University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Historical Materials from University of Nebraska-Lincoln Extension

Extension

1983

EC83-102 Nebraska Spring Small Grain Variety Tests 1983

A. F. Dreier

J. W. Schmidt
USDA-ARS, john.w.schmidt@ars.usda.gov

Follow this and additional works at: https://digitalcommons.unl.edu/extensionhist

Dreier, A. F. and Schmidt, J. W., "EC83-102 Nebraska Spring Small Grain Variety Tests 1983" (1983). *Historical Materials from University of Nebraska-Lincoln Extension*. 4393.
https://digitalcommons.unl.edu/extensionhist/4393

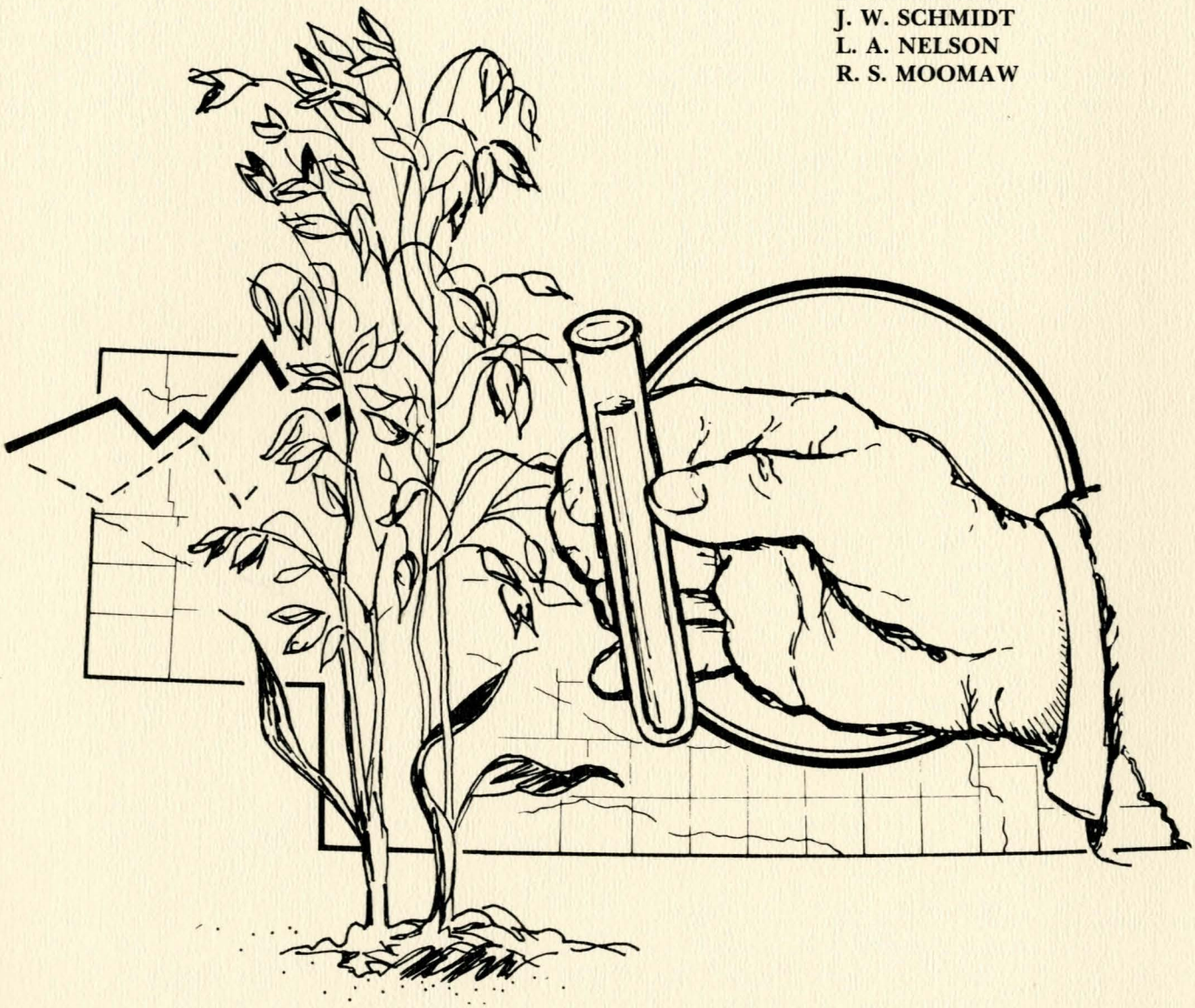
This Article is brought to you for free and open access by the Extension at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Historical Materials from University of Nebraska-Lincoln Extension by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

S
85
E7
~~82~~
102
c.2

NOVEMBER 1983 NEBRASKA COOPERATIVE EXTENSION SERIVCE E.C. 83-102

NEBRASKA SPRING SMALL GRAIN VARIETY TESTS 1983

A. F. DREIER
J. W. SCHMIDT
L. A. NELSON
R. S. MOOMAW



Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Leo E. Lucas, Director of Cooperative Extension Service, University of Nebraska, Institute of Agriculture and Natural Resources.

EXTENSION CIRCULAR 83-102

November 1983

CONTENTS

Foreword 2
The Metric system 2
Introduction 3
Suggested oat varieties 4
Characteristics of oat varieties 5
Location of tests 6
Performance data
Southeast oats, Saunders County, 1983 8
Southeast oats, 1975-1983 9
Northeast oats, Dixon County, 1983 10
Northeast oats, Cedar County, 1983 11
Northeast oats, 1977-1983 12
West nonirrigated oats, Cheyenne County, 1983 13
West nonirrigated oats, 1976-1983 14
West irrigated oats, 1983 15
West irrigated oats, 1975-1983 16
Southeast barley, Saunders County, 1983 17
Northeast barley, Dixon County, 1983 17
West nonirrigated barley, Cheyenne County, 1983 17
Southeast barley, 1974-1983 18
Northeast barley, 1974-1983 19
West nonirrigated barley, 1975-1983 20
West irrigated barley, 1983 21
West irrigated barley, 1975-1983 22
Southeast spring wheat, 1977-1983 23
Northeast spring wheat, Dixon County, 1975-1983 24
West nonirrigated spring wheat, 1975-1983 25
West irrigated spring wheat, 1983 26
West irrigated spring wheat, 1975-1983 27

FOREWORD

This circular is a progress report of small grain variety tests conducted by the Agricultural Experiment Station. Trials were conducted by personnel of the Agronomy Department and the Northeast Nebraska and Panhandle Stations and the High Plains and Northwest Agricultural Laboratories. These extension circulars replace the Outstate Testing Series. Conduct of experiments and publication of results is a joint effort of the Agricultural Experiment Station and the Cooperative Extension Service. Special acknowledgement is made to farmer cooperators who furnished land for experiments; also to County Agents and others who assisted in the conduct of these tests.

