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J. J. Bonnemann
South Dakota State University

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1967 SMALL GRAIN VARIETY TRIALS



AGRONOMY DEPARTMENT
AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE UNIVERSITY, BROOKINGS

Standard Variety Small Grain Trials In South Dakota
1963-1967

J. J. Bonnemann, Assistant Agronomist

Agronomy Department
Agricultural Experiment Station
South Dakota State University
Brookings, South Dakota 57006

Varieties of small grains currently grown by farmers, newer releases not widely in use, and experimental strains being evaluated for possible release were in the performance trials in 1967. The trials were conducted at seven locations in South Dakota, under the supervision of the Crop Performance Testing Activity, Agricultural Experiment Station. Grain yields, test weights, available five-year averages and agronomic and pathologic data are reported in this circular.

Location of Trials

Testing is conducted at substations and with farmer-cooperators around the state as testing only at Brookings would be an insufficient guide to varietal performance. The locations and dates of seeding and harvesting are presented in Table 1. Results of tests of soil samples taken at seeding time and fertilizer applied are listed in Table 2.

Weather and Climatic Conditions

Seeding at most of the trial sites was accomplished by mid-September in the fall and by mid-April in the spring. Equipment problems delayed seeding of the Bison and Eureka trials until early in May. Most of the trials in the northeastern quarter of the state had slow germination and early growth. Some varieties suffered varying losses in stand when temperatures dropped to around 20° F. on three consecutive mornings, April 22 through 24. It was apparent that some varieties suffered greater losses than others, especially oats. Recovery was slow, as temperatures were below average in May and precipitation was very limited. June was also below average for temperature but precipitation was often excessive. The cool, wet June coupled with below normal temperatures and slightly below average precipitation in July provided for excellent growth conditions in many areas of the state. Winter wheat yields were very good, yields up to 60 bushels per acre being quite common in many areas.

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

TABLE 1. LOCATION OF TRIALS AND DATES OF SEEDING AND HARVESTING, 1967

County	Location and Post Office	Date Seeded	Date Harvested
<u>Barley</u>			
Brookings	Agronomy Farm, Brookings	April 4	July 31
Clay	Southeast Research Farm, Beresford	April 6	July 21
Codington	Northeast Research Farm, Watertown	April 5	July 28
Hyde	Central Substation, Highmore	April 7	July 26
McPherson	Northcentral Substation, Eureka	May 9	August 3
Pennington	Lavon Schearer Farm, Wall	April 12	August 8
Perkins	Joe Wunder Farm, Bison	May 8	August 9
<u>Flax</u>			
Brookings	Agronomy Farm, Brookings	April 25	as ready
Codington	Northeast Research Farm, Watertown	April 27	August 10
Hyde	Central Substation, Highmore	May 8	August 15
<u>Oats</u>			
Brookings	Agronomy Farm, Brookings	April 4	as ready
Clay	Southeast Research Farm, Beresford	April 6	July 27
Codington	Northeast Research Farm, Watertown	April 5	August 1 & 4
Hyde	Central Substation, Highmore	April 7	August 2
McPherson	Northcentral Substation, Eureka	May 9	August 3 & 14
Pennington	Lavon Schearer Farm, Wall	April 12	August 8
Perkins	Joe Wunder Farm, Bison	May 8	August 9
<u>Spring Wheat and Durum</u>			
Brookings	Agronomy Farm, Brookings	April 4	as ready
Clay	Southeast Research Farm, Beresford	April 6	July 28
Codington	Northeast Research Farm, Watertown	April 5	August 4
Hyde	Central Substation, Highmore	April 7	August 2
McPherson	Northcentral Substation, Eureka	May 9	August 14
Pennington	Lavon Schearer Farm, Wall	April 12	August 7
Perkins	Joe Wunder Farm, Bison	May 8	August 9
<u>Winter Wheat</u>			
Clay	Southeast Research Farm, Beresford	Sept. 16	July 20
Hyde	Central Substation, Highmore	Sept. 12	July 24
Lyman	Southcentral Research Farm, Presho	Sept. 13	July 21
Pennington	Lavon Schearer Farm, Wall	Sept. 8	July 25
<u>Rye</u>			
Brookings	Agronomy Farm, Brookings	Sept. 14	August 1
Clay	Southeast Research Farm, Beresford	Sept. 16	July 20
Codington	Northeast Research Farm, Watertown	Sept. 7	destroyed
Hyde	Central Substation, Highmore	Sept. 12	July 24
Lyman	Southcentral Research Farm, Presho	Sept. 13	July 21

TABLE 2. RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES TAKEN PRIOR TO SEEDING SMALL GRAIN TRIALS AND FERTILIZER APPLIED FOR THE 1967 CROP YEAR.

Location	Soil Classification	Percent Organic Matter				Fertilizer Applied	Lbs/A	
			P	K	pH		N	P ₂ O ₅
Beresford	Kranzburg silty clay loam	3.5	38	553	6.5	plowed down in fall	60	40
Bison	Morton silt loam	2.1	43	499	6.9	discd under	10	25
Brookings	Vienna silt loam	3.1	72	164	6.7	plowed down	32	40
Eureka	Williams loam	3.5	59	533	7.1	discd under	25	25
Highmore	Williams loam	3.4	140	533	6.3	discd under	33.5	0
Wall	Morton silt loam	2.0	43	533	6.5	discd under	10	25
Watertown	Kranzburg silt loam	3.7	47	197	6.5	plowed down in fall	60	40

Precipitation was slightly below the average in both July and August and temperatures stayed below normal also. The small grain benefited in most areas and many record yields of spring grain were harvested. Growth was quite rank at some locations and lodging was spotted throughout the plot sites. The trials at Beresford were badly lodged at harvest time because of heavy rain accompanied by high winds in early July.

Yields in the Wall trial were excellent and not what might be expected in that area in most years. Cool temperatures were the rule and small amounts of precipitation fell almost daily until after mid-July, permitting varieties of later maturity to achieve excellent yields.

The last freezing temperatures caused little damage at any location. Some varieties were just recovering from the hard freeze of late April.

Temperatures reached 100° F. at several locations but not for extended periods of time. High temperatures did not cause yield losses to the degree they have in previous years.

Weather data are presented for six locations in Table 3. No reporting stations are located near the Wall plot site.

Planting and Harvesting Procedures

Field preparation, fertility level and rotation sequence are generally the same each year at the substations in accordance with recommended practices. The trials at Bison and Wall were on fallowed land. The fertilizer at these two locations was broadcast in the fall at the time the site was selected for the coming year.

TABLE 3. TEMPERATURE AND PRECIPITATION DATA FOR THE SMALL GRAIN GROWING SEASON OF SOUTH DAKOTA FOR 1967.

Location	Month	Temperature			Precipitation		
		Mean Average	Departure from Normal	Ave. Departure	Monthly Total	Departure from Normal	Total Departure
		Degree F.			Inches		
Eureka*	April	41.1	-2.5		3.93	2.58	
	May	51.8	-4.3		0.91	-1.68	
	June	63.0	-2.0		4.67	0.84	
	July	68.0	-4.4		1.82	-0.63	
	August	68.7	-2.0	-3.0	0.86	-1.55	-0.44
	Last freeze	May 13 - 32°				12.19	
Highmore* 1 W	April	46.3	0.9		1.28	-0.46	
	May	51.8	-5.4		0.68	-1.65	
	June	64.1	-2.7		7.80	4.26	
	July	71.5	-3.0		1.43	-0.55	
	August	70.8	-2.0	-2.4	1.95	-0.09	1.51
	Last freeze	May 20 - 28°				13.14	
Brookings* 2 NE	April	43.1	-2.1		2.02	0.25	
	May	50.5	-7.1		0.82	-1.97	
	June	64.0	-3.1		8.90	4.95	
	July	67.5	-5.7		2.06	-0.09	
	August	65.9	-5.3	-4.7	2.36	-0.61	2.35
	Last freeze	May 20 - 23°				16.16	
Centerville 6 SE	April	50.2			2.10		
	May	56.1			1.68		
	June	67.8			7.56		
	July	72.1			2.47		
	August	69.4			3.37		
	Last freeze	May 9 - 29°				17.18	
Bison*	April	42.1			5.17		
	May	48.4			2.11		
	June	60.1			4.26		
	July	69.6			0.32		
	August	70.3			0.20		
	Last freeze	May 14 - 31°				12.06	
NE Farm 15 N Watertown	April	42.6			0.92		
	May	49.8			0.69		
	June	62.8			4.58		
	July	66.2			1.05		
	August	66.4			1.13		
	Last freeze	May 20 - 26°				8.37	

*Based upon reports of Monthly Climatological Data, U. S. Dept. of Commerce, Environmental Science Services Administration, Office of the State Climatologist, State University, Brookings, South Dakota, 57006

The trials at each site were seeded in a randomized-block design with four replications. Plots were 14 feet long and of four rows one foot apart. The two center rows were trimmed of border effect to 12 feet in length before harvest for yield determinations. A small National 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.

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.

