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EC85-102 Nebraska Spring Small Grain Variety Tests 1985

August F. Dreier

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

Lenis Alton Nelson
University of Nebraska-Lincoln, lnelson1@unl.edu

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NEBRASKA SPRING SMALL GRAIN VARIETY TESTS 1985

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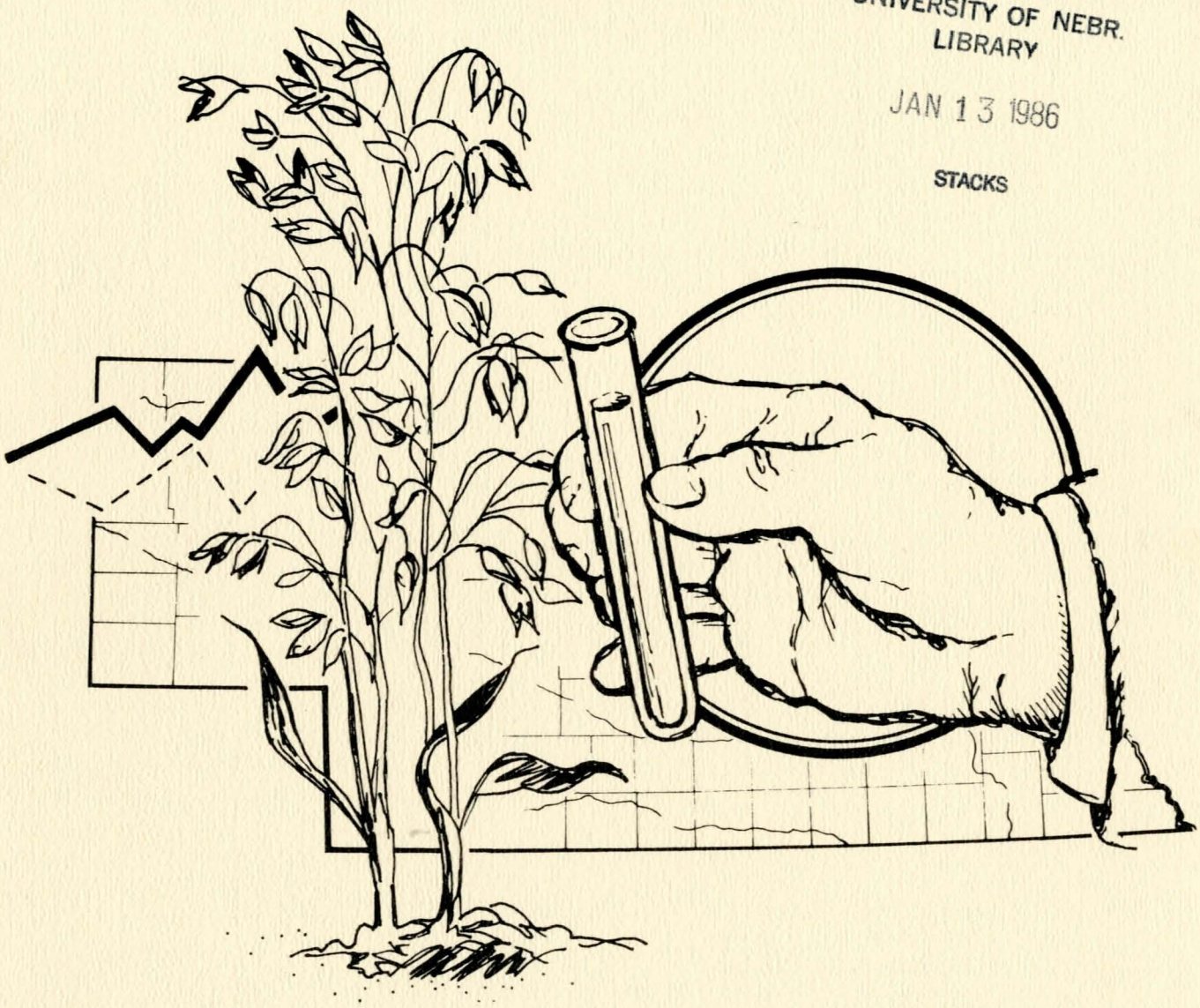

University of Nebraska–Lincoln
Institute of Agriculture and Natural Resources
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EXTENSION CIRCULAR 85-102

NEBRASKA SPRING SMALL GRAIN VARIETY TESTS

October 1985

AUTHORS

August F. Dreier	Department of Agronomy, Lincoln
John W. Schmidt	Department of Agronomy, Lincoln
Lenis A. Nelson	Panhandle Research and Extension Center, Scottsbluff
Rusell S. Moomaw	Northeast Research and Extension Center, Concord

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The Institute of Agriculture and Natural Resources provides information and educational programs to all people without regard to race, color, national origin, sex or handicap.

METRIC EQUIVALENTS

1 centimeter = 0.394 inches	cm = inches x 2.54
1 hectare = 2.471 acres	ha = acres x 0.405
1 kilogram = 2.205 pounds	kg = pounds x 0.454
1 hictoliter = 2.838 bushels	hl = bushels x 0.352

Kilogram/hectoliter = lb/bu x 1.287
Kilogram/hectare = bu/A x 35.87 (32#bushel) oats
Kilogram/hectare = bu/A x 53.81 (48#bushel) barley
Kilogram/hectare = bu/A x 67.26 (60#bushel) wheat

EXTENSION CIRCULAR 85-102

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NEBRASKA OATS AND BARLEY

PRODUCTION

Year	Oats		Barley	
	Harv. acres 000	Yield bu/A	Harv. acres 000	Yield bu/A
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
1960	1,213	35.5	225	29.0
1970	573	42.0	45	36.0
1980	380	41.0	25	38.0
1981	395	40.0	25	39.0
1982	460	58.0	22	50.0
1983	310	44.0	69	39.0
1984	300	50.0	78	33.0
1985	420	60.0	120	30.0

1985 data are preliminary. Comparable data for spring wheat are not available.

NEBRASKA SPRING SMALL GRAIN

VARIETY TESTS

1985

Oat planting in Nebraska proceeded rapidly in 1985. On April 7, 60% of the acreage was seeded. Normal for this date is 20%. On April 21, the crop was 98% seeded compared to a normal of 50% on this date.

May weather was warmer than normal with adequate moisture. Favorable weather for development continued until July. Favorable conditions resulted in the production of a 60-bushel average oat yield, a new record for Nebraska.