THE METRIC SYSTEM

Among the more common equivalents used are:

0° Celsius	=	32° Fahrenheit
1 millimeter (mm)	=	0.0394 inches
1 centimeter (cm)	=	0.394 inches
1 hectare (ha)	=	2.471 acres
1 kilogram (kg)	=	2.205 pounds
1 hectoliter (hl)	=	2.838 bushels
1 metric ton (t)	=	2,204.6 pounds

Conversion factors are as follows:

cm	=	inches x 2.54
ha	=	acres x 0.405
kg/ha	=	bu/A x 35.87 oats (32 lb/bu)
	=	bu/A x 53.81 barley (48 lb/bu)
	=	bu/A x 67.26 wheat (60 lb/bu)
	=	lb/A x 1.12
kg/hl	=	lb/bu x 1.287
t/ha	=	cwt/A x 0.1121

NEBRASKA SPRING SMALL GRAIN VARIETY TESTS

OATS-BARLEY-SPRING WHEAT

1983

Harvested acreages and average yields of oats and barley in Nebraska for selected years were as follows:

	Oats		Barley	
Year	Acres 000	Yield bu/A	Acres 000	Yield bu/A
1910	2,400	27.0	118	14.0
1920	2,400	33.0	256	25.0
1930	2,485	29.0	726	25.5
1940	1,426	24.0	1,321	16.0
1950	2,562	24.0	310	15.0
1955	2,029	26.0	190	20.0
1960	1,213	35.5	225	29.0
1965	617	40.0	37	30.0
1970	573	42.0	45	36.0
1975	590	49.0	33	36.0
1979	400	53.0	28	43.0
1980	380	41.0	25	38.0
1981	395	40.0	25	39.0
1982	425	58.0	25	47.0
1983	300	45.0	55	45.0

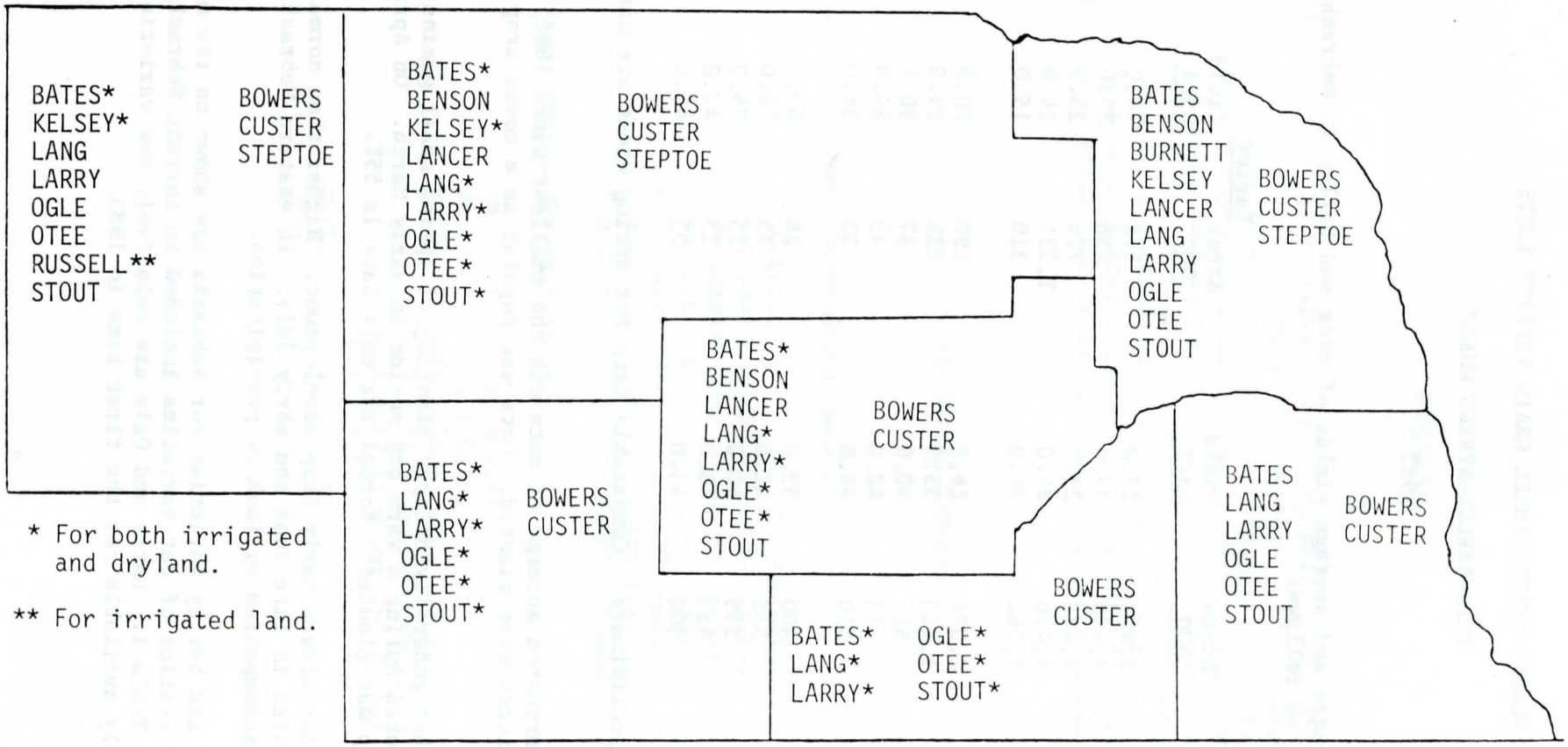
The 1983 data are preliminary. Comparable data for spring wheat are not available.

The 300,000 harvested acreage of oats was the smallest since 1880. An estimated 520,000 acres were planted. Oats was popular as a cover crop in the PIK program.

Cold wet weather generally delayed planting of spring small grains. A few acres were planted during a warm dry period in early March. On April 18, only 7% of the crop was planted. Normal for this date is 55%.

Cool wet weather slowed early crop development. Higher than normal temperatures prevailed in late June and early July. In eastern Nebraska, the heat wave was accompanied by lack of precipitation.

Suggested oat and barley varieties for Nebraska are shown on the map (Page 4). Characteristics of oat varieties included in current Nebraska tests are shown in Table 1. Larry and Ogle are relatively new varieties which were generally available for the first time in 1983.



