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Circular 165

December 1964

1964 Small Grain Variety Trials

AGRONOMY DEPARTMENT
AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE UNIVERSITY, BROOKINGS

LOCATION OF SMALL GRAIN TABLES

South Dakota Standard Variety Small Grain Trials 1960 - 1964

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Varieties of small grains being grown by farmers, newer varieties not yet widely used, and new experimental strains being considered for release were in performance trials during 1964 at up to eight locations. The trials were under the supervision of the Crop Performance Testing Activity, Agricultural Experiment Station. Grain yields, test weights, available five-year averages, and selected agronomic data are reported in this circular.

Location of Trials

Because tests only at Brookings would not be a sufficient guide to varietal performance over the state, testing is also done at substations throughout South Dakota at locations listed in Table 1. Dates of seeding and harvesting are also given.

Weather and Climatic Conditions

Field preparation and seeding were delayed by wet field conditions until late April in eastern South Dakota. Seeding began by mid-April in the western and central portions. Seeding did not begin in the immediate Brookings area until the last of April, crowding planting schedules of cereal grains and flax.

After seeding was accomplished, rainfall was limited, causing uneven and poor stands in some trials. Beneficial rainfall occurred in most areas the latter part of May.

Temperatures were above average during April and May at most locations. Temperatures during June were below average to average for mean temperatures common to the stations during June. Above average temperatures during the first half of July coupled with high velocity, hot, searing winds and little rainfall forced ripening of much of the grain, especially varieties of earlier maturity

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The generous assistance of R. S. Albrechtsen, P. B. Price, and D. G. Wells is gratefully acknowledged. Much credit is also due the following substation supervisors: Albert Dittman, Carl Erickson, Jake Fredrikson, Frank Holmes, Harry Geise, Quentin Kingsley, Herb Lund, and John Nesvold.

TABLE 1. LOCATION OF TRIALS AND DATES OF SEEDING AND HARVESTING OF OATS, BARLEY, FLAX, WHEAT, AND RYE TRIALS, 1964

County	Location and Post Office	Date Planted	Date Harvested
	Oats		
Butte	U. S. Newell Field Station, Newell	April 15	July 28
Jackson	Range Field Station, Cottonwood	April 15	July 24
Hyde	Central Substation, Highmore	April 16	July 17
Clay	Southeast Research Farm, Beresford	April 20	July 20
McPherson	North Central Substation, Eureka	April 23	July 30
Codington	Northeast Research Farm, Watertown	April 27	July 17
Brookings	Agronomy Farm, Brookings	May 1	July
	Barley		
Butte	U. S. Newell Field Station, Newell	April 15	July 27
Jackson	Range Field Station, Cottonwood	April 15	July 24
Hyde	Central Substation, Highmore	April 16	July 17
Clay	Southeast Research Farm, Beresford	April 20	July 20
McPherson	North Central Substation, Eureka	April 23	July 29
Codington	Northeast Research Farm, Watertown	April 27	July 20
Brookings	Agronomy Farm, Brookings	May 1	July
	Flax		
Brookings	Agronomy Farm, Brookings	May 4	August
Codington	Northeast Research Farm, Watertown	May 5	July 28
Hyde	Central Substation, Highmore	May 6	August 6
	Spring Wheat and Durum		
Butte	U. S. Newell Field Station, Newell	April 15	July 28
Jackson	Range Field Station, Cottonwood	April 15	July 24
Hyde	Central Substation, Highmore	April 16	July 21
Clay	Southeast Research Farm, Beresford	April 20	July 20
McPherson	North Central Substation, Eureka	April 23	July 29
Codington	Northeast Research Farm, Watertown	April 27	July 28
Brookings	Agronomy Farm, Brookings	May 1	July
	Winter Wheat and Rye		
Clay	Southeast Research Farm, Beresford	Sept. 11	July 9
Hyde	Central Substation, Highmore	Sept. 17	July 15
Brookings	Agronomy Farm, Brookings	Oct. 3	July

normally considered adapted to central and western parts of South Dakota. The later maturing varieties that survived benefited from rains that finally came, producing creditable yields and creating results somewhat contrary to expectations. In most tables later maturing varieties, which usually perform most satisfactorily in the northern and eastern portions of the state, were highest yielding.

Freezing temperatures occurred as late as June 2 at the Northeast Farm. Damage was light to small grain. Hail did not damage any of the trials in 1964.

The trials at the Northeast Farm performed quite satisfactorily in the absence of adequate rainfall. This is attributable in part to below average temperatures which favored crops, especially flax.

Lodging was of little consequence at most locations except Eureka where excessive moisture caused some lodging in the oat variety trial.

Weather data from all locations for April through July are reported in Table 2.

Planting and Harvesting Procedure

The trials were seeded in randomized block designs of four replications at each site. The plots were 14 feet long and of four rows one foot apart. Two center rows, trimmed of border effect to 12 feet in length, were harvested for yield determinations. A small National mower, equipped with catching hopper, was used to cut the grain. Any downed grain was gleaned from the harvested area before the sample was bagged. The samples were returned to the Main Station, air-dried in a pole shed and threshed with a Vogel-type nursery thresher. Following threshing the samples were cleaned, weighed for yield determination, and test weighed for bushel weights.

Measurements of Performance

The yield reported for each variety or selection is the average obtained from grain weights of all replications, expressed as bushels per acre. Because of variations in stand, slope or unequal soil fertility, entries of equal potential may have yielded differently. Mathematical determinations have been made to ascertain whether yield differences were caused by variations in environment or were true varietal differences.

The minimum amount in each test by which two entries must differ in yield for the difference to be considered statistically significant at the 5 percent level is found at the bottom of all yield tables. If the trial was not found to have statistical difference a notation, N.S., is shown. When the trial was found to have statistically significant differences between means, an additional test, Duncan's Multiple Range Test, was run on the means.

As an example of Duncan's test (Table 4) vertical lines on the right side of the trials indicate those variety yields adjacent to the line which are statistically alike. In the instance of this table, under prevailing environmental conditions during 1964, Ortley, Mo. 0-205, and all entries in decending order through Clintland 60 and Garland were not statistically different in yield from each other. The tables from all trials having significant differences are read the same as the above example. It must be remembered that results from only one year do not present as true a picture of yield differences as average results of three or more years at the same location.

TABLE 2. TEMPERATURE AND PRECIPITATION DATA FOR THE 1964 SMALL GRAIN GROWING SEASON OF SOUTH DAKOTA

		Temperature			Precipitation		
Location	Month	Mean Average	Departure from Normal	Ave. Departure	Monthly Total	Departure from Normal	Total Departure
		degrees F.				inches	
Brookings[a/]	April	46.5	1.3		2.45	0.68	
1 E	May	59.4	1.8		2.55	-0.24	
	June	66.6	-0.5		2.86	-1.09	
	July	73.4	0.2	.7	3.02	0.87	0.22
Last freeze May 13 - 28°					10.88		
Highmore[a/]	April	48.0	2.6		4.53	2.79	
1 W	May	60.3	3.1		3.32	0.99	
	June	67.2	0.4		4.61	---	
	July	76.8	2.3	2.1	2.66	0.68	---
Last freeze May 13 - 31°					15.12		
Eureka[a/]	April	44.8	1.2		2.37	1.02	
	May	57.2	1.1		2.95	0.36	
	June	65.3	0.3		9.59	5.76	
	July	72.6	0.2	.7	2.37	-0.08	7.06
Last freeze April 29 - 27°					17.28		
Newell[a/]	April	44.5	0.4		0.78	-0.87	
2 NW	May	56.8	1.4		3.16	0.67	
	June	63.3	-1.1		5.43	2.24	
	July	74.4	1.2	.5	1.98	0.22	2.26
Last freeze April 30 - 30°					11.35		
Cottonwood[a/]	April	47.4	1.1		3.59	1.94	
	May	60.6	3.2		2.55	-0.16	
	June	65.1	-2.0		5.31	2.33	
	July	77.2	1.2	.9	0.87	-0.67	3.44
Last freeze May 24 - 32°					12.32		
Centerville[a/]	April	50.5			3.77		
6 SE	May	63.7			2.10		
	June	70.1			6.29		
	July	77.2			3.02		
Last freeze May 13 - 32°					15.18		
NE Farm	April	42.6	-0.6		2.39	0.33	
15 NE	May	58.2	-2.2		1.07	-1.80	
Watertown	June	61.4	-2.5		3.62	-0.08	
	July	68.1	-4.2	-2.4	2.01	-0.66	-2.21
Last freeze June 2 - 29°					9.09		

[a/] These are based upon reports of Monthly Climatological Data, U. S. Dept. of Commerce, Office of State Climatologist, State University, Brookings, South Dakota.

The mean yield of all 1964 entries in each test is found at the bottom of the yield column in each table.

Discussion of Results

The 1964 trial results and the available five-year averages are presented in tables which follow the text. These 1960-1964 averages present a truer indication of a variety's capabilities under fluctuating moisture and temperature conditions than do results of one year. A brief summary of the results from each crop follows. Field preparations, adequate fertility levels, and rotation sequence are the same each year in accordance with practices established some time ago. A list of varieties recommended for planting in South Dakota during 1965 is presented on the back cover of this publication.

Oats: Adequate soil fertility is required, especially for the newer varieties released in recent years. The results presented in this circular are for conditions of adequate fertility. Specific varieties might react differently if soil fertility levels are low. Yield is but one of the factors to consider. Maturity, disease reaction, heat tolerance, and kernel types also play important roles. Even if some varieties yield quite well, the test weight should also be considered, as low test weights can indicate a high percentage of bulk and lower protein, thus reducing the value of the variety for feed.