If the trial means were found not to be statistically different, a notation, N.S., is shown under the table. When the trial was found to have statistically significant differences between mean yields, an additional test, Duncan's Multiple Range Test, was run to show individual comparisons between means at the 5% probability level.

As an example of Duncan's Test, observe in Table 4 that varieties accompanied by the same lower case letter under the column headed Statistical Significance are not statistically different in 1967 yields. In the case of this table, under prevailing environmental conditions of 1967, Leeds, CI 13937, and all entries in descending order through Lakota were not statistically different from each other in yield. This above example holds true for all the tables having significant differences in 1967 yields.

Discussion of Results

The 1967 and available five-year averages are presented in tables following the text. A more accurate estimation of a variety's capabilities under seasonal variation is obtained from 1963-67 averages rather than from results of a single year.

Oats: Several newly released varieties were included in the 1967 trials. Normally, early to mid-season oats perform most satisfactorily in the warmer and drier areas of the state. The performance of these varieties was satisfactory but the cool and wet conditions of June, followed by cool weather in July permitted the later maturing varieties to mature under quite favorable conditions and produce excellent yields, whereas, these same entries would generally suffer from the heat and drier conditions. Some of these newer releases have been included more than a year but recommendations based upon results from a single year such as 1967 would be unreliable.

Many of the newer varieties require adequate fertility in order to express their full potential. Specific varieties may react differently when fertility levels

are low. Some varieties have produced high yields but low test weight. Time of maturity, heat tolerance, disease reaction and kernel type also affect yield.

Barley: Barley yields were excellent at several locations. The adequate precipitation in June and cool temperatures in June and July were generally ideal for barley. The recently released South Dakota variety, Primus, yielded quite well at most locations and in the warmer, more arid areas will generally return superior yields. Larker and Dickson are good malting varieties.

Flax: Only those flax varieties resistant to all North American races of rust are currently recommended. 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: The rye trials were expanded in 1967 to include new strains introduced from other states and countries. Several entries appear to be promising while others winter-killed badly. Currently recommended winter-hardy varieties are Antelope, Caribou and Pierre.

Durum: Leeds gave the most satisfactory performance of the durum wheat varieties included in 1967. It has better rust resistance and produced a higher test weight than Wells, the other durum recommended for 1968.

Spring Wheat: The most recent releases performed most satisfactorily in 1967. Unusual climatic conditions during the year caused some unexpected results.

Winter Wheat: Lancer and Scout performed exceptionally well in much of the winter wheat area. Little damage was caused by winterkilling and these varieties performed very well over a wide area. Gage has done well in the south central area and in the lower areas around the Black Hills. The South Dakota release, Hume, is superior where winterkilling and rust are more limiting to other varieties.

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

TABLE 4. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, AGRONOMY FARM, BROOKINGS, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Leeds*				46.9	48.2		62.5	a
CI 13937					47.2		60.0	ab
Manitou			37.0	41.7	46.4		59.5	abc
Wellis*	20.9	27.0	45.7	47.0	45.9	37.3	59.0	abcd
DT 191*					45.7		60.0	abcd
Lakota	22.0	22.9	44.1	45.1	43.1	35.4	57.5	abcde
Sheridan	18.3	26.5	43.4	38.6	42.9	33.9	60.0	bcdef
Chris	23.4	32.7	46.7	36.8	41.3	36.1	61.0	cdefg
Stewart 63*			43.1	43.9	41.0		60.0	cdefg
Pembina	13.5	17.1	34.2	38.1	40.3	28.6	57.0	defgh
Fortuna				40.3	39.7		60.0	efgh
Selkirk	11.9	21.1	33.3	35.7	39.6	28.3	57.0	efgh
Justin	8.3	18.8	35.3	40.1	38.9	28.3	59.0	efgh
11-55-16					37.9		61.5	efgh
Crim	14.5	24.7	36.3	41.5	37.2	30.8	57.0	fgh
CI-13773			38.5	40.1	36.5		61.5	gh
Rushmore	12.7	21.6	32.0	34.7	35.8	27.4	60.0	gh
Thatcher	10.3	18.6	27.2	39.0	34.7	26.0	58.5	h
Mean yield 41.2								

*durums

TABLE 5. STANDARD VARIETY BARLEY TRIALS, AGRONOMY FARM, BROOKINGS, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Conquest				73.9	84.1		50.0	a
Galt				72.8	84.0		49.5	ab
Primus				74.5	83.3		52.0	abc
Larker	54.8	53.6	76.1	66.1	81.6	66.4	52.0	abc
Dickson			80.4	70.7	80.3		52.5	abc
CI 11863				64.0	79.4		53.0	abc
Traill	53.5	50.4	82.3	67.3	79.1	66.5	52.0	abc
Trophy	48.8	48.5	74.9	69.8	78.4	64.1	52.0	abc
CI 13110				62.9	77.5		50.0	abc
CI 11864				69.7	74.7		52.0	bcd
Firbecks III					74.1		53.0	cde
Liberty	63.4	55.7	76.1	71.4	73.7	68.1	50.0	cde
Spartan	47.8	41.0	56.7	49.1	66.4	52.2	52.0	de
Plains	46.0	48.3	63.6	68.1	63.7	57.9	51.0	e
Mean yield 60.0								

TABLE 6. STANDARD VARIETY OAT TRIALS, AGRONOMY FARM, BROOKINGS, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Orbit				112.8	127.4		33.5	a
Brave		72.1	126.7	105.3	123.1		35.0	ab
Portal				98.5	121.8		36.0	abc
Clintland 64		76.9	103.9	75.8	121.8		36.5	abc
Kelsey					115.5		34.0	abcd
Santee		67.0	66.5	75.8	114.9		35.0	abcd
Tyler		72.6	107.6	93.1	114.8		34.5	abcde
Multiline M68					112.4		37.0	bcde
Minhafer	55.9	65.5	100.3	84.3	112.2	83.6	35.5	bcde
Holden		76.3	134.2	104.1	112.0		32.0	bcde
Stormont				72.1	111.9		33.0	bcde
Dupree	42.6	79.2	111.1	96.7	111.8	88.3	34.5	bcde
Andrew	40.8	70.7	108.9	92.5	111.7	84.9	35.0	bcde
Ortley	29.6	83.1	93.4	107.4	111.5	85.0	36.5	bcde
Burnett	45.5	77.8	108.9	99.8	110.8	88.6	36.0	bcdef
Clintford		67.3	90.3	86.2	110.3		38.5	bcdef
Coachman	36.9	76.5	112.3	95.3	110.1	86.2	35.0	bcdef
Cl 8178			101.1	71.8	109.6		35.5	bcdef
Jaycee				94.7	109.4		35.0	cdef
Cl 8273				64.3	109.2		34.5	cdef
Sloux				118.0	109.0		33.5	cdef
Dawn				86.1	108.9		37.0	cdef
Lodi	43.4	78.8	90.3	113.4	105.5	86.3	35.0	def
Rodney	40.8	70.7	124.0	77.7	105.1	83.7	31.5	def
Garry	43.4	80.6	127.2	106.8	104.6	92.5	34.0	def
Multiline E68					103.8		37.0	def
Wyndmere				100.3	103.7		35.0	def
O'Brien				103.0	101.8		37.0	def
Garland	52.1	75.8	121.8	100.0	100.3	90.0	33.5	def
Dodge	56.8	66.5	109.9	66.3	100.3	80.0	37.5	def
Tippecanoe		68.7	81.7	73.1	99.4		36.5	ef
Portage	61.4	80.5	105.1	111.8	94.9	90.7	34.0	f
Mean yield					110.0			

TABLE 7. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, NORTHEAST RESEARCH FARM, WATERTOWN UNIT, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Leeds*				29.0	44.6		61.5	a
Lakota*	9.9	29.8	41.4	28.7	44.4	30.8	57.0	ab
Fortuna				19.7	44.1		60.0	ab
DT 191*					43.8		60.0	abc
CI 13937					43.7		59.5	abcd
Wells*	7.6	33.5	39.4	30.1	43.3	30.8	59.0	abcd
Crim	6.9	29.1	28.0	21.0	42.7	25.5	57.0	abcde
Manitou			38.0	23.4	41.3		59.0	abcdef
Selkirk	8.6	24.8	26.4	21.3	40.8	24.4	55.0	bcdef
Rushmore	9.5	27.6	24.1	22.8	40.7	24.9	59.0	bcdef
11-55-16					39.8		60.0	cdefg
Chris	17.0	32.3	44.5	23.3	39.7	31.4	57.0	defg
Justin	6.2	24.0	28.8	23.8	38.9	24.3	57.0	efgh
Pembina	13.7	23.2	29.1	20.2	38.4	24.9	57.0	fgh
CI 13773			42.9	29.4	38.1		60.0	fgh
Thatcher	7.0	23.8	18.0	25.1	37.6	22.3	57.0	fgh
Sheridan	11.4	23.8	42.0	18.2	35.8	26.2	58.0	gh
Stewart 63*			35.0	29.7	35.1		60.0	h
Mean yield 40.7								

