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1962 Small Grain Variety Trials

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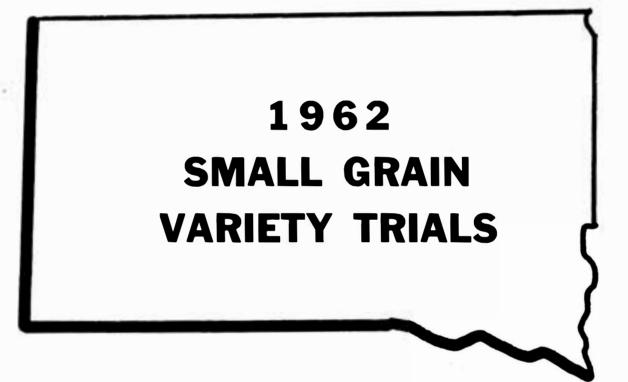
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CROP PERFORMANCE TESTING ACTIVITY

AGRICULTURAL EXPERIMENT STATION

SOUTH DAKOTA STATE COLLEGE BROOKINGS

Standard Variety Trials of Spring Small Grain and Oil Crops in South Dakota 1958 - 1962

J. J. Bonnemann1/

Statewide Services Agricultural Experiment Station South Dakota State College Brookings, South Dakota

This pamphlet reports the performance of spring small grain trials harvested in 1962. The testing of standard or newly released varieties of spring and durum wheat, oats, barley and flax was under the supervision of the Crop Performance Testing Activity of Statewide Services, Agricultural Experiment Station in 1962.

Data reported are the acre grain yields, tests weights and five-year averages where available. Tests by the plant breeders also are conducted at Brookings and most of the sub-stations. Promising strains or selections of their material are entered in Standard Variety Trials to determine adaptability and performance of the material before their release and recommendation to farmers and ranchers.

Location of trials

The trials were conducted at the several state and federal stations located within South Dakota. Trials at these locations are exposed to conditions more closely representative of the surrounding counties than would tests made only at the Main Station. The locations of the trials are given in Table 1.

Weather and climatic conditions

Weather conditions in the fall and winter of 1961 and 1962 caused some delay in field preparation and in seeding of 1962 small grains, especially in the eastern and central areas of the state. Late fall rains in eastern and, more especially, east central parts of South Dakota had adequately filled the soil moisture profile. Near record quantities of snowfall contributed to excessive surface water retarding spring operations.

1/ Assistant Agronomist The generous assistance of P. B. Price, D. G. Wells and all cooperating substation supervisors is gratefully acknowledged.

County	Location and Post Office	Date planted	Date harvested
	Spring Wheat and Durum		
Butte	U. S. Newell Field Station, Newell	April 18	August 8
Hyde	Central Substation, Highmore	April 19	August 2
McPherson	North Central Substation, Eureka	April 20	August 15
Brookings	Agronomy Farm, Brookings	April 23	August 13
Clay	Southeast Research Farm, Beresford	April 24	July 24
Codington	Northeast Research Farm, Watertown	April 26	August 14
	Oats		
Butte	U. S. Newell Field Station, Newell	April 18	August 8
Hyde	Central Substation, Highmore	April 19	July 30
McPherson	North Central Substation, Eureka	April 20	August 15
Brookings	Agronomy Farm, Brookings	April 23	July 27
Clay	Southeast Research Farm, Beresford	April 24	July 24
Codington	Northeast Research Farm, Watertown	April 26	Aug. 1 & 3
	B ar ley		
Butte	U. S. Newell Field Station, Newell	April 18	August 8
llyde	Central Substation, Highmore	April 19	July 18
McPherson	North Central Substation, Eureka	April 20	August 7
Brooking s	Agronomy Farm, Brookings	April 23	July 26
Clay	Southeast Research Farm, Beresford	April 24	July 24
Codington	Northeast Research Farm, Watertown	April 26	August 1
	Flax		
Hyde	Central Substation, Highmore	May 7	August 9
Brookings	Agronomy Farm, Brookings	April 23	August 17
Codington	Northeast Research Farm, Watertown	April 26	

Table 1. The location of trials and dates of seeding and harvesting of spring and durum wheat, oats, barley and flax trials, 1962

In the extreme western portion of the state, there was little surface moisture and practically no subsoil moisture. Except in the western areas of the state field preparations did not begin until mid-April. Seeding of the small grain trials began on April 18 and ended in the southeastern part of the state on April 28. The seeding and harvesting dates are shown in Table 1.

The climate throughout much of the small grain growing season of 1962 was favorable for lush growth. The temperatures, though not too much below normal mean temperatures, were more constant and not subject to periods of excessively hot or depressingly cool temperatures. Rainfall equaled or exceeded normal rainfall at most locations and timely rains fell until late July in adequate amounts. Table 2 reports the weather data of the test aites from April through August.

		Temper	ature		P	recipitat	10n
			Depar-			Depar-	
			ture	Ave.		ture	Total
		Mean	from	depar-	Month	from	depar-
Location	Month	average	normal	ture	total	normal	ture
1/		Degree				inches	
Brookings1/	April	43.0	-2.2		2.14	+ .37	
1 E	May	59.6	+2.0		4.10	+1.31	
	June	64.9	-2.2		4.76	+ .81	
	July	68.1	-5.1		7.29	+5.14	
	August	68.3	-2.9	-2.1	.93	-2.04	÷5.59
	Freeze May 1				19.22		
Highmorel/	April	46.7	+1.3		.99	75	
1 W	May	59.0	+1.8		6.18	+3.85	
	June	64.7	-2.1		4.02	+ .48	
	July	68.8	-5.7		4.88	+2.90	
	August	70.2	-2.6	-1.5	5.02	+2.98	+9.46
	Freeze May 1	- 300			21.09		
Eurekal/	April	43.8	+0.2		.38	97	
	May	56.2	+0.1		3.61	+ .75	
	June	63.8	-1.2		3.66	17	
	July	66.4	-6.0		6.18	+3.73	
	August	69.4	-1.3	-1.6	1.14	-1.27	+2.07
	Freeze May 1	- 300			14.97		
Newe111/	April	46.8	+2.7		1.03	62	
2 NW	May	55.2	-0.2		8.60	+6.11	
	June	62.6	-1.8		4.85	+1.30	
	July	66.9	-6.3		4.02	+2.26	
	August	68.5	-2.7	-1.7	.88	40	·H8.65
Last	Freeze May 1				19.38		
NE Farm	April	41.3			2.41		
15 N	May	55.6			9.26		
Watertown	June	62.8			4.45		
	July	67.3			6.29		
	August	66.9			1.14		
Last	Freeze April				23.55		
SE Farm	April	45.6			1.81		
6W,3S	May	64.0			4.34		
Beresford	June	67.6			4.34 5.98		
	July	71.6			5.72		
	August	71.6			3.60		
	-	19 - 30°			21.45		

Table 2.	Temperature and Precipitation Data for the 1962 Small Grai	n
	Growing Season of South Dakota	

1/ These are based upon reports of Monthly Climatological Data, U. S. Dept. of Commerce, Office of State Climatologist, State College, Brookings, S.D.

Stands were quite uniform in most trials. Abnormal amounts of precipitation throughout the growing season favored the expression of maximum plant heights and generous tillering. The rank growth was subject to lodging when rains and accompanying winds continued late into the small grain growing season. Only the dryland trial on the Newell Field Station was erect at harvest time. All other trials had lodged, the degree depending upon the væriety. Even varieties normally having strong straw were lodged. Estimates of yield by mid-June were very optimistic. However, the continuing precipitation provided conditions favorable to diseases, which developed rapidly. The result was one of the highest losses of wheat due to stem rust in several years. Test weights of wheat in the low forties were not upsommon. Oats, barley and flax also had low test weights in most trials.

Planting and Harvesting Procedures

<u>Planting</u>. The entries in each trial were planted in four replications. The plots were seeded with a specifically designed planter with double-disc openers mounted on an Allis-Chalmers "G" tractor. The plots were 4 rows one foot apart, and 16 feet long.

<u>Harvesting</u>. Two center rows, 13 feet long, were harvested for yield determinations. A small National mower, equipped with a catching basket, was used to cut the grain. All downed grain and loose heads were gleaned from the harvested area before the sample was bagged. The samples were returned to the Main Station for threshing in a small Vogel-type nursery thresher. Following threshing the samples were cleaned, weighed for yield determination, and test weighed for bushel weights.

Measurements of Performance

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

At the bottom of all yield tables is given 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 per cent level. If the trials were found to have statistically significant differences between mean yields 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 table indicate those variety yields adjacent to the line which are statistically alike. In the instance of this table, under environmental conditions which prevailed during 1962, and, considering both spring wheat and durum, Langdon, CI 13242, CI 13340, Pembina, Lakota, CI 13162, Spinkcota, Selkirk and Wells were not significantly different in yield from each other. In this same table under the same circumstances one may check across to determine which durums were significantly superior to others and the same may be done for spring wheat. The tables from all trials having significant differences are read the same as the above. 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.

The 1962 average yield of all entries is found at the bottom of the yield c.lumns in each table.

Discussion of results

Preparation of the land, adequate fertility levels and rotation sequence are the same each year in accordance with practices established some time ago. The following tables present the results of 1962 as well as five-year averages where available. These 1958-1962 averages present a truer indication of a variety's capabilities under varying temperature and moisture conditions. A brief summary for each crop is presented below.

<u>Spring Wheat</u> Favorable growing conditions during 1962 permitted the varieties of medium to late maturity, most resistant to present races of stem rust, to perform satisfactorily. Selkirk and Pembina were generally in the upper one-fourth to one-third of all trials. Selkirk has also performed well over the past few years as the three-year averages in the table indicate. Pembina has not been available for the period of time Selkirk has been available but has performed equally as well as Selkirk and has some milling qualities more desirable than Selkirk. In years when drier conditions prevail, especially in western areas of the state Rushmore and Lee are still quite satisfactory. These two are susceptible to race 15B of stem rust. Hence, Canthatch is more suitable from this standpoint. Spinkcota yields were satisfactory but is not acceptable to the milling industry.

<u>Durum Wheat</u> Lakota, Wells and Langdon durums performed quite satisfactorily in 1962 and also for the three years for which data are available. Langdon might be a high risk crop for susceptibility to race 15B of stem rust in 1963.

<u>Oats</u> The cool, wet season of 1962 favored later maturing varieties of oats over most of the state. Crown rust was severe in many areas. Specific oat varieties might react differently than shown in this pamphlet if favorable fertility levels are not maintained. Improved varieties will not react favorably with inadequate fertility. Also maturity, disease reaction, heat tolerance and kernel type should be considered in addition to yield. Some varieties are high yielding but have low test weights making them poor choices from the feeding standpoint.

Varieties deserving attention over the past few years are Burnett, Mo. 0-205, and Andrew in the east central area of the state. Garry and Rodney generally perform well in the northeastern area of especially high lands of the state. Dupree and Osage have performed satisfactorily in eastern areas of the state but Dupree is more adapted to the areas where diseases are not commonly a hazard.

Barley Larker and Trophy, two newly released malting barleys were included in the 1962 tests. Larker proved superior to Trophy in most trials during 1962. Traill and Trophy have had comparable yields during the past two years. Larker and Trophy have had comparable yields during the past two years. Larker and Trophy have generally been superior to Traill in test weight and kernel plumpness. Liberty barley again performed quite satisfactorily in most areas of the state.

Flax Arny flax ranked high in yield at Brookings and Highmore, the only sites at which flax tests could be harvested, because it did not lodge. Normally Arny does not do well from late seeding while Marine does because of greater earliness. Marine is earlier and should be planted if late seedings are necessary. The new release, Windom, rated well in the Brookings trial in 1962 and over the period of 4 years. The recommended varieties of B-5128, Bolley and Redwood, though not yielding exceptionally high in 1962, rate high in the long-time averages.