Oat Vareity Survey

In 1985, the Department of Agronomy, the Northeast Research and Extension Center and the Nebraska Crop Improvement Association cooperated in a survey of oat varieties being planted in the Northeast Crop Reporting District. The purpose of this survey was to determine the varieties in current use. This information will be of value in determining varieties for planting in future tests. The data should provide some insight into the types of oats preferred by farmers. It also should indicate to farmers how their variety choice agrees with others in that region. The Northeast District was selected because that area is the most concentrated area of oat production in Nebraska.

A total of 1,347 postcards were sent to farmers in 13 counties. A total of 540 were returned. This should give a good sample of varieties in use. Results of the survey are shown in Table 1. Burnett was planted on one-third of the acreage. This variety was released in 1956. Ogle, a highly productive variety of relatively recent release ranked second with nearly 13% of the acreage. Nodaway ranked third with 11% of the acreage. This is a popular variety from the standpoint of grain quality.

Suggested Varieties and New Releases

Suggested oat and barley varieties for Nebraska are shown on the map (page 5). Characteristics of oat varieties included in current Nebraska tests are shown in Table 2.

Kelly, Pierce, Steele and Webster were tested for the first time in 1984. Don, Hazel and Proat were released in 1985.

Don resulted from a cross of Coker 234/2/Orbit/CI8168 made in Illinois. Kernels of Don are chalk white and awnless. Compared to Lang, Don is similar in height and maturity, equal or better in yield, higher test weight and has more attractive grain. It has been in statewide tests for four years.

Hazel is an Illinois release from the cross Coker 227/2/Clintford/Postal. Hazel has greyish kernels compared to Ogle. Hazel has about the same maturity, better crown rust resistance, higher test weight and equal or better straw strength. It should be especially well suited for areas where both crown rust and barley yellow dwarf often cause damage to the oat crop.

Table 1. Oat variety survey. Northeast Crop Reporting District. 1985.[1/]

Variety	Acres	%
Burnett	8752	33.0
Ogle	3382	12.8
Nodaway 70[2/]	2974	11.2
Kota	1795	6.8
Lang	1145	4.3
Noble	1116	4.2
Lancer	970	3.7
Larry	500	1.9
Jaycee	323	1.2
Bates	228	0.9
Stout	213	0.8
Trio	180	0.7
Santee	132	0.5
Nemaha	130	0.5
Other[3/]	901	3.4
Unknown or unidentified	3,748	14.1
Total	26,489	100.0

1/ Based on 540 returns from 1,347 mailings to 13 counties.

2/ Includes Nodaway.

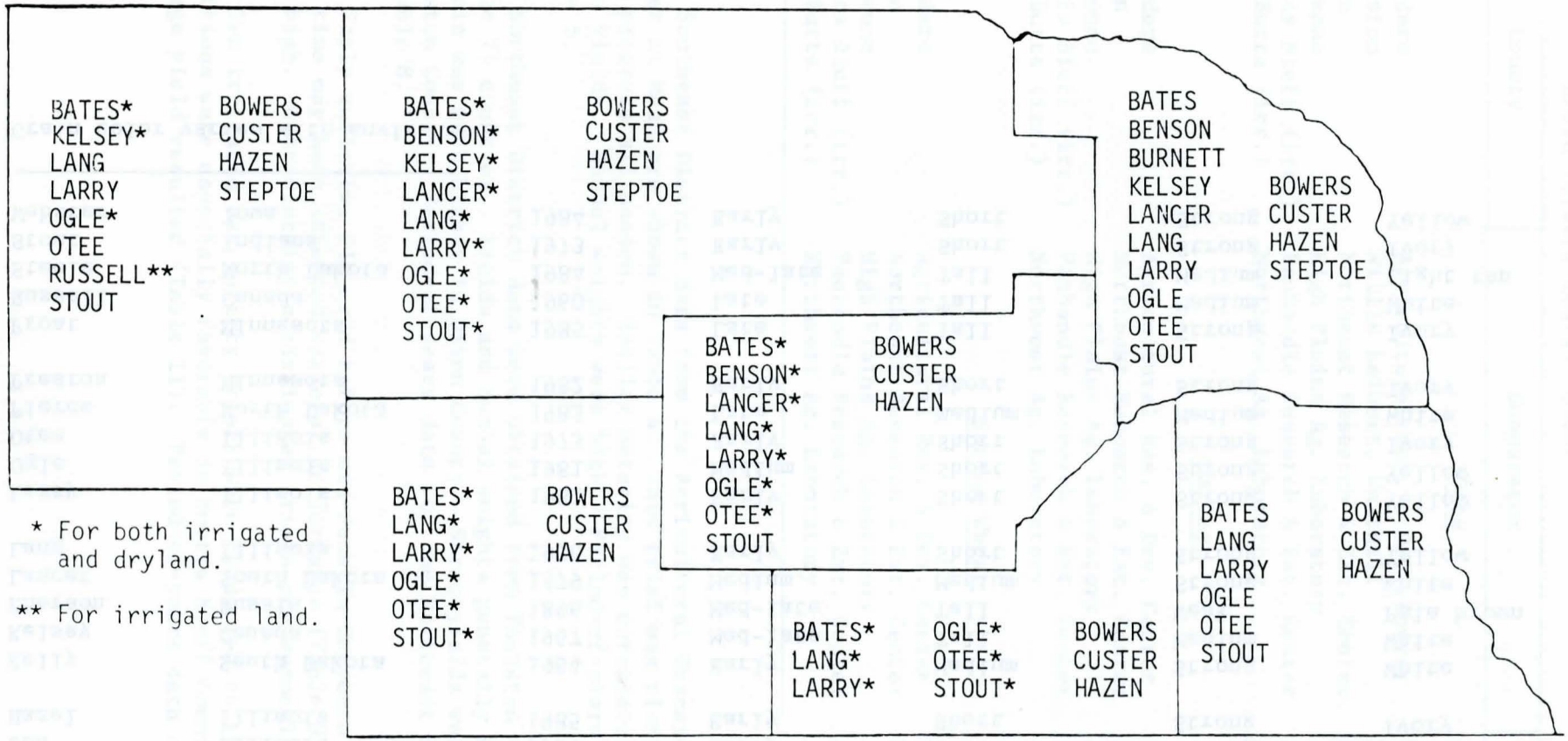
3/ Varieties with less than 0.5% of acreage. Includes McCurdy, AGO 275, Benson, Putnam, Diana, Moore, Andrew, Otee, Neal, Russell, Porter, Multiline E-77, Preston, Rodney, Holden, Clintford, Pettis, Cherokee, Chief and Lyon.

Proat was released by Minnesota from a cross between Dal and Lyon. It is a tall relatively late variety selected for high groat protein. The late maturity may limit its use in Nebraska. Proat has been tested only one year in Nebraska statewide trials.