The use of the 1964 data must be tempered with one prime consideration. Near drought conditions existed in many areas of the state from mid-June till mid-July. The earlier oat varieties suffered most severely from these conditions and the late varieties were tardy enough to take advantage of late July precipitation and lower temperatures. This is clearly pointed out when one averages a variety over all eight locations in the state. Four of the five top yielding varieties on a statewide basis are among the latest maturing varieties grown or tested in the state. Late varieties are expected to perform well only in the northeastern portion of the state where cooler temperatures and higher precipitation are more commonly anticipated.

Specific remarks on varieties in the 1964 trials would tend to be misleading and possibly misinterpreted. Careful examination of entries in the trials at least three years is considered more beneficial.

Barley: Malting barleys, generally considered adapted to the northeastern areas of the state, yielded most satisfactorily in nearly all trials. The recommended feed barley, Liberty, yielded well also. Larker and Trophy are the best of present malting barleys produced in the state.

Flax: The two newly released varieties, Summit and Windom, performed quite satisfactorily in 1964. Only five varieties are recommended for South Dakota during 1965: B-5128, Bolley, Redwood, Summit, and Windom. All others have been found susceptible to either or both of two newer races of flax rust that were first isolated in Canada in 1962.

Rye: No great differences in yield have separated the rye varieties over the past several years. Pierre seems to be somewhat earlier but yields about the same. Elk has suffered from winterkilling more frequently.

Spring Wheat: The past cropping season produced yield results contrary to expectations and results from previous years. Over four- and five-year periods Crim, Pembina, and Selkirk have produced satisfactorily in the eastern portions of the state. In the drier areas, less subject to disease problems, Rushmore and Lee have been satisfactory. Lee yields were down because it was susceptible to a prevalent race of the stem rust organism, race 15B-2.

Durum: The most desirable durum wheats for durum producing areas are Lakota and Wells . Disease resistance has been most satisfactory in these two varieties over others tested to this time.

Winter Wheat: In the south-central area of the state, Omaha and Warrior, nave been satisfactory for the past several years. Two newly released varieties, Gage and Scout, have done very well and are adapted in the area also. Ottawa has performed satisfactorily and is adapted to the extreme southern portions of the state. Another new release, Lancer, has done well in this area also.

In the winter wheat areas where the winters are likely to be more severe and winter hardiness is of greater importance, Minter has been useful. Yet another newly released variety, Winalta, is especially adapted in the areas where Minter can be grown.

TABLE 3. STANDARD VARIETY OAT TRIALS, SOUTHEAST RESEARCH FARM, BERESFORD, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Ortley				51.2	61.1		35.0	
Garry	81.8	55.2	45.1	38.0	58.8	55.8	33.0	
Dupree			56.8	56.7	58.3		31.5	
AuSable				42.1	57.0		34.0	
Lodi				38.3	56.7		32.5	
CI 7978					56.7		32.5	
Mo. 0-205	96.3	56.5	39.0	52.4	56.5	60.1	33.5	
Rodney			38.9	44.7	55.0		34.0	
Burnett	89.6	45.5	34.8	50.2	54.4	54.9	34.5	
Portage	91.0	54.0	50.9	53.1	52.5	60.3	33.0	
Goodfield	78.2	43.8		49.9	49.8		35.5	
Tippecanoe					49.6		33.5	
Dodge			44.1	53.4	48.6		34.0	
Clintland 60	88.2	37.8	44.7	49.0	48.3	53.6	34.0	
Garland			37.3	45.1	47.8		33.5	
Neal				43.6	47.6		31.5	
Nodaway		45.1	32.8	49.6	47.5		33.5	
Minhafer	77.9	56.2	53.9	50.2	47.0	57.0	32.5	
Clintland 64					46.4		34.0	
Coachman				50.0	46.1		34.0	
CI 7679					46.1		31.5	
Brave					45.6		32.5	
CI 7454					45.3		31.5	
Andrew	89.7	65.5	43.7	56.8	44.0	59.9	31.5	
Nehawka	84.7	58.1	36.9	41.1	43.4	52.8	32.5	
Bonkee				40.7	42.9		35.0	
CI 7463					42.3		34.5	
Putnam 61					39.8		32.5	
Newton				43.3	39.4		32.5	
		Mean yield			49.5			
LSD .05	14.3	12.0	12.5	7.9	12.9			

TABLE 4. STANDARD VARIETY OAT TRIALS, AGRONOMY FARM, BROOKINGS, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Ortley	118.4	106.4	73.4	29.6	83.1	82.2	34.0	
Mo. 0-205	126.2	98.6	65.7	37.9	81.8	82.0	34.0	
Garry	118.0	111.7	59.5	43.4	80.6	82.6	32.0	
Portage	121.6	107.4	62.4	61.4	80.5	86.7	33.0	
Dupree	124.1	101.4	69.5	42.6	79.2	83.4	32.5	
Lodi				43.4	78.8		33.0	
Burnett	117.7	113.8	72.1	45.5	77.8	85.4	35.0	
Clintland 64					76.9		33.5	
Coachman				36.9	76.5		35.5	
CI 7978					76.3		35.0	
Clintland 60	119.1	106.4	64.7	46.4	76.1	82.5	34.5	
Garland			94.7	52.1	75.8		35.0	
CI 7679					72.6		32.0	
Nehawka	129.7	100.7	65.9	43.8	72.3	82.5	32.5	
Newton			77.6	30.6	72.1		34.0	
Brave					72.1		34.0	
Bonkee				35.5	71.3		32.5	
Brunker			70.3	51.3	71.1		32.5	
AuSable				22.8	70.9		34.5	
Andrew	125.1	89.0	70.3	40.8	70.7	79.2	33.0	
Rodney	103.9	103.9	63.4	40.8	70.7	76.5	34.0	
Tippecanoe					68.7		31.5	
CI 7463					67.3		34.5	
CI 7454					67.0		31.0	
Dodge		86.5	74.6	56.8	66.5		33.5	
Goodfield	105.6	96.4	73.8	42.1	65.6	76.7	35.5	
Minhafer	113.8	98.2	92.3	55.9	65.5	85.1	34.0	
Putnam 61					64.3		35.0	
Neal			78.5	35.3	64.1		32.5	
Nodaway		98.9	69.2	33.6	63.6		33.5	
		Mean yield			72.7			
LSD .05	7.8	15.9	16.4	a	8.9			

a - No statistical analysis made, only one replication harvested.

TABLE 5. STANDARD VARIETY OAT TRIALS, RANGE FIELD STATION, COTTONWOOD, 1960-1964

Variety	1963	1964	1963-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bu/A				
CI 7679		46.9		37.0	
Brave		43.0		38.0	
Garland	31.8	42.0	36.9	39.0	
Andrew	29.2	41.0	35.1	37.5	
CI 7463		40.1		39.0	
Tippecanoe		39.2		38.0	
CI 7454		38.6		37.5	
Dupree	37.6	38.5	38.0	37.0	
Burnett	33.3	38.4	35.9	38.5	
Mo. 0-205	29.4	38.1	33.8	35.5	
CI 7978		36.4		36.0	
Dodge	29.0	36.1	32.6	39.0	
Newton		36.1		38.5	
Neal	27.8	35.3	31.6	37.0	
Nehawka	28.4	34.6	31.5	38.0	
Minhafer	28.5	34.5	31.5	38.5	
Coachman	32.5	34.2	33.3	37.0	
Portage	32.0	33.6	32.8	38.0	
Ortley	30.4	32.1	31.3	38.0	
Brunker	31.1	30.8	31.0	38.0	
Clintland 64		29.8		38.0	
Bonkee	25.3	28.3	26.8	40.0	
Putnam 61		27.9		38.0	
Nodaway		27.0		38.5	
Clintland 60	28.9	26.4	27.7	40.0	
Mean yield		35.6			
LSD .05	8.2	11.3			

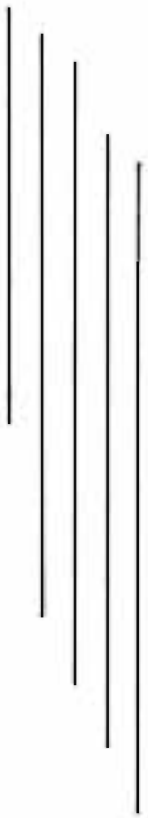


TABLE 6. STANDARD VARIETY OAT TRIALS, NORTH CENTRAL SUBSTATION, EUREKA, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Ortley	35.4		76.2	42.7	120.8		35.5	
Lodi				29.7	114.4		32.0	
Rodney			54.7	34.1	112.9		35.5	
Burnett	33.6	35.8	56.6	53.6	109.2	57.8	35.5	
Mo. 0-205	37.2	33.1	58.5	30.8	105.6	53.0	34.0	
Portage				44.9	102.4		33.0	
Garry	32.0	29.5	54.2	25.7	102.3	48.7	33.5	
Brave					99.9		32.5	
Minhafer	30.4	36.5	72.9	46.5	98.1	56.9	33.5	
Tippecanoe					97.9		34.5	
Coachman				53.0	95.9		33.0	
Dupree	27.8	38.5	47.4	35.4	92.7	48.4	32.5	
Bonkee				32.6	92.1		33.5	
Clintland 64					91.9		34.0	
CI 7978					91.7		32.0	
CI 7679					90.7		32.0	
Andrew	36.4	33.4	57.0	47.8	89.8	53.1	32.0	
AuSable				34.3	87.3		33.5	
CI 7463					85.9		34.5	
Neal			64.8	44.9	85.7		31.0	
Dodge		23.7	50.6	47.7	84.4		33.5	
Putnam 61					83.4		33.5	
Clintland 60	28.0	24.0	58.7	41.2	83.0	47.0	34.0	
Garland			60.6	51.6	82.5		34.0	
CI 7454					79.6		31.0	
Nehawka	32.6	29.1	59.7	27.7	67.6	43.3	33.0	
Mean yield					94.1			
LSD .05	N.S.	9.5	N.S.	13.9	25.4			