*durums

TABLE 8. STANDARD VARIETY BARLEY TRIALS, NORTHEAST RESEARCH FARM, WATERTOWN, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Liberty	37.9	54.9	70.1	31.4	70.8	53.0	47.5	a
CI 11864				18.7	68.5		47.0	ab
Primus				25.4	67.3		48.0	ab
Trail	25.6	47.8	65.5	16.4	67.0	44.5	47.0	ab
Conquest				25.8	66.7		46.0	ab
CI 11863				20.9	64.8		47.0	ab
Larker	31.6	50.3	67.8	24.2	61.2	47.0	47.5	abc
Trophy	26.8	48.8	74.3	20.1	60.7	46.1	46.5	abc
CI 13110				21.0	60.5		45.0	abc
Firlbecks III					59.5		50.0	abc
Spartan	30.3	40.3	59.3	37.3	56.0	44.6	50.5	bc
Galt				23.1	55.7		45.0	bc
Dickson			73.7	14.7	48.5		47.0	c
Plains	34.0	43.5	62.7	37.1	48.3	45.1	48.0	c
Mean yield 61.1								

TABLE 9. STANDARD VARIETY OAT TRIALS, NORTHEAST RESEARCH FARM, WATERTOWN UNIT, 1963-1967

Variety	Average Yields, bushels per acre					1967 Test Wt. lb/bu	Statistical Significance	
	1963	1964	1965	1966	1967			1963-67
Clintland		80.1	121.9	49.4	108.5	37.5	a	
O'Brien				48.6	104.9	40.0	ab	
Orbit				51.4	104.7	34.5	abc	
Clintford		74.7	100.9	58.8	104.1	41.0	abc	
Dodge	52.3	71.0	111.9	47.9	103.5	77.3	38.5	abc
Stormont				44.1	103.3		34.5	abc
Tippecanoe		67.6	106.3	48.2	102.5		38.5	abc
Kelsey					101.9		34.0	abcd
Portal				54.2	101.9		35.5	abcd
Portage	54.2	71.0	109.3	53.1	101.8	77.9	35.5	abcd
Burnett	56.9	73.5	104.9	60.3	101.7	79.5	39.0	abcd
Multiline E68					101.1		41.0	abcd
Santee		68.9	122.8	53.0	101.0		38.0	abcd
Jaycee				47.1	100.1		37.0	abcd
Minhafer	61.9	72.3	109.8	50.0	99.7	78.7	38.5	abcd
Brave		75.5	118.5	47.1	99.6		38.0	abcd
Sioux				51.4	99.4		36.0	abcde
Cl 8178			121.4	48.5	99.0		36.5	abcdef
Andrew	52.2	78.2	90.2	50.4	98.7	73.9	37.5	abcdef
Ortley	46.2	78.5	102.1	53.3	96.4	75.3	39.5	abcdefg
Multiline M68					93.8		38.5	bcdefg
Coachman	55.5	69.7	110.4	40.9	93.4	74.0	37.5	bcdefg
Tyler		68.6	119.9	43.5	91.8		36.5	bcdefgh
Cl 8273				52.1	91.3		38.5	bcdefgh
Dupree	55.4	74.7	115.0	48.1	91.0	76.8	35.5	cdefgh
Garry	44.2	67.0	102.8	46.6	90.8	70.3	35.5	cdefgh
Dawn				41.9	86.8		38.0	defgh
Rodney	40.6	58.3	98.5	47.3	86.7	66.3	34.5	defgh
Lodi	59.2	69.0	96.0	52.0	83.5	71.9	34.0	efgh
Holden		79.8	124.6	54.5	83.3		34.5	fgh
Wyndmere				48.7	80.7		35.5	gh
Garland	61.3	71.9	120.4	52.5	76.4	76.5	37.5	h

Mean yield 96.3

TABLE 10. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, SOUTHEAST RESEARCH FARM, BERESFORD, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967+	1963-67		
DT 191*					43.5		58.0	a
Lakota*				33.9	42.4		56.5	a
Wells*				34.0	41.7		59.0	ab
Stewart 63*				33.8	39.9		60.0	abc
Manitou			36.9	31.9	37.1		58.0	abcd
CI 13937					33.7		56.5	bcde
Chris	16.8	27.1	34.7	32.8	33.6	29.0	59.5	bcde
CI 13773			38.2	35.1	33.0		60.5	cdef
Leeds*				31.8	29.1		61.0	defg
Justin	8.7	17.0	20.7	29.9	28.6	21.0	58.5	defg
Sheridan	16.8	24.4	34.3	30.1	28.2	26.8	60.0	efg
Rushmore	11.8	19.4	27.3	30.5	27.7	23.3	55.5	efg
11-55-16					26.8		59.5	efg
Pembina	11.4	17.5	33.8	30.2	26.6	23.9	53.5	efg
Crim	12.0	21.4	30.9	32.6	24.5	24.3	57.5	fg
Selkirk	10.5	18.2	23.7	28.6	24.5	21.1	53.5	fg
Thatcher	10.3	19.0	21.8	26.4	24.3	20.4	55.0	fg
Fortuna				32.6	22.8		54.5	g
Mean yield					31.6			

* durums

+ Plots badly lodged by heavy rain and high wind on July 9, 1967

TABLE 11. STANDARD VARIETY BARLEY TRIALS, SOUTHEAST RESEARCH FARM, BERESFORD, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967*	1963-67		
CI 11863				48.9	61.1		43.5	a
Trophy	20.5	37.9	63.0	46.3	58.7	45.3	43.5	ab
CI 13110				45.0	58.2		45.0	abc
CI 11864				45.4	56.5		44.5	abc
Galt				46.8	53.8		42.5	bc
Liberty	34.8	41.5	61.9	53.4	52.9	48.9	43.5	bc
Primus				47.2	52.7		43.0	bc
Conquest				46.6	51.3		43.5	bcd
Dickson			70.8	50.3	50.8		43.5	cd
Firbecks III					44.3		47.0	de
Trail	32.3	41.5	67.1	49.7	43.3	46.8	44.5	de
Larker	23.9	42.1	68.5	46.3	41.8	44.5	45.5	e
Plains	21.3	34.8	64.6	51.3	38.9	42.2	42.5	e
Spartan	18.0	31.2	52.8	43.3	38.3	36.7	45.5	e
Mean yield					50.2			

* Plots badly lodged by heavy rain and high wind on July 9, 1967

TABLE 12. STANDARD VARIETY OAT TRIALS, SOUTHEAST RESEARCH FARM, BERESFORD, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967*	1963-67		
Clinton 64		46.4	90.8	62.7	44.1		37.0	a
Portage	53.1	52.5	74.4	62.4	40.7	56.6	34.0	ab
Holden		56.7	92.0	68.7	39.7		34.0	abc
Multiline E68					39.5		37.0	abcd
Minhafer	50.2	47.0	90.0	59.9	37.1	56.8	36.0	abcde
Clintonford		42.3	92.8	61.8	36.7		36.0	abcdef
Multiline M68					36.6		36.0	abcdef
Tippecanoe		49.6	80.2	67.0	34.2		35.0	abcdefg
Kelsey					33.9		31.0	abcdefg
Jaycee				71.4	32.7		35.0	bcdefg
Orbit				75.9	32.3		32.0	bcdefg
Lodi	38.3	56.7	81.9	67.0	32.2	55.2	30.0	bcdefg
Wyndmere				77.1	31.8		34.0	bcdefg
Dupree	56.7	58.3	82.6	77.9	31.4	61.4	34.0	bcdefg
Ortley	51.2	61.1	73.3	56.2	31.3	54.6	35.0	bcdefg
Rodney	44.7	55.0	71.2	51.8	31.3	50.8	27.0	bcdefg
Garland	45.1	47.8	101.3	60.1	31.2	57.1	34.0	bcdefg
Sioux				68.3	30.1		34.0	bcdefg
Dodge	53.4	48.6	95.5	62.5	29.8	58.0	36.0	bcdefg
CI 8273				63.6	29.7		34.0	bcdefg
CI 8178			83.6	72.7	29.7		37.0	bcdefg
Portal				66.2	29.6		36.0	bcdefg
Andrew	56.8	44.0	82.7	78.0	28.9	58.1	33.0	cdefg
Dawn				72.0	28.1		33.0	defg
Stormont				67.1	27.9		32.0	defg
Brave		45.6	85.6	74.1	27.5		33.0	efg
O'Brien				68.7	26.1		37.0	efg
Santee		45.3	85.7	66.4	26.0		32.0	efg
Garry	38.0	58.8	87.0	58.7	24.9	53.5	30.0	fg
Tyler		46.1	87.2	67.5	24.6		32.0	fg
Coachman	50.0	46.1	85.4	70.8	23.9	55.2	32.0	g
Burnett	50.2	54.4	87.8	69.1	22.8	56.9	33.0	g