1985 Tests

Locations and dates of planting and harvest of spring small grain variety trials are shown in Table 3. Oat data for the Southeast, Northeast and West (irrigated and nonirrigated) trials are shown in Tables 4 through 12. Barley data are sumarized in Tables 13 through 19. Spring wheat data are reported in Tables 20 through 24, inclusive.

The 1985 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.



SUGGESTED OAT AND BARLEY VARIETIES FOR NEBRASKA

1986

Table 2. Characteristics of oat varieties in Nebraska tests.

Variety	Origin	Released	Maturity	Height	Straw strength	Grain color
Bates	Missouri	1976	Early	Short	Strong	Dark
Benson	Minnesota	1979	Medium	Med-tall	Medium	White
Burnett	Iowa	1957	Medium	Medium	Medium	Ivory
Don	Illinois	1985	Early	Short	Strong	White
Hazel	Illinois	1985	Early	Short	Strong	Ivory
Kelly	South Dakota	1984	Early	Medium	Strong	White
Kelsey	Canada	1967	Med-late	Tall	Medium	White
Kherson	Russia	1896	Med-late	Tall	Weak	Pale brown
Lancer	South Dakota	1979	Medium	Medium	Strong	White
Lang	Illinois	1976	Early	Short	Strong	Yellow
Larry	Illinois	1981	Early	Short	Strong	Yellow
Ogle	Illinois	1981	Medium	Short	Strong	Yellow
Otee	Illinois	1973	Early	Short	Strong	Ivory
Pierce	North Dakota	1983	Late	Medium	Medium	White
Preston	Minnesota	1982	Early	Short	Strong	Ivory
Proat	Minnesota	1985	Late	Tall	Strong	Ivory
Russell	Canada	1960	Late	Tall	Medium	White
Steele	North Dakota	1984	Med-late	Tall	Medium	Light tan
Stout	Indiana	1973	Early	Short	Strong	Ivory
Webster	Iowa	1984	Early	Short	Strong	Yellow

Grain color varies with environment.

Table 3. Location and dates of planting and harvest. Nebraska spring small grain variety tests. 1985.

County	Cooperator	Planted	Harvested
	Oats		
Saunders	Agricultural Res. & Dev. Center	March 20	July 10
Thurston	Willis Leinart, Walthill	March 26	July 12
Dixon	Northeast Research & Ext. Center	March 26	July 10
Cheyenne	High Plains Ag. Laboratory	April 2	Aug. 6
Scotts Bluff (irr.)	Panhandle Research & Ext. Center	April 5	Aug. 7
Box Butte (irr.)	Northwest Ag. Laboratory	April 3	Aug. 8
	Barley		
Saunders	Agricultural Res. & Dev. Center	March 20	July 3
Dixon	Northeast Research & Ext. Center	March 26	July 8
Cheyenne	High Plains Ag. Laboratory	April 2	Aug. 6
Scotts Bluff (irr.)	Panhandle Research & Ext. Center	April 5	Aug. 7
Box Butte (irr.)	Northwest Ag. Laboratory	April 3	July 25
	Spring Wheat		
Saunders	Agricultural Res. & Dev. Center	March 20	July 23
Dixon	Northeast Research & Ext. Center	March 26	July 17
Cheyenne	High Plains Ag. Laboratory	April 2	Aug. 6
Scotts Bluff (irr.)	Panhandle Research & Ext. Center	April 5	Aug. 7
Box Butte (irr.)	Northwest Ag. Laboratory	April 3	Aug. 8

Oats

Southeast District data from the Agricultural Research and Development Center at Mead are shown in Table 4. This trial was planted early and made good progress all season. Earlier maturity was correlated with higher acre grain yields. Bushel weights were high. Period-of-years data are shown in Table 5.

Northeast District data were obtained from Thurston (Table 6) and Dixon (Table 7) counties. Yields and bushel weights generally were good. Grain protein was much higher in Dixon County. Straw yields were measured in Thurston County. Period-of-years data for the Northeast District are shown in Table 8.

Early varieties flowered before mid-June in Cheyenne County. A hail at this time may have affected varietal performance (Table 9). Bushel weights were high. West District nonirrigated trials are summarized in Table 10.

Two irrigated oat variety trials were conducted in the West District. Conditions were especially favorable in Scotts Bluff County and a 121-bushel average yield resulted (Table 11). Period-of-years data are shown in Table 12.

Barley

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

Location	Barley % of Oats									
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Saunders	86	147	102	89	95	---	79	73	80	114
Dixon	76	85	117	134	117	---	123	73	136	118
Cheyenne	77	114	91	107	121	73	133	101	143	105
Sheridan	94	---	---	---	---	---	---	---	---	---
Scotts Bluff (irr.)	128	99	89	95	141	---	125	125	101	132
Box Butte (irr.)	---	108	---	136	112	127	106	121	107	148
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.

Barley entries included varieties from private breeding programs. Entrants and varieties submitted were as follows:

Entrant	Variety
Arrow Seed Co./Gooding Seed Co. Broken Bow, NE/Gooding, ID	Teton
Busch Agricultural Resources Berthoud, CO	Premier

A fee was charged to cover a portion of the testing costs. Questions about these varieties should be addressed to the seed supplier.

Barley yield and other data from the Southeast, Northeast and West Nonirrigated and West Irrigated Districts are shown in Tables 13 through 19. Steptoe is a late variety and performed poorly in Saunders County. Performance at other locations in 1985 did not appear to be related to maturity.

Spring Wheat

Spring wheat data are shown in Tables 20 through 24. Yields at Mead were low and earlier-maturing varieties were most productive. Irrigated yields in the West under irrigation were record highs.

Table 4. Southeast District oat variety test. Saunders County. 1985

Variety	Flower June	Height inches	Yield bu/A	Weight lb/bu
Bates	1	39	100	37.5
Benson	8	44	100	36.5
Burnett	2	43	96	34.2
Kelly	3	43	79	39.2
Kelsey	8	46	99	37.0
Kherson	8	42	51	29.0
Lancer	6	43	93	36.2
Larry	4	40	121	36.5
Ogle	5	43	127	35.6
Pierce	12	40	79	35.7
Proat	10	45	91	38.3
Russell	9	46	81	35.9
Steele	8	48	99	36.0
Webster	3	41	112	36.0
Don	3	37	120	37.7
Exp. 0-14	3	42	107	37.5
Hazel	4	38	126	37.3
Dif. req. sig.	1.4	1.8	5.3	----

Test on Agricultural Research and Development Center, Mead.

Table 5 . Southeast District oat variety tests. 1978-1985.