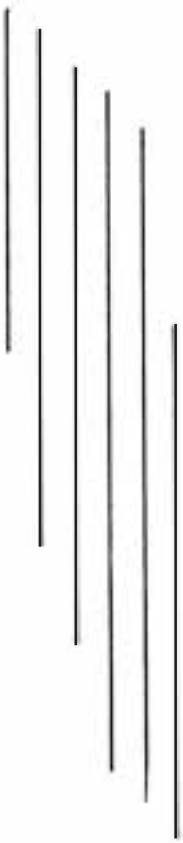


TABLE 7. STANDARD VARIETY OAT TRIALS, CENTRAL SUBSTATION, HIGHMORE 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Garry	69.7	35.5	86.0	35.6	61.4	57.6	33.5	
Brave					60.8		35.0	
Mo. 0-205	69.0	41.5	88.7	51.1	60.3	62.1	35.0	
Lodi				39.2	59.5		35.0	
Rodney			91.2	36.2	59.5		37.0	
Dupree	63.4	40.6	87.6	49.5	58.8	60.0	35.0	
Portage				41.9	53.9		34.5	
AuSable				36.6	53.1		36.5	
Burnett	72.2	47.1	98.8	50.4	52.6	64.2	35.5	
Andrew	84.1	39.0	84.2	48.9	51.8	61.6	35.0	
Ortley	62.1	33.3	106.9	38.5	51.4	58.4	35.0	
CI 7454					51.0		33.0	
Coachman				41.4	50.3		35.5	
CI 7679					49.0		33.5	
CI 7978					47.7		33.5	
Minhafer	70.4	44.8	112.7	39.2	47.4	62.9	32.5	
Neal			112.1	47.8	47.3		34.5	
Garland			110.4	38.4	45.4		35.0	
Clintland 64					45.1		34.5	
Tippecanoe					44.7		34.5	
Bonkee				40.1	44.6		36.0	
Putnam 61					43.1		33.0	
Nehawka	76.8	42.9	90.7	38.5	42.2	58.2	34.5	
Clintland 60	42.7	45.6	103.5	36.6	42.0	54.1	35.0	
Dodge		27.6	96.2	41.9	41.0		35.0	
CI 7463					40.8		36.5	
Nodaway		46.4	88.3	29.0	39.7		35.0	
Mean yield					49.8			
LSD .05	14.7	6.0	14.9	8.9	12.1			

TABLE 8. STANDARD VARIETY RYE TRIALS, CENTRAL SUBSTATION, HIGHMORE, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu
	Average Yields, bushels per acre						
Pierre	20.7	43.6	22.3	21.5	44.9	30.6	57.0
Caribou	19.3	52.6	17.6	32.1	44.3	33.2	56.5
Elk	26.0	54.4	15.8	28.2	43.6	33.6	56.0
Antelope	22.9	36.9	29.5	30.4	42.6	32.5	56.5
Mean yield					43.9		
LSD .05				6.0	N.S.		

TABLE 9. STANDARD VARIETY OAT TRIALS, DRYLAND, U. S. NEWELL FIELD STATION, NEWELL, 1959-1964

Variety	1959	1960	1962	1963	1964	1959-64[a]	1964 Test Wt. lb/bu
	Average Yields, bushels per acre						
Mo. O-205	5.9	23.3	88.3	82.4	46.6	49.3	36.5
CI 7454					44.4		34.5
Brave					41.3		35.0
Rodney			89.2	74.0	40.5		37.0
CI 7679					38.8		34.0
Clintland 64					38.5		36.0
Ortley				76.8	38.3		38.0
Minhafer	3.8	24.6	79.5	81.3	38.1	45.5	34.5
AuSable				77.8	37.9		39.0
Neal			79.7	90.1	37.1		35.0
Coachman				108.9	36.1		37.0
Dupree	6.0	28.1	83.3	92.0	36.0	49.1	35.0
Dodge			76.8	89.4	35.1		37.0
Lodi				98.4	34.8		35.0
Clintland 60	6.5	20.6	73.5	88.7	34.4	44.7	36.0
Cherokee			75.2	90.9	34.3		35.0
Andrew	5.4	26.4	78.9	93.5	34.3	47.7	36.5
Tippecanoe					33.1		37.0
Burnett			90.7	89.6	32.7		37.5
Nodaway					32.6		37.0
Bonkee				81.3	32.4		36.0
CI 7463					31.9		39.0
Nehawka	5.4	22.1	70.1	86.9	31.9	43.3	35.0
Portage				87.4	31.8		35.5
Garry			85.2	87.7	31.4		35.5
Garland				65.7	27.4		35.0
Putnam 61					25.5		35.0
	Mean yield				35.5		
LSD .05	N.S.	N.S.	11.5	22.3	N.S.		

a - 1961 failure due to drought

TABLE 10. STANDARD VARIETY OAT TRIALS, IRRIGATED, U. S. NEWELL FIELD STATION, NEWELL, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt.
	Average Yields, bushels per acre						lb/bu
Brave					68.4		36.5
CI 7679					66.1		35.5
Andrew			79.1	83.7	64.1		35.5
Dupree	94.1	9.0	60.5	80.7	62.3	61.3	36.5
Lodi				85.6	61.1		35.0
AuSable				90.8	60.7		39.5
Clintland 64					59.8		36.0
Mo. 0-205	87.3	8.2	59.4	79.0	59.7	58.7	37.5
CI 7454					59.3		34.0
Ortley				86.8	58.1		38.0
Clintland 60	83.6	7.0	67.3	86.4	57.5	60.5	36.5
Minhafer	80.3	8.3	67.6	69.1	57.1	56.5	36.0
Newton					56.8		36.5
CI 7463					56.5		39.0
CI 7978					55.6		36.0
Dodge		10.4	76.1	82.4	53.8		38.0
Tippecanoe					52.6		36.0
Coachman				94.8	52.0		38.5
Portage	86.4	8.2	60.0	81.5	51.8	57.6	37.5
Rodney	98.8	8.9		88.7	51.4		37.5
Burnett	79.9	11.8	66.5	93.1	51.3	60.5	37.5
Garry	97.0	9.3	70.6	89.3	48.1	62.9	36.5
Neal			94.0	85.0	46.8		36.0
Garland				74.0	46.8		36.0
Bonkee				66.5	46.2		37.0
Goodfield	76.5	8.5			46.1		36.5
Nehawka	84.5	7.1	64.1	63.6	43.9	52.6	35.0
	Mean yield				55.3		
LSD .05	6.4	N.S.	N.S.	13.8	N.S.		

TABLE 11. STANDARD VARIETY OAT TRIALS, NORTHEAST RESEARCH FARM, WATERTOWN, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Clintland 64					80.1		34.5	
CI 7978					79.8		32.5	
Ortley	73.6	91.0	76.9	46.2	78.5	73.2	32.5	
Andrew	77.9	96.9	61.0	52.2	78.2	73.2	32.5	
Brave					75.5		32.5	
CI 7463					74.7		35.0	
Dupree			76.5	55.4	74.7		32.0	
Clintland 60	58.0	89.4	88.1	52.6	74.4	72.5	34.5	
Mo. 0-205	40.0	99.3	73.1	57.5	74.1	68.8	33.5	
Burnett	73.3	92.5	65.9	56.9	73.5	72.4	34.0	
Minhafer	74.8	89.8	93.6	61.9	72.3	78.5	32.5	
Garland			91.0	61.3	71.9		33.0	
Nodaway		92.4	72.0	55.5	71.5		34.5	
Dodge		91.0	88.2	52.3	71.0		34.5	
Portage		95.5	88.8	54.2	71.0		30.5	
Coachman				55.5	69.7		33.5	
Lodi				59.2	69.0		33.0	
CI 7454					68.9		32.5	
CI 7679					68.6		32.5	
Tippecanoe					67.6		34.0	
Putnam 61		84.1			67.3		33.0	
Garry	65.9	94.9	60.0	44.2	67.0	66.4	33.5	
Bonkee				53.9	63.5		34.5	
Nehawka		85.4	90.0	49.0	62.1		33.5	
Neal				52.6	61.7		35.5	
AuSable				46.8	60.0		35.9	
Rodney	80.0	88.7	70.0	40.6	58.3	67.5	35.5	
		Mean yield			70.6			
LSD .05	N.S.	8.6	17.2	6.9	11.1			

TABLE 12. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, SOUTHEAST RESEARCH FARM, BERESFORD, 1958-1964

Variety	1958	1960	1962	1963	1964	1958-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
CI 13751				16.8	27.1		60.5	
CI 13655					26.4		62.5	
CI 13654				19.1	25.6		59.5	
CI 13586				16.8	24.4		60.5	
Wells	20.8	39.4	8.3	17.3	21.8	21.5	60.0	
Lakota	25.4	35.9	7.8	19.6	21.7	22.1	56.5	
Crim			8.5	12.0	21.4		58.5	
Rushmore	20.7	28.2	8.1	11.8	19.4	17.6	57.0	
Thatcher	22.3	25.0	6.5	10.3	19.0	16.6	57.5	
Canthatch	21.7	25.1	6.5	10.4	18.5	16.4	57.0	
Selkirk	21.4	28.8	5.7	10.5	18.2	16.9	54.0	
Pembina		35.1	7.3	11.4	17.5		55.5	
Lee	19.7	22.9	6.9	8.7	17.4	15.1	55.0	
Justin			4.5	8.7	17.0		56.0	
		Mean yield			21.1			
LSD .05	2.8	6.9	3.0	2.7	4.9			