Mean yield 31.4

* Plots badly lodged by heavy rain and high wind on July 9, 1967

TABLE 13. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, CENTRAL SUBSTATION, HIGHMORE, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Leeds*				15.8	54.1		62.0	a
Fortuna				17.6	53.3		62.0	a
DT 191*					50.7		60.0	ab
Chris	19.2	28.1	35.1	16.2	48.9	29.5	61.0	abc
CI 13937					48.7		60.5	abcd
Manitou			40.1	16.9	48.4		60.5	abcd
Wells*	22.8	27.5	38.4	15.3	46.0	30.0	59.0	bcde
Pembina	15.0	23.4	35.1	16.9	45.3	27.1	58.5	bcde
Lakota*	21.3	29.6	46.1	15.9	44.9	31.6	56.0	bcdef
CI 13773			41.4	16.0	43.3		61.0	bcdef
Stewart 63*			35.3	13.8	43.1		60.0	cdefg
Sheridan	16.7	26.3	44.3	13.9	41.6	28.6	59.5	cdefg
11-55-16					41.1		61.0	defg
Justin	13.4	23.8	37.1	15.0	40.2	25.9	59.5	efg
Rushmore	14.7	25.3	33.2	16.9	38.4	25.7	60.0	efg
Crim	14.2	24.0	33.7	15.9	38.4	25.2	59.0	efg
Selkirk	11.5	26.4	34.0	14.8	36.8	24.7	55.5	fg
Thatcher	12.6	22.9	26.0	17.3	35.0	22.8	59.0	g
Mean yield 44.3								

* durums

TABLE 14. STANDARD VARIETY BARLEY TRIALS, CENTRAL SUBSTATION, HIGHMORE, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Conquest				29.9	86.6		48.5	a
Primus				36.2	85.9		50.5	ab
Firlbecks III					80.9		51.0	abc
CI 11863				18.1	77.6		50.0	abcd
CI 13110				24.3	76.3		49.0	abcd
Galt				28.1	74.9		48.0	bcde
Plains	32.4	29.3	65.7	31.1	73.4	46.4	49.0	cdef
CI 11864				22.8	71.8		49.0	cdef
Liberty	37.5	32.9	81.9	35.5	71.8	51.9	48.0	cdef
Tra III	41.3	41.5	87.7	21.4	70.5	52.5	49.0	cdef
Larker	43.1	39.1	84.4	26.8	69.5	52.6	50.5	cdef
Trophy	45.1	38.6	76.6	21.8	67.8	50.0	49.5	def
Spartan	33.9	30.5	59.7	31.7	62.9	43.7	48.5	ef
Dickson			90.4	21.7	61.8		48.0	f
Mean yield 73.7								

TABLE 15. STANDARD VARIETY OAT TRIALS, CENTRAL SUBSTATION, HIGHMORE, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Andrew	48.9	51.8	89.0	51.0	99.2	68.0	38.5	a
Orbit				45.8	92.7		35.0	ab
Clintford		40.8	70.4	47.0	92.3		42.0	ab
Brave		60.8	98.7	46.4	92.2		38.0	abc
Tyler		49.0	83.1	42.2	90.8		36.0	abcd
Dupree	49.5	58.8	87.2	44.2	89.5	65.8	37.5	abcde
Burnett	50.4	52.6	85.6	48.8	85.3	64.5	39.0	abcdef
Minhafer	39.2	47.4	75.5	44.3	85.0	58.3	38.5	abcdef
Santee		51.0	66.3	51.9	81.2		37.0	abcdefg
Tippecanoe		44.7	68.0	40.2	81.0		39.0	abcdefg
Dawn				37.1	80.3		37.0	bcdefg
Ortley	38.5	50.4	76.6	30.7	79.7	55.2	39.0	bcdefg
Garry	35.6	61.4	103.3	26.7	79.5	61.3	35.0	bcdefg
Kelsey					79.3		31.0	bcdefg
Sioux				33.1	76.9		33.5	bcdefg
O'Brien				49.8	76.5		37.0	bcdefg
Clintland 64		45.1	74.0	43.7	75.8		39.0	bcdefg
Rodney	36.2	59.5	75.8	22.0	71.9	53.1	33.0	cdefg
Portal				44.1	71.7		36.0	defg
Jaycee				52.7	70.0		36.0	defg
Coachman	41.4	50.3	80.1	36.9	69.5	55.6	35.5	efg
CI 8178			85.8	37.2	69.4		36.5	efg
Dodge	41.9	41.0	93.5	35.5	68.5	56.1	39.5	efg
Multiline M 68					68.3		37.5	fg
Multiline E 68					68.0		39.5	fg
Wyndmere				44.4	65.2		35.0	fg
Holden		47.7	106.1	45.9	62.6		33.0	gh
Lodi	39.2	59.5	92.2	30.8	61.8	56.7	31.5	gh
Stormont				32.2	61.7		33.0	gh
CI 8273				38.1	61.3		37.0	gh
Portage	41.9	53.9	90.7	34.1	61.1	56.3	33.0	gh
Garland	38.4	45.4	108.6	43.0	42.0	55.5	35.0	h

Mean yield 75.3

TABLE 16. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, NORTHCENTRAL SUBSTATION, EUREKA, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Fortuna				17.3	40.8		60.5	a
Manitou			32.7	17.0	33.5		57.0	b
CI 13937					32.4		58.0	bc
Leeds*				16.1	32.3		61.0	bc
DT 191*					32.1		59.0	bc
Crim	12.3	39.7	30.4	16.7	30.4	25.9	57.0	bcd
Rushmore	16.4	32.4	27.6	18.0	30.2	24.9	58.0	bcde
Pembina	16.6	33.6	31.2	16.2	29.7	25.5	57.0	bcde
Wells*	17.4	48.6	35.8	14.3	29.0	29.0	56.5	bcdef
Thatcher	15.7	32.5	21.7	17.1	28.1	23.0	56.5	bcdef
CI 13773			37.0	18.2	28.0		58.5	bcdef
Chris	17.8	42.6	31.6	14.1	27.2	26.7	57.0	bcdefg
Lakota*	15.6	50.1	37.0	14.0	25.8	28.5	56.0	defg
Justin	14.7	35.8	24.3	14.6	24.0	22.7	57.0	defg
11-55-16					23.1		59.0	efg
Stewart 63*			34.1	15.5	22.4		58.5	fg
Selkirk	13.8	31.0	27.9	12.4	20.6	21.1	54.0	g
Sheridan	17.9	45.4	31.6	15.4	20.0	26.1	56.0	g
Mean yield					28.3			

* durums

TABLE 17. STANDARD VARIETY BARLEY TRIALS, NORTHCENTRAL SUBSTATION, EUREKA, 1963-1967

Variety	Average Yield, bushels per acre						1967 Test Wt. lb/bu
	1963	1964	1965	1966	1967	1963-67	
Primus				27.0	48.9		48.0
CI 11863				18.0	46.1		46.5
Larkey	51.6	71.5	78.0	27.8	45.7	54.9	47.0
Galt				22.2	43.4		44.0
CI 13110				19.5	42.8		45.3
CI 11864				17.3	41.5		45.0
Plains	40.4	56.5	71.9	24.8	41.1	46.9	49.0
Trall	43.8	65.6	73.3	18.1	39.9	48.1	44.0
Dickson			72.1	14.0	38.6		48.0
Spartan	43.7	52.3	58.7	29.0	38.4	44.4	50.0
Liberty	52.1	57.7	83.6	24.1	38.1	51.1	47.0
Firibecks III					37.5		47.0
Trophy	40.9	55.5	76.5	15.2	36.3	44.9	44.5
Conquest				24.0	34.7		45.0
Mean yield					40.9		
					N.S.		

TABLE 18. STANDARD VARIETY OAT TRIALS, NORTHCENTRAL SUBSTATION, EUREKA, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu
	1963	1964	1965	1966	1967	1963-67	
Lodi	29.7	114.4	102.7	12.1	92.1	70.2	40.5
Santee		79.6	98.2	25.4	91.2		38.5
Tyler		90.7	99.8	22.4	91.0		39.0
Clintford		85.9	102.1	24.5	89.1		43.0
Orbit				12.5	88.3		38.0
Multiline M68					86.5		40.0
Dupree	35.4	92.7	112.8	19.5	84.3	68.9	39.0
Wyndmere				25.1	81.2		39.5
Tippecanoe		97.9	98.8	19.2	80.9		40.0
Sioux				17.5	79.2		41.0
Jaycee				15.7	78.2		40.0
Holden		91.7	108.0	18.4	77.6		40.5
Minhafer	46.5	98.1	101.3	24.2	77.3	69.5	39.5
Clintland 64		91.9	103.3	17.4	76.1		38.5
Stormont				12.1	76.1		40.5
Garry	25.7	102.3	105.7	15.9	75.7	65.0	38.5
Burnett	53.6	109.2	112.1	21.2	74.9	74.2	39.5
Portage	44.9	102.4	100.7	15.4	74.7	67.6	38.5
Kelsey					73.9		38.5
Garland	51.6	82.5	116.4	18.1	73.8	68.5	40.0
O'Brien				20.2	69.3		41.0
Cl 8178			111.9	13.1	67.7		41.0
Brave		99.9	108.1	25.2	67.6		41.0
Ortley	42.7	120.8	97.5	9.2	66.8	67.4	42.0
Cl 8273				22.3	64.7		39.0
Dodge	47.7	84.4	99.5	16.1	64.9	62.5	41.0
Rodney	34.1	112.9	96.3	15.5	64.0	64.6	38.0
Andrew	47.8	89.8	106.8	18.0	62.3	64.9	37.5
Portal				15.1	59.3		39.5
Coachman	53.0	95.9	102.7	17.0	58.8	65.5	41.0
Dawn				10.5	56.5		40.0
Multiline E68					46.9		40.5

Mean yield 74.2

1967 data were not analyzed statistically as data presented are from unequal numbers of replications. Part of trial destroyed prior to harvest.