Variety	Grain yield bu/A										Weight lb/bu	
	1978	1979	1980	1981	1982	1983	1984	1985	1980-85 average	1978-85 average	1980-85 average	1978-85 average
Bates	43	26	85	38	67	78	78	100	74	64	34.0	32.3
Benson	32	24	77	27	60	75	80	100	70	59	32.2	30.6
Burnett	43	20	73	34	59	70	66	96	66	58	31.1	29.7
Kelly	--	--	--	--	--	43	78	79	--	--	----	----
Kelsey	47	18	91	27	64	38	89	99	68	59	32.9	31.2
Kherson	29	22	81	25	58	59	47	51	54	47	27.6	27.0
Lancer	44	25	86	32	72	43	78	93	67	59	33.1	31.7
Lang	61	16	72	45	66	69	78	--	--	--	----	----
Larry	--	--	78	48	74	60	78	121	77	--	33.1	----
Ogle	--	--	68	39	89	107	89	127	87	--	31.7	----
Otee	41	22	82	30	65	74	73	--	--	--	----	----
Pierce	--	--	--	--	--	--	--	79	--	--	----	----
Preston	--	--	76	25	69	70	75	--	--	--	----	----
Prout	--	--	--	--	--	--	--	91	--	--	----	----
Russell	40	24	74	21	57	48	57	81	56	50	32.1	30.7
Steele	--	--	--	--	--	--	--	99	--	--	----	----
Stout	43	10	55	27	62	43	73	--	--	--	----	----
Webster	--	--	--	--	--	--	82	112	--	--	----	----
Don	--	--	--	--	72	80	89	120	--	--	----	----
Exp. 0-14	--	--	--	--	--	--	87	107	--	--	----	----
Hazel	--	--	--	--	--	--	--	126	--	--	----	----
Dif. req. sig.	10.9	6.8	11.7	8.0	10.2	14.0	12.8	5.3	14.5	9.8	1.4	1.3

Tests on Agricultural Research and Development Center, Mead.

Table 6. Northeast District oat variety tests. Thurston County. 1985.

Variety	Height inches	Lodging %	Grain bu/A	Weight lb/bu	Protein %	Straw cwt/A
Bates	36	5	74	36.9	10.6	25.9
Benson	40	5	78	36.9	10.7	30.4
Burnett	44	20	75	34.4	10.7	29.1
Kelly	40	19	79	38.7	11.8	29.3
Kelsey	43	5	93	37.1	10.3	35.7
Kherson	45	12	71	32.7	11.1	34.0
Lancer	38	4	74	36.0	12.7	30.8
Larry	35	0	73	35.2	13.1	27.8
Ogle	39	3	84	34.1	10.9	30.5
Pierce	36	0	77	36.8	10.7	29.4
Proat	42	1	87	37.2	12.1	37.8
Russell	42	11	74	35.3	11.5	28.9
Steele	42	1	85	34.7	12.1	37.5
Webster	36	6	71	30.6	13.1	30.1
Don	37	3	83	36.2	11.0	25.9
Exp. 0-14	38	5	80	38.4	11.7	29.1
Hazel	36	1	85	36.0	11.6	30.1
Dif. req. sig.	3.2	8.3	13.2	----	1.3	6.4

Grain protein on 12% moisture basis.
Test on Willis Leinart farm, Walthill.

Table 7. Northeast District oat variety test. Dixon County. 1985

Variety	Flower June	Height inches	Lodging %	Yield bu/A	Weight lb/bu	Protein %
Bates	8	32	2	77	33.7	16.2
Benson	12	37	Tr.	82	35.6	14.2
Burnett	8	35	5	78	32.4	14.8
Kelly	9	37	5	72	37.1	15.5
Kelsey	14	36	1	85	35.9	12.5
Kherson	14	33	3	56	28.8	15.5
Lancer	10	32	2	88	35.0	16.0
Larry	8	30	0	95	33.7	13.9
Ogle	10	31	0	100	32.4	13.1
Pierce	15	31	3	70	35.9	14.4
Proat	14	34	0	76	35.9	15.1
Russell	14	35	3	65	32.5	14.1
Steele	13	34	0	77	33.2	13.2
Webster	8	33	0	88	33.0	12.9
Don	8	30	2	87	34.3	12.1
Exp. 0-14	8	33	0	78	36.1	14.7
Hazel	8	28	1	89	33.5	13.2
Dif. req. sig.	1.1	2.0	3.4	7.0	----	1.4

Grain protein on 12% moisture basis.
Test on Northeast Research and Extension Center, Concord.

Table 8 . Northeast District oat variety tests. 1978-1985.

Variety	Grain yield bu/A										Weight lb/bu	
	1978	1979	1980	1981	1982	1983	1984	1985	1980-85 average	1978-85 average	1985	1980-85 average
Bates	56	95	115	52	108	80	80	76	85	83	35.3	34.7
Benson	52	104	107	36	88	62	83	80	76	77	36.3	34.1
Burnett	48	94	112	49	92	55	74	77	77	75	33.4	32.0
Kelly	--	--	--	--	--	--	60	76	--	--	37.9	----
Kelsey	48	108	108	35	89	53	91	89	78	78	36.5	33.3
Kherson	31	75	95	37	68	42	74	64	63	61	30.8	28.6
Lancer	55	103	110	44	86	59	68	81	75	76	35.5	34.2
Lang	62	97	115	55	103	65	57	--	--	--	----	----
Larry	--	--	120	61	106	62	58	84	82	--	34.5	----
Ogle	--	110	122	54	114	81	88	92	92	--	33.3	32.2
Otee	53	95	112	48	92	71	46	--	--	--	----	----
Pierce	--	--	--	--	--	--	--	74	--	--	36.4	----
Preston	--	--	104	41	94	64	63	--	--	--	----	----
Proat	--	--	--	--	--	--	--	82	--	--	36.6	----
Russell	42	101	--	--	95	56	77	70	--	--	33.9	----
Steele	--	--	--	--	--	--	--	81	--	--	34.0	----
Stout	60	90	106	36	108	58	70	--	--	--	----	----
Webster	--	--	--	--	--	--	53	80	--	--	31.8	----
Don	--	--	--	--	115	85	85	85	--	--	35.3	----
Exp. 0-14	--	--	--	--	--	--	64	79	--	--	37.3	----
Hazel	--	--	--	--	--	--	--	87	--	--	34.8	----
Dif. req. sig.	9.9	7.7	N.S.	10.7	11.8	N.S.	24.1	16.4	9.5	7.1	2.0	1.7

Location of tests (counties): 1977-1980 Dixon and Cedar; 1981 Cedar; 1982 Dixon; 1983-1984 Dixon and Cedar; 1985 Thurston and Dixon.

Table 9. West District nonirrigated oat variety test. Cheyenne County. 1985.