TABLE 13. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, AGRONOMY FARM BROOKINGS, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
CI 13655					32.8		61.0	
CI 13751				23.4	32.7		59.0	
Wells	38.9	25.0	24.5	20.9	27.0	27.3	58.5	
CI 13586				18.3	26.5		58.0	
CI 13654				21.1	24.8		60.5	
Crim		26.2	12.4	14.5	24.7		56.0	
Lakota	40.7	26.2	25.8	22.0	22.9	27.5	56.5	
Rushmore	37.9	20.9	17.5	12.7	21.6	22.1	55.5	
Mida	34.9	27.9	21.1	11.9	21.1	23.4	57.0	
Selkirk	39.1	30.7	22.3	11.9	21.1	25.0	51.5	
Lee	37.3	23.1	21.5	10.0	19.5	22.3	54.5	
Canthatch	31.3	22.2	16.4	10.4	19.0	19.9	53.5	
Justin		22.4	17.6	8.3	18.8		54.0	
Thatcher	29.2	17.5	15.0	10.3	18.6	18.1	52.0	
Pembina	40.1	27.4	22.0	13.5	17.1	24.0	51.5	
		Mean yield			23.2			
LSD .05	3.3		4.5	3.4	4.9			

TABLE 14. STANDARD VARIETY SPRING WHEAT TRIALS, RANGE FIELD STATION, COTTONWOOD, 1963-1964

Variety	1963	1964	1963-64	1964 Test Wt. lb/bu
	Average Yields, bushels per acre			
CI 13654	17.5	28.1	22.8	60.0
CI 13655		28.1		61.5
Justin	14.8	28.1	21.5	57.5
Rushmore	18.6	27.9	23.3	60.0
CI 13751	17.2	27.3	22.3	59.5
CI 13586	13.5	25.9	19.7	59.5
Canthatch	16.6	24.9	20.8	58.5
Selkirk	15.4	24.0	19.7	55.5
Crim	13.6	23.1	18.4	58.5
Thatcher	15.5	23.0	19.3	58.0
Mida	14.0	23.0	18.5	59.5
Pembina	14.8	22.4	18.6	57.0
Ceres		21.6		58.5
Lee	11.8	20.6	16.2	57.5
Marquis	10.9	13.2	12.1	49.0
	Mean yield	24.1		
LSD .05	N.S.	N.S.		

TABLE 15. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, NORTH CENTRAL SUBSTATION, EUREKA, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Lakota	16.8	11.5	30.6	15.6	50.1	24.9	60.0	
Wells	12.4	6.8	27.2	17.4	48.6	22.5	61.0	
CI 13586				17.9	45.4		61.5	
CI 13654				18.9	45.2		62.5	
CI 13751				17.8	42.6		61.0	
CI 13655					40.1		62.0	
Crim		23.5	23.4	12.3	39.7		61.0	
Justin		28.1	24.3	14.7	35.8		59.0	
Pembina		25.2	30.9	16.6	33.6		59.0	
Canthatch	15.2	32.1	21.8	16.5	32.6	23.6	60.0	
Thatcher	14.3	28.1	25.7	15.7	32.5	23.3	59.0	
Rushmore	15.0	23.5	24.5	16.4	32.4	22.4	60.0	
Selkirk	13.5	19.3	29.0	13.8	31.0	21.3	56.5	
Lee	14.2	26.0	26.6	13.7	27.9	21.7	59.5	
		Mean yield			38.4			
LSD .05	N.S.		7.5	N.S.	6.5			

TABLE 16. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, CENTRAL SUBSTATION, HIGHMORE, 1960-1964.

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
CI 13655					30.4		62.0	
Lakota	21.9	14.2	47.1	21.3	29.6	26.8	60.5	
CI 13654				17.6	28.9		62.0	
CI 13751				19.2	28.1		62.0	
Wells	21.5	14.5	52.4	22.8	27.5	27.7	62.5	
Selkirk	23.1	18.5	37.6	11.5	26.4	23.4	57.5	
CI 13586				16.7	26.3		60.0	
Rushmore	23.4	17.8	30.9	14.7	25.3	22.4	60.5	
Canthatch	22.6	18.1	26.1	14.6	24.9	21.3	60.0	
Crim		18.2	33.8	14.2	24.0		60.0	
Justin		16.2	37.4	13.4	23.8		59.0	
Pembina	24.5	17.6	39.6	15.0	23.4	24.0	58.0	
Thatcher	20.5	17.1	27.0	12.6	22.9	20.0	59.5	
Lee	24.6	16.4	37.2	16.7	20.3	23.0	59.5	
		Mean yield			25.8			
LSD .05	3.0		8.7	2.7	7.0			

TABLE 17. STANDARD VARIETY SPRING WHEAT AND DURUM TRIALS, NORTHEAST RESEARCH FARM, WATERTOWN, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Wells	30.0	32.5	38.3	7.6	33.5	28.4	57.0	
CI 13655					33.5		59.5	
CI 13654				18.6	33.0		58.5	
CI 13751				17.0	32.3		57.5	
Lakota	27.3	30.5	41.2	9.9	29.8	27.7	56.5	
Crim		25.4	18.0	6.9	29.1		55.0	
CI 13586				11.4	28.8		56.5	
Rushmore	22.4	22.0	20.7	9.5	27.6	20.4	56.5	
Canthatch	21.4	17.5	16.4	6.9	26.1	17.7	54.5	
Selkirk	25.7	25.8	22.4	8.6	24.8	21.5	51.0	
Justin		25.8	18.8	6.2	24.0		53.5	
Thatcher	13.1	17.2	14.1	7.0	23.8	15.0	51.5	
Pembina		26.4	21.4	13.7	23.2		52.5	
Lee	31.3	21.6	18.8	6.6	23.0	20.3	53.0	
		Mean yield			28.0			
LSD .05	5.7		4.9	2.3	6.7			

TABLE 18. STANDARD VARIETY SPRING WHEAT TRIALS, DRYLAND, U.S. NEWELL FIELD STATION, NEWELL, 1959-1964

Variety	1959	1960	1962	1963	1964	1959-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
CI 13586				27.8	28.0		61.0	
CI 13655					25.5		61.0	
Crim		12.2	32.0	25.2	25.3		58.5	
CI 13654				32.2	24.5		60.5	
Mida	0.6	12.2	36.8	24.1	24.2	19.6	60.5	
Selkirk	0.4	12.9	33.5	26.2	23.8	19.4	56.5	
Justin			31.8	23.0	23.3		59.0	
Thatcher	0.9	12.6	23.7	19.5	22.6	15.9	58.5	
Pembina		12.4	27.7	29.9	22.0		56.5	
Rushmore		13.3	25.2	22.6	22.0		59.0	
CI 13751				24.6	21.5		59.0	
Lee	0.2	11.8	30.5	23.1	21.0	17.3	59.5	
Canthatch		10.9	23.5	18.7	20.8		59.0	
Ceres	0.8	11.6			18.6		58.5	
Marquis	0.9	11.3	7.4	18.8	14.2	10.5	55.0	
		Mean yield			22.5			
LSD. .05		N.S.	6.1	N.S.	8.8			

TABLE 19. STANDARD VARIETY SPRING WHEAT TRIALS, IRRIGATED, U.S. NEWELL FIELD STATION, NEWELL, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
CI 13655					27.8		62.0	
CI 13654				32.3	27.3		62.0	
CI 13751				32.1	26.4		61.5	
Canthatch	41.6	6.5	36.2	35.5	26.0	29.2	60.5	
Rushmore	40.2	5.5	35.7	29.3	25.7	27.3	60.5	
Crim	43.0	6.3	34.1	32.5	23.5	27.9	61.0	
Thatcher	41.2			34.7	23.3		59.0	
CI 13586				32.5	22.7		61.0	
Selkirk	41.4	5.1	40.7	37.3	22.2	29.3	58.0	
Lee	41.2	5.2	37.8	30.5	21.0	27.1	60.0	
Justin		6.2	36.3	29.7	20.1		58.0	
Pembina	40.1	4.9	39.5	34.9	19.6	27.8	58.0	
		Mean yield			23.8			
LSD .05	N.S.		N.S.	N.S.	6.9			

TABLE 20. STANDARD VARIETY BARLEY TRIALS, SOUTHEAST RESEARCH FARM, BERESFORD, 1959-1964

Variety	1959	1961	1962	1963	1964	1959-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Larker			31.6	23.9	42.1		49.5	
Liberty	15.3	35.5	42.3	34.8	41.5	33.9	48.5	
Traill	5.2		26.3	32.3	41.5		48.0	
Betzes	9.1	22.4	11.8	18.9	41.3	20.7	47.6	
Trophy			24.8	20.5	37.9		48.0	
Parkland			15.4	17.1	37.0		48.0	
Otis	15.6	23.1	17.7	17.0	36.4	22.0	48.0	
Plains	10.0	34.7	21.5	21.3	34.8	24.5	49.0	
Custer	9.3		20.2	11.9	32.9		46.0	
Kindred	2.9		32.1	17.2	32.1		47.5	
Spartan	12.2	24.4	14.4	18.0	31.2	20.0	48.0	
Feebar	6.5		18.0	20.7	29.7		44.5	
	Mean yield				36.5			
LSD .05	5.6	N.S.	7.4	5.1	4.2			

TABLE 21. STANDARD VARIETY WINTER WHEAT TRIALS, SOUTHEAST RESEARCH FARM, BERESFORD, 1962-1964

Variety	1962	1963	1964	1962-1964	1964 Test Wt. lb/bu
	Average Yields, bushels per acre				
Scout			40.7		60.5
Gage			39.2		60.5
Shoshoni			37.8		61.0
Cheyenne	2.6	6.6	37.4	15.5	60.0
Lancer	5.8	18.3	37.1	20.4	61.0
Warrior	5.2	7.2	36.3	16.2	60.5
Wichita	6.2	8.9	36.1	17.1	61.5
Winalta			35.6		61.0
Rodco	6.4	12.6	35.5	18.2	61.0
Omaha	6.2	10.5	35.0	17.2	61.0
Minter	8.9	16.8	34.6	20.1	62.0
SD 56-53	10.5	17.9	34.0	20.8	60.5
Ottawa	6.0	13.0	33.5	17.5	61.5
Aztec		3.7	32.6		62.5
Nebred	2.9	9.3	30.7	14.3	61.0
Bison	4.7	4.6	30.4	13.2	61.0
	Mean yield		35.4		
LSD .05		3.9	N.S.		