* For both irrigated and dryland.

** For irrigated land.

SUGGESTED OAT AND BARLEY VARIETIES FOR NEBRASKA

1984

Table 1. Characteristics of oat varieties in recent Nebraska tests.

Variety	Relative Maturity	Straw strength	Bushel weight	Height
Bates	Early	Strong	High	Short
Benson	Med-late	Medium	Medium	Tall
Burnett	Medium	Medium	Medium	Medium
Colorado 37	Late	Weak	Medium	Tall
Garry	Late	Strong	Medium	Tall
Kelsey	Med-late	Medium	Medium	Tall
Kherson	Late	Weak	Low	Medium
Lancer	Medium	Medium	High	Medium
Lang	Early	Strong	Medium	Short
Larry	Early	Strong	High	Short
Lodi	Late	Medium	Medium	Tall
Lyon	Medium	Strong	Medium	Tall
Ogle	Med-early	Strong	Medium	Short
Otee	Early	Strong	High	Short
Preston	Early	Strong	Medium	Medium
Russell	Late	Medium	Medium	Tall
Stout	Early	Strong	High	Short
Trio	Early	Medium	High	Medium
Wright	Medium	Strong	High	Tall

Larry was selected from the cross Tyler x Egdolon 2x Orbit at the University of Illinois. It is a high yielding, early maturing variety with good resistance to barley yellow dwarf. It is similar to Lang with equal or better lodging resistance, slightly higher test weight and a more attractive kernel.

Ogle resulted from a cross of Brave 2x Tyler x Egdolon 23 made at the University of Illinois. It is a high yielding, medium maturing variety with excellent resistance to barley yellow dwarf. It is slightly taller and several days later than Lang. Kernels appear similar to Lang. It has an excellent record in Nebraska.

Locations and dates of planting and harvest of spring small grain variety trials are shown in Table 2. Oat data for the Southeast, Northeast and West (irrigated and nonirrigated) trials are shown in Tables 3 through 11. Barley data are summarized in Tables 12 through 19. Spring wheat data are reported in Tables 20 through 24.

The 1983 data are shown along with period-of-years performance. This provides information about variety reaction to differing conditions. The performance of varieties cannot be measured with absolute accuracy because of variations in soil and other conditions within the test area. Unless varieties differ in yield or other characters by more than the difference required for significance shown in the tables, little confidence can be placed in the superiority of one over the other. These differences are calculated at the 5% level of probability. Differences this great would be expected through chance alone in 1 of 20 trials.

Table 2. Locations and dates of planting and harvest. Spring small grain variety tests. 1983.

County	Cooperator	Planted	Harvested
	Oats		
Saunders	Mead Field Laboratory	April 20	July 25
Dixon	Northeast Station	April 25	July 19
Cedar	Charles Foxhoven, Wynot.	April 25	July 21
Cheyenne	High Plains Ag. Laboratory	April 18	Aug. 11
Scotts Bluff (irr)	Panhandle Station	April 19	Aug. 5
Box Butte (irr)	Northwest Ag. Laboratory	April 20	Aug. 10
	Barley		
Saunders	Mead Field Laboratory	April 20	July 20
Dixon	Northeast Station	April 25	July 15
Cheyenne	High Plains Ag. Laboratory	April 18	Aug. 1
Scotts Bluff (irr)	Panhandle Station	April 19	Aug. 5
Box Butte (irr)	Northwest Ag. Laboratory	April 20	Aug. 10
	Spring wheat		
Saunders	Mead Field Laboratory	April 20	Aug. 1
Dixon	Northeast Station	April 25	July 25
Cheyenne	High Plains Ag. Laboratory	April 18	Aug. 11
Scotts Bluff (irr)	Panhandle Station	April 19	Aug. 5
Box Butte (irr)	Northwest Ag. Laboratory	April 20	Aug. 10

Oats

Southeast District data were obtained at the Mead Field Laboratory (Table 3). Yields were good with lower-than-average test weights. Period-of-years data are included in Table 4. Ogle had an outstanding four-year yield record.

Two trials were planted in the Northeast District. In Dixon County, yields were fair with low bushel weights (Table 5.) Yields were higher in Cedar County (Table 6). Bushel weights also were low. Grain protein is reported for whole grain at 12% moisture. Oats in Cedar County grew taller and lodged more than in Dixon County. There was poor agreement in yield in these two trials. Four-year average yields were as follows: Ogle 93, Bates 89, Larry 87, and Lang 85 bushels per acre (Table 7).

Spring grain trials in western Nebraska were planted after mid-April and harvested in early August. The extreme heat of July did not reduce yields as much as expected. Lower night temperatures may account for increased yields.

Results of the nonirrigated oat trial in Cheyenne County are shown in Table 8. Bushel weights were high. Period-of-years data are shown in Table 9.

West irrigated oat data from Scotts Bluff and Box Butte Counties are reported in Table 10. Period-of-years data are included in Table 11. Ogle and Kelsey each had four-year average yields in excess of 100 bushels per acre.

Barley

Barley trials were planted adjacent to oats. Relative production of oats and barley per unit area was as follows:

Location	Barley % of Oats								
	1975	1976	1977	1978	1979	1980	1981	1982	1983
Saunders	78	86	147	102	89	95	----	79	73
Dixon	112	76	85	117	134	117	----	123	73
Cheyenne	113	77	114	91	107	121	73	133	101
Box Butte	149	----	----	----	----	----	----	----	----
Sheridan	----	94	----	----	----	----	----	----	----
Scotts Bluff (irr)	156	128	99	89	95	141	----	125	125
Box Butte (irr)	----	----	108	----	136	112	127	106	121
Dawes (irr)	----	----	----	86	----	----	----	----	----

These data are based on the average yield of all varieties included in that test. They emphasize that relative performance of these two crops varies greatly with environmental conditions.

Nonirrigated barley yield data from Southeast, Northeast and West District trials are shown in Tables 12, 13 and 14, respectively. Bowers had the highest four-year average yield in the eastern districts (Tables 15 and 16). Steptoe and Custer were most productive in the West nonirrigated trial (Table 17). Steptoe did not perform well in West District irrigated trials in 1983 (Table 18). However, Steptoe was the highest yielding variety in five- and seven- year averages (Table 9).

Spring Wheat

Spring wheat yield and other data are shown in Tables 20 through 24. Yields were low at the Mead Field Laboratory and Northeast Station (Tables 20 and 21). Production in Cheyenne County was near the five-year average (Table 22). Irrigated data were obtained in Scotts Bluff and Box Butte Counties (Table 23). Performance of varieties under irrigation in trials since 1975 is shown in Table 24.