Variety	Flower June	Height inches	Lodging %	Yield bu/A	Weight lb/bu
Bates	11	29	6	62	35.4
Benson	16	33	9	55	33.0
Kelly	13	32	14	48	36.0
Kelsey	17	34	14	62	33.8
Kherson	17	35	14	50	29.8
Lancer	14	33	6	65	35.4
Larry	12	29	0	77	34.9
Ogle	13	32	3	77	33.1
Pierce	19	31	5	62	34.3
Proat	18	33	0	63	34.4
Russell	18	34	11	61	33.9
Steele	16	34	3	60	34.4
Webster	12	32	0	73	33.9
Don	10	30	4	72	35.2
Exp. 0-14	10	32	1	62	35.9
Hazel	12	28	1	70	35.6
Dif. req. sig.	1.1	2.9	5.0	9.3	0.9

Test on High Plains Agricultural Laboratory, Sidney.

Table 10. West District nonirrigated oat variety tests. 1977-1985.

Variety	Grain yield bu/A											Weight lb/bu
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1980-85 average	1978-85 average	1980-85 average
Bates	74	42	81	40	109	98	78	59	62	74	71	34.8
Benson	79	39	92	35	83	108	77	62	55	70	69	32.3
Burnett	70	33	99	37	87	80	71	70	--	--	--	----
Kelly	--	--	--	--	--	--	--	58	48	--	--	----
Kelsey	80	29	103	38	88	83	52	82	62	68	67	31.9
Kherson	63	25	92	27	72	73	59	72	50	59	59	28.4
Lancer	--	29	93	38	91	111	77	59	65	74	70	33.4
Lang	75	59	94	48	105	109	78	58	--	--	--	----
Larry	--	--	--	44	97	111	81	56	77	78	--	33.5
Ogle	--	--	105	42	110	131	81	87	77	88	--	31.6
Otee	63	43	84	37	87	100	68	48	--	--	--	----
Pierce	--	--	--	--	--	--	--	67	62	--	--	----
Preston	--	--	--	37	83	89	67	59	--	--	--	----
Proat	--	--	--	--	--	--	--	--	63	--	--	----
Russell	88	38	85	36	--	90	73	70	61	--	--	----
Steele	--	--	--	--	--	--	--	76	60	--	--	----
Stout	69	51	85	44	80	109	72	54	--	--	--	----
Webster	--	--	--	--	--	--	--	55	73	--	--	----
Don	--	--	--	--	--	115	79	64	72	--	--	----
Exp. 0-14	--	--	--	--	--	--	--	62	62	--	--	----
Hazel	--	--	--	--	--	--	--	--	70	--	--	----
Dif. req. sig.	9.0	18.6	12.7	N.S.	21.3	16.4	6.2	7.8	9.3	11.8	N.S.	1.1

Location of tests (counties): 1977 Cheyenne and Sheridan; 1977-1985 Cheyenne.

Table 11. West District irrigated oat variety tests. 1985.

Variety	Box Butte County					Scotts Bluff County				1985 average			
	Flower June	Height inches	Lodging score	Yield bu/A	Weight lb/bu	Flower June	Height inches	Yield bu/A	Weight lb/bu	Flower June	Height inches	Yield bu/A	Weight lb/bu
Bates	13	44	0.0	101	38.2	8	34	132	34.2	11	39	117	36.2
Benson	19	50	0.0	92	37.8	14	36	124	34.8	17	43	108	36.3
Kelly	13	46	0.0	74	38.6	8	33	100	35.6	11	40	87	37.1
Kelsey	20	50	2.0	101	36.4	14	39	161	36.0	17	45	131	36.2
Kherson	19	47	7.0	66	33.0	15	40	134	30.0	17	44	100	32.0
Lancer	17	45	0.0	108	38.0	11	32	122	33.9	14	39	115	36.0
Larry	14	40	0.0	113	37.4	7	29	118	32.9	11	35	116	35.2
Ogle	17	42	0.0	148	37.2	10	30	114	31.3	14	36	131	34.3
Pierce	22	49	0.0	111	39.3	18	36	113	34.7	20	43	112	37.0
Proat	22	51	0.0	102	38.1	16	36	112	33.7	19	44	107	35.9
Russell	20	52	1.0	107	38.2	16	37	119	34.0	18	45	113	36.1
Steele	19	53	0.0	114	37.2	13	36	110	33.1	16	45	112	35.2
Webster	15	44	1.7	102	35.0	6	31	122	31.5	11	38	112	33.3
Don	13	41	0.0	110	38.2	9	28	114	33.6	11	35	112	35.9
Exp. 0-14	13	41	0.0	112	38.2	7	31	123	35.3	10	36	118	36.8
Hazel	16	42	0.0	115	38.5	9	29	125	33.3	13	36	120	35.9
Dif. req. sig.	1.9	2.9	1.2	15.0	1.2	1.6	2.9	25.7	1.4	2.1	3.6	N.S.	1.8

Lodging score: 0 = None, 9 = Flat
Tests on Panhandle Research & Extension Center and Northwest Agricultural Laboratory.

Table 12. West District irrigated oat variety tests. 1977-1985.

Variety	Grain yield bu/A											Weight lb/bu
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1980-85 average	1978-85 average	1980-85 average
Bates	104	65	70	81	102	98	84	102	117	97	90	34.3
Benson	98	64	66	84	109	72	86	102	108	94	86	33.6
Burnett	102	60	66	77	113	90	82	107	---	--	--	----
Kelly	--	--	--	--	--	--	--	92	87	--	--	----
Kelsey	106	71	82	96	127	101	87	119	131	110	102	33.7
Kherson	98	56	60	74	112	95	74	100	100	93	84	30.5
Lancer	--	55	79	70	116	79	77	96	115	92	86	33.1
Lang	105	63	67	70	120	91	81	87	---	--	--	----
Larry	--	--	--	73	130	91	76	92	116	96	--	33.0
Ogle	--	--	94	93	129	106	95	123	131	113	--	32.6
Otee	90	54	71	75	92	85	67	78	---	--	--	----
Pierce	--	--	--	--	--	--	--	123	112	--	--	----
Preston	--	--	--	67	99	79	70	86	---	--	--	----
Proat	--	--	--	--	--	--	--	--	107	--	--	----
Russell	114	68	83	89	118	89	85	114	113	101	95	----
Steele	--	--	--	--	--	--	--	125	112	--	--	----
Stout	89	48	67	58	--	96	64	94	--	--	--	----
Webster	--	--	--	--	--	--	--	95	112	--	--	----
Don	--	--	--	--	--	100	81	105	112	--	--	----
Exp. 0-14	--	--	--	--	--	--	--	88	118	--	--	----
Hazel	--	--	--	--	--	--	--	--	120	--	--	----
Dif. req. sig.	N.S.	13.0	15.7	16.7	20.2	N.S.	12.1	20.6	N.S.	7.9	6.3	0.7

Location of tests (counties): 1977 Scotts Bluff and Box Butte; 1978 Scotts Bluff and Dawes; 1979-1980 Scotts Bluff and Box Butte; 1981 Box Butte; 1982-1984 Scotts Bluff and Box Butte.