TABLE 22. STANDARD VARIETY BARLEY TRIALS, AGRONOMY FARM, BROOKINGS, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Liberty	58.7	64.0	51.9	63.4	55.7	58.7	50.0	
Larker		69.0	53.1	54.8	53.6		51.0	
Swan			41.9	48.3	51.6		50.5	
Parkland	51.9	63.5	39.0	43.8	51.5	49.9	49.5	
Traill	48.5	64.2	49.6	53.5	50.4	53.2	49.0	
Husky	44.6	51.2	45.6	48.6	49.3	47.9	45.5	
Trophy		69.7	38.9	48.8	48.5		48.5	
Plains	51.6		48.6	46.0	48.3		49.5	
Odessa	36.8	46.7	38.4	53.5	47.6	44.6	48.0	
Betzes		47.3	32.1	45.5	46.1		50.0	
Feebar	54.9	38.7	50.9	44.6	42.5	46.3	46.5	
Kindred	35.0	50.2	31.1	42.4	42.1	40.2	48.5	
Otis			46.6	50.3	41.9		49.0	
Custer	69.6	58.7	46.5	48.4	41.6	53.0	47.5	
Spartan	53.4	38.5	40.8	47.8	41.0	44.3	49.5	
		Mean yield			47.4			
LSD .05	12.9		7.8	4.7	6.0			

TABLE 23. STANDARD VARIETY FLAX TRIALS, AGRONOMY FARM, BROOKINGS, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Summit	21.3	27.5	10.1	18.6	17.0	18.9	53.0	
B-5128	17.0	28.0	4.6	13.2	15.7	15.7	53.5	
Bolley	22.7	23.1	7.0	17.0	15.2	17.0	53.5	
Windom	23.4	29.6	9.1	19.2	15.1	19.3	54.5	
Arny	20.0	25.3	11.5	22.0	14.9	18.7	54.0	
CI 2426					14.1		53.0	
Marine	20.7	26.9	7.9	19.9	13.9	17.8	54.5	
Marine 62				18.7	13.4		53.5	
Redwood	21.5	29.2	5.8	14.9	13.4	17.0	54.0	
Linda			7.1	16.0	13.1		53.0	
Norland	14.8	27.3	4.0	12.7	12.8	14.3	52.0	
CI 1909					11.8		54.0	
Cree				18.5	11.2		53.0	
De Oro				9.7	10.3		52.5	
CI 1910					9.6		53.5	
B-5128(ss)				15.3	9.3		53.5	
Amalla					8.5		52.5	
Caldwell				18.4	7.9		53.5	
		Mean yield			12.6			
LSD .05	4.6	1.9	2.3	3.3	3.3			

TABLE 24. STANDARD VARIETY BARLEY TRIALS, RANGE FIELD STATION, COTTONWOOD, 1963-1964

Variety	1963	1964	1963-1964	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels/acre				
Custer	18.5	36.4	27.5	45.0	
Otis	22.4	36.0	29.2	47.0	
Larker	22.1	33.4	27.7	48.5	
Plains	11.6	31.0	21.3	48.5	
Betzes	31.3	27.1	29.2	47.0	
Spartan	24.0	22.9	23.5	45.5	
Traill	25.8	22.4	24.1	47.0	
Trophy	21.0	19.5	20.3	46.1	
Feebar	17.3	18.9	18.1	44.5	
Kindred	15.0	14.5	14.8	46.5	
Liberty	20.9	13.5	17.2	47.0	
Parkland	21.0	12.6	16.8	46.5	
Mean yield		24.0			
LSD .05	5.9	5.1			

TABLE 25. STANDARD VARIETY RYE TRIALS, SOUTHEAST RESEARCH FARM, BERESFORD. 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu
	Average Yields, bushels per acre						
Caribou	25.5		15.1	27.9	39.8	27.1	55.5
Antelope	25.4		20.9	27.0	37.8	27.8	55.5
Elk	28.9		10.8	4.6	36.5	20.2	55.0
Pierre	23.0		13.7	24.6	33.7	23.8	56.5
Mean yield					37.0		
LSD .05				17.4	N.S.		

TABLE 26. STANDARD VARIETY RYE TRIALS. AGRONOMY FARM, BROOKINGS, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu
	Average yields, bushels per acre						
Elk	45.9	11.3	6.6	12.1	35.5	22.3	55.5
Pierre	58.4	28.8	11.0	16.3	30.9	29.1	55.0
Caribou	56.0	26.0	8.0	22.2	30.7	28.6	54.5
Antelope	53.7	45.7	14.9	17.1	25.2	31.3	53.5
Mean yield					30.6		
LSD .05				N.S.	N.S.		

TABLE 27. STANDARD VARIETY BARLEY TRIALS, NORTH CENTRAL SUBSTATION, EUREKA, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Larker		26.6	57.9	51.6	71.5		51.0	
Traill	13.6	24.3	33.4	43.8	65.6	36.1	48.5	
Liberty	22.2	26.5	46.5	52.1	57.7	41.0	47.5	
Plains		17.6	37.1	40.4	56.5		49.5	
Trophy		26.6	33.3	40.9	55.5		48.0	
Spartan	29.3		37.8	43.7	52.3		48.0	
Parkland	14.8		35.6	49.1	51.9		48.5	
Betzes	24.6	27.3	34.5	45.0	49.9	36.3	46.5	
Custer		24.4	36.1	50.5	48.2		43.5	
Otis			40.1	55.1	46.6		44.0	
Feebar	8.9	17.7	35.3	37.8	43.9	28.7	45.5	
Kindred	12.0	24.7	35.8	29.4	41.9	28.8	46.5	
		Mean yield			53.5			
LSD .05	4.6	6.1	10.3	7.8	10.1			

TABLE 28. STANDARD VARIETY WINTER WHEAT TRIALS, CENTRAL SUBSTATION, HIGHMORE, 1961-1964

Variety	1961	1963	1964	1961-64	1964 Test Wt. lb/bu	Statistical Significance	Rust LR%	7-1-64 SR%
	Average Yields, bu/acre							
Gage			27.4		59.5		R-0	MR-1
Scout			27.1		60.5		S-65	R-0
Ottawa	8.5	40.5	25.6	24.9	59.0		X-10	S-40
Wichita	6.6	36.9	24.8	22.8	59.5		S-65	S-25
Omaha	6.9	36.0	24.3	22.4	57.5		S-65	S-65
Rodco	1.8	36.3	23.7	20.6	59.5		MR-10	Mixed
Aztec	12.3	24.8	23.3	20.1	61.5		S-65	S-65
Cheyenne	9.7	26.4	22.9	19.7	59.0		S-65	S-25
Shoshoni			22.4		58.0		S-40	S-40
Nebred	12.2	28.9	22.2	21.1	57.5		S-65	S-25
Bison	2.9	30.8	21.8	18.5	58.0		S-65	S-65
Lancer	7.6	30.5	21.7	19.9	58.5		S-65	R-0
Warrior	10.2	34.8	21.3	22.1	57.5		S-65	S-65
Winalta			18.3		58.0		S-65	Mixed
SD 56-53	8.0	31.7	16.0	18.6	55.5		S-65	R-0
Minter	22.2	23.5	15.3	20.3	56.0		S-65	R-0
	Mean yield		22.4					
LSD .05		5.1	4.8					

TABLE 29. STANDARD VARIETY BARLEY TRIALS, CENTRAL SUBSTATION, HIGHMORE 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Traill	16.7	22.2	69.4	41.3	41.5	38.2	51.0	
Larker		24.0	52.7	43.1	39.1		51.0	
Trophy		21.7	61.3	45.1	38.6		51.0	
Parkland	16.8	24.4	57.7	44.0	37.7	36.1	49.5	
Betzes	32.3	20.0	43.0	37.4	35.6	33.7	49.5	
Liberty	32.7	28.7	54.0	37.5	32.9	37.2	49.0	
Spartan	36.0		43.8	33.9	30.5		50.5	
Plains		20.9	50.8	32.4	29.3		49.5	
Otis			53.0	45.1	28.1		49.5	
Kindred	14.1	18.0	46.3	35.4	27.9	28.3	48.5	
Feebar	33.9	19.0	42.0	36.9	27.6	31.9	47.0	
Custer		35.7	67.0	36.8	27.5		47.5	
		Mean yield			33.0			
LSD .05	7.5	6.6	12.6	6.7	6.4			

TABLE 30. STANDARD VARIETY FLAX TRIALS, CENTRAL SUBSTATION, HIGHMORE, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Summit	23.2	10.8	7.5	10.4	17.1	13.8	53.0	
Bolley	22.3	10.0	6.9	7.6	16.1	12.6	51.5	
CI 1909					16.1		54.5	
CI 1910					15.5		54.0	
Windom	17.2	13.0	5.0	8.1	15.3	11.7	53.5	
Linda	19.6	10.7	4.7	8.1	14.5	11.5	50.5	
Marine 62				7.2	14.1		53.0	
Caldwell				9.2	13.5		53.0	
CI 2426					13.3		52.5	
Marine	19.2	10.7	9.8	7.7	13.1	12.1	51.5	
Amalla					12.7		51.0	
Arny	17.1	9.5	9.7	9.3	12.6	11.6	51.5	
Norland	12.1	7.2	3.6	9.4	12.1	8.9	53.0	
B-5128	16.7	10.5	6.1	9.1	11.9	10.9	52.0	
Redwood	16.9	8.9	6.0	9.1	11.1	10.4	51.5	
B-5128(ss)				10.7	10.7		52.0	
Cree				10.0	9.8		50.5	
De Oro				5.4	3.0		48.0	
		Mean yield			12.9			
LSD .05	3.5	2.2	3.5	1.9	3.6			