Table 3. Southeast District oat variety test. Saunders County. 1983.

Variety	Stem rust	Flower June	Height inches	Yield bu/A	Weight lb/bu
Bates	S	22	34	78	33.0
Benson	S	23	41	75	33.5
Burnett	S	22	43	70	30.5
Kelsey	S	26	40	38	30.0
Kherson	S	24	41	59	26.5
Lancer	S	23	34	43	30.0
Lang	S	22	34	69	31.5
Larry	VS	22	32	60	32.0
Ogle	S	22	37	107	32.0
Otee	S	22	36	74	33.5
Preston	MS	22	37	70	32.0
Russell	MR-MS	26	41	48	30.5
Stout	MR-MS	22	30	43	30.5
Exp. 0-11	S	22	33	68	31.5
Exp. 0-12	MS	22	31	80	33.0
Exp. 0-13	S	22	37	43	33.5
Dif. req. sig.	---	0.7	3.0	14.0	----

Test on Mead Field Laboratory

Table 4. Southeast District oat variety tests. 1976-1983.

Variety	Grain yield bu/A										Weight lb/bu	
	1976	1977	1978	1979	1980	1981	1982	1983	1980-83 average	1978-83 average	1980-83 average	1978-83 average
Bates	89	48	43	26	85	38	67	78	67	56	33.5	31.4
Benson	--	36	32	24	77	27	60	75	60	49	31.7	29.7
Burnett	71	43	43	20	73	34	59	70	59	50	30.6	28.9
Garry	48	33	29	24	91	26	--	--	--	--	----	----
Kelsey	55	51	47	18	91	27	64	38	55	48	32.2	30.2
Kherson	56	38	29	22	81	25	58	59	56	46	27.5	26.8
Lancer	--	--	44	25	86	32	72	43	58	50	32.3	30.6
Lang	83	49	61	16	72	45	66	69	63	55	31.5	29.1
Larry	--	--	--	--	78	48	74	60	65	--	32.5	----
Lyon	40	43	40	16	--	--	--	--	--	--	----	----
Ogle	--	--	--	--	68	39	89	107	76	--	31.0	----
Otee	75	44	41	22	82	30	65	74	63	52	34.1	31.7
Preston	--	--	--	--	76	25	69	70	60	--	33.0	----
Russell	60	45	40	24	74	21	57	48	50	44	31.6	29.8
Stout	79	44	43	10	55	27	62	43	47	40	31.9	29.1
Trio	52	46	42	18	--	--	--	--	--	--	----	----
Wright	74	34	42	19	--	--	--	--	--	--	----	----
Exp. 0-11	--	--	--	--	--	--	72	68	--	--	----	----
Exp. 0-12	--	--	--	--	--	--	72	80	--	--	----	----
Exp. 0-13	--	--	--	--	--	--	--	43	--	--	----	----
Dif. req. sig.	14.9	11.6	10.9	6.8	11.7	8.0	10.2	14.0	N.S.	N.S.	2.0	1.9

Tests on Mead Field Laboratory, Saunders County.

Table 5. Northeast District oat variety test. Dixon County. 1983.

Variety	Flower June	Height inches	Lodging %	Grain bu/A	Weight lb/bu	Protein %	Straw cwt/A
Bates	25	27	1	68	31.8	13.4	24.0
Benson	28	33	1	68	31.0	11.2	22.0
Burnett	25	32	4	60	29.5	12.2	19.6
Kelsey	29	35	3	60	30.5	9.8	24.9
Kherson	27	35	5	62	27.4	12.2	23.3
Lancer	26	28	0	62	30.0	13.5	21.0
Lang	24	27	0	59	23.9	10.8	20.6
Larry	25	27	0	54	24.2	10.7	18.5
Ogle	26	30	T	71	28.9	12.8	23.9
Otee	25	30	0	64	31.0	13.9	22.4
Preston	25	31	1	59	31.3	15.1	19.3
Russell	28	34	4	61	28.0	12.2	26.6
Stout	24	25	0	51	28.4	13.0	18.5
Exp. 0-11	25	26	0	63	24.2	11.6	22.8
Exp. 0-12	24	27	0	75	31.2	11.3	18.3
Dif. req. sig.	0.8	1.8	2.4	8.0	----	1.2	2.7

Test on Northeast Station

Table 6. Northeast District oat variety test. Cedar County.

Variety	Height inches	Lodging %	Grain bu/A	Weight lb/bu	Protein %	Straw cwt/A
Bates	35	5	91	31.3	15.8	37.9
Benson	40	34	56	29.1	14.0	29.9
Burnett	41	32	50	24.6	15.2	26.7
Kelsey	43	36	45	23.2	12.1	30.2
Kherson	39	71	21	16.3	13.1	18.3
Lancer	36	5	55	26.2	13.8	32.8
Lang	35	28	70	28.2	10.7	32.7
Larry	35	22	70	28.7	11.9	33.8
Ogle	38	7	90	29.9	11.5	36.0
Otee	38	11	77	30.7	14.7	35.9
Preston	38	10	68	30.7	16.0	31.3
Russell	41	22	50	25.3	13.5	27.8
Stout	33	3	65	25.5	14.2	37.1
Exp. 0-11	35	22	74	28.7	11.0	34.6
Exp. 0-12	36	9	94	30.9	12.0	33.3
Dif. req. sig.	1.6	19.2	14.3	----	1.5	5.1

Test on Charles Foxhoven Farm, Wynot.

Table 7. Northeast District oat variety tests. 1977-1983.

Variety	Grain yield bu/A									Weight lb/bu	
	1977	1978	1979	1980	1981	1982	1983	1980-83 average	1978-83 average	1983	1980-83 average
Bates	73	56	95	115	52	108	80	89	84	31.6	34.1
Benson	65	52	104	107	36	88	62	73	75	30.1	32.7
Burnett	65	48	94	112	49	92	55	77	75	27.1	30.8
Kelsey	77	48	108	108	35	89	53	71	74	26.9	31.6
Kherson	58	31	75	95	37	68	42	61	58	21.9	26.8
Lancer	--	55	103	110	44	86	59	75	76	28.1	33.3
Lang	84	62	97	115	55	103	65	85	83	26.1	30.8
Larry	--	--	--	120	61	106	62	87	--	26.5	----
Lyon	72	46	107	---	--	--	--	--	--	----	31.9
Ogle	--	--	110	122	54	114	81	93	--	29.4	31.2
Otee	70	53	95	112	48	92	71	81	79	30.9	34.3
Preston	--	--	--	104	41	94	64	76	--	31.0	34.0
Russell	66	42	101	---	--	95	56	--	--	26.7	----
Stout	73	60	90	106	36	108	58	77	76	27.0	32.4
Trio	61	51	92	---	--	--	--	--	--	----	----
Wright	75	51	95	---	--	--	--	--	--	----	----
Exp. 0-11	--	--	--	---	--	98	69	--	--	26.5	----
Exp. 0-12	--	--	--	---	--	115	85	--	--	31.1	----
Dif. req. sig.	N.S.	9.9	7.7	N.S.	10.7	11.8	N.S.	8.5	7.6	N.S.	1.8

Location of tests (counties): 1976-1980 Dixon and Cedar; 1981 Cedar; 1982 Dixon; 1983 Dixon and Cedar.

