1989

EC89-102 Nebraska Spring Small Grain Variety Tests 1989

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EXTENSION CIRCULAR 89-102

NEBRASKA SPRING SMALL GRAIN

VARIETY TESTS

October 1989

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METRIC EQUIVALENTS

1 centimeter = ... 0.394 inches	**cm = ... inches x 2.54**
1 hectare = ... 2.471 acres	**ha = ... acres x 0.045**
1 kilogram= . . . . . 2.205 pounds	**kg = ... pounds x 0.454**
1 hectoliter = ... 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 89-102
CONTENTS

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
1982	460	58.0	22	50.0
1984	320	49.0	78	34.0
1985	420	61.0	120	32.0
1986	360	59.0	135	40.0
1987	360	48.0	75	36.0
1988	300	37.0	60	34.0
1989[1]	310	31.0	30	23.0

[1]1989 data are preliminary. Comparable data for spring wheat are not available.

NEBRASKA SPRING SMALL GRAIN VARIETY TESTS 1989

Dry weather in the spring of 1989 allowed for early planting of spring grain throughout the state. The eastern half of the state got only scattered showers after planting which were enough to keep the crop going but limited the yields. High temperatures and dry conditions throughout the spring and early summer reduced yieldsand decreased the test weight of the grain as well. In addition to the hot dry weather, two of the western locations also had hail.

Suggested varieties and new releases

Suggested oat and barley varieties for Nebraska are shown on the map (page 4). Characteristics of oat varieties included in recent Nebraska statewide tests are shown in Table 1.

Pierce and Steele were tested for the first time in 1984. Don, Hazel and Proat were released in 1985. Hytest, Sandy and Starter were released in 1986. Trucker and Pennuda were released in 1987.

Trucker oats was developed by the South Dakota Agricultural Experiment Station. The pedigree is Moore/Dal/Nodaway 70. It is a white oat with exceptional test weight. Trucker was tested in Nebraska in 1987 under the experimental designation O-17.

Pennuda oats was developed by the Pennsylvania Agricultural Experiment Station. It is a lodging resistant, naked-seeded cultivar which had rather limited yield potential in Nebraska. It was derived from the cross Nuprime/Noble//Otee. Pennuda was tested in Nebraska for the first time in 1988.

Hamilton was released from Iowa in 1989. It is an early short oat with yellow grain color.

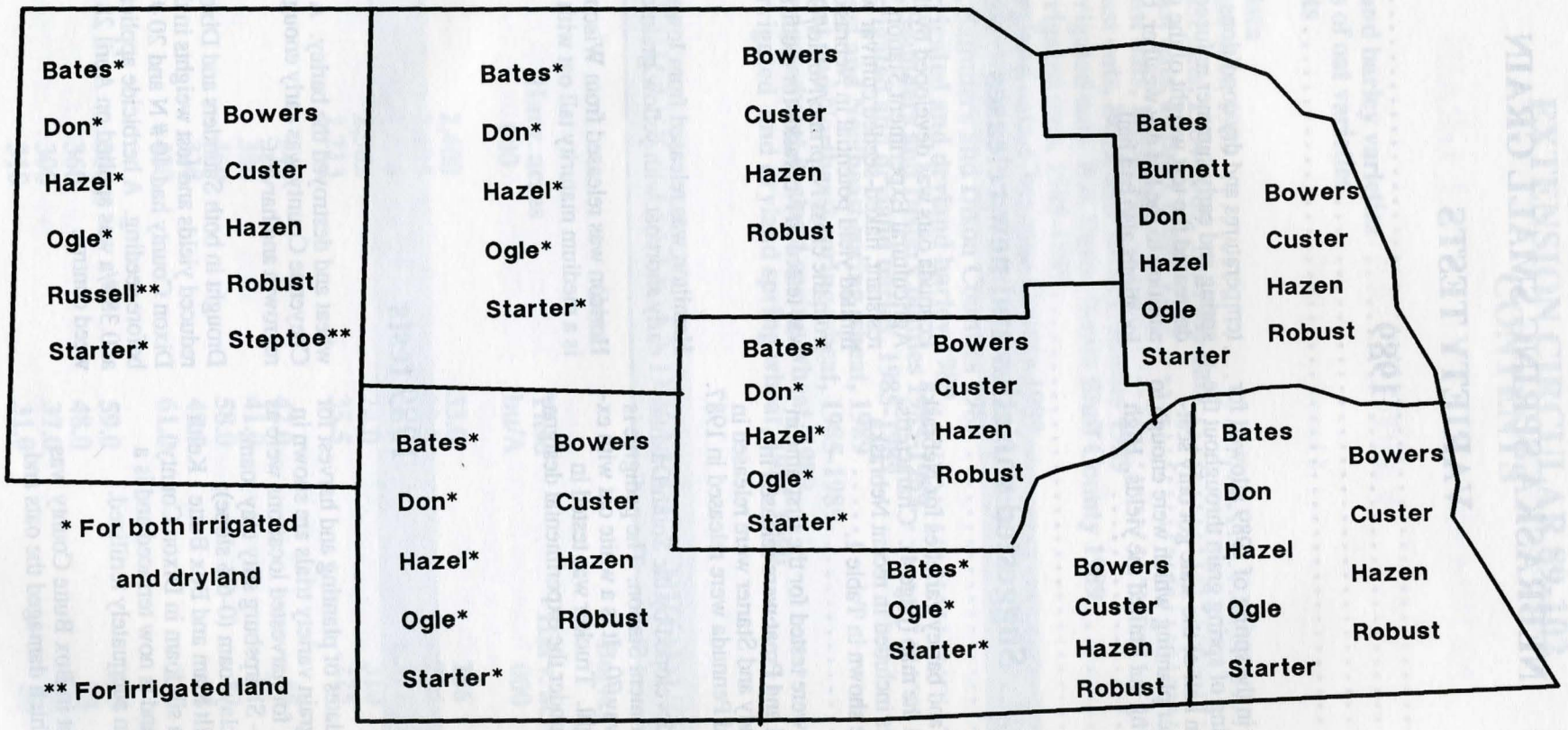
Horicon was released from Wisconsin in 1989. It is a medium maturity tall oat with tan grain color.