Va rie ty	1958 Aver	1960 age yield.	1962 bu/acre	1958-62 <u>b</u> /	1962 test wt. 1b/bu.	Statistical significance ^c
Langdon	28.6	40.6	32.2	33.8	54	1
CI 13162	24.5		27.2		56	
Lakota	29.3	40.7	25.8	31.9	55	
CI 13340			24.5		50	
Wells	29.5	38.9	24.5	31.0	50	
Lathrop			23.5		51	111
Selkirk	29.0	39.1	22.3	30.1	49	1110
Pembina		40.1	22.0		49	
Sentry	25.5		21.5		54	11111
Lee	23.3	37.3	21.5	27.4	52	
Spinkcota	29.9	32.7	21.3	28.0	57	11111
Mida	27.6	34.9	21.1	27.9	49	
CI 13242	2	• • • • •	19.1		49	
CI 13466			18.4	+1	51	
CI 13349			18.4		50	
Justin			17.6		50	11111
Rushmore	26.8	37.9	17.5	27.4	49	11111
Ransey	30.8	33.2	16.9	27.0	50	
Canthatch	28.5	31.3	16.4	25.4	49	- 'HHh
Yuma	23.9	29.7	16.2	23.3	50	S111
Thatcher	29.5	29.2	15.0	24.6	47	211
CI 13465	27.3	2/02	12.4	24.0	55	
Ceres	28.2	20.4	11.0	19.9	42	· · · · · ·
Conley	27.8	27.2	8.2	21.1	39	
Marquis	25.8	13.0	7.3	1 5. 4	32	
marquis	23.0		د. /	1 .	32	2
	Mean Yi	eld	19.3			
LSD .05	3.8	3.3	4.7			

Table 3. Standard Variety Spring Wheat and Durum Trials, Agronomy Farm, Brookings, 1958-1962a/

A 1959 and 1961 data not available

b Three-year average
c Using Duncan's Multiple Range Test at the 5% level.

	1958	1960	1962	1958-62 ^a	1962 Test wt.	Statistical	
Variety	Ave	rage yie	ld, bu/ac	c r e	1b/bu.	significance ^b	
Langdon	47.2	14.3	34.2	31.9	58		
CI 13242			33.1		57		
CI 13340			32.2		54	114	
Pembina			30.9		57		
Lakota	46.9	16.8	30.6	31.4	53		
CI 13162			29.8		58		
Sp ink cota	40.5	14.0	29.5	28.0	59		
Selkirk	38.4	13.5	29.0	27.0	55		
Wells	49.2	12.4	27.2	29.6	56		
Lee	45.4	14.2	26.6	28.7	56		
Thatcher	29.7	14.3	25.7	23.2	55		
Mida	37.0	12.6	25.5	25.0	57		
Ramsey	43.5	13.8	25.4	27.6	58		
Rushmore	33.0	15.0	24.5	24.2	56		
Justin			24.3		57		
CI 13465			23.4		55	· 1 M	
Canthatch	32.6	15.2	21.8	23.2	56		
Conley	28.9	10.5	17.9	19.1	51		
Ceres	31.1	13.0	9.6	17.9	50		
Marquis	27.3	14.5	2.9	14.9	29	,	
	Mean Yi	eld	25.2				
LSD .05	5.2	NS	7.5				

Table	4.	Standard	Variety	Spring	Wheat	and	Durum	Trials
	Nor	thcentral	Substat	ion, Eur	reka, 1	1953-	-1962ª	

a 1959 and 1961 data not available, three year average

b Using Duncan's Multiple Range Test at 5% level.

	North	east Res	earch Fa	rm, Waterto	wn, 1958-19	62 ^a
Variety	1958 Ave	1960 ra <u>ge y</u> ie	1962 1d, bu/a	1958-62 ^a cre	1962 Test wt. 1b/bu.	Statistical significance ^t
Lakota	27.8	27.3	41.2	28.8	53	1.2
CI 13340			40.5		55	
Wells	31.7	30.0	38.3	33.3	57	
Langdon	31.8	25.9	36.6	31.4	58	
Lathrop			36.6		55	1.5.1.1
CI 13162	30.6		35.7		57	1.0
Ramsey	23.0	25.3	23.9	24.1	56	
Spinkcota	29.8	26.8	23.4	26.6	59	
CI 13242			23.1		53	
Selkirk	23.5	25.7	22.4	23.9	52	
Pembina			21.4		51	1
Rushmore	17.1	22.4	20.7	20.1	54	
Lee	25.7	31.3	18.8	25.3	55	
Justin			18.8		55	
Mida	22.3	26.2	18.7	22.4	54	
CI 13465			18.0		55	
Canthatch	17.5	21.4	16.4	18.4	56	1
Ceres	15.6	12.6	15.8	14.7	50	1
Thatcher	13.1	13.1	14.1	13.4	54	2 × 2.
Conley	14.2	16.7	10.7	13.9	44	
-	Mean	yield	24.8		-10.57	
LSD .05	4.2	5.7	4.9		1000-0000000	
				-		

Table 5. Standard Variety Spring Wheat and Durum Trials, Northeast Research Farm, Watertown, 1958+1962^a

a- 1959 and 1961 data not available, three-year average

b- Using Duncan's Multiple Range Test at 5% level

Variety	1957	1959		1962) d , b u/ad	1957-62 ^a	Test wt. 1b/bu.	S tatisti cal significance ^b
		AVELAE	e ylei				significance-
Langdon				40.1		64	10
Ramsey				39.5		65	1 i
Wells				38.5		63	
Lakota		~ ~		37.3		62	
Mida	16.0	0.6	12.2		16.4	62	
CI 13162	20.3	0.6	13.4	35.7	17.5	60	11111
CI 13242			14.2	35.3		59	
CI 13340				33.5		60	
Selkirk	19.7	0.4	12.9	33.5	16.6	57	
CI 13465			12.2	32.0		60	1111
Justin				31.8		59	- 11 î.
Lee	18.5	0.2	11.8	30.5	15.3	61	1111
Spinkcota	17.0			29.1		62	
Pembina			12.4	27.7		59	
Rushmore	15.3		13.3			58	
Conley	14.0		12.0		12.6	59	
Thatcher	19.4	0.9	12.6	23.7	14.2	57	
Canthatch			10.9			58	11
Ceres	15.2	0.8	11.6	12.8	10.1	48	
Marquis		0.9	11.3	7.4		40	1
M	lean yi	eld		29.9			
LSD .05			NS	6.1			
	NG						
	NS ear av				ant. 1961	-drought no	CTOD.
a - Four-y	ear av		1958-	hailed o		drought, no ne 5% level.	crop.
a - Four-y b - Using	ear av	's Mul	1958- tiple	hailed (Range Te	est at th	-drought, no ne 5% level. g Wheat and D	
a - Four-y b - Using	ear av Duncan Table	's Mul 7. S	1958- tiple tandar	hailed (Range Te d Varie)	est at th ty Spring Highmore	ne 5% level. Wheat and D 1958-1962 ^a	Durum Trial,
a - Four-y b - Using	ear av Duncan Table	's Mul 7. S Centra	1958- tiple tandar 1 Subs	hailed (Range To d Varies tation, P	est at th ty Spring Highmore 196	ne 5% level. 3 Wheat and D 1958-1962 ^a 2	ourum Trial,
a - ^P our-y b - ^U sing	ear av Duncan Table 1958	's Mul 7. S Centra 1960	1958- tiple tandar 1 Subs 1962	hailed (Range To d Varie) tation, H 1958-62	est at th ty Spring Highmore 196 2 ^a Test	ne 5% level. 3 Wheat and D 1958-1962 ^a 52 54 54 wt.	Durum Trial,
a - Four-y b - Using	ear av Duncan Table 1958	's Mul 7. S Centra 1960	1958- tiple tandar 1 Subs 1962	hailed (Range To d Varies tation, P	est at th ty Spring Highmore 196 2 ^a Test	ne 5% level. 3 Wheat and D 1958-1962 ^a 2	ourum Trial,
a - Four-y b - Using Variety	ear av Duncan Table 1958 Av	's Mul 7. S Centra 1960 erage	1958- tiple tandar 1 Subs 1962 yield,	hailed of Range To d Varies tation I 1958-62 bu/acro	est at th ty Spring Highmore 2 ^a Test a 1b/	he 5% level. Wheat and D 1958-1962 ^a 2 wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells	ear av Duncan Table 1958	's Mul 7. S Centra 1960	1958- tiple tandar <u>1 Subs</u> 1962 yield, 52.4	hailed (Range To d Varie) tation, H 1958-62	est at th ty Spring Highmore 2 ^a Test a 1b/ 60	he 5% level. 5 Wheat and D 1958-1962 ^a 52 52 54 54 54 54 55 56 56 57 56 56 56 56 56 56 56 56 56 56	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340	ear av Duncan Table 1958 <u>Av</u> 48.8	's Mul 7. S Centra 1960 erage 21.5	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9	hailed of Range To d Varies tation, H 1958-62 bu/acro 40.9	est at th ty Spring Highmore 2 ^a Test a 1b/ 60 59	he 5% level. Wheat and D 1958-1962 ^a 2 wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota	ear av Duncan Table 1958 Av 48.8 42.9	's Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9	1958- tiple tandar 1962 yield, 52.4 49.9 47.1	hailed of Range To d Varied tation, H 1958-62 bu/acro 40.9 37.3	est at th ty Spring Highmore 2 ^a Test a 1b/ 60 55 58	he 5% level. Wheat and D 1958-1962 ^a 2 wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon	ear av Duncan Table 1958 <u>Av</u> 48.8	's Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3	hailed of Range To d Varies tation, H 1958-62 bu/acro 40.9	est at th ty Spring Highmore 2 ^a Test e 1b/ 60 55 58 61	he 5% level. Wheat and D 1958-1962 ^a wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1	's Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6	hailed of Range To d Varied tation, I 1958-62 bu/acro 40.9 37.3 37.1	est at the ty Spring Highmore 2 ^a Test a 1b/ 58 58 58 58 58 58	he 5% level. 3 Wheat and D 1958-1962 ^a 2 3 wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk	ear av Duncan Table 1958 Av 48.8 42.9	's Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6	hailed of Range To d Varied tation, H 1958-62 bu/acro 40.9 37.3	est at the ty Spring Highmore 2 ^a Test a 1b, 58 58 58 58 58 58 58 58	he 5% level. Wheat and D 1958-1962 ^a 2 wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.4	hailed of Range To d Varies tation, H 1958-62 bu/acro 40.9 37.3 37.1 31.4	est at the ty Spring Highmore 2 ^a Test a 1b/ 55 55 55 55 55 55 55 55 55 55 55 55 55	te 5% level. Wheat and D 1958-1962 ^a 2 wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8	1958- tiple tandar 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.4 37.3	hailed of Range To d Varied tation, P 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0	est at the ty Spring Highmore 2 ^a Test a 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	he 5% level. Wheat and D 1958-1962 ^a 2 wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.4 37.3 37.2	hailed of Range To d Varies tation, H 1958-62 bu/acro 40.9 37.3 37.1 31.4	est at th ty Spring Highmore 2 ^a Test e 1b/ 60 58 61 58 61 58 61 58 61 58 61 58 61 58 58 61 58 58 58 58 58 58 58 58 58 58 58 58 58	he 5% level. Wheat and D 1958-1962 ^a wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee CI 13162	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.6 37.4 37.3 37.2 36.3	hailed of Range To d Varied tation, P 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0	est at th ty Spring Highmore 2 ^a Test = 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	he 5% level. Wheat and D 1958-1962 ^a wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee CI 13162 CI 13242	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.6 37.4 37.3 37.2 36.3 36.1	hailed of Range To d Varied tation, P 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0	est at th ty Spring Highmore 2 ^a Test a 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	he 5% level. Wheat and D 1958-1962 ^a 2 wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee CI 13162 CI 13242 CI 13242 CI13465	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9 34.6	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8 24.6	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.6 37.4 37.3 37.2 36.3 36.1 33.8	hailed of Range To d Varied tation, H 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0 32.1	est at the ty Spring Highmore 2 ^a Test a 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	he 5% level. Wheat and D 1958-1962 ^a 2 wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Lakota Selkirk Justin Ramsey Lee CI 13162 CI 13242 CI 13242 CI13465 Mida	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9 34.6	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8 24.6	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.6 37.4 37.3 37.2 36.3 36.1 33.8 32.6	hailed of Range To d Varied tation, I 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0 32.1	est at the ty Spring Highmore 2 ^a Test a 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	he 5% level. Wheat and D 1958-1962 ^a 2 wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee CI 13162 CI 13242 CI 13242 CI 13245 Mida SFinkcota	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9 34.6 35.1 34.6	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8 24.6 23.4 24.8	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.6 37.4 37.3 37.2 36.3 36.1 33.8 32.6 32.4	hailed of Range To d Varied tation, H 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0 32.1 30.4 30.4	est at the ty Spring Highmore 2 ^a Test a 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	ne 5% level. 3 Wheat and D 1958-1962 ^a 2 3 wt. bu.	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee CI 13162 CI 13242 CI 13242	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9 34.6 35.1 34.6 30.1	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8 24.6 23.4 24.8 23.4	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.6 37.6 37.4 37.3 37.2 36.3 36.1 33.8 32.6 32.4 30.9	hailed of Range To d Varied tation, I 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0 32.1 30.4 30.6 28.1	est at the ty Spring Highmore 2 ^a Test = 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	he 5% level. 3 Wheat and D 1958-1962 ^a 2 2 3 4 5 6 7 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee CI 13162 CI 13242 CI 13465 Mida SF inkcota	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9 34.6 35.1 34.6 30.1 32.6	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8 24.6 23.4 24.8 23.4 14.8	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.4 37.3 37.2 36.3 37.2 36.3 36.1 33.8 32.6 32.4 30.9 27.2	hailed of Range To d Varied tation, I 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0 32.1 30.4 30.6 28.1 24.9	est at the ty Spring Highmore 2 ^a Test = 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	he 5% level. 3 Wheat and D 1958-1962 ^a 2 2 3 4 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee CI 13162 CI 13242 CI 13242	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9 34.6 30.1 32.6 28.3	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8 24.6 23.4 24.8 23.4 14.8 23.4 14.8 20.5	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.6 37.6 37.6 37.3 36.3 36.1 33.8 32.6 32.4 30.9 27.2 27.0	hailed of Range To d Varied tation, I 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0 32.1 30.4 30.6 28.1 24.9 25.3	est at the ty Spring Highmore 2 ^a Test a 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	he 5% level. 3 Wheat and D 1958-1962 ^a 2 2 3 4 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee CI 13162 CI 13242	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9 34.6 35.1 34.6 30.1 32.6 28.3 28.4	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8 24.6 23.4 24.6 23.4 14.8 23.4 14.8 20.5 22.6	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.6 37.6 37.4 37.3 36.3 36.1 33.8 32.6 32.4 30.9 27.2 27.0 26.1	hailed of Range To d Varied tation, I 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0 32.1 30.4 30.6 28.1 24.9 25.3 25.7	est at the ty Spring Highmore 2 ^a Test a 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	ne 5% level. 3 Wheat and D 1958-1962 ^a 2 2 3 4 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee CI 13162 CI 13242 CI 13245 Mida SF inkcota	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9 34.6 30.1 32.6 28.3	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8 24.6 23.4 24.6 23.4 14.8 20.5 22.6 19.3	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.6 37.6 37.6 37.6 37.6 37.6 37	hailed of Range To d Varied tation, I 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0 32.1 30.4 30.6 28.1 24.9 25.3 25.7 23.6	est at the ty Spring Highmore 2 ^a Test a 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	ne 5% level. 3 Wheat and D 1958-1962 ^a 2 2 3 4 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7	ourum Trial,
a - Four-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee CI 13162 CI 13242 CI13465 Mida Spinkcota Rushmore Conley Thatcher Canthatch Ceres Marquis	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9 34.6 35.1 34.6 30.1 32.6 28.3 28.4 29.0 23.3	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8 24.6 23.4 24.6 23.4 24.8 23.4 14.8 20.5 22.6 19.3 19.1	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.6 37.4 37.3 37.2 36.3 37.2 36.3 36.1 33.8 32.6 32.4 30.9 27.2 27.0 26.1 22.6 10.6	hailed of Range To d Varied tation, I 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0 32.1 30.4 30.6 28.1 24.9 25.3 25.7	est at the ty Spring Highmore 2 ^a Test a 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	ne 5% level. 3 Wheat and D 1958-1962 ^a 2 2 3 4 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7	ourum Trial,
A - Pour-y b - Using Variety Wells CI 13340 Lakota Langdon Pembina Selkirk Justin Ramsey Lee CI 13162 CI 13242 CI 13242 CI 13242 CI 13245 Mida Spinkcota Rushmore Conley Thatcher Canthatch Ceres Marquis	ear av Duncan Table 1958 <u>Av</u> 48.8 42.9 45.1 33.4 40.9 34.6 35.1 34.6 30.1 32.6 28.3 28.4 29.0	s Mul 7. S <u>Centra</u> 1960 erage 21.5 21.9 20.9 24.5 23.1 20.8 24.6 23.4 24.8 23.4 14.8 23.4 14.8 20.5 22.6 19.3 19.1 Le1d	1958- tiple tandar 1 Subs 1962 yield, 52.4 49.9 47.1 45.3 39.6 37.6 37.6 37.6 37.6 37.6 37.6 37.6 37	hailed of Range To d Varied tation, I 1958-62 bu/acro 40.9 37.3 37.1 31.4 33.0 32.1 30.4 30.6 28.1 24.9 25.3 25.7 23.6	est at the ty Spring Highmore 2 ^a Test a 1b/ 58 58 58 58 58 58 58 58 58 58 58 58 58	ne 5% level. 3 Wheat and D 1958-1962 ^a 2 2 3 4 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7	ourum Trial,