Table 13. Southeast District barley variety test. Saunders County. 1985.

Variety	Flower date	Height inches	Lodging score	Yield bu/A	Weight lb/bu
Azure	6/1	42	0.5	85	46.0
Bowers	6/2	40	4.8	71	45.3
Custer	5/31	39	6.7	68	45.0
Hazen	6/2	43	0.2	90	49.2
Robust	6/2	41	0.3	81	46.2
Steptoe	6/3	38	5.5	55	49.0
Dif. req. sig.	1.0	1.8	1.5	9.3	----

Lodging scored 0-9: 0 = None, 9 = Flat.
Test on Agricultural Research and Development Center, Mead.

Table 14. Northeast District barley variety test. Dixon County. 1985.

Variety	Flower June	Height inches	Yield bu/A	Weight lb/bu
Azure	8	31	62	48.9
Bowers	9	31	62	49.1
Custer	5	35	63	48.5
Hazen	9	31	62	49.1
Robust	9	31	59	50.1
Steptoe	8	32	69	46.5
Dif. req. sig.	0.5	2.7	5.2	----

Test on Northeast Research and Extension Center, Concord.

Table 15. Southeast District barley variety tests. 1976-1985. No 1981 data.

Variety	Grain yield bu/A											Weight lb/bu
	1976	1977	1978	1979	1980	1982	1983	1984	1985	1983-85 average	1979-85 average	1983-85 average
Azure	--	--	--	15	39	40	36	45	85	55	43	45.5
Beacon	30	40	32	10	--	--	--	--	--	--	--	----
Bowers	--	46	42	14	57	37	34	46	71	50	43	46.5
Custer	46	43	38	12	53	32	26	43	68	46	39	44.0
Hazen	--	--	--	--	--	--	41	47	90	59	--	47.1
Morex	--	44	38	11	45	36	28	--	--	--	--	----
Primus II	33	41	--	--	--	--	--	--	--	--	--	----
Robust	--	--	--	--	--	--	42	43	81	55	--	46.9
Steptoe	49	40	33	16	50	31	14	19	55	29	31	43.3
Dif. req. sig.	9.9	9.5	8.8	2.9	N.S.	8.2	6.5	5.0	5.2	8.0	9.4	N.S.

Table 16. Northeast District barley variety tests. 1976-1985. No 1981 data.

Variety	Grain yield bu/A											Weight lb/bu
	1976	1977	1978	1979	1980	1982	1983	1984	1985	1983-85 average	1979-85 average	1983-85 average
Azure	--	--	--	77	79	83	36	72	62	57	68	49.6
Beacon	13	39	42	62	--	--	--	--	--	--	--	----
Bowers	--	53	52	81	85	91	40	82	62	61	74	49.7
Custer	16	50	56	78	75	76	40	62	63	55	66	47.2
Hazen	--	--	--	--	--	--	39	78	62	60	--	49.7
Lud	--	47	40	73	--	--	--	--	--	--	--	----
Morex	--	50	48	72	78	73	33	--	--	--	--	----
Nordic	11	42	44	75	--	--	--	--	--	--	--	----
Primus II	12	42	--	--	--	--	--	--	--	--	--	----
Robust	--	--	--	--	--	--	--	74	59	--	--	----
Steptoe	10	52	48	83	68	81	24	57	69	50	64	46.0
Dif. req. sig.	N.S.	8.2	4.7	7.3	N.S.	8.1	5.4	6.5	5.2	N.S.	N.S.	1.9

Tests on Northeast Research and Extension Center. Dixon County.

Table 17. West nonirrigated barley. Cheyenne County. 1980-1985.

Variety	Grain yield bu/A							Weight lb/bu		1985		
	1980	1981	1982	1983	1984	1985	1983-85	1985	1983-85	Flower June	Height inches	Lodging %
Azure	26	45	93	57	64	42	54	42.7	43.6	14	28	15
Bowers	27	38	94	49	65	40	51	42.6	44.3	14	30	13
Bumper	--	--	--	37	59	--	--	--	----	--	--	--
Custer	41	66	88	50	72	39	54	42.3	43.0	12	28	18
Hazen	--	--	--	58	63	47	56	44.7	44.8	15	29	8
Klages	--	--	--	--	52	--	--	----	----	--	--	--
Lindy	--	--	--	--	53	--	--	----	----	--	--	--
Piston	--	--	--	--	57	--	--	----	----	--	--	--
Premier	--	--	--	--	60	--	--	----	----	--	--	--
Robust	--	--	--	--	--	41	--	46.0	----	16	30	10
Steptoe	35	56	100	45	65	54	55	41.2	40.9	15	27	3
Teton	--	--	--	42	--	49	--	40.6	----	11	10	27
Dif. req. sig.	6.0	11.4	6.7	6.3	7.5	5.9	N.S.	1.3	2.1	1.7	1.5	N.S.

Tests on High Plains Agricultural Laboratory, Sidney.

Table 18. West District irrigated barley variety tests. 1985.

Variety	Scotts Bluff County				Box Butte County				1985 average				
	Height inches	Lodging score	Yield bu/A	Weight lb/bu	Height inches	Lodging score	Yield bu/A	Weight lb/bu	Flower June	Height inches	Lodging score	Yield bu/A	Weight lb/bu
Azure	31	1.8	100	47.2	45	0.0	104	49.5	10	38	0.9	102	48.4
Bowers	34	2.3	108	47.7	45	1.0	98	50.3	11	40	1.7	103	49.0
Custer	29	3.0	96	45.5	44	4.0	65	43.8	6	37	3.5	81	44.7
Hazen	29	0.3	108	48.1	45	0.0	104	50.5	12	37	0.2	106	49.3
Klages	29	0.0	103	50.2	44	0.5	109	51.0	18	37	0.3	106	50.6
Premier	29	0.0	100	51.1	40	1.0	102	50.5	18	35	0.5	101	50.8
Robust	31	0.3	94	49.7	46	0.0	93	50.5	11	39	0.2	94	50.1
Steptoe	28	0.0	125	46.3	42	3.7	97	45.0	10	35	1.9	111	45.7
Teton	30	0.0	131	46.2	42	0.0	125	48.7	8	36	0.0	128	47.5
Dif. req. sig.	N.S.	0.7	21.1	1.0	6.3	2.4	20.2	2.5	2.3	N.S.	N.S.	19.1	2.5

Lodging score: 0 = None, 9 = Flat.