Table 8. West District nonirrigated oat variety test. Cheyenne County. 1983.

Variety	Flower date	Height inches	Yield bu/A	Weight lb/bu
Bates	6-26	33	78	35.2
Benson	7-2	38	77	32.6
Burnett	6-27	39	71	32.1
Kelsey	7-7	37	52	32.7
Kherson	7-1	38	59	29.4
Lancer	6-29	35	77	34.9
Lang	6-27	31	78	33.8
Larry	6-28	30	81	34.6
Ogle	6-28	33	81	31.0
Otee	6-27	33	68	35.9
Preston	6-27	34	67	35.6
Russell	7-5	38	73	33.4
Stout	6-27	30	72	34.3
Exp. 0-11	6-28	31	83	34.8
Exp. 0-12	6-26	31	79	35.2
Dif. req. sig.	1.1	1.8	6.2	1.1

Table 9. West District nonirrigated oat variety tests. 1976-1983.

Variety	Grain yield bu/A										Weight lb/bu
	1976	1977	1978	1979	1980	1981	1982	1983	1980-83 average	1978-83 average	1980-83 average
Bates	48	74	42	81	40	109	98	78	81	75	34.5
Benson	--	79	39	92	35	83	108	77	76	72	31.6
Burnett	50	70	33	99	37	87	80	71	69	68	31.6
Garry	--	76	31	102	33	94	--	--	--	--	----
Kelsey	42	80	29	103	38	88	83	52	65	66	30.8
Kherson	43	63	25	92	27	72	73	59	58	58	27.3
Lancer	--	--	29	93	38	91	111	77	79	73	32.9
Lang	53	75	59	94	48	105	109	78	85	82	32.5
Larry	--	--	--	--	44	97	111	81	83	--	33.3
Lyon	35	78	42	100	--	--	--	--	--	--	----
Ogle	--	--	--	105	42	110	131	81	91	--	30.9
Otee	37	63	43	84	37	87	100	68	73	70	33.8
Preston	--	--	--	--	37	83	89	67	69	--	33.7
Russell	36	88	38	85	36	--	90	73	--	--	----
Stout	52	69	51	85	44	80	109	72	76	74	33.0
Trio	41	62	39	85	--	--	--	--	--	--	----
Wright	49	70	46	96	--	--	--	--	--	--	----
Exp. 0-11	--	--	--	--	--	--	114	83	--	--	----
Exp. 0-12	--	--	--	--	--	--	115	79	--	--	----
Dif. req. sig.	15.5	9.0	18.6	12.7	N.S.	21.3	16.4	6.2	11.1	10.0	1.1

Location of tests (counties): 1975 Cheyenne and Box Butte: 1976 Cheyenne and Sheridan; 1977-83 Cheyenne.

Table 10. West District irrigated oat variety tests. 1983.

Variety	Scotts Bluff County				Box Butte County					1983 average		
	Flower June	Height inches	Yield bu/A	Weight lb/bu	Flower date	Height inches	Lodging %	Yield bu/A	Weight lb/bu	Flower June	Yield bu/A	Weight lb/bu
Bates	24	32	93	33.4	6-23	28	20	74	31.5	24	84	32.5
Benson	28	39	87	32.3	7-1	36	21	85	30.0	30	86	31.2
Burnett	23	39	86	32.9	6-24	35	23	77	30.5	24	82	31.7
Kelsey	29	40	90	30.4	7-1	38	28	83	29.8	30	87	30.1
Kherson	27	39	82	28.8	6-30	37	43	66	27.8	29	74	28.3
Lancer	28	36	77	32.8	7-1	33	5	77	30.0	30	77	31.4
Lang	26	33	94	30.5	6-22	28	0	68	29.5	24	81	30.0
Larry	25	33	80	31.9	6-27	26	0	71	31.0	26	76	31.5
Ogle	27	34	101	29.8	6-28	30	3	89	31.8	28	95	30.8
Otee	27	34	67	33.3	6-25	31	3	67	30.5	26	67	31.9
Preston	24	35	70	32.2	6-26	30	15	69	32.0	25	70	32.1
Russell	30	39	89	33.6	7-1	37	23	81	30.5	31	85	32.1
Stout	22	31	72	31.3	6-23	27	0	56	30.5	23	64	30.9
Exp. 0-11	25	33	90	32.1	6-26	28	10	74	30.8	26	82	31.5
Exp. 0-12	24	32	91	32.9	6-22	26	0	71	32.3	23	81	32.6
Dif. req. sig.	2.5	1.9	9.4	2.3	1.9	2.4	34.4	10.0	1.3	3.1	12.1	N.S.

Table 11. West District irrigated oat variety tests. 1975-1983.

Variety	Grain yield bu/A											Weight lb/bu
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1980-83 average	1978-83 average	1980-83 average
Bates	77	91	104	65	70	81	102	98	84	91	83	33.8
Benson	--	--	98	64	66	84	109	72	86	88	80	32.8
Burnett	80	97	102	60	66	77	113	90	82	91	81	32.4
Colorado 37	81	108	102	70	70	90	95	--	--	--	--	----
Garry	80	99	122	71	82	78	127	--	--	--	--	----
Kelsey	95	104	106	71	82	96	127	101	87	103	94	32.9
Kherson	84	98	98	56	60	74	112	95	74	89	79	29.9
Lancer	--	--	--	55	79	70	116	79	77	86	79	32.2
Lang	71	76	105	63	67	70	120	91	81	91	82	31.7
Larry	--	--	--	--	--	73	130	91	76	93	--	32.4
Lodi	82	93	109	65	--	69	108	--	--	--	--	----
Lyon	--	98	113	56	80	--	--	--	--	--	--	----
Ogle	--	--	--	--	94	93	129	106	95	106	--	31.9
Otee	64	87	90	54	71	75	92	85	67	80	74	33.8
Preston	--	--	--	--	--	67	99	79	70	79	--	33.6
Russell	85	100	114	68	83	89	118	89	85	95	89	32.8
Stout	72	93	89	48	67	58	--	96	64	--	--	----
Trio	63	89	97	53	58	--	--	--	--	--	--	----
Wright	81	93	89	57	70	--	--	--	--	--	--	----
Exp. 0-11	--	--	--	--	--	--	--	89	82	--	--	----
Exp. 0-12	--	--	--	--	--	--	--	100	81	--	--	----
Dif. req. sig.	9.5	N.S.	N.S.	13.0	15.7	16.7	20.2	N.S.	12.1	9.8	7.4	0.9