Table 6		Standard Variety Spring Wheat and Durum Trial, Dryland,	
U.	s.	Newell Field Station, Newell, 1957-1962ª	

a- Three-year average: 1959 and 1961 data not available

b- Using Duncan's Multiple Range Test at the 5% level.

					1962	
Variety	1958 Ave	1960 r <u>ag</u> e yie	1962 ld s , bu		Te st wt. 1b/bu.	Statistical significance
	-500					
athrop			10.3		51	
Spinkcota	20.6	25.5	10.1	18.7	56	
CI 13465			8.5		50	
Vells	20.8	39.4	8.3	22.8	48	
lushmore	20.7	28.2	8.1	19.0	46	
akota	25.4	35.9	7.8	23.0	46	
CI 13340			7.6		46	
embina		35.1	7.3		42	
I 13162	20.6		7.2		50	
CI 13242			6.9		45	1
Lee	19.7	22.9	6.9	16.5	46	1
anthatch	21.7	25.1	6.5	17.8	48	
Thatcher	22.3	25.0	6.5	17.9	45	
onley	19.3	18.9	6.4	14.9	42	
eres	22.7		5.9		44	
Belkirk	21.4	28.8	5.7	18.6	43	
Langdon	23.9	39.5	4.9	22.8	45	
lida	22.7	22.0	4.7	16.5	56	
lamsey	19.2	28.4	4.6	17.4	44	4
lustin			4.5		41	1
	n yield		6.9		• =	
LSD .05		6.9	3.0	-		

Table 8. Standard Variety Spring Wheat and Durum Trials, Southeast Research Farm, Beresford, 1958-1962ª

a- 1958 and 1960 data from station formerly at Menno; 1959 and 1961, unavailable

b- Using Duncan's Multiple Range Test at the 5% level

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Table 9.	Standard Variety Spring Wheat and Durum Trials, Irrigated,
Section 201	U. S. Newell Field Station, Newell, 1957-1962 ^a

Variety	1957	1959 Average	1960 yields,	1962 bu/acre	1957 - 62 ^a	1962 Test wt. 1b/bu.
Wells				44.2		62
Selkirk	16.4	36.4	41.4	40.7	33.7	59
Pembina		31.8	40.1	39.5		58
Lee	18.3	25.5	41.2	37.8	30.7	58
Justin				36.3		60
Canthatch		·36.2	41.6	36.3		58
Rushmore	17.0	30.7	40.2	35.7	30.9	59
CI 13162	20.4	34.5	40.2	35.1	32.6	60
CI 13465			43.0	34.1		58
Mida	17.5	38.3	38.7	33.3	32.0	60
Langdon				30.5		61
Ceres	18.2	40.2	41.7	20.8	30.2	50
		Mea	n yield	35.4		
LSD .C	05 3.0	6.2	NS	NS		

a- Hailed out in 1958: 1961 data not available; four year average.