Tests on Panhandle Research & Extension Center and Northwest Agricultural Laboratory.

Table 19. West District irrigated barley variety tests. 1977-1985.

Variety	Grain yield bu/A											Weight lb/bu
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1983-85 average	1979-85 average	1983-85 average
Azure	--	--	51	64	99	73	76	79	102	86	78	46.1
Bowers	78	37	49	65	102	72	72	80	103	85	78	47.0
Bumper	--	--	--	--	--	--	53	80	--	--	--	----
Custer	67	34	47	60	83	72	61	73	81	72	68	44.0
Hazen	--	--	--	--	--	--	72	81	106	86	--	46.7
Klages	--	--	--	--	--	--	--	75	106	--	--	----
Morex	66	27	41	61	95	64	62	--	--	--	--	----
Premier	--	--	--	--	--	--	--	--	101	--	--	----
Robust	--	--	--	--	--	--	--	--	94	--	--	----
Steptoe	84	45	70	76	124	81	57	83	111	84	86	43.6
Teton	--	--	--	--	--	--	60	--	128	--	--	----
2380-521	--	--	--	--	--	--	--	--	108	--	--	----
2381-4030	--	--	--	--	--	--	--	--	113	--	--	----
Dif. req. sig.	N.S.	N.S.	5.6	N.S.	16.0	13.8	N.S.	N.S.	19.1	N.S.	8.6	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; 1982-1985 Scotts Bluff and Box Butte.

Table 20. Southeast District spring wheat variety tests. Saunders County. 1979-1985.

Variety	Grain yield bu/A								Weight lb/bu		1985	
	1979	1980	1981	1982	1983	1984	1985	1982-85 average	1985	1982-85 average	Flower Date	Height inches
Butte	17	23	13	17	21	18	24	20	53.0	55.8	6-5	36
Centa	--	--	--	14	22	26	28	23	54.7	56.5	6-3	37
Eureka	16	23	12	13	16	21	19	17	49.5	51.8	6-11	39
Guard	--	--	--	--	21	28	37	--	54.7	----	6-6	35
James	--	23	13	10	21	25	24	20	51.1	53.8	6-6	35
Len	18	23	14	14	13	18	22	17	48.6	53.0	6-11	31
Marshall	--	27	6	12	21	23	20	19	48.5	53.5	6-14	28
Olaf	16	20	12	9	12	19	15	14	48.6	----	6-12	31
Olso	--	--	--	11	14	24	38	22	51.7	53.2	5-31	30
Stoa	--	--	--	--	--	32	33	--	54.0	----	6-11	39
Wheaton	--	--	--	--	--	25	29	--	49.0	----	6-7	30
WS-3	--	--	--	--	--	--	28	--	50.6	----	6-8	27
Dif. req. sig.	3.0	5.6	5.6	2.6	4.5	4.0	3.6	N.S.	----	2.8	---	--

Tests on Agricultural Research and Development Center, Mead.

Table 21. Northeast District nonirrigated spring wheat variety tests. Dixon County. 1978-1985. No 1981 data.

Variety	Grain yield bu/A								Weight lb/bu		1985	
	1978	1979	1980	1982	1983	1984	1985	1982-85 average	1985	1982-85 average	Flower Date	Height inches
Butte	18	41	40	36	15	42	43	34	60.2	58.3	6-7	35
Centa	--	--	--	41	17	42	41	35	60.6	58.5	6-6	36
Eureka	--	47	38	31	14	40	36	30	58.0	55.9	6-10	35
Guard	--	--	--	--	--	47	45	--	59.6	----	6-7	32
James	--	--	44	35	18	44	35	33	56.6	56.9	6-7	33
Len	--	45	36	30	17	37	36	30	57.5	57.2	6-10	30
Marshall	--	--	--	29	25	42	40	34	58.2	57.8	6-10	27
Olaf	16	45	35	25	17	37	36	29	57.5	56.1	6-11	30
Oslo	--	--	--	28	17	40	43	32	57.2	55.4	6-5	29
Stoa	--	--	--	--	--	47	44	--	59.9	----	6-10	36
Wheaton	--	--	--	--	--	48	43	--	57.7	----	6-8	28
WS-3	--	--	--	--	--	--	45	--	59.5	----	6-8	27
Dif. req. sig.	2.1	6.5	4.8	4.8	1.9	4.0	4.3	N.S.	----	N.S.	0.9	2.0

Tests on Northeast Research and Extension Center, Concord.

Table 22. West District nonirrigated spring wheat variety tests. Cheyenne County. 1978-1985.

Variety	Grain yield bu/A								Weight lb/bu		1985	
	1979	1980	1981	1982	1983	1984	1985	1982-85 average	1985	1982-85 average	Flower Date	Height inches
Butte	46	17	22	45	28	34	28	34	56.7	56.7	6-16	30
Centa	--	--	--	45	27	33	29	34	58.1	57.8	6-14	32
Eureka	41	16	6	41	26	30	30	32	55.8	55.3	6-17	32
Guard	--	--	--	--	--	35	29	--	57.1	----	6-15	27
James	--	16	28	53	28	38	33	38	53.6	55.1	6-13	31
Len	47	16	16	48	28	36	32	36	55.6	56.3	6-17	28
Marshall	--	--	11	44	31	38	29	36	55.3	55.7	6-19	24
Olaf	43	18	10	44	30	37	33	36	57.7	57.0	6-17	28
Oslo	--	--	--	46	27	30	30	33	56.1	55.0	6-14	26
Stoa	--	--	--	--	--	41	32	--	56.4	----	6-19	30
Wheaton	--	--	--	--	--	36	36	--	56.9	----	6-17	27
WS-3	--	--	--	--	--	--	33	--	56.7	----	6-16	23
Dif. req. sig.	4.3	N.S.	9.0	4.6	3.5	5.1	N.S.	3.1	1.4	1.1	1.3	2.4

Tests on High Plains Agricultural Laboratory, Sidney.

Table 23. West District irrigated spring wheat variety tests. 1985.