TABLE 31. STANDARD VARIETY BARLEY TRIALS, DRYLAND, U.S. NEWELL FIELD STATION, NEWELL, 1962-1964

Variety	1962	1963	1964	1962-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre					
Traill	47.5	41.9	34.6	41.3	49.0	
Betzes	51.6	40.0	31.2	40.9	50.0	
Otis	48.2	32.1	27.9	36.1	48.5	
Trophy	45.1	36.8	27.5	36.5	49.0	
Liberty	56.2	39.7	27.1	41.0	48.0	
Larker	54.2	35.8	26.9	39.0	50.5	
Feebar	37.8	34.4	25.5	32.6	46.0	
Spartan	47.6	43.3	25.3	38.7	51.0	
Custer	41.1	33.7	23.3	32.7	47.0	
Plains	49.4	30.4	23.2	34.3	49.0	
Kindred	33.6	30.7	22.5	28.9	48.5	
Parkland	44.3	34.2	20.5	33.0	50.5	
	Mean yield		26.3			
LSD .05	8.4	N.S.	6.2			

TABLE 32. STANDARD VARIETY BARLEY TRIALS, IRRIGATED, U.S. NEWELL FIELD STATION, NEWELL, 1962-1964

Variety	1962	1963	1964	1962-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre					
Traill	81.5	40.0	46.0	55.8	48.0	
Trophy	45.7	42.0	45.8	44.5	48.0	
Custer	65.3	46.3	44.8	52.1	46.5	
Betzes	62.1	46.9	43.2	50.7	49.0	
Liberty	61.9	45.0	42.2	49.7	48.0	
Spartan	50.2	47.8	41.7	46.6	49.5	
Larker		43.9	41.5		50.5	
Otis	47.3	40.9	40.2	42.8	47.5	
Feebar	63.8	35.5	36.8	45.4	45.0	
Plains	64.9	29.4	33.8	42.7	48.0	
Parkland		45.3	29.0		47.5	
Kindred	53.9	33.4	27.7	38.3	48.0	
	Mean yield		39.4			
LSD .05	N.S.	10.6	7.2			

TABLE 33. STANDARD VARIETY BARLEY TRIALS, NORTHEAST RESEARCH FARM, WATERTOWN, 1960-1964

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Liberty	48.3	41.6	38.2	37.9	54.9	44.0	49.5	
Larker		42.7	51.8	31.6	50.3		49.5	
Trophy		45.5	47.2	26.8	48.8		47.0	
Traill	37.2	41.8	48.8	25.6	47.8	40.2	47.5	
Betzes	35.1	40.3	43.7	34.0	47.8	40.2	46.0	
Otis			41.3	28.3	45.1		48.5	
Parkland	27.0	37.4	44.0	30.4	44.3	36.6	47.0	
Plains			38.1	34.0	43.5		49.5	
Feebar	34.0		41.9	29.7	42.7		46.0	
Custer			36.4	31.6	41.8		47.0	
Spartan	26.3		38.9	30.3	40.3		45.5	
Kindred	27.0	40.2	31.1	22.5	40.0	32.2	46.0	
		Mean yield			45.5			
LSD .05	10.9	N.S.	7.7	7.5	5.8			

TABLE 34. STANDARD VARIETY FLAX TRIALS, NORTHEAST RESEARCH FARM, WATERTOWN, 1960-1964

Variety	1960	1961	1962*	1963	1964	1960-64	1964 Test Wt. lb/bu	Statistical Significance
	Average Yields, bushels per acre							
Summit	18.2	21.3		16.4	24.0	20.0	53.5	
Redwood	13.1	18.3		13.0	23.3	16.9	53.5	
Windom	21.7	19.2		15.8	23.3	20.0	53.5	
Arny	15.5	16.5		16.7	23.1	17.9	54.0	
CI 2426					22.3		52.5	
CI 1909					22.1		53.5	
CI 1910					21.3		53.0	
Marine 62				17.0	21.2		54.0	
Linda	15.7	15.8		12.6	20.7	16.2	52.0	
Bolley	19.0	13.5		15.5	20.6	17.2	52.5	
B-5128	15.9	18.5		11.6	20.4	16.6	53.0	
Caldwell				13.0	20.2		53.0	
Marine	14.5	15.7		18.3	19.2	16.9	53.5	
B-5128(ss)				12.9	18.6		52.5	
Norland	13.0	18.7		12.6	18.6	15.7	53.0	
De Oro				6.1	18.4		53.0	
Cree				13.9	17.9		52.5	
Amalla					16.8		51.5	
		Mean yield			20.7			
LSD .05	1.8	2.7		2.0	2.5			

* Crop lost because of excessive lodging, average is for a 4-year period.

TABLE 35. SUPPLEMENTAL AGRONOMIC DATA FOR STANDARD VARIETY OAT TRIAL AT BROOKINGS, SOUTH DAKOTA, 1964

Variety	One-half Headed	Date Ripe	Height, inches	Crown Rust	Stem Rust
	June	July		7/21	7/21
Ortley	28	22	43	5-S	tr-S
Mo. 0-205	22	19	39	10-S	20-S
Garry	29	23	44	tr-MS	tr-MS
Portage	27	21	43	tr-MR	20-S
Dupree	21	19	35	2-MS	5-S
Lodi	27	22	44	tr-MS	tr-S
Burnett	23	20	37	2-X	tr-MS
Clintland 64	20	17	35	tr-MS	tr-MR
Coachman	25	20	36	5-S	2-S
CI 7978	23	20	36	2-MS	tr-MS
Clintland 60	20	18	36	2-S	tr-S
Garland	21	18	33	2-MS	tr-MS
CI 7679	21	17	33	5-S	5-S
Nehawka	19	17	33	tr-MS	10-S
Newton	23	19	37	2-MS	20-S
Brave	20	20	36	tr-MS	tr-S
Bonkee	21	17	35	tr-MS	0
Brunker	20	18	34	2-MS	20-S
AuSable	30	27	43	5-MS	5-S
Andrew	21	19	36	2-MS	10-S
Rodney	29	24	43	2-MS	tr-S
Tippecanoe	20	17	34	5-MS	2-MS
CI 7463	21	17	32	2-S	10-S
CI 7454	21	17	33	tr-S	10-S
Dodge	21	17	36	tr-MS	tr-S
Goodfield	22	18	33	tr-MS	tr-MR
Minhafer	20	17	38	tr-MS	tr-S
Putnam 61	19	17	36	tr-S	tr-MR
Neal	20	18	33	tr-S	2-S
Nodaway	20	18	36	2-MS	2-S

R - resistant
MR - moderately resistant
MS - moderately susceptible
S - susceptible
X - mixed reaction

TABLE 36. WINTER WHEAT DRILL STRIP VARIETY TRIALS, SOUTH CENTRAL RESEARCH FARM, PRESHO, 1960-1964 a/

Variety	1960	1961	1962	1963	1964	1960-64	1964 Test Wt. lb/bu
	Average Yields, bushels per acre						
Northern:							
Winalta				38.5	36.5		61
Minter	25.1	31.8	1.8	22.8	32.8	22.9	61
Yogo	15.5	15.6	1.6	21.2	26.5	16.1	57
Central:							
Warrior	24.5	30.2	4.0	36.4	43.6	27.7	61
Scout					41.2		62
Ottawa		33.8	18.0	39.2	39.3		62
Gage					38.9		61
Shoshoni					38.4		61
Cheyenne	24.0	25.6	2.0	31.4	36.8	24.0	62
Lancer			20.9	35.4	35.8		60
Omaha	30.6	45.0	6.6	35.0	34.0	30.2	60
Nebred	17.8	24.7	1.4	28.4	33.6	21.2	61
SD 56-53		32.9	13.6	25.0	28.4		58
Southern:							
Pawnee	27.0	32.5	4.2	25.8	41.6	26.2	60
Triumph				15.4	38.1		61
Wichita	28.0	24.4	7.1	23.2	36.7	23.9	62
Bison	25.4	16.8	4.9	21.4	35.4	20.8	62
Rodco			21.2	28.2	34.1		61
Aztec			1.1	26.0	33.1		63
LSD .05					2.2		

TABLE 37. WINTER BARLEY AND RYE TRIALS, SOUTH CENTRAL SUBSTATION, PRESHO, L963-1964 a/

Winter Barley				Rye			
Variety	Test Wt. lb/bu	1964 Yield, B/A	1963-64 Yield, B/A	Variety	Test Wt. lb/bu	1964 Yield, B/A	1963-64 Yield, B/A
Chase	48.5	36.9	26.8	Antelope	57.0	37.0	38.2
Mo B969	49.0	36.8	25.3	Elk	55.0	37.0	30.6
Kearney	49.0	35.1	27.0	Caribou	56.0	30.6	25.4
Dicktoo	49.3	34.5	25.7	Pierre	56.0	26.8	21.8
Mo B1222	47.5	31.7	25.0				
Average		35.0		Average		32.8	
LSD .05		2.3					

a/ Data furnished by H. A. Geise, Supt. Yields are averages of three replications. Area harvested was 6 by 100 feet.