Variety Average yields, bu/acre lb/bu. significance Garland 94.7 34 Minhafer 59.9 38.0 113.8 98.2 92.3 80.4 35 Cherokee 57.1 39.5 119.5 90.1 82.0 77.6 34 Putnam 61 96.1 81.9 35 30 31 30 Cl 7399 81.8 30 31 70.6 33 70.6 33 Tonka 97.1 79.2 37 70 63 32 70.6 33 Newton 77.6 33 70.6 32 70.6 33 70 70.6 70.8 70.8 73 70.102.9 104.2 73.7 80.7 30 70.8 70.8 73 70.102.9 104.2 73 70 70.7 70.7 70 70 70 70.7 70.7 70.7 70 70 70.7 70.7 70.7 70.7 70.7	Vendeter	1958	1959 1960		1962	1958-62	1962 Test wt.	Statistical
Minhafer 59.9 38.0 113.8 98.2 92.3 80.4 35 Cherokee 57.1 39.5 119.5 90.1 82.0 77.6 34 Putnam 61 96.1 81.9 35 35 36 C1 7399 81.4 33 30 31 C1 7400 81.4 33 31 Tonka 97.1 79.2 37 37 C1 7440 76.8 32 32 Dodge 86.5 74.6 32 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 C1 7473 118.4 106.4 73.4 29 33 Sauk 71.4 27 7 81.4 27 Brunker 70.3 33.5 129.7 103.7 76.5 29 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway<	Variety		Average	/10105,	bu/acr	<u>e</u>	ID/DU.	significance
Minhafer 59.9 38.0 113.8 98.2 92.3 80.4 35 Cherokee 57.1 39.5 119.5 90.1 82.0 77.6 34 Putnam 61 96.1 81.9 35 35 35 C1 7399 81.4 33 30 31 C1nka 97.1 79.2 37 37 C1 7440 76.8 32 32 32 Newton 77.6 33 32 33 Dodge 86.5 74.6 32 36 Godfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 33 Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 77 80.7 33 33 Andrew 57.4 40.5 125.1 89.0 70.3 33 33 Nodaway 98.9 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></td<>								1
Cherokee 57.1 39.5 119.5 90.1 82.0 77.6 34 Putnam 61 96.1 81.9 35 CI 7399 81.8 30 Clinton 81.4 33 Tonka 97.1 79.2 37 CI 7440 78.5 32 Newton 77.6 33 Shield 76.8 32 Dodge 86.5 74.6 32 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 Goodfield 57.4 40.5 125.1 89.0 70.3 33 Andrew 57.4 40.5 125.1 89.0 77.3 31 Modaway 98.9 69.2 33 33 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Putnam 61 96.1 81.9 35 CI 7399 81.8 30 Clinton 81.4 33 Tonka 97.1 79.2 37 CI 7440 78.5 32 Newton 77.6 33 Shield 76.8 32 Dodge 86.5 74.6 32 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 CI 7473 118.4 106.4 73.4 27 27 Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 33 3 3 3 Nodaway 98.9 69.2 33 33 3 3 Nehawka 56.9 35.5 129.7 100.7 65.9 77.3 31 31						80.4		
CI 7399 81.8 30 Clinton 81.4 33 Tonka 97.1 79.2 37 Tonka 97.1 79.2 37 Clinton 78.5 32 Newton 77.6 33 Shield 76.8 32 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 CI 7473 118.4 106.4 73.4 27 33 Burnett 73.4 39.5 117.7 113.8 76.5 29 Dupree 69.5 44.5 125.1 89.0 76.5 29 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway 98.9 69.2 33 33 33 33 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Modaway 98.9 69.2 33 <		57.1	39.5 119.5			77.6		
Clinton 81.4 33 Tonka 97.1 79.2 37 CI 7440 78.5 32 Newton 77.6 33 Shield 76.8 32 Dodge 86.5 74.6 32 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 Maubay 67.7 37.0 120.9 104.2 73.7 80.7 30 CI 7473 118.4 106.4 73.4 27 8 8 7 Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 8 8 27 Brunker 70.3 33 33 33 Andrew 57.4 40.5 125.1 89.0 70.3 31 Modaway 98.9 69.2 33 33 33 33 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Moi 0-205 73.4 <td< td=""><td></td><td></td><td></td><td>96.1</td><td></td><td></td><td></td><td></td></td<>				96.1				
Tonka 97.1 79.2 37 CI 7440 78.5 32 Newton 77.6 33 Newton 77.6 33 Newton 77.6 32 Dodge 86.5 74.6 32 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 CI 7473 118.4 106.4 73.4 27 27 27 Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 27 27 27 27 Burnett 73.4 39.5 129.7 100.7 65.9 29 20 Nodaway 98.9 69.2 33 33 31 21 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
CI 7440 78.5 32 Newton 77.6 33 Shield 76.8 32 Dodge 86.5 74.6 32 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 CI 7473 118.4 106.4 73.4 27 80.7 30 33 Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 87.4 40.5 125.1 89.0 70.3 76.5 29 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway 98.9 69.2 33 33 33 33 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 Marion 73.3 <	Clinton				81.4		33	
Newton 77.6 33 Shield 76.8 32 Dodge 86.5 74.6 32 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Subaption 67.7 37.0 120.9 104.2 73.7 80.7 30 CI 7473 118.4 106.4 73.4 27 27 Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 33 33 33 33 33 Andrew 57.4 40.5 125.1 89.0 70.3 76.5 29 29 33 33 33 Nodaway 98.9 69.2 33 33 33 33 33 34 34 35 110.7 78.0 64.8 74.7 <				97.1	79.2			THUI,
Shield 76.8 32 Dodge 86.5 74.6 32 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 Cl 7473 118.4 106.4 73.4 27 27 Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 27 27 27 27 27 Brunker 70.3 33 33 33 33 33 Andrew 57.4 40.5 125.1 89.0 70.3 76.5 29 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway 98.9 69.2 33 33 33 33 Marion 73.4 39.5 117.7 78.0 64.8 74.7 33 Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 <td>CI 7440</td> <td></td> <td></td> <td></td> <td>78.5</td> <td></td> <td>32</td> <td>111111</td>	CI 7440				78.5		32	111111
Dodge 86.5 74.6 32 Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 CI 7473 118.4 106.4 73.4 27 80.7 30 Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 33 33 Andrew 57.4 40.5 125.1 89.0 70.3 76.5 29 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway 98.9 69.2 33 33 33 34 111 111.4 69.5 81.8 32 111	Newton						33	
Goodfield 57.1 21.0 105.6 96.4 73.8 70.8 37 Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 CI 7473 118.4 106.4 73.4 27 Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 77 80.7 33 33 Andrew 57.4 40.5 125.1 89.0 70.3 76.5 29 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway 98.9 69.2 33 33 33 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 Marion 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4	Shield				76.8		32	
Waubay 67.7 37.0 120.9 104.2 73.7 80.7 30 CI 7473 118.4 106.4 73.4 27 Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 Brunker 70.3 33 Andrew 57.4 40.5 125.1 89.0 70.3 76.5 29 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway 98.9 69.2 33 33 33 33 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 Marion 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.4 <	Dodge			86.5	74.6		32	
CI 7473 118.4 106.4 73.4 27 Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 Brunker 70.3 33 Andrew 57.4 40.5 125.1 89.0 70.3 76.5 29 33 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 33 Nodaway 98.9 69.2 33 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 33 Marion 73.4 39.5 117.7 78.0 64.8 74.7 33 33 Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 30 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 32 Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 32 Portage 121.6 107.4 62.4 32 32 Osage 60.1 26 31 Ajax 60.1 26 32 Yikota 54.9 27 31 Branch 51.3 25 27 James 28.4 39 39 Mean yield 65.0 39	Goodfield	57.1	21.0 105.0	96.4	73.8	70.8	37	
Burnett 73.4 39.5 117.7 113.8 72.1 83.3 29 Sauk 71.4 27 Brunker 70.3 33 Andrew 57.4 40.5 125.1 89.0 70.3 76.5 29 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway 98.9 69.2 33 33 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 Marion 73.4 39.5 117.7 78.0 64.8 74.7 33 Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32	Waubay	67.7	37.0 120.9	104.2	73.7	80.7	30	
Sauk 71.4 27 Brunker 70.3 33 Andrew 57.4 40.5 125.1 89.0 70.3 76.5 29 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway 98.9 69.2 33 33 33 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 Marion 73.4 39.5 117.7 78.0 64.8 74.7 33 Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32 32 31 Ajax 60.1 26 26 31 31 <	CI 7473		118.4	106.4	73.4		27	
Brunker 70.3 33 Andrew 57.4 40.5 125.1 89.0 70.3 76.5 29 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway 98.9 69.2 33 33 11111 Nobaway 98.9 69.2 33 31 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 Marion 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32 32 Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 Park 58.2 26 26 27	Burnett	73.4	39.5 117.7	113.8	72.1	83.3	29	
Andrew 57.4 40.5 125.1 89.0 70.3 76.5 29 Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway 98.9 69.2 33 33 33 33 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 Marion 73.4 39.5 117.7 78.0 64.8 74.7 33 Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.9 83.4 75.3 28 Portage 121.6 107.4 62.4 32 32 Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 Park 58.2 26 26 27	Sauk				71.4		27	
Dupree 69.5 44.5 124.1 101.4 69.5 81.8 32 Nodaway 98.9 69.2 33 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 Marion 73.4 39.5 117.7 78.0 64.8 74.7 33 Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32 31 Ajax 60.1 26 31 34.5 32 31 Ajax 58.2 26 26 32 32 33 32 Park 58.2 26 32 33 32 33 33 33 34 <t< td=""><td>Brunker</td><td></td><td></td><td></td><td>70.3</td><td></td><td>33</td><td></td></t<>	Brunker				70.3		33	
Nodaway 98.9 69.2 33 Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 Marion 73.4 39.5 117.7 78.0 64.8 74.7 33 Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32 31 31 Ajax 60.1 26 31 31 45.5 27 Garty 68.8 41.0 118.0 111.7 59.5 79.8 26 Park 58.2 26 27 27 33 25 33 39 Mean yield 65.0 28.4 39 39 39 39 39 39 <td>Andrew</td> <td>57.4</td> <td>40.5 125.1</td> <td>89.0</td> <td>70.3</td> <td>76.5</td> <td>29</td> <td></td>	Andrew	57.4	40.5 125.1	89.0	70.3	76.5	29	
Nehawka 56.9 33.5 129.7 100.7 65.9 77.3 31 Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 Marion 73.4 39.5 117.7 78.0 64.8 74.7 33 Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32 31 Osage 61.0 31 31 4jax 60.1 26 Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 Park 58.2 26 27 27 33 25 Ransom 45.5 27 27 27 27 27 James 28.4 39 39 39 39 <td>Dupree</td> <td>69.5</td> <td>44.5 124.1</td> <td>101.4</td> <td>69.5</td> <td>81.8</td> <td>32</td> <td></td>	Dupree	69.5	44.5 124.1	101.4	69.5	81.8	32	
Mo. 0-205 73.4 45.5 126.2 98.6 65.7 81.9 32 Marion 73.4 39.5 117.7 78.0 64.8 74.7 33 Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32 Osage 61.0 31 Ajax 60.1 26 Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 Park 58.2 26 27 27 27 27 27 27 27 28.4 39 Mean yield 65.0 28.4 39 39 39 39 39 39	Nodaway			98.9	69.2		33	
Marion 73.4 39.5 117.7 78.0 64.8 74.7 33 Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32 1111 Osage 61.0 31 31 111 26 Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 Park 58.2 26 27 111	Nehawka	56.9	33.5 129.7	100.7	65.9	77.3	31	
Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32 31 Osage 61.0 31 31 31 Ajax 60.1 26 26 Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 Park 58.2 26 27 27 27 27 27 Branch 51.3 25 25 26 27 25 Ransom 45.5 27 27 28.4 39 39 Mean yield 65.0 27 39 39 39	Mo. 0-205	73.4	45.5 126.2	98.6	65.7	81.9	32	
Clintland 60 73.3 31.0 119.1 106.4 64.7 78.9 30 Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32 31 Osage 61.0 31 31 31 Ajax 60.1 26 26 Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 Park 58.2 26 27 27 27 27 27 Branch 51.3 25 25 26 27 25 Ransom 45.5 27 27 28.4 39 39 Mean yield 65.0 27 39 39 39	Marion	73.4	39.5 117.7	78.0	64.8	74.7	33	
Minton 80.1 38.5 116.3 113.4 63.9 82.4 29 Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32 11111 Osage 61.0 31 31 11111 60.1 26 Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 Park 58.2 26 26 111111 111111 111111 1111	Clintland 60		31.0 119.	106.4	64.7		30	
Rodney 70.9 34.5 103.9 103.9 63.4 75.3 28 Portage 121.6 107.4 62.4 32 111111111111111111111111111111111111								
Portage 121.6 107.4 62.4 32 11111 Osage 61.0 31 11111 Ajax 60.1 26 11111 Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 26 11111 Park 58.2 26 11111 Vikota 54.9 27 11111 Branch 51.3 25 11111 Ransom 45.5 27 11111 James 28.4 39 11111								
Osage 61.0 31 Ajax 60.1 26 Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 Park 58.2 26 111.7 58.2 26 111.7 Vikota 54.9 27 27 27 27 Branch 51.3 25 25 Ransom 45.5 27 28.4 39 Mean yield 65.0 10 10								
Ajax 60.1 26 Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 Park 58.2 26 26 111.7 58.2 26 Vikota 54.9 27 27 27 25 25 Branch 51.3 25 27 28.4 39 Mean yield 65.0 27 28.4 39	-							
Garry 68.8 41.0 118.0 111.7 59.5 79.8 26 111111111111111111111111111111111111	-							
Park 58.2 26 Vikota 54.9 27 Branch 51.3 25 Ransom 45.5 27 James 28.4 39	-	68.8	41.0 118.) 111.7		79.8		
Vikota 54.9 27 Branch 51.3 25 Ransom 45.5 27 James 28.4 39	•							
Branch 51.3 25 Ransom 45.5 27 James 28.4 39 Mean yield 65.0								
Ransom 45.5 27 James 28.4 39 Mean yield 65.0								
James 28.4 39 Mean yield 65.0								
Mean yield 65.0								
			Me	an yiel				20
	LSD .05	9.5	5.9 7.	3 15.9	16.4	~~~~		

Table 10. Standard Variety Oat Trials, Agronomy Farm Brookings, 1958-1962.

a - Using Duncan's Multiple Range Test at the 5% level.