TABLE 19. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, WALL, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
11-55-16					46.7		59.0	a
DT 191*					46.0		60.0	a
Fortuna				22.9	44.3		61.0	ab
CI 13773			21.0	21.0	43.1		61.0	ab
Leeds*				21.3	42.9		61.5	abc
Wells*				24.1	42.5		60.0	abc
Stewart 63*				22.1	41.6		60.0	abcd
CI 13937					41.4		60.0	abcde
Lakota*				22.7	40.7		57.0	abcde
Chris	17.2	27.3	25.1	24.7	37.9	26.4	58.5	bcdef
Sheridan	13.5	25.9	28.9	22.6	35.4	25.3	60.0	cdefg
Justin	14.8	28.1	13.2	21.5	34.0	22.3	57.0	defg
Crim	13.6	23.1	17.1	22.2	33.5	21.9	58.0	efg
Manitou			23.1	23.8	31.2		58.0	fg
Selkirk	15.4	24.0	15.6	20.8	30.8	21.3	54.0	fg
Rushmore	18.6	27.9	15.7	21.6	29.8	22.7	58.0	fg
Pembina	14.8	22.4	20.0	21.6	28.9	21.5	56.0	g
Thatcher	15.5	23.0	7.1	21.7	19.9	17.4	56.0	h
Mean yield 37.2								

*durums

TABLE 20. STANDARD VARIETY BARLEY TRIALS, WALL, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67*		
Dickson			56.5		75.7		50.0	a
Trophy	21.0	19.5	50.6		69.8	40.2	49.0	ab
FirlbecksIII					65.9		52.0	abc
Primus					65.9		49.0	abc
Traill	25.8	22.4	51.6		64.2	41.1	49.0	bc
Galt					63.4		49.0	bcd
Liberty	20.9	13.5	53.4		63.3	37.8	48.0	bcd
Larker	22.1	33.4	53.9		63.1	43.1	51.0	bcd
CI 11864					59.9		50.0	bcde
Conquest					59.2		49.0	cde
CI 11863					57.3		50.0	cde
Plains	11.6	31.0	38.2		52.7	33.4	50.0	de
Spartan	24.0	22.9	35.0		51.4	33.3	50.5	e
CI 13110					50.6		50.0	e
Mean yield 61.6								

* 1966 trial not included

TABLE 21. STANDARD VARIETY OAT TRIALS, WALL, 1963-1967

Variety	Average Yields, bushels per acre					1967 Test Wt. lb/bu	Statistical Significance
	1963*	1964*	1965	1966	1967		
Orbit				31.2	126.0	36.5	a
Brave		43.0	70.8	44.0	110.0	38.0	ab
Kelsey					109.5	33.0	bc
Dupree	37.6	38.5	72.4	33.5	102.7	56.9	36.0
Sioux				31.5	101.7	37.0	bcde
Wyndmere				40.6	101.2	38.0	bcdef
Lodi			80.7	35.1	100.1	32.0	bcdef
Holden		36.4	77.7	37.8	100.0	37.0	bcdef
Dodge	29.0	36.1	69.6	29.6	98.2	52.5	39.0
Burnett	33.3	38.4	67.1	44.0	97.8	56.1	36.0
Andrew	29.2	41.0	57.2	30.3	95.9	50.7	37.0
Portal				33.2	95.5	37.0	bcdefgh
Minhafer	28.5	34.5	54.4	33.6	94.9	49.2	38.0
Portage	32.0	33.6	77.7	43.1	93.7	56.0	36.0
Coachman	32.5	34.2	59.5	33.0	93.2	50.5	39.0
CI 8178			63.8	38.0	91.7		37.0
Stormont				43.0	90.6		37.0
Rodney			48.4	41.1	89.9		33.0
Tyler		46.9	76.6	42.8	89.4		36.0
Garland	31.8	42.0	75.6	37.3	89.3	55.2	37.5
Ortley	30.4	32.1	64.4	43.4	85.7	51.2	38.0
Garry			67.2	28.2	85.2		34.0
O'Brien				40.5	81.8		39.0
Jaycee				44.1	80.3		36.0
Multiline M68					79.4		36.5
Santee		38.6	75.2	40.1	78.1		35.0
Dawn				40.9	74.0		37.0
Clintland 64		29.8	75.9	39.9	72.0		35.0
Tippecanoe		39.2	65.0	35.2	70.1		37.0
Multiline E68					62.0		39.0
Clintford		40.1	78.9	38.8	60.2		39.0
CI 8273				29.4	59.9		36.0

Mean yield 89.4

* 1963 and 1964 data from Cottonwood

TABLE 22. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, BISON, 1966-1967

Variety	Average Yields, bushels per acre			1967 Test Wt. lb/bu
	1966	1967+	1966-67	
Crim	13.8	31.2	22.5	58.0
DT 191 *		28.9		59.5
Wells*	19.2	28.7	23.9	60.0
Justin	12.8	28.7	20.7	56.0
Rushmore	11.7	28.3	20.0	59.0
Thatcher	14.2	26.9	20.5	57.0
Sheridan	12.1	26.8	19.4	58.0
CI 13937		26.3		58.0
Fortuna	16.7	25.8	21.3	59.0
Manitou	14.9	24.9	19.9	57.0
Selkirk	12.0	24.6	18.3	54.0
Leeds*	18.2	24.1	21.1	61.5
CI 13773	15.7	24.1	19.9	60.0
Lakota*	17.9	23.6	20.7	57.5
Pembina	9.7	22.1	15.9	55.0
Chris	15.0	21.9	18.4	57.0
Stewart 63*	16.5	21.7	19.1	57.0
11-55-16		20.3		58.0
Mean yield			25.3	

N.S.

* durums

+ all 1967 yields are the average of three replications

TABLE 23. STANDARD VARIETY BARLEY TRIAL, BISON, 1967

Variety	1967 Yield B/A	1967 Test Wt. lb/bu	Statistical Significance
Spartan	50.4	50.0	a
Galt	42.5	40.0	ab
Liberty	40.8	46.5	bc
Firibecks III	40.0	46.0	bc
CI 11863	40.0	45.0	bc
Primus	39.9	47.0	bc
Conquest	38.1	44.5	bcd
Dickson	37.1	45.0	bcd
CI 13110	36.6	45.0	bcde
Larker	34.9	45.5	bcde
Plains	31.8	46.0	cde
TraIII	30.8	43.5	cde
CI 11864	29.1	43.5	de
Trophy	25.9	45.0	e
Mean yield			37.0

TABLE 24. STANDARD VARIETY OAT TRIALS, BISON, 1966-1967

Variety	Average Yields, bushels per acre			1967 Test Wt. lb/bu	Statistical Significance
	1966	1967	1966-67		
Dupree	23.6	77.1	50.4	32.0	a
Coachman	24.2	76.9	50.6	35.0	ab
Stormont	23.7	74.8	49.3	33.0	abc
Tyler	15.2	73.3	44.3	33.0	abcd
Andrew	21.8	72.9	47.4	33.5	abcde
Holden	24.0	72.6	48.3	34.0	abcdef
Orbit	29.8	72.6	51.2	30.0	abcdef
Santee	25.3	72.1	48.7	34.0	abcdefg
Brave	30.7	71.3	51.0	32.5	abcdefg
Portage	25.0	69.8	47.4	31.0	abcdefg
Garry	30.7	67.9	49.3	31.0	abcdefg
Burnett	21.4	67.0	44.2	34.5	abcdefgh
Clintford	17.7	65.9	41.8	37.0	abcdefgh
Cl 8178	24.9	64.4	44.7	33.5	abcdefgh
Wyndmere	26.9	63.8	45.4	32.0	bcdefghi
Sioux	30.7	63.7	47.2	31.0	bcdefghi
Rodney	17.9	62.6	40.3	35.0	cdefghi
O'Brien	23.1	60.5	41.8	35.5	defghi
Tippecanoe	9.2	60.3	34.8	37.0	defghi
Multiline E68		59.8		38.0	defghi
Garland	22.1	59.2	40.7	34.0	defghi
Dawn	20.6	59.1	39.8	34.5	defghi
Kelsey		59.1		31.0	defghi
Jaycee	18.3	58.8	38.6	33.0	efghi
Minhafer	26.7	58.5	42.6	36.0	efghi
Portal	19.0	58.3	38.7	34.0	efghi
Multiline M68		57.6		34.0	fghi
Ortley	28.0	57.5	42.8	34.0	ghi
Lodi	28.5	57.4	42.9	32.0	ghi
Cl 8273	14.0	51.6	32.8	33.5	hi
Clintland 64	17.5	48.7	33.1	35.0	i
Dodge	17.5	48.4	33.0	33.5	i
	Main yield	63.8			