Location of tests (counties): 1975-1976 Scotts Bluff; 1977 Scotts Bluff and Box Butte; 1978 Scotts Bluff and Dawes; 1979-1980 Scotts Bluff and Box Butte; 1981 Box Butte; 1982-1983 Scotts Bluff and Box Butte.

Table 12. Southeast District barley variety test. Saunders County. 1983.

Variety	Stem rust	Flower June	Height inches	Yield bu/A	Weight lb/bu
Azure	MR	22	30	36	45.5
Bowers	MS	24	31	34	47.0
Custer	S	22	31	26	44.0
Morex	MR	24	32	28	45.5
Robust	MR	23	32	42	47.0
Steptoe	S	25	28	14	38.0
Exp. B-11	MR	24	30	30	43.0
Exp. B-12	R-MR	23	33	41	46.0
Dif. req. sig.	--	1.5	2.1	6.5	----

Table 13. Northeast District barley variety test. Dixon County. 1983.

Variety	Flower June	Height inches	Lodging %	Yield bu/A	Weight lb/bu
Azure	26	29	0	36	48.7
Bowers	26	24	1	40	49.2
Custer	25	23	1	40	46.9
Morex	25	25	T	33	49.8
Steptoe	26	22	2	24	46.0
Exp. B-11	25	22	0	30	46.6
Exp. B-12	26	23	1	39	49.5
Dif. req. sig.	N.S.	2.5	1.5	5.4	----

Table 14. West District nonirrigated barley variety test. Cheyenne County 1983.

Variety	Flower June	Height inches	Yield bu/A	Weight lb/bu
Azure	29	31	57	43.6
Bowers	29	31	49	45.3
Bumper	30	29	37	42.0
Custer	27	32	50	41.5
Morex	29	33	53	45.0
Steptoe	26	29	45	38.9
Teton	25	30	42	38.8
Exp. B-11	27	30	52	40.9
Exp. B-12	28	34	58	44.4
Dif. req. sig.	1.2	2.1	6.3	1.5

Table 15. Southeast District barley variety tests. 1974-1983. No 1981 data.

Variety	Grain yield bu/A											Weight lb/bu
	1974	1975	1976	1977	1978	1979	1980	1982	1983	1979-83 average	1977-83 average	1979-83 average
Azure	--	--	--	--	--	15	39	40	36	33	--	45.7
Beacon	25	26	30	40	32	10	--	--	--	--	--	----
Bowers	--	--	--	46	42	14	57	37	34	36	38	47.8
Custer	26	29	46	43	38	12	53	32	26	31	34	45.9
Klages	--	--	--	24	--	--	--	--	--	--	--	----
Manker	--	34	27	31	26	--	--	--	--	--	--	----
Morex	--	--	--	44	38	11	45	36	28	30	34	46.8
Nordic	19	44	27	48	28	11	--	--	--	--	--	----
Primus II	26	25	33	41	--	--	--	--	--	--	--	----
Robust	--	--	--	--	--	--	--	--	42	--	--	----
Steptoe	17	23	49	40	33	16	50	31	14	28	31	42.5
Exp. B-11	--	--	--	--	--	--	--	40	30	--	--	----
Exp. B-12	--	--	--	--	--	--	--	--	41	--	--	----
Dif. req. sig.	5.9	6.1	9.9	9.5	8.8	2.9	N.S.	8.2	6.5	N.S.	4.6	2.1

Tests on Mead Field Laboratory, Saunders County.

Table 16. Northeast District barley variety tests. 1974-1983. No 1981 data.

Variety	Grain yield bu/A											Weight lb/bu
	1974	1975	1976	1977	1978	1979	1980	1982	1983	1979-83 average	1977-83 average	1979-83 average
Azure	--	--	--	--	--	77	79	83	36	69	--	49.3
Beacon	60	58	13	39	42	62	--	--	--	--	--	----
Bowers	--	--	--	53	52	81	85	91	40	74	67	50.7
Custer	69	49	16	50	56	78	75	76	40	67	63	49.0
Lud	--	--	--	47	40	73	--	--	--	--	--	----
Morex	--	--	--	50	48	72	78	73	33	64	59	51.0
Nordic	62	52	11	42	44	75	--	--	--	--	--	----
Primus II	60	59	12	42	--	--	--	--	--	--	--	----
Steptoe	56	44	10	52	48	83	68	81	24	64	59	46.5
Exp. B-11	--	--	--	--	--	--	--	95	30	--	--	----
Exp. B-12	--	--	--	--	--	--	--	--	39	--	--	----
Dif. req. sig.	9.1	8.0	N.S.	8.2	4.7	7.3	N.S.	8.1	5.4	N.S.	6.2	1.4

Table 17. West District nonirrigated barley variety tests. 1975-1983.

Variety	Grain yield bu/A											Weight lb/bu
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1979-83 average	1977-83 average	1979-83 average
Azure	--	--	--	--	74	26	45	93	57	59	--	44.3
Beacon	52	20	45	16	56	--	--	--	--	--	--	----
Bowers	--	--	58	19	70	27	38	94	49	56	51	44.8
Bumper	--	--	--	--	--	--	--	--	37	--	--	----
Custer	51	29	58	28	67	41	66	88	50	62	57	43.8
Morex	--	--	46	16	64	25	44	76	53	52	46	44.9
Nordic	56	22	50	13	62	--	--	--	--	--	--	----
Steptoe	60	32	78	25	73	35	56	100	45	62	59	42.3
Teton	--	--	--	--	--	--	--	--	42	--	--	----
Exp. B-11	--	--	--	--	--	--	--	103	52	--	--	----
Exp. B-12	--	--	--	--	--	--	--	--	58	--	--	----
Dif req. sig.	--	5.1	10.5	5.5	11.3	6.0	11.4	6.7	6.3	N.S.	8.1	1.5

Location of tests (counties): 1976 Cheyenne and Sheridan; 1977-1983 Cheyenne.