					_		1962	
Variety	1958 ^a	1959 ^a	1960 ^a	1961	1 962	1 958-62	Test wt.	Statistical
-		Averag	e yiel	ds, bu	./acre		lb./bu.	significance
Dupree					56.8		31	1.
CI 7399					54.3		33	
Minhafer	59.2	12.4	77.9	56.2	53.9	51.9	33	11
088.3e					53.7		31	11.
Portage			91.0				32	
Marion	59.4	7.0	73.7	60.5		50.2	31	
onka				38.1			36	1 1 2 3
CI 7473			R 0 F		48.4		31	
√auba y	55.9	8.5	73.5			45.0	32	
Garry	64.1	3.5	81.8			49.9	26	
Clintland 60	48.3	4.4	88.2	37.8		44.7	33	
Dodge					44.1		32	
Andrew	64.1	7.3	89.7		43.7	54.1	32	
lansom	62.7	7.4	70.6			45.9	31	
10. 0-205	69.9	6.9	96.3	56.5		53.7	31	
Rodney					38.9		30	
Garland					37.3		33	
Nehawka		14.6					31	
Burnett	64.9	8.3	89.6	45.5		48.6	31	1
				45.1	32.8		33	
Nodaway								
LSD .05 a - Data from		4.6 farm;		12.0 to Ber				
LSD .05 a - Data from b - Using Dune	Menno can's M Table 1	4.6 farm; Nultipl 2. St	14.3 moved e Rang andard	12.0 to Ber e Test Varie	12.5 esford at th ty Oat	e 5% lev : Trials	vel , Irrigated	
LSD .05 a - Data from b - Using Dund	Menno can's M Table 1 U.S.	4.6 farm; Nultipl 2. St Newel	14.3 moved e Rang andard 1 Fiel	12.0 to Ber e Test Varie <u>d Stat</u>	12.5 esford at th ty Oat ion, b	e 5% lev Trials Newell,	vel , Irrigated 1957-1962 ^a . 1962	
LSD .05 a - Data from b - Using Dune	Menno can's M Table 1 <u>U.S.</u> 1957	4.6 farm; Nultipl 2. St <u>Newel</u> 1959	14.3 moved e Rang andard 1 Fiel 1960	12.0 to Ber e Test Varie <u>d Stat</u> 1961	12.5 esford at th ty Oat ion, M 1962	ne 5% lev Trials Newell, 1957-62	vel , Irrigated 1957-1962 ^a . 1962 Test wt.	
LSD .05 a - Data from b - Using Dund	Menno can's M Table 1 <u>U.S.</u> 1957	4.6 farm; Nultipl 2. St Newel	14.3 moved e Rang andard 1 Fiel 1960	12.0 to Ber e Test Varie <u>d Stat</u> 1961	12.5 esford at th ty Oat ion, M 1962	ne 5% lev Trials Newell, 1957-62	vel , Irrigated 1957-1962 ^a . 1962	
LSD .05 a - Data from b - Using Dund Variety CI 7440	Menno can's M Table 1 <u>U.S.</u> 1957	4.6 farm; Nultipl 2. St <u>Newel</u> 1959	14.3 moved e Rang andard 1 Fiel 1960	12.0 to Ber e Test Varie <u>d Stat</u> 1961	12.5 esford at th ty Oat ion, b 1962 ./acre 94.0	ne 5% lev Trials Newell, 1957-62	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33	
LSD .05 a - Data from b - Using Dund Variety CI 7440 Andrew	Menno can's M Table 1 <u>U.S.</u> 1957	4.6 farm; Nultipl 2. St <u>Newel</u> 1959	14.3 moved e Rang andard 1 Fiel 1960	12.0 to Ber e Test Varie <u>d Stat</u> 1961	12.5 esford at th ty Oat ion, 1 1962 ./acre 94.0 79.1	ne 5% lev Trials Newell, 1957-62	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29	
LSD .05 a - Data from b - Using Dund Variety CI 7440 Andrew Nodaway	Menno can's M Table 1 <u>U.S.</u> 1957	4.6 farm; Nultipl 2. St <u>Newel</u> 1959	14.3 moved e Rang andard 1 Fiel 1960	12.0 to Ber e Test Varie d Stat 1961 ds, bu	12.5 esford at th ty Oat ion, b 1962 ./acre 94.0 79.1 78.3	ne 5% lev Trials Newell, 1957-62	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33	
LSD .05 a - Data from b - Using Dund Variety CI 7440 Andrew Nodaway Dodge	Menno Can's M Iable 1 <u>U.S.</u> 1957	4.6 farm; Mltipl 2. St Newel 1959 Averag	14.3 moved e Rang andard 1 Fiel 1960 e yiel	12.0 to Ber e Test Varie <u>d Stat</u> 1961 ds, bu	12.5 esford at th ty Oat ion, N 1962 ./acre 94.0 79.1 78.3 76.1	ne 5% lev Trials Newell, 1957-62	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32	
LSD .05 a - Data from b - Using Dund Variety CI 7440 Andrew Nodaway Dodge Marion	Menno can's M Table 1 U. S. 1957 49.1	4.6 farm; Mltipl 2. St <u>Newel</u> 1959 Averag	14.3 moved e Rang andard <u>1 Fiel</u> 1960 e yiel 88.3	12.0 to Ber e Test Varie d Stat 1961 ds, bu 10.4 11.6	12.5 esford at th ty Oat ion, M 1962 ./acre 94.0 79.1 78.3 76.1 74.0	te 5% levels Trials Newell, 1957-62	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32 31	
LSD .05 a - Data from b - Using Dund Variety Variety CI 7440 Andrew Nodaway Dodge Marion Garry	Menno can's M Table 1 U. S. 1957 49.1 35.7	4.6 farm; Mltipl 2. St <u>Newel</u> 1959 Averag 74.6 86.3	14.3 moved e Rang andard <u>1 Fiel</u> 1960 e yiel 88.3 97.0	12.0 to Ber e Test Varie d Stat 1961 ds, bu 10.4 11.6 9.3	12.5 esford at th ty Oat <u>ion, b</u> 1962 ./acre 94.0 79.1 78.3 76.1 74.0 70.6	59.5 59.8	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32 31 31	
LSD .05 a - Data from b - Using Dund Variety Variety CI 7440 Andrew Nodaway Dodge Marion Garry Minhafer	Menno can's M Table 1 U. S. 1957 49.1	4.6 farm; Nultipl 2. St Newel 1959 Averag 74.6 86.3 80.2	14.3 moved e Rang andard <u>1 Fiel</u> 1960 e yiel 88.3 97.0 80.3	12.0 to Ber e Test Varie d Stat 1961 ds, bu 10.4 11.6 9.3 8.3	12.5 esford at th ty Oat 1962 ./acre 94.0 79.1 78.3 76.1 74.0 70.6 67.6	te 5% levels Trials Newell, 1957-62	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32 31 31 29	
LSD .05 a - Data from b - Using Dund Variety Variety CI 7440 Andrew Nodaway Dodge Marion Garry Minhafer Clintland 60	Menno can's M Iable 1 U. S. 1957 49.1 35.7 43.8	4.6 farm; wltipl 2. St Newel 1959 Averag 74.6 86.3 80.2 67.0	14.3 moved e Rang andard 1 Fiel 1960 e yiel 88.3 97.0 80.3 83.6	12.0 to Ber e Test Varie d Stat 1961 ds, bu 10.4 11.6 9.3 8.3 7.0	12.5 esford at th ty Oat ion, 1 1962 ./acre 94.0 79.1 78.3 76.1 74.0 70.6 67.6 67.6	59.5 59.8 56.0	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32 31 31 29 29 29	
LSD .05 a - Data from b - Using Dund Variety Variety CI 7440 Andrew Nodaway Dodge Marion Garry Minhafer Clintland 60 Burnett	Menno can's M Table 1 U. S. 1957 49.1 35.7	4.6 farm; mltipl 2. St Newel 1959 Averag 74.6 86.3 80.2 67.0 88.0	14.3 moved e Rang andard 1 Fiel 1960 e yiel 88.3 97.0 80.3 83.6 79.9	12.0 to Ber e Test Varie d Stat 1961 ds, bu 10.4 11.6 9.3 8.3 7.0 11.8	12.5 esford at th ty Oat ion, 1 1962 ./acre 94.0 79.1 78.3 76.1 74.0 70.6 67.6 67.3 66.5	59.5 59.8	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32 31 31 29 29 29 26	
LSD .05 a - Data from b - Using Dund Variety Variety CI 7440 Andrew Nodaway Dodge Marion Garry Minhafer Clintland 60 Burnett Nehawka	Menno can's M Iable 1 U. S. 1957 49.1 35.7 43.8	4.6 farm; wltipl 2. St Newel 1959 Averag 74.6 86.3 80.2 67.0	14.3 moved e Rang andard 1 Fiel 1960 e yiel 88.3 97.0 80.3 83.6	12.0 to Ber e Test Varie d Stat 1961 ds, bu 10.4 11.6 9.3 8.3 7.0	12.5 esford at th ty Oat ion, M 1962 ./acre 94.0 79.1 78.3 76.1 74.0 70.6 67.6 67.3 66.5 64.1	59.5 59.8 56.0	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32 31 31 29 29 29 29 29 26 30	
LSD .05 a - Data from b - Using Dund Variety Variety CI 7440 Andrew Nodaway Dodge Marion Garry Minhafer Clintland 60 Burnett Nehawka Cherokee	Menno can's M Table 1 U. S. 1957 49.1 35.7 43.8 43.4	4.6 farm; wltipl 2. St Newel 1959 Averag 74.6 86.3 80.2 67.0 88.0 72.8	14.3 moved e Rang andard <u>1 Fiel</u> 1960 e yiel 88.3 97.0 80.3 83.6 79.9 84.5	12.0 to Ber e Test Varie d Stat 1961 ds, bu 10.4 11.6 9.3 8.3 7.0 11.8 7.1	12.5 esford at th ty Oat ion, W 1962 ./acre 94.0 79.1 78.3 76.1 74.0 70.6 67.6 67.3 66.5 64.1 62.3	59.5 59.5 59.8 56.0 57.9	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32 31 31 29 29 29 26 30 29	
a - Data from b - Using Dund Variety Variety CI 7440 Andrew Nodaway Dodge Marion Garry Minhafer Clintland 60 Burnett Nehawka Cherokee Dupree	Menno can's M Iable 1 U. S. 1957 49.1 35.7 43.8	4.6 farm; mltipl 2. St Newel 1959 Averag 74.6 86.3 80.2 67.0 88.0	14.3 moved e Rang andard <u>1 Fiel</u> 1960 e yiel 88.3 97.0 80.3 83.6 79.9 84.5 94.1	12.0 to Ber e Test Varie d Stat 1961 ds, bu 10.4 11.6 9.3 8.3 7.0 11.8 7.1 9.0	12.5 esford at th ty Oat <u>ion, b</u> 1962 ./acre 94.0 79.1 78.3 76.1 74.0 70.6 67.6 67.3 66.5 64.1 62.3 60.5	59.5 59.8 56.0	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32 31 31 29 29 29 26 30 29 29 29 29	
LSD .05 a - Data from b - Using Dund Variety Variety CI 7440 Andrew Nodaway Dodge Marion Garry Minhafer Clintland 60 Burnett Nehawka Cherokee Dupree Portage	Menno can's M Table 1 U. S. 1957 49.1 35.7 43.8 43.4 50.7	4.6 farm; Nultipl 2. St Newel 1959 Averag 74.6 86.3 80.2 67.0 88.0 72.8 75.4	14.3 moved e Rang andard <u>1 Fiel</u> 1960 e yiel 88.3 97.0 80.3 83.6 79.9 84.5 94.1 86.4	12.0 to Ber e Test Varie d Stat 1961 ds, bu 10.4 11.6 9.3 8.3 7.0 11.8 7.1 9.0 8.2	12.5 esford at th ty Oat ion, B 1962 ./acre 94.0 79.1 78.3 76.1 74.0 70.6 67.6 67.3 66.5 64.1 62.3 60.5 60.0	59.5 59.5 59.8 56.0 57.9	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32 31 31 29 29 29 26 30 29 29 30	
LSD .05 a - Data from b - Using Dund Variety Variety CI 7440 Andrew Nodaway Dodge Marion Garry Minhafer Clintland 60 Burnett Nehawka Cherokee Dupree	Menno can's M Table 1 U. S. 1957 49.1 35.7 43.8 43.4 50.7 51.8	4.6 farm; mltipl 2. St Newel 1959 Averag 74.6 86.3 80.2 67.0 88.0 72.8 75.4 82.2	14.3 moved e Rang andard 1 Fiel 1960 e yiel 88.3 97.0 80.3 83.6 79.9 84.5 94.1 86.4 87.3	12.0 to Ber e Test Varie d Stat 1961 ds, bu 10.4 11.6 9.3 8.3 7.0 11.8 7.1 9.0 8.2 8.2	12.5 esford at th ty Oat <u>ion, b</u> 1962 ./acre 94.0 79.1 78.3 76.1 74.0 70.6 67.6 67.3 66.5 64.1 62.3 60.5	59.5 59.5 59.8 56.0 57.9	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32 31 31 29 29 29 26 30 29 29 29 29	
LSD .05 a - Data from b - Using Dund Variety Variety CI 7440 Andrew Nodaway Dodge Marion Garry Minhafer Clintland 60 Burnett Nehawka Cherokee Dupree Portage	Menno can's M Table 1 U. S. 1957 49.1 35.7 43.8 43.4 50.7	4.6 farm; wltipl 2. St Newel 1959 Averag 74.6 86.3 80.2 67.0 88.0 72.8 75.4 82.2 78.2	14.3 moved e Rang andard <u>1 Fiel</u> 1960 e yiel 88.3 97.0 80.3 83.6 79.9 84.5 94.1 86.4	12.0 to Ber e Test Varie d Stat 1961 ds, bu 10.4 11.6 9.3 8.3 7.0 11.8 7.1 9.0 8.2 8.2 10.1	12.5 esford at th ty Oat ion, B 1962 ./acre 94.0 79.1 78.3 76.1 74.0 70.6 67.6 67.3 66.5 64.1 62.3 60.5 60.0	te 5% levente 5% levente 5% levente 5% levente 5% levente 5% se	vel , Irrigated 1957-1962 ^a . 1962 Test wt. 1b./bu. 33 29 33 32 31 31 29 29 29 26 30 29 29 30	

Table 11. Standard Variety Oat Trials, Southeast Research Farm, Beresford, 1958-1962.