Variety	Scotts Bluff County				Box Butte County					1985 average			
	Flower June	Height inches	Yield bu/A	Weight lb/bu	Flower June	Height inches	Lodging score	Yield bu/A	Weight lb/bu	Flower June	Height inches	Yield bu/A	Weight lb/bu
Butte	9	30	58	60.5	13	42	3.5	61	60.1	11	36	60	60.3
Centa	7	34	66	59.9	11	44	3.5	63	60.2	9	39	65	60.1
Eureka	13	36	61	59.0	17	47	0.0	69	59.4	15	42	65	59.2
Guard	10	30	66	59.7	14	39	0.0	76	60.8	12	35	71	60.3
James	8	32	68	58.7	11	44	0.0	83	58.2	10	38	76	58.5
Len	13	33	70	58.9	17	39	0.0	76	59.7	15	36	73	59.3
Marshall	14	29	77	60.2	18	35	0.0	83	61.1	16	32	80	60.7
Olaf	12	32	73	59.9	17	40	0.0	80	60.3	15	36	77	60.1
Oslo	8	28	64	57.4	15	36	0.0	85	58.4	12	32	75	57.9
Stoa	11	33	71	59.2	17	48	0.0	83	61.5	14	41	77	60.4
Wheaton	12	29	75	58.6	18	36	0.0	87	59.9	15	33	81	59.3
WS-3	10	27	66	57.6	17	34	0.0	81	58.3	14	31	74	58.0
Dif. req. sig.	2.5	2.3	8.8	1.1	1.4	1.4	1.4	6.1	0.9	2.1	4.4	9.8	1.2

Lodging score: 0 = None, 9 = Flat.

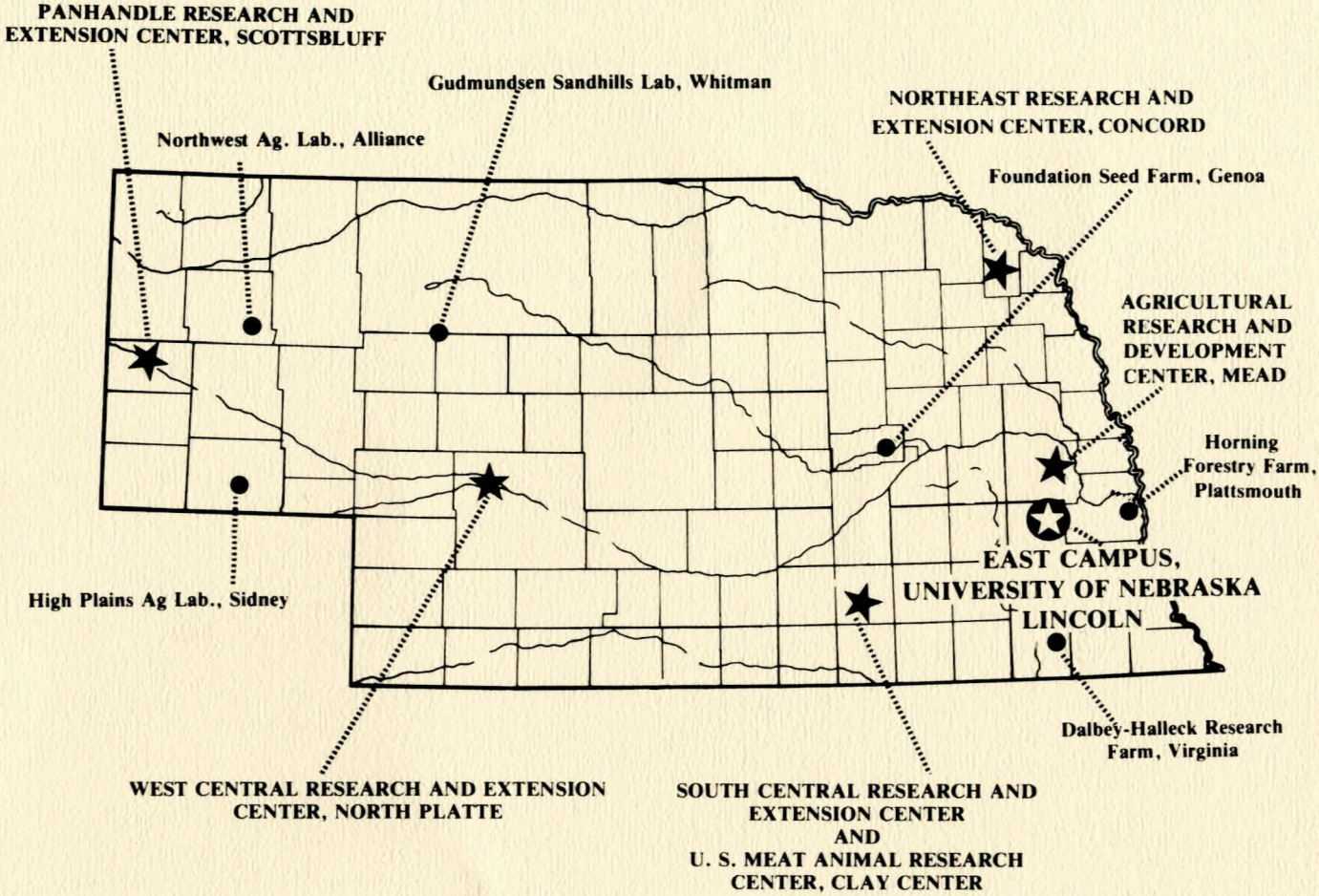
Tests on Panhandle Research and Extension Center, and Northwest Agricultural Laboratory.

Table 24. West District irrigated spring wheat variety tests. 1976-1985.

Variety	Grain yield bu/A											Weight lb/bu
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1982-85 average	1982-85 average
Butte	--	49	34	46	41	60	38	38	60	60	49	58.0
Centa	--	--	--	--	--	--	45	36	52	65	50	58.9
Eureka	--	--	--	38	39	54	41	35	52	65	48	55.8
Guard	--	--	--	--	--	--	--	--	51	71	--	----
James	--	--	--	--	42	63	44	38	57	76	54	56.2
Len	--	--	--	47	37	64	43	37	51	73	51	55.4
Marshall	--	--	--	--	--	61	43	40	62	80	56	55.5
Olaf	46	59	31	45	43	55	42	37	56	77	53	57.0
Oslo	--	--	--	--	--	--	46	35	63	75	55	55.9
Stoa	--	--	--	--	--	--	--	--	57	77	--	----
Wheaton	--	--	--	--	--	--	--	--	55	81	--	----
WS-3	--	--	--	--	--	--	--	--	--	74	--	----
Dif. req. sig.	--	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	9.8	N.S.	2.0

Location of tests (counties): 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; 1982-1985 Scotts Bluff and Box Butte.

AGRICULTURAL RESEARCH AND EXTENSION FOR ALL OF NEBRASKA



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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 less than 15 to more than 35 inches per year, and the soil types vary from sands to heavy clays. The research and extension programs thus are broad in subject matter and geography, resulting in the need for various centers, satellite locations, and local offices.