medium	Medium	Good	Medium Med.	Good	White	R	SR	R			
Larker*	Traill x Swan	N.D. '61	High	Medium	Medium	Good	Medium M-L	Good	White	R	MS	S			
Liberty*	LMC-A x Titan	S.D. '57	High	Medium	Medium	Good	Medium Med.	Poor	White	R	S	S			
Primus*	Brandon 3902 x Liberty x Swan	S.D. '66	High	Medium	Early	Good	High Med.	†	White	R	S	S			
Paragon	Brandon 7212 x Parkland ²	Man. '68	High	Tall	Late	Good	Medium Med.	†	Blue	R	SR	R			
Primus II	Reselected from Primus	S.D. '68	High	Medium	Early	Good	High Med.	†	White	R	S	S			

* Recommended for 1970

+ Two-row variety

† Malting quality reports to date are favorable but final acceptance is being delayed until further testing is completed.

I High yielding under irrigation, not recommended for dryland production.

Data furnished by P. B. Price.

SR - Stem Rust

SB - Spot Blotch

TABLE 37. CHARACTERISTICS OF RYE VARIETIES FOR SOUTH DAKOTA

Variety	Released by	Year	yielding Ability	Plant Height	Seed Color	Maturity	Lodging Resistance	Bushel Weight	Winter Hardiness
Antelope	Canada	1942	High	Tall	Mixed	Medium	Medium	High	Excellent
Caribou	Canada	1953	High	Tall	Mixed	Medium	Medium	High	Excellent
Cougar	Canada	--	High	Medium	Mixed	Medium	Good	High	Excellent
Elk	Minnesota	1959	High*	Medium	Green	Late	Medium	Medium	Fair-good
Frontier	Canada	1965	High	Tall	Blue-grey	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 R. S. Albrechtsen.

Field Crop Varieties Recommended in South Dakota for 1970

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

Gage.....	A, B4, C2, C3
Guide.....	A, B4, C2, C3
Hume.....	All winter wheat areas
Lancer.....	A, B2°, B3, B4, C2, C3, D4, E
Scout 66	B3, B4, C2, C3
Trader.....	A, B2°, B3, B4, C2, C3, D4, E
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

Christ†	Statewide
Fortuna.....	B1, B2, C1
Manitou	Statewide
Neepawa	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

Brave	Statewide
Burnett†	Statewide
Clintland 64	C2, C3, D2, D3, D4, E
Dupree.....	B1, B2, B3, B4, C2, C3
Garland	B2, C1, D1, D2, D3, D4, E
Holden	B2, C1, D1, D2, D3, D4, E
Jaycee.....	C1°, C2, C3, D3, D4, E
Kelsey.....	B2†, C1†, D1, D2, D3
Kota	Statewide
Lodi.....	C1†, D1, D2, D3
Portal.....	B2, C1, D1, D2, D3, D4, E
Sioux.....	B2†, C1†, D1, D2, D3

Barley

Conquest	Statewide
Dickson.....	A, B2, C1, D1, D2, D3
Larker.....	A, B2, C1, D1, D2, D3
Liberty†	Statewide
Primus†	Statewide
Primus II†	Statewide
Spartan.....	B2°, B3, B4, C2, C3

Conquest, Larker, and Dickson approved for malting; Primus and Primus II not yet approved.

Flax

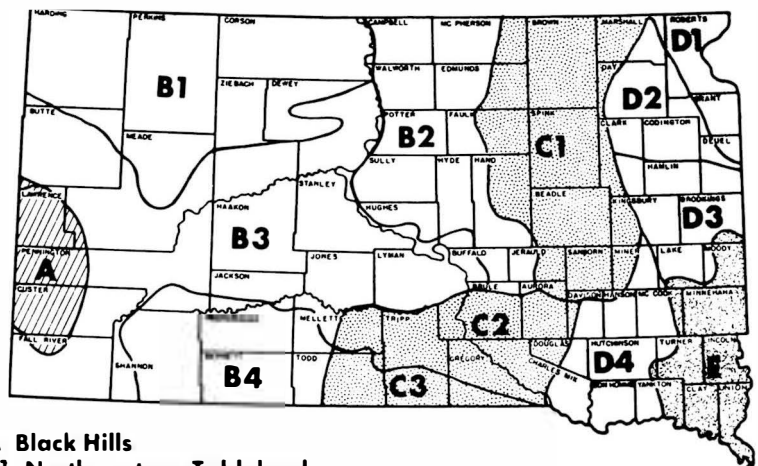
B-5128.....	C1†, D1, D2, D3
Bolley.....	All flax areas
Linott	All flax areas
Nored.....	All flax areas
Norstar.....	C1†, D1, D2, D3
Summit.....	All flax areas
Windom.....	All flax areas

Rye

Antelope	Statewide
Caribou	Statewide
Frontier	Statewide

° Southern counties of this area
 °° Where straw strength is needed
 † Northern counties of this area
 †† For both irrigation and dryland

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