a = 1958 crop hailed out

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Variety	1958	1959 Averas		- 1961 Ld s, b u			1962 Test wt. 1b/bu.	
CONTRACTOR OF	_				. <u>T</u>			
CI 7473	81.5. P. S.		35.4	17-19-12-13 17-19-12-13	76.5		32	
Minhafer	111.3	31.1	30.4	36.5	72.9	56.4	34	
CI 7399			34.6		70.8		32	
Ajax					69.6		33	
CI 7440					64.8		35	
Marion	94.6	41.3	34.1	36.1	63.6	53.9	32	
Garland					60.6		32	
Waubay	110.2	27.5	30.2	25.8	59.8	50.7	32	
Nehawka			32.6	29.1	59.7		32	
Clintland 60	108.6	30.1	28.0	24.0	58.7	49.9	34	
Mo. 0-205	120.9	19.1	37.2	33.1	58.5	53.8	36	
Andrew	110.7	35.8	36.4	33.4	57.9	54.8	32	
Burnett	94.3	47.6	33.6	35.8	56.6	53.6	32	
Ransom	108.5	27.4	26.8	28.4	56.2	49.5	32	
Rodney					54.7		32	
Garry	100.4	43.6	32.0	29.5	54.2	51.9	29	
Branch					51.6		30	
Dodge				23.7	50.6		32	
Dupree	115.0	38.4	27.8	38.5	47.4	53.4	31	
Tonka				13.1*	41.6		36	
			Mean	yield	55.1			
LDS .05	16.8	NS	NS	9.5	NS	No. of this way in		

Table 13. Standard Variety Oat Trials, North Central Substation Ruraka 1958-1962

*Severely damaged by grasshoppers

Variety	1957	1959	1960	1961	1962	1957-62 ^a	1962 Test wt.	Statistical b
	<u>A</u> `	verage	yield	s, bu.	/acre		1 b ./bu.	significance
Burnett					90.7		38	1.
Rodney					89.2		40	110
Mo. 0-205	56.8	5.9	23.2	2	88.3	43.6	38	111.
Garry					85.2		38	1111
Ransom	59.6	6.7	22.5		84.8	43.4	38	
Dupree	59.0	6.0	28.1		83.3	44.1	38	
Marion					82.5		37	
CI 7440					79.7		36	
Minhafer	53.5	3.8	24.6		79.5	40.4	37	
Andrew	51.4	5.4	26.4		78.9	40.5	37	
Dodge					76.8		37	1
Cherokee					75.2		37	
Clintland 60		6.5	20.6		73.5		37	
Brunker	50.2	2.9	19.8		72.8	36.4	36	
Nehawka		5.4	22.1		70.1		37	
Tonka					66.3		40	
		Mean	yield		79.8			
LSD .05	NS	NS	NS	10.00	11.5			

Table 14. Standard Variety Oat Trials, Dryland, U. S. Newell Field Station. Newell, 1957-1962^a.

a - Four-year average: 1958 hailed out, 1961 failure due to drought.

b - Using Duncan's Multiple Range Test at the 5% level.

Variety	1958	1959	1960	1961	1962	1958-62	1962 Test wt.	Statistical
•		Average					1b/bu.	
Minhafer	111.5	23.9	74.8	89.8	93.6	78.7	30	
Garland					91.0		29	1 I r
Nehawka					90.0		29	
Portage				95.5			30	
Dodge				91.0			33	
Clintland 60		11.2		89.4	•		30	
CI 7473			73.6	91.0	76.9		28	
Dupree					76.5		26	11111.
Mo. 0-205	107.7	14.1	40.0	99.3	73.1	66.8	26	
Nodaway				92.4	72.0		29	
Tonka				85.5			32	
Rodney		20.7	-	88.7			29	
Burnett	115.3	19.4	73.3	92.5		73.3	27	
CI 7399			66.0		65.9		24	
Ransom	104.9	15.5	61.9	91.5	64.2	67.6	26	
Branch					61.1		24	
Andrew		16.4					24	
Garry	123.8					72.8	22	
Marion	107.7		74.8	88.2	57.7		26	11
Wau bay	101.1		70.6	93.9	56.3		26	1
LSD .05 a - Using Dun	Table 16	7.6 tiple R	dard V	8.6 est at eriety	Oat 1	Trials,	Central	
a - Using Dun	can's Mul Table 16	7.6 tiple R Stan Substat	NS ange To dard Va ion, Hi	8.6 est at ariety ighmor	17.2 the ! Oat ! e, 19!	Frials, 58-1962 ⁸	1962	
	can's Mul Table 16 1958 1	7.6 tiple R Stan Substat 959 19	NS ange To dard Va ion, H: 60 190	8.6 est at ariety ighmor 51 19	17.2 the 1 Oat 1 e, 19	Frials, 58-1962 [®] 58-1962 [®] T	1962 est wt.	Statistical
a - Using Dun Variety	can's Mul Table 16 1958 1	7.6 tiple R Stan Substat	NS ange To dard Va ion, H: 60 190	8.6 est at ariety ighmor 51 19 bu./	17.2 the 9 0at 19 62 19 acre	Frials, 58-1962 [®] 58-1962 [®] T	1962 est wt. lb./bu.	Statistical significance ^b
a - Using Dun Variety CI 7399	can's Mul Table 16 1958 1 A	7.6 tiple R Substat 959 19 verage 91	NS ange To dard Va ion, H: 60 190 yields	8.6 est at ariety ighmor 51 19 bu./	17.2 the 9 0at 19 62 199 acre 7.5	Frials, 58-1962 ⁸ 58-1962 ⁸	1962 est wt. lb./bu. 33	
a - Using Dun Variety CI 7399 Minhafer	can's Mul Table 16 1958 1	7.6 tiple R Stan Substat 959 19 verage	NS ange To dard Va ion, Hi 60 190 yields	8.6 est at ariety Ighmor 51 19 bu./ 11 .8 11	17.2 the 19 e, 19 62 19 acre 7.5 2.7	Frials, 58-1962 [®] 58-1962 [®] T	1962 est wt. lb./bu. 33 34	
a - Using Dun Variety CI 7399 Minhafer CI 7440	can's Mul Table 16 1958 1 A	7.6 tiple R Substat 959 19 verage 91	NS ange To dard Va ion, H: 60 190 yields	8.6 est at ighmor 51 19 bu./ 11 .8 11 11	17.2 the 19 oat 19 62 19 acre 7.5 2.7 8 2.1	Frials, 58-1962 ⁸ 58-1962 ⁸	1962 ast wt. 1b./bu. 33 34 35	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland	can's Mul Table 16 1958 1 A	7.6 tiple R Substat 959 190 verage 91 a 70	NS ange To dard Va ion, H: 60 190 yields .1 .4 44	8.6 est at ariety ighmor 51 19 bu./ 11 .8 11 11	17.2 the 19 0at 19 62 19 acre 7.5 2.7 2.1 0.4	Frials, 58-1962 ⁸ 58-1962 ⁸	1962 ast wt. 1b./bu. 33 34 35 33	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7473	can's Mul Table 16 1958 1 	7.6 tiple R Substat 959 19 verage 91 a 70	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33	8.6 ariety <u>lghmor</u> 51 19 <u>bu./</u> 11 .8 11 11 .3 10	17.2 the solution the solution of the solution	Frials, 58-1962 ⁸ 58-1962 ⁸ 30.2	1962 est wt. lb./bu. 33 34 35 33 33 33	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7473 Clintland 60	can's Mul Table 16 <u>1958 1</u> 93.0 93.2	7.6 tiple R Substat 959 19 verage 91 a 70 62 42	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33 .7 45	8.6 est at ariety ighmor 51 19 bu./ 11 .8 11 11 .3 10 .6 10	17.2 the 19 0at 19 62 19 acre 7.5 2.7 2.1 0.4 6.9 3.5	Frials, 58-1962 [®] 58-1962 [®] 30.2	1962 est wt. lb./bu. 33 34 35 33 33 33 35	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7473 Clintland 60 Burnett	can's Mul Table 16 1958 1 	7.6 tiple R Substat 959 19 verage 91 a 70	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47	8.6 est at ariety ighmor 51 19 bu./ 11 .8 11 11 .3 10 .6 10 .1 9	17.2 the solution of the solut	Frials, 58-1962 ⁸ 58-1962 ⁸ 30.2	1962 ast wt. 1b./bu. 33 34 35 33 33 35 35 35	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge	can's Mul Table 16 1958 1 93.0 93.2 97.1	7.6 tiple R <u>Substat</u> 959 19 <u>verage</u> 91 a 70 62 42 72	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 27	8.6 est at ariety <u>ighmor</u> 51 19 <u>bu./</u> 11 .8 11 11 .3 10 .6 10 .1 9 .6 9	17.2 the solution of the solut	Frials , 58-1962 [®] 58-1962 [®] 30.2 71.3 78.8	1962 ast wt. 1b./bu. 33 34 35 33 33 35 35 35 35	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee	can's Mul Table 16 <u>1958 1</u> 93.0 93.2	7.6 tiple R Substat 959 19 verage 91 a 70 62 42	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 27	8.6 ariety Ighmor 51 19 51 19 51 19 10.6 10 .6 9 .0 9	17.2 the 19 0at 19 62 19 acre 7.5 2.7 2.1 0.4 6.9 3.5 8.8 6.2 3.6	Frials, 58-1962 [®] 58-1962 [®] 30.2	1962 ast vt. lb./bu. 33 34 35 33 35 35 35 35 33	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee Rodney	can's Mul Table 16 <u>1958 1</u> 93.0 93.2 97.1 87.9	7.6 tiple R <u>Substat</u> 959 19 <u>verage</u> 91 a 70 62 42 72 64	NS ange To dard Vo ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 .27 .6 42	8.6 ariety <u>lghmor</u> 51 19 <u>bu./</u> 11 .8 11 11 .3 10 .6 10 .1 9 .6 9 .0 9	17.2 the 9 0at 19 62 19 acre 7.5 2.7 2.1 0.4 6.9 3.5 8.8 6.2 3.6 1.2	Frials , 58-1962 [®] 58-1962 [®] 30.2 71.3 78.8 72.0	1962 est wt. lb./bu. 33 34 35 33 35 35 35 35 33 27	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee Rodney Nehawka	can's Mul Table 16 <u>1958 1</u> 93.0 93.2 97.1 87.9 97.6	7.6 tiple R <u>Substat</u> 959 19 <u>verage</u> 959 29 <u>959 39</u> 00 00 00 00 00 00 00 00 00 00 00 00 00	NS ange To dard Va ion, Hi 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 .2 47 .2 47 .6 42 .8 42	8.6 ariety Ighmor 51 19 51 9 50 9 5	17.2 the solution of the solut	Frials , 58-1962 [®] 58-1962 [®] 30.2 71.3 78.8 72.0 77.0	1962 est wt. lb./bu. 33 34 35 33 35 35 35 35 35 35 35 35	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee Rodney Nehawka Mo. 0-205	can's Mul Table 16 <u>1958 1</u> 93.0 93.2 97.1 87.9	7.6 tiple R <u>Substat</u> 959 19 <u>verage</u> 91 a 70 62 42 72 64	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 .2 47 .27 .6 42 .8 42 .0 41	8.6 est at ariety ighmor 51 19 bu./ 11 .8 11 11 .3 10 .6 10 .1 9 .6 9 .0 9 .9 9 .5 8	17.2 the 0at (e, 19) 62 19 acre 7.5 2.7 2.1 0.4 6.9 3.5 8.8 6.2 3.6 1.2 0.7 8.7	Frials , 58-1962 [®] 58-1962 [®] 30.2 71.3 78.8 72.0	1962 est wt. lb./bu. 33 34 35 33 35 35 35 35 35 35 35 35	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee Rodney Nehawka Mo. 0-205 Nodaway	can's Mul Table 16 <u>1958 1</u> 93.0 93.2 97.1 87.9 97.6 92.7	7.6 tiple R <u>Substat</u> 959 199 verage 959 291 9 1 a 70 62 42 72 64 76 69	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 .2 47 .2 47 .6 42 .8 42 .0 41 .46	8.6 ariety Ighmor 51 19 bu./ 11 .8 11 11 .3 10 .6 10 .1 9 .6 9 .0 9 .9 9 .5 8 .4 8	17.2 the 0at (e, 19) 62 19 acre 7.5 2.7 2.1 0.4 6.9 3.5 8.8 6.2 3.6 1.2 0.7 8.7 8.3	Frials , 58-1962 ^a 58-1962 ^a 30.2 71.3 78.8 72.0 77.0 73.0	1962 est wt. lb./bu. 33 34 35 33 35 35 35 35 35 35 35 35	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee Rodney Nehawka Mo. 0-205 Nodaway Dupree	can's Mul Table 16 1958 1 93.0 93.0 93.2 97.1 87.9 97.6 92.7 80.5	7.6 tiple R <u>Substat</u> 959 19 <u>verage</u> 91 a 70 62 42 72 64 76 69 63	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 .2 42 .0 41 .4 40	8.6 est at ariety <u>ighmor</u> 51 19 <u>bu./</u> 11 .8 11 11 .3 10 .6 10 .1 9 .6 9 .0 9 .9 9 .5 8 .4 8 .6 8	17.2 the 0at () () () () () () () () () () () () ()	Frials , 58-1962 ^a 58-1962 ^a 30.2 71.3 78.8 72.0 77.0 73.0 58.0	1962 ast wt. 1b./bu. 33 34 35 33 35 35 35 35 35 35 33 27 32 33 32 32 32	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee Rodney Nehawka Mo. 0-205 Nodaway Dupree Marion	can's Mul Table 16 1958 1 93.0 93.0 93.2 97.1 87.9 97.6 92.7 80.5 91.0	7.6 tiple R <u>Substat</u> 959 19 verage 959 29 verage 91 a 70 62 42 72 64 76 69 63 61	NS ange To dard Vo ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 .6 42 .8 42 .0 41 .46 .4 40 .9 37	8.6 ariety lghmor 51 19 .bu./ 11 .8 11 11 .3 10 .6 10 .1 9 .6 9 .0 9 .9 9 .5 8 .4 8 .6 8 .9 8	17.2 the oat e, 19 62 19 acre 7.5 2.7 2.1 0.4 6.9 3.5 8.8 6.2 3.6 1.2 0.7 8.3 7.6 6.7	Frials , 58-1962 ^{a} 58-1962 ^{a} 30.2 71.3 78.8 72.0 77.0 73.0 58.0 59.4	1962 est wt. lb./bu. 33 34 35 33 35 35 35 35 35 35 35 33 27 32 33 32 32 32 32	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee Rodney Nehawka Mo. 0-205 Nodaway Dupree Marion Garry	can's Mul Table 16 <u>1958 1</u> 93.0 93.0 93.2 97.1 87.9 97.6 92.7 80.5 91.0 88.4	7.6 tiple R <u>Substat</u> 959 19 <u>verage</u> 959 29 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NS ange To dard Va ion, Hi 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 .2 7 .6 42 .0 41 .4 40 .9 37 .7 35	8.6 ariety lghmor 51 19 bu./ 11 .8 11 11 .3 10 .6 10 .1 9 .0 9 .0 9 .9 9 .5 8 .4 8 .6 8 .9 8 .5 8	17.2 the oat e, 19 62 19 acre 7.5 2.7 2.1 0.4 6.9 3.5 8.8 6.2 3.6 1.2 0.7 8.7 8.3 7.6 6.7 6.0	Frials , 58-1962 ^{a} 58-1962 ^{a} 30.2 71.3 78.8 72.0 77.0 73.0 58.0 59.4 59.9	1962 est wt. lb./bu. 33 34 35 33 35 35 35 35 35 35 35 32 32 32 32 32 32 32 32 32 32	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee Rodney Nehawka Mo. 0-205 Nodaway Dupree Marion Garry Andrew	can's Mul Table 16 <u>1958 1</u> 93.0 93.0 93.2 97.1 87.9 97.6 92.7 80.5 91.0 88.4 84.0	7.6 tiple R <u>Substat</u> 959 19 <u>verage</u> 31 a 70 62 42 72 64 76 69 63 61 69 84	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 .2 47 .27 .6 42 .8 42 .0 41 .46 .4 40 .9 37 .7 35 .1 39	8.6 ariety Ighmor 51 19 bu./ 11 .8 11 11 .3 10 .6 10 .1 9 .6 9 .0 9 .9 9 .5 8 .4 8 .9 8 .5 8 .0 8	17.2 the 0at (e, 19) 62 19 acre 7.5 2.7 2.1 0.4 6.9 3.5 8.8 6.2 3.6 1.2 0.7 8.3 7.6 6.7 6.0 6.0 6.0	Frials , 58-1962 ⁸ 58-1962 ⁸ 30.2 71.3 78.8 72.0 77.0 73.0 58.0 59.4 59.9 72.8	1962 est wt. lb./bu. 33 34 35 33 35 35 35 35 35 35 35 35	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee Rodney Nehawka Mo. 0-205 Nodaway Dupree Marion Garry Andrew Ransom	can's Mul Table 16 <u>1958 1</u> 93.0 93.0 93.2 97.1 87.9 97.6 92.7 80.5 91.0 88.4	7.6 tiple R <u>Substat</u> 959 19 <u>verage</u> 31 a 70 62 42 72 64 76 69 63 61 69 84	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 .2 47 .27 .6 42 .0 41 .46 .4 40 .9 37 .7 35 .1 39 .8 41	8.6 ariety lghmor 51 19 bu./ 51 19 bu./ 11 .8 11 11 .3 10 .6 10 .1 9 .6 9 .9 9 .9 9 .9 9 .5 8 .4 8 .5 8 .0 8 .5 7	17.2 the 0at (e, 19) 62 19 acre 7.5 2.7 2.1 0.4 6.9 3.5 8.8 6.2 3.6 1.2 0.7 8.3 7.6 6.7 6.7 6.7 6.7 6.7 6.0 6.7	Frials , 58-1962 ^{a} 58-1962 ^{a} 30.2 71.3 78.8 72.0 77.0 73.0 58.0 59.4 59.9	1962 est wt. lb./bu. 33 34 35 33 35 35 35 35 35 35 35 35	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee Rodney Nehawka Mo. 0-205 Nodaway Dupree Marion Garry Andrew Ransom Tonka	can's Mul Table 16 1958 1 93.0 93.0 93.2 97.1 87.9 97.6 92.7 80.5 91.0 88.4 84.0 84.6	7.6 tiple R <u>Substat</u> 959 19 <u>verage</u> 959 29 <u>91</u> a 70 62 42 72 64 76 69 63 61 69 84 54	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 .2 47 .2 47 .2 47 .2 47 .6 42 .0 41 .4 40 .9 37 .7 35 .1 39 .8 41 .36	8.6 est at ariety ighmor 51 19 bu./ 51 19 bu./ 11 .8 11 11 .3 10 .6 10 .1 9 .6 9 .0 9 .9 9 .9 9 .5 8 .4 8 .9 8 .5 8 .0 8 .5 7 .7 7	17.2 the oat e, 19 62 19 acre 7.5 2.7 2.1 0.4 6.9 3.5 8.8 6.2 3.6 1.2 0.7 8.3 7.6 6.7 6.0 6.7 6.0 6.4 2 7.6 6.0 6.2 7.6 6.0	Frials , 58-1962 ^{a} 58-1962 ^{a} 30.2 71.3 78.8 72.0 77.0 73.0 58.0 59.4 59.9 72.8 54.6	1962 est wt. lb./bu. 33 34 35 33 33 35 35 35 35 35 35 35	
a - Using Dun Variety CI 7399 Minhafer CI 7440 Garland CI 7440 Garland CI 7473 Clintland 60 Burnett Dodge Cherokee Rodney Nehawka Mo. 0-205 Nodaway Dupree Marion Garry Andrew Ransom	can's Mul Table 16 <u>1958 1</u> 93.0 93.0 93.2 97.1 87.9 97.6 92.7 80.5 91.0 88.4 84.0	7.6 tiple R <u>Substat</u> 959 19 <u>verage</u> 959 29 <u>91</u> a 70 62 42 72 64 76 69 63 61 69 84 54	NS ange To dard Va ion, H: 60 190 yields .1 .4 44 .1 33 .7 45 .2 47 .27 .6 42 .27 .6 42 .0 41 .46 .4 40 .9 37 .7 35 .1 39 .8 41 .36 .4 46	8.6 est at ariety ighmor 51 19 bu./ 51 19 bu./ 11 .8 11 11 .3 10 .6 10 .1 9 .6 9 .0 9 .9 9 .5 8 .4 8 .5 8 .5 8 .5 8 .5 7 .7 7 .7 7	17.2 the oat e, 19 62 19 acre 7.5 2.7 2.1 0.4 6.9 3.5 8.8 6.2 3.6 1.2 0.7 8.3 7.6 6.7 6.0 6.7 6.0 6.4 2 7.6 6.0 6.2 7.6 6.0	Frials , 58-1962 ⁸ 58-1962 ⁸ 30.2 71.3 78.8 72.0 77.0 73.0 58.0 59.4 59.9 72.8	1962 est wt. lb./bu. 33 34 35 33 35 35 35 35 35 35 35 35	