TABLE 25. STANDARD VARIETY WINTER WHEAT TRIALS, CENTRAL SUBSTATION, HIGHMORE, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1964-67		
Shoshoni		22.4	14.4	34.7	48.6	30.0	62.5	a
Winalta		18.3	25.7	28.9	47.5	30.1	62.6	ab
Neb. 64322					45.4		62.8	abc
Winalta 66				26.0	45.0		63.0	abc
Winter	23.5	15.3	22.8	25.0	44.9	27.0	61.3	abc
Scout		27.1	35.4	30.7	44.8	34.5	63.1	abc
Neb. 64323					44.8		61.4	abc
Warrior	34.8	21.3	13.4	28.2	44.8	26.9	63.0	abc
Lancer	30.5	21.7	39.7	29.7	43.4	33.6	63.6	bcd
Gage		27.4	29.2	31.3	43.0	32.7	62.2	bcd
CI 13994					41.8		62.0	cd
Hume	31.4	16.0	33.9	25.5	41.3	29.2	63.0	cd
Ottawa	40.5	25.6	17.8	20.4	41.0	26.2	63.0	cd
Nebred	28.9	22.2	15.7	30.9	41.0	27.5	61.5	cd
Bison	30.8	21.8	21.6	23.2	38.1	26.2	63.3	d
Omaha	36.0	24.3	24.2	27.3	34.0	27.5	61.6	e
Mean yield					43.1			

TABLE 26. STANDARD VARIETY FLAX TRIALS, CENTRAL SUBSTATION, HIGHMORE, 1962-1967

Variety	Average Yield, bushels per acre						1967 Test Wt. lb/bu
	1962	1963	1964	1965	1967	1962-67	
Caldwell		9.2	13.5	19.3	23.2		52.5
Redwood	6.0	9.1	11.1	21.0	22.7	14.0	54.0
Norland	3.6	9.4	12.1	16.3	21.4	12.6	53.5
Bolley	6.9	7.6	16.1	*	21.2		53.0
Linott					21.2		54.0
Windom	5.0	8.1	15.3	21.2	21.2	14.2	54.0
Summit	7.5	10.4	17.1	23.5	20.5	15.8	53.5
Dillman			16.1	22.0	20.1		53.0
Noralta					20.1		54.0
B-5128	6.1	9.1	11.9	20.2	19.7	13.4	53.0
Mac			15.5	21.6	19.5		53.5
Redwood 65					18.7		53.0
Mean yield					20.8		
N.S.							

* Seed planted Improperly labeled

TABLE 27. STANDARD VARIETY FLAX TRIALS, AGRONOMY FARM, BROOKINGS, 1963-1967

Variety	Average Yield, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Redwood 65				11.9	33.1		54.0	a
Noralta				15.6	32.8		55.0	ab
Bolley	17.0	15.2	*	13.6	32.5		54.0	abc
Summit	18.6	17.0	26.3	13.5	30.6	21.2	54.0	abcd
Linott					30.3		54.0	abcd
Windom	19.2	15.1	32.1	18.3	29.8	22.9	55.0	abcde
CI 2444					29.7		54.0	abcde
Caldwell	18.4	7.9	32.3	15.3	29.1	20.6	55.0	abcdef
B-5128	13.2	15.7	29.4	12.5	28.8	19.9	55.0	bcdef
Redwood	14.9	13.4	30.2	15.6	28.8	20.6	55.0	bcdef
CI 2483					28.4		54.0	bcdef
CI 2292			32.1	14.7	28.3		54.0	cdef
Noriand	12.7	12.8	28.4	12.2	26.5	18.5	54.0	def
Dillman		11.8	29.6	12.6	25.0		55.0	ef
Mac		9.6	35.5	11.4	24.3		55.0	f
				Mean yield	29.2			

* Seed planted Improperly labeled

TABLE 28. STANDARD VARIETY FLAX TRIALS, NORTHEAST RESEARCH FARMS, WATERTOWN UNIT, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Noralta				15.1	23.3		53.0	a
Norland	12.6	18.6	26.5	13.8	22.4	18.8	53.5	ab
Redwood 65				16.8	22.0		52.0	abc
Summit	16.4	24.0	32.9	17.2	21.7	22.4	53.0	abc
Redwood	13.0	23.3	29.5	16.3	21.6	20.7	53.0	abc
B-5128	11.6	20.4	28.2	14.8	21.2	19.2	53.5	abcd
Caldwell	13.0	20.2	30.8	15.7	21.1	20.2	53.5	abcd
CI 2483					20.9		53.0	abcd
CI 2444					20.8		54.0	abcd
Bolley	15.5	20.6	*	15.7	20.7		53.0	abcd
CI 2292			30.4	18.1	19.5		54.0	bcd
Linott					19.2		52.5	cd
Windom	15.8	23.3	33.8	16.6	18.2	21.5	53.5	de
Mac		21.3	27.0	11.9	15.4		53.5	e
Dillman		22.1	30.5	13.8	14.9		53.0	e
				Mean yield	20.2			

* Seed planted was Improperly labeled

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

Variety	1967 Test Wt. lb/bu	1967 Yield B/A	Statistical Significance
Gage	62.6	54.2	a
Scout	63.8	53.0	ab
Nebred	63.8	51.5	abc
Warrior	63.0	51.4	abcd
Neb. 64322	62.7	51.0	abcd
Lancer	63.5	50.9	abcd
Shoshoni	62.8	50.4	abcd
Winalta	63.6	49.9	abcd
Hume	63.3	49.4	abcd
CI 13994	62.2	47.0	bcde
Winalta 66	63.6	45.6	cde
Neb. 64323	62.4	45.2	cde
Bison	62.9	44.5	cde
Omaha	62.5	44.4	cde
Ottawa	63.2	44.2	de
Minter	63.1	39.9	e
Mean yield		48.3	

TABLE 30. STANDARD VARIETY WINTER WHEAT TRIAL, PRESHO, 1967

Variety	1967 Test Wt. lb/bu	1967 Yield B/A	Statistical Significance
Shoshoni	62.0	53.4	a
Neb. 64323	61.0	53.0	a
Winalta	62.3	51.5	ab
Scout	63.1	50.7	ab
Neb. 64322	61.7	49.9	ab
Winalta 66	60.7	49.8	ab
Bison	62.4	48.6	abc
Lancer	62.2	48.2	abc
Nebred	62.4	48.1	abc
Gage	62.3	48.1	abc
CI 13994	61.5	48.1	abc
Minter	60.8	47.9	abc
Warrior	62.2	46.8	abcd
Hume	62.4	44.9	bcd
Omaha	62.2	41.7	cd
Ottawa	62.5	39.8	d
Mean yield		48.2	

TABLE 31. STANDARD VARIETY WINTER WHEAT TRIALS, SOUTHEAST RESEARCH FARM, BERESFORD, 1963-67

Variety	Average Yield, bushels per acre					1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965*	1966	1967		
Gage		39.2		42.6	39.7	59.6	a
Omaha	10.5	35.0		44.5	35.8	59.1	ab
Ottawa	13.0	33.6		42.8	33.6	58.0	bc
Winalta		35.6		42.1	33.5	59.1	bc
Neb. 64323					32.6	56.2	bc
Hume	17.9	34.0		39.1	32.3	59.8	bc
CI 13994					31.1	57.5	bc
Scout		40.7		48.8	30.9	58.8	bcd
Winalta 66				41.7	30.9	58.9	bcd
Neb. 64322					29.8	57.2	cde
Lancer	18.3	37.1		46.1	28.5	58.0	cdef
Warrior	7.2	36.3		48.3	28.1	54.5	cdef
Bison	4.6	30.4		39.4	24.7	56.7	def
Minter	16.8	34.6		29.5	24.2	54.9	ef
Nebred	9.3	30.7		44.4	23.4	53.7	f
Shoshoni		37.8		40.8	23.1	51.7	f
Mean yield					30.1		

* Lost to winter killing

TABLE 32. STANDARD VARIETY RYE TRIALS, SOUTHEAST RESEARCH FARM, BERESFORD, 1963-67

Variety	Average Yields, bushels per acre					1967 Test Wt. lb/bu	Statistical Significance
	1963	1964	1965	1966	1967		
Guelzower					55.7	53.0	a
Antelope	27.0	37.8	49.6	56.9	54.2	53.7	ab
Von Lochow			21.1	73.8	54.1	54.5	ab
Petkus					53.9	52.1	ab
Sangaste					52.1	53.0	ab
Elk	4.6	36.5	17.5	65.6	52.0	52.9	ab
Dominant					50.7	53.3	abc
Zelder					50.7	53.2	abc
Toiva					47.4	51.8	abcd
Frontier					45.8	53.4	bcd
Caribou	27.8	39.8	49.4	59.1	41.1	53.3	cde
Dakold					38.4	53.4	def
Pierre	24.6	33.7	53.6	54.9	34.3	54.1	def
7276					32.8	54.4	def
Adams					31.5	51.5	def
N.F. #7					31.3	54.7	ef
Bonel					30.7	52.2	f
Elbon					28.4	54.5	f
Mean yield					43.6		