Table 18. West District irrigated barley variety tests. 1983.

Variety	Scotts Bluff County			Box Butte County					1983 average		
	Height inches	Yield bu/A	Weight lb/bu	Flower date	Height inches	Lodging %	Yield bu/A	Weight lb/bu	Height inches	Yield bu/A	Weight lb/bu
Azure	34	80	47.9	6-30	28	4	71	40.8	31	76	44.4
Bowers	32	73	50.0	6-30	31	28	71	41.8	32	72	45.9
Bumper	34	64	47.6	7-1	29	49	42	38.0	32	53	42.8
Custer	33	68	45.3	6-27	31	80	54	39.5	32	61	42.4
Morex	34	67	45.2	6-28	32	25	57	42.0	33	62	43.6
Steptoe	29	65	44.9	7-1	27	80	48	39.3	28	57	42.1
Teton	31	77	45.2	7-1	27	80	43	37.8	29	60	41.5
Exp. B-11	31	71	46.1	25	26	1	74	40.0	29	73	43.1
Exp. B-12	34	69	47.9	7-1	30	1	75	42.5	32	72	45.2
Dif. req. sig.	2.5	7.3	2.4	2.4	2.6	10.2	6.2	1.9	N.S.	N.S.	N.S.

Table 19. West District irrigated barley variety tests. 1976-1983.

Variety	Grain yield bu/A											Weight lb/bu
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1979-83 average	1977-83 average	1979-83 average
Azure	--	--	--	--	51	64	99	73	76	73	--	43.8
Beacon	79	63	72	36	48	--	--	--	--	--	--	----
Bowers	--	--	78	37	49	65	102	72	72	72	68	44.5
Bumper	--	--	--	--	--	--	--	--	53	--	--	----
Custer	52	87	67	34	47	60	83	72	61	65	61	42.1
Manker	78	85	61	29	--	--	--	--	--	--	--	----
Morex	--	--	66	27	41	61	95	64	62	65	59	44.2
Nordic	--	91	64	34	37	--	--	--	--	--	--	----
Steptoe	85	83	84	45	70	76	124	81	57	82	77	43.5
Teton	--	--	--	--	--	--	--	--	60	--	--	----
Exp. B-11	--	--	--	--	--	--	--	78	73	--	--	----
Exp. B-12	--	--	--	--	--	--	--	--	72	--	--	----
Dif. req. sig.	17	17	N.S.	N.S.	5.6	N.S.	16.0	13.8	N.S.	10.3	7.7	1.4

Location of tests (counties): 1976 Scotts Bluff; 1977 Scotts Bluff and Box Butte; 1978 Scotts Bluff and Dawes; 1979-1980 Scotts Bluff and Box Butte; 1981 Box Butte; 1982-1983 Scotts Bluff and Box Butte.

Table 20. Southeast District spring wheat variety tests. 1977-1983.

Variety	Grain yield bu/A							1983				
	1977	1978	1979	1980	1981	1982	1983	Leaf rust	Stem rust	Flower June	Height inches	Weight lb/bu
Butte	31	21	17	23	13	17	21	40MS	MR	22	35	55.0
Centa	--	--	--	--	--	14	22	10MR	R	22	35	59.5
Eureka	--	17	16	23	12	13	16	10MR	R-MR	23	37	50.0
Fielder (white)	26	16	13	23	8	--	--	----	--	--	--	----
Guard	--	--	--	--	--	--	21	5MR	MS	22	31	55.0
James	--	--	--	23	13	10	21	60MR-MS	R	22	34	53.5
Len	--	--	18	23	14	14	13	10MR	MR	24	32	52.0
Marquis	17	6	13	16	3	--	--	----	--	--	--	----
Marshall	--	--	--	27	6	12	21	TR-R	MR	24	30	54.0
Olaf	28	16	16	20	12	9	12	10MR	MR	24	32	53.0
Oslo	--	--	--	--	--	11	14	TR-MR	MS-S	22	29	52.0
Rugby (durum)	38	23	20	19	11	--	--	----	--	--	--	----
Waldron	26	19	13	25	12	--	--	----	--	--	--	----
Dif. Req. sig.	5.2	5.3	3.0	5.6	5.6	2.6	4.5	----	--	0.5	1.3	----

Rust: R = resistant, S = susceptable, MR = moderately resistant, MS = moderately susceptible.

Table 21. Northeast District spring wheat variety tests. 1975-1983. No 1981 data.

Variety	Grain yield bu/A								1983		
	1975	1976	1977	1978	1979	1980	1982	1983	Flower June	Height inches	Weight lb/bu
Butte	--	--	33	18	41	40	36	15	24	29	54.5
Centa	--	--	--	--	--	--	41	17	24	29	57.0
Eureka	--	--	--	--	47	38	31	14	28	30	52.5
Fielder (white)	--	--	31	12	35	38	--	--	--	--	----
James	--	--	--	--	--	44	35	18	25	30	55.5
Len	--	--	--	--	45	36	30	17	27	26	57.0
Marquis	9	8	19	9	30	26	--	--	--	--	----
Marshall	--	--	--	--	--	--	29	25	27	26	58.0
Olaf	23	16	39	16	45	35	25	17	27	26	56.5
Oslo	--	--	--	--	--	--	28	17	25	23	54.5
Rugby (durum)	--	--	31	20	38	37	--	--	--	--	----
Waldron	27	15	36	--	44	42	--	--	--	--	----
Dif. req. sig.	--	3.3	4.8	2.1	6.5	4.8	4.8	1.9	6.8	1.5	----

Tests on Northeast Station, Dixon County.

Table 22. West District nonirrigated spring wheat variety tests. 1975-1983.

Variety	Grain yield bu/A									1983		
	1975	1976	1977	1978	1979	1980	1981	1982	1983	Flower July	Height inches	Weight lb/bu
Butte	--	--	36	22	46	17	22	45	28	3	34	59.0
Centa	--	--	--	--	--	--	--	45	27	1	36	59.7
Eureka	--	--	--	--	41	16	6	41	26	5	36	57.3
Fielder (white)	--	37	39	21	44	18	18	--	--	-	--	----
James	--	--	--	--	--	16	28	53	28	1	33	57.3
Len	--	--	--	--	47	16	16	48	28	6	30	58.1
Marquis	27	16	21	16	39	14	9	--	--	-	--	----
Marshall	--	--	--	--	--	--	11	44	31	7	28	57.7
Olaf	41	27	37	21	43	18	10	44	30	5	29	58.3
Oslo	--	--	--	--	--	--	--	46	27	1	27	55.7
Rugby (durum)	--	--	36	--	47	17	7	--	--	-	--	----
Waldron	37	27	30	--	--	15	11	--	--	-	--	----
Dif. Sig.	3.7	4.5	3.9	6.0	4.3	N.S.	9.0	4.6	3.5	1.2	1.4	1.3

Tests on High plains Agricultural Laboratory. Cheyenne County.