Table 15. Standard Variety Oat Trials, Northeast

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b Using Duncan's Multiple Range Test at the 5% level -13-

	1962										
Variety	1958	1959 Avera	1960 ge yie	1961 1ds, b			Test wt. lb./bu.	Statistical Significance ^a			
Larker			816385	26.6	57.9		45				
Liberty	51.2	17.9	22.2	26.5	46.5	32.9	43	1.			
Otis					40.1		40				
Spartan			29.3		37.8		42				
Plains	56.9	1 5.4		17.6	37.1		42				
Custer	63.1	18.9		24.4	36.1		41				
Kindred	33.4	18.6	12.0	24.7	35.8	24.9	40				
Parkland	56.2	19.1	14.8		35.6		42				
Feebar	37.8	17.2	8.9	17.7	35.3	23.4	39	20			
Betzes	53.5	26.3	24.6	27.3	34.5	33.2	41				
Trai ll	47.1	15.4	13.6	24.3	33.4	26.8	43				
Trophy				26.6	33.3		42				
		Me	an yie	1d	38.6	- 2 - 103					
LSD .05	12.0	9.1	4.6	6.1	10.3		0-14-5-5-9				

Table 17.	Standard Variety Barley Trials, North Central
	Substation, Eureka, 1958-1962.

a - Using Duncan's Multiple Range Test at the 5% level.

	Substa	tion, Highmo	re, 1958-1962 ^a .	
Table	18. Stan	dard Variety	Barley Trials,	Central

Variety	1958		1961 1962 lds, bu./act		1962 Test wt. 1b./bu.	Statistical significance ^b
Custer	57.6	a	35.7 67.0		43	1.
Traill	51.2	16.7	22.2 64.4	38.6	46	- 1 I r
Trophy			21.7 61.3		46	1112
Parkland	60 .7	16.8	24.4 57.7	39.9	48	
Liberty	54.1	32.7	28.7 54.0	42.4	46	
Otis			53.0		43	
Larker			24.0 52.7		48	
Plains	53.6		20.9 50.8		45	
Kindred	47.9	14.1	18.0 46.3	31.6	47	
Spartan	37.0	36.7	43.8		46	
Betzes		32.3	20.0 43.0	31.8	46	
Feebar	39.4	33.9	19.0 42.0	33.6	43	1
		Mean yiel	d 53.8			
LSD .05	12.0	7.5	6.6 12.6			

a - Four-year averages, 1959 crop lost to drought

b - Using Duncan's Multiple Range Test at the 5% level

	Research Farm, Beresford, 1958-1962 ^a . 1962										
Variety	1958	1959 Averag	1960 <u>e yiel</u>	1961 .ds, bu			Test wt. lb./by.	Statistical significance ^b			
Liberty	40.6	15.3	a	35.5	42.3	33.4	42				
Kindred	36.0	2.9			32.1		40				
Larker					31.6		44	i i n			
Traill	39.0	5.2			26.3		41	11.			
Trophy					24.8		40				
Plains	30.9	10.0		34.7	21.5	24.3	38				
Custer	43.0	9.3			20.2		34				
Feebar	34.4	6.5			18.0		35				
Otis	39.7	15.6		23.1	17.7	24.0	38	111			
Parkland					15.4		39				
Spartan	30.4	12.2		24.4	14.4	20.4	38				
Betzes		9.1		22.4	11.8		36				
and the second			Mean	yield	23.0						
TOD OF	1. 2	5 6		NC	7 4						

Table 19. Standard Variety Barley Trials, Southeast

LSD .05 4.2 5.6 NS 7.4 a - Data from Menno Station, 1958 and 1959; lost 1960 to windstorm

b - Using Duncan's Multiple Range Test at the 5% level

Table 20. Standard Variety Barley Trials, Northeast Research Farm, Watertown, 1958-1962.