TABLE 33. STANDARD VARIETY RYE TRIALS, AGRONOMY FARM, BROOKINGS, 1961-1967

Variety	Average Yields, bushels per acre						1967 Test Wt. lb/bu	Statistical Significance
	1961	1962	1963	1964	1967	1961-67		
Dominant					56.2		53.5	a
Guelzower					55.2		53.5	ab
Elk	11.3	6.6	12.1	35.5	54.7	24.0	53.5	ab
Von Lochow					52.0		53.5	abc
Petkus					51.0		53.0	abcd
Sangaste					46.9		52.5	bcde
Zelder					44.3		53.0	cdef
Frontier					41.6		53.5	defg
Adams					38.0		52.5	efgh
Toiva					37.5		50.5	efgh
Caribou	26.0	8.0	22.2	30.7	37.1	24.8	52.0	efgh
Antelope	45.7	14.9	17.1	25.2	36.5	27.9	52.5	efgh
7276					36.4		53.5	efgh
N.F. #7					34.7		52.5	fgh
Pierre	28.8	11.0	16.3	30.9	34.1	24.2	53.5	fgh
Dakold					33.0		52.7	gh
Bonel					28.3		53.0	h
Elbon					27.7		52.5	h
Mean yield					40.2			

TABLE 34. STANDARD VARIETY RYE TRIALS, CENTRAL SUBSTATION, HIGHMORE, 1963-1967

Variety	Average Yields, bushels per acre						1967 Test Wt.	Statistical Significance
	1963	1964	1965	1966	1967	1963-67		
Dominant					65.9		56.6	a
Elk	28.2	43.6	51.8	21.8	62.4	41.6	56.3	ab
Petkus					61.2		56.7	abc
Zelder					59.6		56.8	abcd
Von Lochow			61.0	34.8	57.8		56.5	bcde
Guelzower					54.0		54.8	cdef
Sangaste					52.9		54.9	defg
Frontier					52.4		57.1	defg
Toiva					49.7		54.0	efgh
Caribou	32.1	44.3	47.2	23.9	45.5	38.6	55.5	fghl
Antelope	30.4	42.6	42.8	20.6	44.6	36.2	56.6	ghl
Adams					42.4		55.2	hi
7276					39.4		55.7	ij
Dakold					32.9		55.6	jk
Pierre	21.5	44.9	41.0	12.8	31.5	30.3	54.2	jkl
N.F. #7					28.2		55.8	klm
Bonel					23.2		52.7	lm
Elbon					20.1		56.2	m
Mean yield					45.5			

TABLE 35. STANDARD VARIETY RYE TRIALS, SOUTH CENTRAL RESEARCH FARM, PRESNO, 1967

Variety	1967 Yield B/A	1967 Test Wt. lb/bu	Statistical Significance
Elk	51.5	56.0	a
Zelder	51.1	56.0	a
Dominant	49.2	55.5	a
Von Lochow	48.7	56.5	a
Petkus	47.8	54.5	ab
Guelzower	47.5	55.0	ab
Frontier	46.9	57.0	ab
Sangaste	41.6	53.0	bc
Tolva	39.9	52.5	cd
Antelope	39.2	55.0	cd
Caribou	37.9	55.5	cd
Pierre	37.8	55.0	cd
Adams	35.7	54.5	cde
Dakold	35.3	56.4	cde
7276	33.7	56.0	def
N.F. #7	29.1	54.0	efg
Elbon	27.5	56.0	fg
Bonel	25.4	55.0	g
Mean yield 40.4			

The following data and on page 28 are furnished by H. A. Geise. These data are included as a service to producers and are not a part of the variety testing program.

TABLE 36. OAT VARIETY TRIAL (FORAGE TYPE), SOUTH CENTRAL RESEARCH FARM, PRESNO, 1967

Variety	Date of Heading	Height, Inches	Test Wt. lb/bu	Grain B/A	Silage yield % D.M.	T/A
Lodi	7/1	43.5	32.8	96.0	37.3	4.9
Garry	6/30	42.8	33.2	85.2	36.7	5.3
Ortley	6/27	42.8	36.5	82.8	38.7	4.9
Rodney	7/2	40.2	35.2	81.0	35.2	5.3
Portage	6/25	44.5	34.2	76.6	39.5	5.4

LSD(.05) 10.7

TABLE 37. SPRING SMALL GRAIN VARIETY TRIALS AT THE SOUTH CENTRAL RESEARCH FARM, PRESHO, 1965-67*

Oats				Barley				Spring Wheat			
Variety	Test Wt. lb/bu	1967 Yield, B/A	1965-67 Yield, B/A	Variety	Test Wt. lb/bu	1967 Yield, B/A	1965-67 Yield, B/A	Variety	Test Wt. lb/bu	1967 Yield, B/A	1965-67 Yield, B/A
Wyndmere	36.4	113.5		Dickson	50.2	95.4		Fortuna	56.1	42.8	
Tyler	36.5	111.2	74.2	Larker	51.4	91.0	63.6	Lee	52.9	40.8	21.1
Tippecanoe	38.0	110.9	68.7	Primus	51.1	83.6		Manitou	53.2	40.0	23.7
Brave	36.0	108.3	78.6	Liberty	50.2	82.7	63.9	Chris	56.0	36.4	25.6
Portal	35.0	104.4		Otis	50.2	77.7	64.0	Cl 13773	57.0	36.0	
Santee	37.0	98.5	62.4	Trophy	50.5	77.0	61.7	Sheridan	56.2	35.2	24.5
Holden	35.0	97.2		Conquest	47.8	71.6		Crim	52.1	35.1	23.9
O'Brien	38.0	96.0						BH 631	56.0	34.4	23.5
Jaycee	38.4	92.6		Mean		82.7		Rushmore	56.2	29.0	19.8
Minhafer	36.9	91.6	60.3	LSD (.05)		6.4		BH 632	55.1	28.1	21.4
Burnett	36.5	89.0	68.7	Durum Wheat				Pembina	54.7	27.0	19.2
Dodge	36.6	88.4	62.2	Variety	Test Wt. lb/bu	1967 Yield, B/A	1965-67 Yield, B/A	Justin	53.0	25.6	18.7
Clintford	39.9	87.4	63.2	Leeds	59.0	48.2		Selkirk	52.1	22.0	17.2
Coachman	37.6	84.8	64.3	Wells	56.4	38.8	29.5	Ceres	53.1	17.8	
Dawn	36.4	81.5		Lakota	55.1	36.0	28.0	Mean		32.2	
Garland	35.1	75.9	62.8	Stewart 63	56.4	33.4	24.7	LSD (.05)		7.8	
Clintland 64	36.0	67.1	47.9								
Mean		94.0		Mean		39.1					
LSD (.05)		17.4		LSD (.05)		5.0					

* Harvested area was 4 x 25 feet. All yields reported are the average of four replications.

TABLE 38. 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			Winter Hardiness			
								Leaf Rust	Stem Rust	Wheat Streak Mosaic	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
Cheyenne	Selected from Crimean, an introduction	Nebr. '33	M-late	Strong	S-MT	Excel.	High	S	S	S	G	F	G	P
Gage	Ponca x Mediterranean-Hope-Pawnee	Nebr. '63	Early	Strong	Short	Good	High	R	R	R	G	P	G	P
Hume	Parents were Kharkof, 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.&S.D.'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
Ottawa	(Med.-Hope x Pawnee) x (Oro-W38)	Kan. '60	Early	Strong	Short	Good	High	S	S	S	G	P	F	P
Pawnee	Kawvale x Tenmarq	Kan. '42	Early	Medium	Short	Good	Good	S	S	S	G	P	F	P
Scout	(Nebred-Hope-Turkey) x (Cheyenne-Ponca)	Nebr. '63	Early	Medium	Short	Excel.	High	S	R	Tol.	G	P	F	P
Shoshoni	Selected from Cheyenne	Wyo. '61	M-late	Strong	Short	Excel.	Good	S	S	S	G	F	F	P
Warrior	Pawnee x Cheyenne	Nebr. '60	M-early	Strong	Short	Excel.	High	S	S	S	G	F	G	P
Winalta	Minter x Wichita	Can. '61	Medium	Poor	M-tall	Excel.	Good	S	Mix	S	G	F	G	P
Spring Wheat														
Chris	Ftn-Thatcher ³ x (K58 ₃ x Nth) x Thatcher ²	Minn. '65	Medium	Medium	M-tall	Excel.	High	R	R					
Crim	Klein Titan-Thatcher ³ x II-44-29-Tc ²	Minn. '63	Early	Fair	M-tall	Good	High	S	R					
Fortuna	Rescue-Chinook x (Frontana x Kenya 58-Newthatch)	N.D. '66	Early	Good	M-tall	Good	High	R	R					
Justin	(That. x K. Farmer) x (Lee x Mida)] x Conley	N.D. '63	Medium	Good	M-tall	Excel.	Good	S	R					
Manitou	(Tc ⁷ -Ftn x Canthatch) x (Tc ⁶ x PI 170925)	Can. '65	M-early	Fair	M-tall	Good	High	MR	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	Mont-SD'66	M-late	Fair	Tall	Fair	High	R	R					
Spinkcota	(Private breeder) Pres. Sel ² x Red durum	S.D. '44	Early	Good	Tall	Poor	High	S	S					
Lee	Hope x Bobin ² -Gaza	Minn. '51	Early	Fair	M-tall	Good	Medium	S	S					
Durum														
Leeds	(Ld 357 ⁴ x St. 464 - Ld 357) x Wells	N.D. '66	Early	Good	Short	Good	High	R	R					
Stewart 63	Stewart ⁸ x St. 464	Can. '63	Late	Fair	Tall	Excel.	High	R	R					
Wells	Sentry x (Ld 379-Ld 357)	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 G, good R, resistant
 M-late, Medium late M-tall, mid tall F, fair S, susceptible
 P, poor Mix, react both ways