TABLE 38. SPRING SMALL GRAIN VARIETY TRIALS AT THE SOUTH CENTRAL RESEARCH FARM, PRESHO, 1963-1964[a/]

Oats				Barley				Spring Wheat & Durum			
Variety	Test Wt. lb/bu	1964 Yield, B/A	1963-64 Yield, B/A	Variety	Test Wt. lb/bu	1964 Yield, B/A	1963-64 Yield, B/A	Variety	Test Wt. lb/bu	1964 Yield, B/A	1963-64 Yield, B/A
								S. wheat			
Burnett	38.5	60.1	49.4	Otis	49.0	30.6	26.7	Selkirk	52.0	12.8	8.6
Andrew	37.5	56.6	47.4	Spartan	45.5	23.6	18.0	CI 13571	47.0	8.8	
Tippecanoe	38.0	55.8		Larker	46.0	21.8	17.6	Crim	49.7	8.2	7.1
Neal	38.0	51.2	48.5	Custer	41.0	20.8	20.1	Justin	47.0	6.5	5.0
Dupree	37.5	50.6	49.8	Traill	40.5	20.0	18.2	Pembina	45.5	6.2	5.1
Tonka	40.0	49.8		Plains	46.0	17.4	18.0	Rushmore	47.0	4.6	4.3
Mo. 0-205	38.0	49.1	49.2	Liberty	40.0	17.1	17.0	Canthatch	49.0	4.4	5.8
Garland	38.5	47.3	43.8	Trophy	38.0	16.4	14.7	Lee	53.0	3.6	4.3
Garry	36.5	46.4	42.5					Durum			
Ransom	37.0	46.0	43.5					Lakota	52.0	14.1	13.3
Dodge	38.0	45.9	44.6					Wells	55.7	14.0	12.5
Clintland 60	38.5	44.8	42.6					Langdon	54.5	13.4	11.0
Nehawka	38.0	44.0	40.6					Ramsey	57.0	10.9	10.4
CI 7454	37.0	44.0									
Minhafer	38.2	42.2	41.2								
Clintland 64	37.5	35.5									
Average		48.1		Average		21.0		Average		9.0	
LSD .05		9.2		LSD .05		2.9		LSD .05		5.1	

a/ These data are included as a service to producers and are not part of the variety testing program. Data furnished through courtesy of H. A. Geise.

Harvested plot size was 4 by 45 feet. All yields reported are the average of two replications.

TABLE 39. SMALL GRAIN VARIETY TRIALS AT THE CLAYPAN RESEARCH FARM, PLANKINTON, 1963-1964

Oats

Variety	Test Wt. lb/bu	1964 bushels/acre	1963-64 bushels/acre
Andrew	36.0	24.2	49.0
Garry	33.5	21.9	53.0
Mo. 0-205	38.0	21.2	48.0
Garland	36.5	20.8	41.0
Minhafer	39.0	20.0	52.0
Dodge	36.5	17.8	44.0
Ransom	35.0	17.8	47.0
Tippecanoe	38.0	17.4	
Putnam 61	36.5	16.6	
Neal	36.0	16.5	44.0
Clintland 60	36.5	15.5	42.0
Brave	38.0	14.8	
Burnett	38.0	14.0	48.5
Nehawka	37.0	14.0	38.5
Dupree	37.0	14.0	45.9
Clintland 64	36.0	13.6	
Bonkee	36.5	11.3	
Rodney	34.5	11.3	
Tonka	38.0	11.0	
Average		16.5	
LSD .05		6.4	

Winter Wheat

Variety	Test Wt. lb/bu	Yield B/A	Winter Surv. %
Cheyenne	60.0	20.0	85
Lancer	61.0	19.3	75
Winalta	61.0	18.2	85
Rodco	59.0	16.9	60
Omaha	59.0	16.2	83
Minter	59.0	15.4	35
SD 56-53	59.0	15.2	75
Ottawa	59.0	14.2	53
Warrior	60.0	14.0	75
Wichita	60.0	13.5	63
Nebred	60.0	11.5	33
Average		15.8	

Barley

Variety	Test Wt. lb/bu	1964 bushels/acre	1963-64 bushels/acre
Otis	49.5	18.6	30.0
Spartan	50.0	16.4	28.0
Liberty	46.9	14.1	32.5
Custer	46.0	13.6	31.0
Traill	48.0	13.6	30.5
Plains	49.5	11.6	30.0
Trophy	49.5	12.6	27.0
Larker	49.0	12.4	34.0
Average		14.1	

Spring Wheat & Durum

Variety	Test Wt. lb/bu	1964 bushels/acre	1963-64 bushels/acre
Rushmore		10.5	14.7
Lee		9.7	13.0
Crim		9.5	14.3
Canthatch		9.3	12.0
Wells - d		8.3	19.4
Ramsey - d		8.3	13.6
Selkirk		7.9	11.8
Lakota - d		7.7	19.0
Langdon - d		6.9	13.0
Justin		5.7	10.8
Pembina		5.0	11.2
Average		8.1	
LSD .05		6.4	

Yields are the average of two replications. The plot size for spring grains was 4 by 45 feet; 6 by 100 feet for the winter grain.
Date of planting: April 24, 1964 Date Harvested: July 21 & 22, 1964.
Total precipitation, April through July; 8.67 inches

This data is furnished through courtesy of H. A. Geise.

TABLE 40. CHARACTERISTICS OF WHEAT VARIETIES TESTED OR BEING GROWN IN SOUTH DAKOTA

Variety	Parentage	Released When	Where
Winter Wheat			
Gage	Ponca x Mediteranean-Hope-Pawnee	1963	Nebr.
Lancer	Turkey-Cheyenne x Hope-Cheyenne$_2$	1963	Nebr.
Minter	Minturki$_2$ x Hope	1948	Minn. & SD
Nebred	Selected from Turkey (SD144)	1938	Nebr.
Omaha	Pawnee x Nebred	1960	Nebr.
Ottawa	(Med. - Hope X Pawnee)x(Oro-W38)	1960	Kansas
Scout	Nebred-Hope-Turkey)x(Cheyenne-Ponca)	1963	Nebr.
Warrior	Pawnee x Cheyenne	1960	Nebr.
Winalta	Minter x Wichita	1961	Canada
Bison	Chiefkan x Oro-Tenmarq	1956	Kansas
Cheyenne	Selected from Crimean, an introduction	1933	Nebr.
Pawnee	Kawvale x Tenmarq	1942	Kansas
Rodco	Corresponds closely to mixture of Concho & CI 12406	1957	Kansas
Shoshoni	Selected from Cheyenne	1961	Wyo.
Triumph	Private breeder	1940	Okla.
Wichita	Early Blackhull x Tenmarq	1944	Kansas
Yogo	(Minturki x Beloglina) x (Buffam)	1932	Montana
Spring Wheat			
Canthatch	Thatcher$_6$ x Kenya Farmer	1959	Canada
Crim	Klein Titan-Thatcher^3 x II-44-29-Tc^2	1963	Minn.
Justin	[(That.x K. Farmer)x(Lee x Mida)]x Conley	1963	N. Dak.
Lee	Hope x Bobin^2-Gaza	1951	Minn.
Pembina	Thatcher x (McMurachy-Exchange x Redman^3)	1959	Canada
Rushmore	Rival x Thatcher	1949	S. Dak.
Selkirk	(McMurachy x Exchange) x Redman	1955	Canada
Spinkcota	(Private breeder) Preston selection^2 x Red durum	1944	S. Dak.
Thatcher	Marquis-Iumillo x Marquis-Kanred	1934	Minn.
Durum			
Lakota	Sentry x (Ld 379-Ld 357)	1960	N. Dak.
Wells	Sentry x (Ld 379-Ld 357)	1960	N. Dak.
Langdon	[(Mindum x Carleton)xKhapli]x Ld 308 x Stewart x Carleton	1956	N. Dak.
Ramsey	Carleton x PI 94701	1956	N. Dak.
Stewart 63	Stewart^8 x St. 464	1963	Canada

These data are presented by D. G. Wells, Agronomy Dept. and G. W. Buchenau,
Abbreviations used: M. early - medium early; M. late - medium late;
V. early - very early; m-season - mid-season
E-MS, early to mid-season

Maturity	Straw Strength	Plant Height	Milling & Baking Qualities	Yielding Ability	Winter Hardiness				Disease Reaction		
					SW	NW	SE	NE	Leaf Rust	Stem Rust	Wheat Streak Mosaic
Early	Strong	Short	Good	High	G	P	G	P	Res.	Res.	Susc.
M. early	Strong	Short	Excel.	High	G	F	G	P	Susc.	Res.	Susc.
Late	Poor	M.tall	Excel.	Good	G	F	G	F	Susc.	Res.	Susc.
Medium	Poor	S-MT	Excel.	Good	G	F	G	P	Susc.	Susc.	Susc.
Early	Medium	Short	Good	High	G	P	G	P	Susc.	Susc.	Susc.
Early	Strong	Short	Good	High	G	P	F	P	Res.	Res.	Susc.
Early	Medium	Short	Excel.	High	G	P	F	P	Susc.	Res.	Tol.
M. early	Strong	Short	Excel.	High	G	F	G	P	Susc.	Susc.	Susc.
Medium	Poor	M.tall	Excel.	Good	G	F	G	F	Susc.	Mixed	Susc.
M. early	Strong	S-MT	Excel.	High	G	F	F	P	Susc.	Susc.	Tol.
M. late	Strong	S-MT	Excel.	High	G	F	G	P	Susc.	Susc.	Susc.
Early	Medium	Short	Good	Good	G	P	F	P	Susc.	Susc.	Susc.
M. early	Fair to good	M.tall	Excel.	High	G	P	F	P	Susc.	Mixed	Susc.
M. late	Strong	Short	Excel.	Good	G	F	F	P	Susc.	Susc.	Susc.
V. early	Fair	Short	Fair	Fair	P	P	P	P	Susc.	Susc.	Susc.
V. early	Poor	Short	Fair	Good	G	P	F	P	Susc.	Susc.	Susc.
Late	V. Poor	M.tall	Poor	Poor	G	F	G	F	Susc.	Susc.	Susc.
E-MS	Good	S-MT	Good	Medium					Susc.	Res.	
Early	Fair	Short	Good	High					Susc.	Res.	
m-season	Good	Tall	Excel.	Medium					Susc.	Res.	
Early	Fair	Short	Good	Medium					Susc.	Susc.	
Early	Good	S-MT	Excel.	High					Susc.	Res.	
Early	Good	S-MT	Good	High					Susc.	Mod. Susc.	
E-MS	Good	S-MT	Fair	Medium					Susc.	Res.	
Early	Good	Tall	Poor	High					Susc.	Susc.	
E-MS	Good	S-MT	Good	Medium					Susc.	Susc.	
Early	Good	Short	Excel.	High					Res.	Res.	
Early	Good	Short	Good	High					Res.	Res.	
E-MS	Fair	MT-T	Good	High					Res.	Susc.	
m-season	Fair	Tall	Good	Medium					Res.	Res.	
Late	Fair	Tall	Excel.	High					Res.	Res.	