Table 23. West District irrigated spring wheat variety tests. 1983.

Variety	Scotts Bluff County				Box Butte County					1983 Average		
	Flower date	Height inches	Yield bu/A	Weight lb/bu	Flower date	Height inches	Lodging %	Yield bu/A	Weight lb/bu	Weight inches	Yield bu/A	Weight lb/bu
Butte	6-28	35	39	55.5	6-28	34	3	36	57.0	35	38	56.3
Centa	6-27	35	39	59.0	6-26	35	5	32	56.5	35	36	57.8
Eureka	6-30	36	34	56.0	7-1	37	6	35	51.3	37	35	53.7
James	6-28	34	38	55.6	6-26	32	0	37	50.0	33	38	52.8
Len	6-30	32	37	55.9	7-1	32	5	36	44.0	32	37	50.0
Marshall	7-1	29	36	56.7	7-1	29	5	43	44.8	29	40	50.8
Olaf	6-30	32	40	58.2	7-1	31	0	34	53.0	32	37	55.6
Oslo	6-27	29	39	55.7	6-25	26	1	31	52.3	28	35	54.0
Dif. req. sig.	1.0	2.0	5.5	N.S.	1.3	2.6	N.S.	6.0	4.9	2.1	N.S.	N.S.

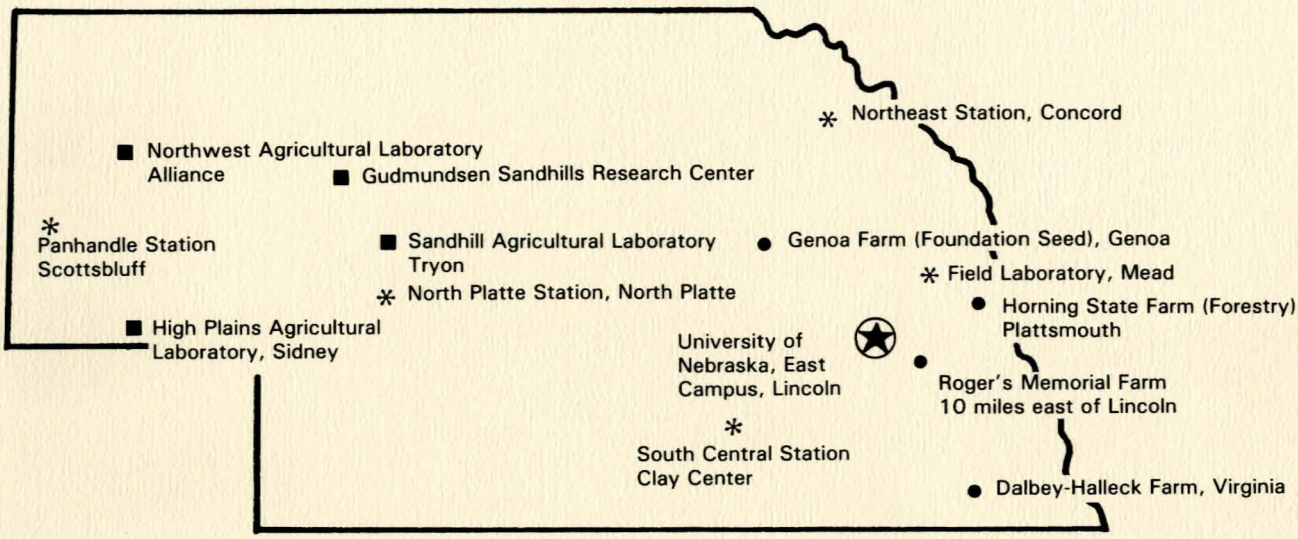
Tests on Panhandle Station and Northwest Agricultural Laboratory.

Table 24. West District irrigated spring wheat variety tests. 1975-1983.

Variety	Grain yield bu/A										Weight lb/bu
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1981-83 average	1981-83 average
Butte	--	--	49	34	46	41	60	38	38	45	55.8
Centa	--	--	--	--	--	--	--	45	36	--	----
Eureka	--	--	--	--	38	39	54	41	35	43	53.6
Fielder (white)	--	51	57	38	55	41	66	--	--	--	----
James	--	--	--	--	--	42	63	44	38	48	53.9
Len	--	--	--	--	47	37	64	43	37	48	50.4
Marquis	36	37	39	23	36	33	44	--	--	--	----
Marshall	--	--	--	--	--	--	61	43	40	48	50.5
Olaf	47	46	59	31	45	43	55	42	37	45	53.9
Oslo	--	--	--	--	--	--	--	46	35	--	----
Rugby (durum)	--	--	55	--	48	44	59	--	--	--	----
Waldron	42	43	45	--	47	39	56	--	--	--	----
Dif. req. sig.	N.S.	2.8	N.S.	N.S.	13.3	6.8	11.9	N.S.	N.S.	N.S.	3.1

Location of tests (counties): 1975 Scotts Bluff and Box Butte; 1976 Scotts Bluff and Morrill; 1977 Scotts Bluff and Box Butte; 1978 Scotts Bluff and Dawes; 1979-1980 Scotts Bluff and Box Butte; 1981 Box Butte; 1982-1983 Scotts Bluff and Box Butte.

Agricultural Research for All of Nebraska



The agricultural research division of the Institute of Agriculture and Natural Resources is the Nebraska Agricultural Experiment Station. The Experiment Station relies on its research centers and field laboratories to provide applied knowledge for development of Nebraska's largest industry—agriculture. In addition, many Nebraska farmers cooperate by furnishing land and other facilities for research projects. This provides information from areas not well represented by stations.

The Cooperative Extension Service transmits data to users through District and County Extension Offices. Area and County Extension Agents are available to provide additional interpretation and more specific recommendations.

Nebraska is a large state and has great variation due to topography and the continental type of climate. The elevation ranges from 1,000 feet to near a mile high in the northwest portion of the state, rainfall varies from 14 to 40 inches per year, and the soil types vary from sands to heavy clays. The research program thus is broad in subject matter and geography, resulting in the need for various stations and satellite locations.

The Cooperative Extension Service provides information and educational programs to all people without regard to race, color, national origin, sex or handicap.