Variety 1958	1959	1960	-		1958-62	1962 Test wt.	Statistical significance ^a	
	-	Averag	e yiel	ds, bu	1b./bu.			
Larker				42.7	51.8		41	1.
Traill	68.0	13.9	37.2	41.8	48.8	41.9	37	
Trophy				45.5	47.2		38	
Parkland	58.6	24.3	27.0	37.4	44.0	38.3	37	
Betzes		14.9	35.1	40.3	43.7		41	
Feebar	69.9	4.5	34.0		41.9		88	111
Otis					41.3		43	- 1 j j ,
Spartan			26.3		38.9		42	
Liberty	52.3	16.2	48.3	41.6	38.2	39.3	35	
Plains	55.4	13.8			38.1		3 6	
Custer	69.9	14.3			36.4		33	1
Kindred	46.0	16.1	27.0	40.2	31.1	32.1	35	
		M	lean yi	eld	41.8			and the second
LSD .05	10.0	12.2	10.9	NS	7.7			

a - Using Duncan's Multiple Range Test at the 5% level

States and s		Agrono	my Far	m, Bro	okings	s, 1958-	1962.	
Variety	1958	1959 Averag		1961 .ds, bu			1962 Test wt. lb./bu.	Statistical significance ^a
Larker				69.0	53.1		44	1
Liberty	47.7	20.5	58 .7	64.0	51.9	48.6	40	
Feebar	24.5	13.4	54.9	38.7	50.9	36.5	38	25
Traill	47.6	18.2	48.5	64.2	49.6	45.6	41	1
Plains	23.8	22.0	51.6		48.6		39	
Otis					46.6		39	1 1 1
Custer	36.1	21.6	69.6	58.7	46.5	46.5	39	
Husky	48.1	12.2	44.6	51.2	45.6	40.3	36	
Swan					41.9		40	1.
Spartan	39.1	16.3	53.4	38.5	40.8	37.6	41	
Parkland	53.4	19.7	51.9	63.5	39.0	45.5	44	- 111
Trophy				69.7	38.9		40	
Odessa	37.1	11.9	36.8	46.7	38.4	34.1	41	
Betzes				47.3	32.1		36	
Kindred	35.5	12.8	35.0	50.2	31.1	32.9	39	2.5
		Mea	n yiel	.d	43.7			
LSD .05	9.3	7.4	12.9		7.8			

Table 21. Standard Variety Barley Trials,

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a - Using Duncan's Multiple Range Test at the 5% level

	Dr	yland		Irrigated		
Variety	1962 B/A	Test wt. lb./bu.	Statistical significance ^a	Variety	1962 B / A	Test wt. lb./bu.
Liberty	56.2	47		Traill	81.5	48
Larker	54.2	48		Custer	65.3	46
Betzes	51.6	47	5.35	Plains	64.9	47
Plain s	49.4	45		Feebar	63.8	44
Otis	48.2	46		Betzes	62.1	48
Spartan	47.6	48		Liberty	61.9	47
Traill	47.5	47		Kindred	53.9	48
Trophy	45.1	47		Spartan	50.2	46
Parkland	44.3	47		Otis	47.3	45
Custer	41.1	43		Trophy	45.7	46
Feebar	37.8	42				
Kindred	33.6	45				
Mean yield	46.4			Mean yield	59.6	
LSD .05	8.4			LSD	NS	

Table 22. Standard Variety Barley Trials, U. S. Newell Field Station, Newell, 1962.

a - Using Duncan's Multiple Range Test at the 5% level

Variety	1958	1959 Averag	1960 e Yiel	1961 ds. bu			1962 Test wt. 1b./bu.	Statistical significance ^a
							1017 001	018
Arny	18.6	13.0	20.0	25.3	11.5	17.7	49	1.
CI 1914		15.3	21.3	27.5	10.1		44	
Windom		13.9	23.4	29.6	9.1		47	
Redwing	17.4	13.3	20.9	23.9	8.9	16.9	46	
Marine	17.0	13.9	20.7	26.9	7.9	17.3	50	
Bison					7.8		47	
Sheyenne	15.6	11.9	18.8	25.1	7.2	15.7	49	
Linda					7.1		43	
Bolley	19.6	13.6	22.7	23.1	7.0	17.2	49	
Redwood	19.6	12.4	21.5	29.2	5.8	17.7	47	111
B-5128	19.2	11.4	17.0	28.0	4.6	16.0	47	
Norland	20.7	12.0	14.8	27.3	4.0	15.8	44	
			an yi e		7.6			

Table 23. Standard Variety Flax Trials,

LSD. .05 1.0 1.6 4.6 1.9 2.3

a - Using Duncan's Multiple Range Test at the 5% level

Table	24.	Standar	d Variety	Flax	Trials,	Central
	Sub	etation	Highmore	1955	R-1962 ⁸	

		<u>_Subst</u>	ation,	HIghm	lore,	1920-190		
Variety	1958	1959 Averag	1960 se yiel				1962 Test wt. 1b./bu.	Statistical significance ^b
Sheyenne					9.9		50	1.
Marine	21.5	а	19.2	10.7	9.8	15.3	50	
Arny	22.2		17.1	9.5	9.7	14.6	50	
CI 1914			23.2	10.8	7.5		48	
Bolley	24.2		22.3	10.0	6.9	15.9	49	
B-5128	25.9		16.7	10.5	6.1	14.8	48	
Redwood	23.8		16.9	8.9	6.0	13.9	48	
Redwing	23.4		26.0	10.4	5.9	16.4	49	
Bison					5.5		49	n -
Windom			17.2	13.0	5.0		48	
Linda	28.2		19.6	10.7	4.7	15.8	47	
Norland	27.1		12.1	7.2	3.6	12.5	47	
		Mear	n <mark>yi</mark> eld	L	7.6			
LSD .05	0.8		3.5	2.2	3.5			

a - Four-year average, crop lost to drought in 1959

b - Using Duncan's Multiple Range Test at the 5% level

	Brookings,	Watertown			
	Lodging	% Lodging	Crown rust		
Variety	(percent)	(4-rep. aver)	<u>a</u> / %		
Andrew	95	29	MR - 65		
Burnett	95	15	MR - 40		
Clintland 60	95	9	MR - 10		
Dodge	60	8	R - t		
Dup ree	95	75	MS - 65		
Garry	85	13	S - 100		
Marion	85	55	S - 100		
Minhafer	90	13	MR - 70		
Mo. 0-205	95	35	3 - 100		
Nehawka	95	38	MR - 25		
Ransom	95	21	MS - 65		
Rodney	80	10	MR - 40		
Portage	90	11	MR - 25		
Tonka	95	14	S - 100		
Waubay	25	13	S - 100		
Nodaway	35	9	MS - 65		
Branch	85	28	MS - 100		
Ajax	75				
Osage	75				
Cherokee	70				
Brunker	95				
Park	25				
Goodfield	20				
Clinton	40				
Shield	40				
Sauk	50				
Minton	40				
Putnam 61	60				
Newton	25				
Vikota	95				
James hulless	70				
Garland	25	30	R - 1		
CI 7399	50	14	MR - 25		
CI 7440	20	•			
CI 7473	65	29	MR - 25		

Table 25. Supplemental Agronomic Data for Standard Variety Oat Trials at Brookings and Watertown, South Dakota, 1962.

a/ Crown Rust Reaction

R - Resistant

MR - Moderately Resistant

- MS Moderately Susceptible
- S Susceptible

	Oatsb			Barley ^C		2	Spring Wheat ^b	
Variety	Test wt.	Yield	Variety	Test wt.	Yield	Variety	Test wt.	,Yield
	lb./bu.	bu./acre		lb./bu.	bu./acre		1b./bu.	bu./acr
Clintland 60	34	76.6	Larker	49	55 . 3	CI 13162	59	27.1
Nehawka	35	70.6	Liberty	49	52.5	Pembina	57	20.6
Burnett	36	67.8	Trophy	46	50.3	Lakota	56	20.0
CI 7440	34	65.2	Traill	46	48.1	Langdon	56	19.0
Garry	34	65.2	Plains	49	47.5	CI 13465	58	17.1
Mo. 0-205	34	62.7	Otis	40	24.1	Selkirk	55	15.3
Dupree	32	61.7	Betzes	37	22.7	Lee	57	14.6
Dodge	36	60.2	Spartan	40	22.3	Rushmore	57	13.4
Marion	35	57.0	-			Ramsey	57	1 3.1
Cherokee	34	57.0				CI 13242	56	13.0
Andrew	34	54.2				Canthatch	55	8.1
Ransom	34	53.9				Ceres	49	3.1
Nodaway	37	52.5						
Portage	35	50.6						
Minhafer	36	48.6						
LSD .05		16.0			3.7			6.5

Table 26. Small grain variety test at the South Central Research Farm, Presho, South Dakota, 1962^a

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

b - Two replications.

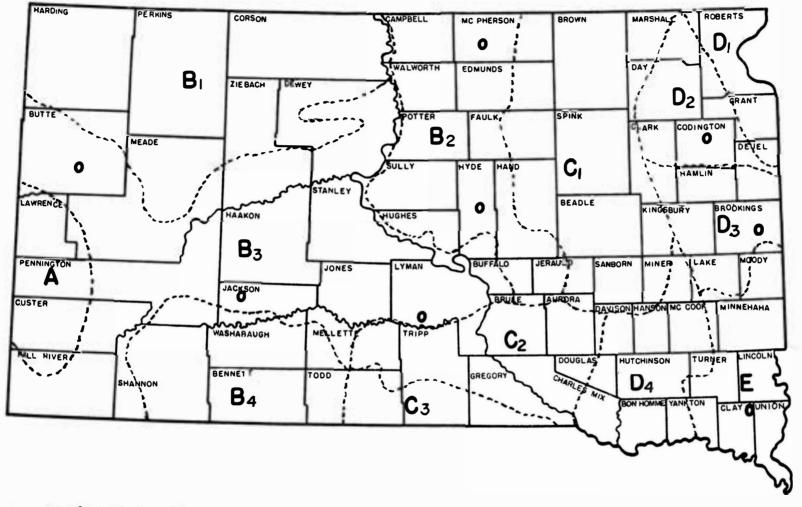
c - Three replications.

Note: Plots harvested with combine. Plot size, 4 feet by 48 feet.

Variety	Cottonwood	Presho		
Variety	Average yields, pounds per acre			
Gila	608.9	374.1		
eb raska 1 0	847.5	514.5		
cific #1	719.9	258.5		
. S. 10	724.1	207.6		

Table 27. Safflower Trial Data from South Central Research Farm, Presho, and Range Field Station, Cottonwood, 1962*.

* Supplemental data not regularly included in testing program.



O-LOCATIONS OF TRIALS

1963 Recommended spring small grain varieties and areas of best adaptation

Variety	Areas of best adaptation	Variety	Areas of best adaptation
Spring Wheat		Oats	
Canthatch	Bl	Andrew #	State Wide
Justin	B1, B2, C1, D1, D2, D3	Bonkee	D4, E
Lee #	A, B1, B2, B3, B4	Burnett #	C1, C2, D1, D2, D3, D4, 1
Rushmore	A, B1, B2, B3, B4, C2	Clintland 60	D3, D4, E
Selkirk #	B1, B2, C1, D1, D2, D3	Dodge	D1, D2, D3, C1 ^a
Pembina	B1, B2, C1, D1, D2, D3	Dupree	B1, B2, B3, B4, C2
		Garland	C1, D1, D2, D3
Durum		Garry	C1, D1, D2, D3
Lakota	B1, B2, C1, C2, D1, D2, D3	Minhafer	State Wide
Langdon	B1, B2, C1, C2, D1, D2, D3	Marion	C1, D2, D3, D4, E
Ramsey	B1, B2, C1, C2, D1, D2, D3	Mo. 0-205	State Wide, except Bl
Wells	B1, B2, C1, C2, D1, D2, D3	Nehawka	B3, B4, C2, C3
		Ortley (7473)	Cl ^a , Dl, D2, D3
Flax		Portage	Cl ^a , Dl, D2, D3
Arny	C1, D1, D2, D3	Ransom	State Wide
B-5128	C1, D1, D2, D3	Rodney	D1, D2, D3
B-5128(ss)	C1, D1, D2, D3	CI 7440	B3, B4, C2, C3, B2*
Bolley	B1, B2, C1, D1, D2, D3, D4, E		
Marine	B1, B2, C1, D1, D2, D3, D4, E		
Marine	B1, B2, C1, D1, D2, D3, D4, E	#For both irri	gated and dryland
Windom	Cl, Dl, D2, D3	a Southern cou	nties
		* Northern cour	nties
Barley			
Kindred	C1, D1, D2, D3, B2 ^a		
Larker	A, B2, C1, D2, D3		
Liberty #	State Wide		
Plains	State_Wide		
Traill #	A, B2, C1, D1, D2, D3		
Trophy	$A, B2^{a}, C1, D1, D2, D3$		
Spartan	A, B1, B2*, B3, B4, C2, C3		

Recommendations courtesy of R. A. Cline and E. E. Sanderson, Associate Extension Agronomist