Plant Pathology Dept.

V. poor - very poor; G - good; Res. - resistant
S-MT - short to mid-tall; F - fair; Susc. - susceptible
Excel. - excellent; P - poor; Mixed - some plants react both ways

TABLE 41. CHARACTERISTICS OF OAT VARIETIES RECOMMENDED FOR SOUTH DAKOTA, 1965

Variety	Parentage	Released	
		When	Where
Andrew	Bond x Rainbow	1949	Minnesota
Bonkee	Bonham^{5}2x Cherokee ^{2}x R. L. 2105	1963	Iowa
Brave	Putnam x LMHJA	1965	Illinois
Burnett	Victoria x Hajira-Banner 2x Colo	1957	Iowa
Clintland 64	Clintland ^{5}x LMHJA 3X$_{6}$Clintland 2X Clinton x Grey Algerian	1964	Indiana
Dodge	Clintland 2x Garry x Hawkeye-Victoria	1961	Wisconsin
Dupree	Anthony x Bond 2x Richland x Fulghum	1954	South Dakota
Garland	Clintland 2x Garry x Hawkeye-Victoria	1962	Wisconsin
Garry	Victory 2x Victoria x Hajira-Banner	1953	Canada
Lodi	Richland x Bond 3x Garry 2x Hawkeye x Victoria	1964	Wisconsin
Minhafer	Bond-Rainbow x Hajira-Joanette 2x Landhafer	1957	Minnesota
Mo. 0-205	Columbia 2x Victoria x Richland	1951	Missouri
Neal	Nemaha x Andrew-Landhafer	1963	Nebraska
Ortley	Garry 2x Santa Fe x R.L. 1942 3x R.L. 2228	1963	South Dakota
Portage	Ajax x Hawkeye-Victoria	1960	Wisconsin
Rodney	Victoria x Hajira-Banner 2x Victory-Hajira 3x Roxton	1954	Canada
Tippecanoe	Clintland 60 ^{2}x Mo. 0-205	1965	Indiana

TABLE 42. CHARACTERISTICS OF FLAX VARIETIES IN SOUTH DAKOTA

Variety	Parentage	Released		Yielding Ability
		When	Where	
RECOMMENDED FOR 1965				
B-5128	Golden x Rio	1943	N. Dak.	Medium
B-5128(ss)	Re-selection of B-5128	1962	N. Dak.	Medium
Bolley	Birio x C.I. 1134	1947	N. Dak.	Medium
Redwood	B-5128 x Redson	1951	Minn.	Medium
Summit	C.I. 980 x Zenith	1964	S. Dak.	High
Windom	Renew x Bison 2x Koto x Redwing 3x Redwood	1963	Minn.	High
NOT RECOMMENDED FOR 1965				
Arny	Crystal x Redson	1958	Minn.	High
Caldwell	Roman Winter x Argentine	1961	Texas	Medium
Marine	C.I. 975 x Sheyenne	1952	N. Dak.	Medium
Marine 62	Re-selection of Marine	1962	Minn.	Medium

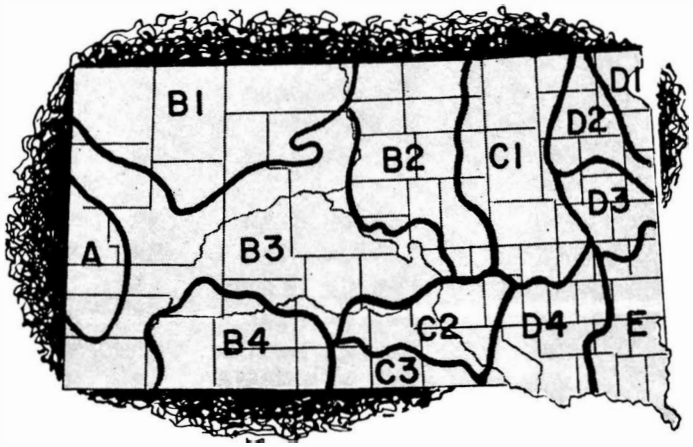
* R-resistant, MR-moderately resistant, MS-moderately susceptible, S-susceptible
∓ Heterogeneous reaction. Some plants resistant, some susceptible.

Data furnished through courtesy of R. A. Albrechtsen

Agronomic Characteristics						Disease Reaction			
Yielding Ability	Plant Height	Maturity	Lodging Resistance	Seed Color	Bushel Weight	Stem Rust	Leaf Rust	Smut	Red Leaf
High	Medium	Early	Medium	Yellow	Medium	MS	S	R	S
Medium	M-short	Early	Medium	Wht-Pk	High	MS	MS	R	S
High	Medium	Medium	Medium	Yellow	Medium	MS	MS	R	MS
High	M-tall	Medium	Good	Yel-Wt	High	MR	MS	R	S
Medium	Medium	M-early	Good	Yellow	High	MR	MR	R	S
Medium	Medium	Medium	Good	Yellow	High	MR	MR	R	S
Medium	Short	Early	Medium	Wht-Gy	Medium	S	S	R	S
Medium	M-short	Medium	Good	Yellow	High	MR	MR	R	S
High	Tall	Late	Good	White	Medium	MR	MS	R	S
High	Tall	Late	Good	White	Medium	MR	MR	R	S
Medium	Medium	Early	Good	Yellow	Medium	MS	MS	R	S
High	Medium	M-early	Medium	Grey	High	S	S	R	S
Medium	M-short	Early	Good	Ivory	Medium	MS∓	MS	R	S
High	Tall	Late	Medium	White	High	MR	MS	MR	S
High	Tall	Late	Medium	White	Medium	MS	MR	R	S
High	Tall	Late	Good	White	High	MR	MS	R	S
Medium	Short	Early	Excel.	Yellow	High	MS	MS	R	S

Agronomic Characteristics								Disease Reaction*		
Plant Height	Maturity	Lodging Resistance	Seed Color	Seed Size	Flower Color	Oil Content	Oil Quality	Rust Race 300	Wilt	Pasmo
M-tall	M-late	Good	Brown	M-L	Blue	Good	Fair	I	MS	S
M-tall	M-late	Good	Brown	M-L	Blue	Good	Fair	I	MS	S
Medium	Early	Good	Brown	Med.	Blue	High	High	I	MR	S
Medium	M-late	Fair	Brown	Med.	Blue	Good	Med.	I	MR	S
Medium	Early	Good	Brown	Med.	Blue	Med.	Med.	I	R	MS
Medium	Early	Good	Brown	M-S	Blue	Med.	High	I	R	S
Tall	Late	V. good	Brown	Med.	Blue	Med.	High	S	R	MR
Short	Medium	Good	Brown	Med.	Blue	Med.	Fair	R,S∓	R	S
Medium	Early	Good	Brown	M-S	Blue	Good	High	S	MR	MR
Medium	Early	Good	Brown	M-S	Blue	High	High	S	MR	MR

CROP ADAPTATION AREAS OF SOUTH DAKOTA



1965 RECOMMENDED SMALL GRAIN VARIETIES AND AREAS OF BEST ADAPTATION

Variety	Area of Best Adaptation
Spring Wheat	
Canthatch	B1
Crim	Statewide
Justin	B1, B2*, C1*, D1, D2, D3
Lee#	Statewide
Pembina	B1, B2, C1, D1, D2, D3
Rushmore	A, B1, B2, B3, B4, C2
Selkirk#	B1, B2, C1, D1, D2, D3
Durum	
Lakota	B1, B2, C1, C2, D1, D2, D3
Wells	B1, B2, C1, C2, D1, D2, D3
Flax	
B-5128	C1, D1, D2, D3
B-5128(ss)	C1, D1, D2, D3
Bolley	all flax areas
Redwood	C1, D1, D2, D3
Summit	all flax areas
Windom	all flax areas
Barley(malting)	
Larker	A, B2, C1, D2, D3
Traill	A, B2[a], C1, D1, D2, D3
Trophy	A, B2[a], C1, D1, D2, D3
Barley (feed)	
Liberty	Statewide
Plains	Statewide
Spartan	A, B1, B2*, B3, B4, C2, C3

Variety	Area of Best Adaptation
Oats	
Andrew#	Statewide
Bonkee	D4, E
Brave	Statewide
Burnett#	C1, C2, D1, D2, D3, D4, E
Clintland 64	C1, C2, C3, D1, D2, D3, D4, E
Dodge	D1, D2, D3, C1, D4, E
Dupree	B1, B2, B3, B4, C2
Garland	C1, D1, D2, D3, D4, E
Garry	C1, D1, D2*, D3
Lodi	D1, D2, D3*
Minhafer	Statewide
Mo. 0-205	Statewide
Neal	B2, B3, B4, C2, C3, D4
Ortley	C1[a], D1, D2, D3
Portage	C1[a], D1, D2, D3
Rodney	D1, D2, D3
Tippecanoe	C1[a], C2, C3, D3, D4, E
Rye	
Antelope	Statewide
Caribou	Statewide
Pierre	Statewide
Winter Wheat	
Gage	B4, C2, C3
Lancer	B3[a], C2, C3, B4
Minter	D4, E
Nebred	B3, B4, C2, C3
Omaha	B4, C2, C3, D4, E
Ottawa	B3[a], B4, C2, C3
Scout	B4, C2, C3
Warrior	B3[a], B4, C2, C3
Winalta	B1, B3, C2

\# for both irrigated and dryland
a Southern counties
* Northern counties

These recommendations are through the courtesy of R. A. Cline and E. E. Sanderson, Extension Agronomists - Crops.