TABLE 39. CHARACTERISTICS OF OAT VARIETIES RECOMMENDED FOR SOUTH DAKOTA, 1968

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	Cltd ⁵ x LMJHA 3x Cltd 2x Cltn ⁶ x Grey Alg.	Ind. '64	Medium	Medium	M-Early	Good	High	MR	MR	R	S
Coachman	Marne 4x Bvr x Gy 2x Ctn 3x Clintland	Mich. '64	Medium	Medium	Medium	Good	High	MR	MS	MR	MS
Dupree	Anthony x Bond 2x Richland x Fulghum	S.D. '54	Medium	Short	Early	Medium	Medium	S	S	R	S
Garland	Clintland 2x Garry x Hawkeye-Victoria	Wisc. '62	High	M-Short	Medium	Good	High	MR	MR	R	S
Holden	Clintland 3x Garry 2x Hawkeye x Victoria	Wisc. '67	High	Medium	Medium	Good	High	MR	MR	R	S
Kelsey	Vict. 2x Haj-Ban x Banner 3x Roxton 4x Beacon 5x Rodney	Can. '67	V-High	Tall	Late	Medium	Medium	MR	MR	R	S
Jaycee	Cltd 3x Garry 2x Hawkeye x Victoria 4x Putnam	Ill. '67	Medium	M-Short	Early	Good	High	MR	MS	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
Rodney	Vict. x Haj-Ban 2x Vict-Haj. 3x Roxton	Can. '54	High	Tall	Late	Good	High	MR	MS	R	S
Santee	Clinton 4x Victoria 2x Hajira x Banner 3x Victory	Nebr. '65	Medium	Short	M-Early	Good	Medium	MS	MS	R	S
Sioux	Garry x Rex	Can. '67	V-High	Medium	Late	Medium	Medium	MR	MS	R	S
Tippecanoe	Clintland 60 ² x Mo. 0-205	Ind. '64	Medium	Short	Early	Excel.	High	MS	MS	R	S
Tyler	Clintland 60 ² x Mo. 0-205	Ind. '65	Medium	Short	M-Early	Excel.	High	MS	MS	MS	S

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

TABLE 40. CHARACTERISTICS OF FLAX VARIETIES RECOMMENDED FOR SOUTH DAKOTA, 1968

Variety	Parentage	Released	Agronomic Characteristics						Disease Reaction*				
			Yielding Ability	Plant Height	Maturity	Lodging Resistance	Seed Size	Flower Color	Oil Content	Oil Quality	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
Redwood	B-5128 x Redson	Minn. '51	Medium	Medium	M-Late	Fair	Med.	Blue	Good	Med.	I	MR	S
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 41. CHARACTERISTICS OF BARLEY VARIETIES GROWN IN 1967 TRIALS

Variety	Parentage	Released	Agronomic Characteristics										Disease Reaction		
			Yielding Ability	Plant Height	Maturity	Lodging Resistance	Bushel Weight	Seed Size	Malting Quality	Aluerone Color	Stem Rust	Spot Blotch	Smut		
Larker *M	Traill x Swan	N.D. '61	High	Medium	Medium	Good	Medium	M-L	Good	White	R	MS	S		
Trophy *M	Traill ² x Swan	N.D. '61	High	Medium	Medium	Good	Medium	Med.	Good	White	R	MS	S		
Dickson *M	Traill ² x Kindred x C.I. 7117-77	N.D. '65	High	Medium	Medium	Good	Medium	Med.	Good	White	R	MR	S		
Liberty *F	LMC-A x Titan	S.D. '57	High	Medium	Medium	Good	Medium	Med.	Poor	White	R	S	S		
Plains *F	Peatland x Dryland	S.D. '48	High	Short	Early	Medium	High	Med.	Poor	White	R	MS	S		
Spartan *F ²	Mich. 2-rowed x Black Barbless	Mich. '28	Medium	Medium	Early	Medium	High	Lge.	Poor	White	S	S	S		
Feebar F	Peatland x Vaughn	S.D. '47	Medium	Short	Medium	Good	Low	Lge.	Poor	White	R	MS	S		
Primus *	Brandon 3902 x Liberty x Swan	S.D. '66	High	Medium	Early	Good	High	Med.	≠	White	R	S	S		
Conquest	Vantage x Jet 2x Vantmore 3x Br. 4635 4x Swan 5x Parkland	Man. '65	Medium	Tall	Medium	Good	Medium	Med.	≠	Blue	R	S	R		
Galt F	Glacier x ² Newal 2x Husky	Alta. '65	High	M-S	Medium	Good	Medium	M-L	Poor	White	R	S	S		

² Two-row variety

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

M Malting type

F Feed type

Data furnished by P. B. Price

Field Crop Varieties Recommended in South Dakota for 1968

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
 Hume..... A, B3, C2, D4, E
 Lancer..... A, B3°, B4, C2, C3, D4, E
 Minter..... A, B3, D4, E
 Scout..... B3, B4, C2, C3
 Scout 66..... B3, B4, C2, C3
 Winalta..... A, B3, C2, D4, E

Winter wheat production under the high risk conditions of areas B1, B2, and C1 means selecting the most hardy varieties. Good yields will also depend on a favorable climate and the best cultural practices.

Spring Wheat

Chris† Statewide
 Crim Statewide
 Fortuna B1
 Justin..... B1, B2†, C1†, D1, D2
 Manitou Statewide
 Rushmore..... A, B1, B2, B3
 Sheridan..... A, B1, B2, B3, C1

Durum

Leeds..... B1, B2, C1, C2, D1, D2, D3
 Wells..... B1, B2, C1, C2, D1, D2, D3

Oats

Brave Statewide
 Burnett† Statewide
 Clintland 64 C2, C3, D2, D3, D4, E
 Coachman†..... A, B1, B2, B3, C1, D1, D2, D3
 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
 Lodi D1, D2, D3†
 Portal..... B2, C1, D1, D2, D3, D4, E
 Rodney..... C1†, D1, D2, D3
 Santee..... B3°, B4, C2, C3, D4, E
 Sioux..... B2†, C1†, D1, D2, D3
 Tippecanoe°° Statewide
 Tyler°° Statewide

Barley

Dickson..... A, B2, C1, D1, D2, D3
 Larker..... A, B2, C1, D1, D2, D3
 Liberty† Statewide
 Primus† Statewide
 Spartan... A, B1, B2°, B3, B4, C2, C3
Larker and Dickson approved for malting; Primus not yet approved.

Flax

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

Rye

Antelope Statewide
 Caribou Statewide
 Pierre Statewide

° Southern counties of this area.

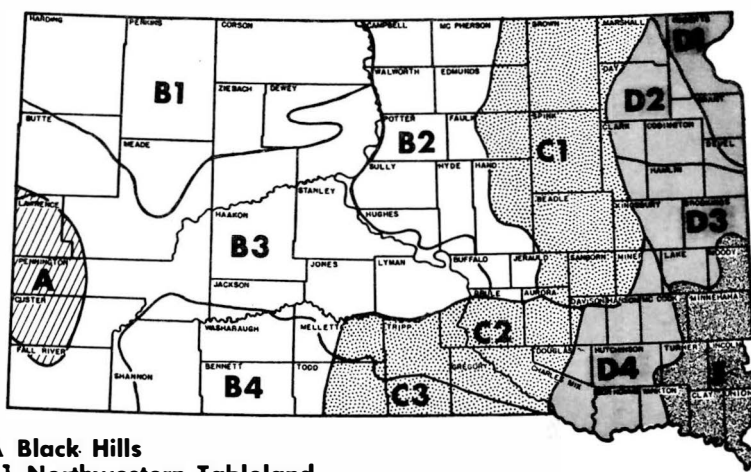
°° Where straw strength is needed.

† Northern counties of this area.

‡ For both irrigation and dryland.

§ Recommended only for late planting in areas D4 and E.

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