1989 tests

Locations and dates of planting and harvest for spring small grain variety trials are shown in Table 2. Soil types for harvested locations were as follows: Saunders - Sharpsburg silty clay loam; Dixon - Nora silty clay loam (0-6% slope); Cheyenne - Keith silt loam and Box Butte - Keith silt loam. The Nora silt loam in Dixon County was eroded. This land is now terraced and is a productive soil when adequately fertilized.

The spring grain plot in Box Butte County was hailed on June 20 which damaged the oats and wheat and destroyed the barley. A May 20 hail in Cheyenne County was early enough to allow regrowth and harvest.

Drought in both Saunders and Dixon Counties reduced yields and test weights in those locations. Dixon County had 40 # N and 20 # P applied before seeding. A herbicide application of Buctril at 0.38 #/a was applied on April 28 for broadleaf weed control.



Suggested Oat and Barley varieties for Nebraska 1989

Table 1. Characteristics of oat varieties in Nebraska tests.

Variety	Origin	Released	Maturity	Height	Straw strength	Grain color
Bates	Missouri	1975	Early	Short	trong	Dark
Burnett	Iowa	1957	Medium	Medium	Medium	Ivory
Don	Illinois	1985	Early	Short	Strong	White
Hamilton	Iowa	1989	Early	Short	Strong	Yellow
Hazel	Illinois	1985	Early	Short	Strong	Ivory
Horicon	Wisconsin	1989	Medium	Tall	Strong	Tan
Hytest	South Dakota	1986	Medium	Tall	Medium	Lt. Cream
Kherson	Russia	1986	Med-late	Tall	Weak	Pale Brown
Nodaway 70	Missouri	1970	Early	Medium	Weak	White
Ogle	Illinois	1981	Medium	Short	Strong	Yellow
Pennuda	Pennsylvania	1987	Early	Short	Strong	N/A
Pierce	North Dakota	1983	Late	Medium	Medium	White
Proat	Minnesota	1985	Late	Tall	Strong	Ivory
Sandy	South Dakota	1986	Late	Tall	Strong	Lt. Cream
Starter	Minnesota	1986	Early	Short	Strong	Yellow
Steele	North Dakota	1984	Med-late	Tall	Medium	Lt. Tan
Trucker	South Dakota	1988	Medium	Tall	Medium	White
Webster	Iowa	1984	Early	Short	Strong	Yellow

Grain color varies with environment.

Table 2. Location and dates of planting and harvest. Nebraska spring small grain variety tests. 1989.

County	Cooperator	Planted	Harvested
	Oats		
Saunders	Agricultural Res. & Dev. Center	March 23	July 19
Dixon	Northeast Res. & Ext. Center	March 30	July 10
Cheyenne	High Plains Ag. Laboratory	April 6	Aug 2 [1]/
Scotts Bluff (irr.)	Panhandle Res. & Ext. Center	March 31	July 27
Box Butte (irr.)	Larry Shefeik Farm	April 14	Aug 9 [2]/
	Barley		
Saunders	Agricultural Res. & Dev. Center	March 23	July 19
Dixon	Northeast Res. & Ext. Center	March 30	July 6
Cheyenne	High Plains Ag. Laboratory	April 6	Aug 2 [1]/
Scotts Bluff (irr.)	Panhandle Res. & Ext. Center	March 31	July 27
Box Butte (irr.)	Larry Shefeik Farm	April 14	Aug 9 [2]/
	Spring Wheat		
Saunders	Agricultural Res. & Dev. Center	March 23	July 19
Dixon	Northeast Res. & Ext. Center	March 30	July 10
Cheyenne	High Plains Ag. Laboratory	April 6	Aug 2 [1]/
Scotts Bluff (irr.)	Panhandle Res. & Ext. Center	March 31	July 27
Box Butte (irr.)	Larry Shefeik Farm	April 14	Aug 9 [2]/

[1]/ Hailed May 20. Regrowth harvested.

[2]/ Hailed June 20. Oats and wheat harvested, barley abandoned.

Oats

The results from the Saunders County test are shown in Table 3. These plots were quite dry and the heat was above normal most of the summer. The results of 1985-1989 oat tests are shown in Table 4.

Results from Dixon County are shown in Table 5. Yields were variable and bushel weights were low. Barley Yellow Dwarf Virus was very prevalent in some of the oat varieties and resulted in reduced yields. Proteincontent of the grain was good as shown in Table 11. Results of 1985-1989 oat tests in this area are shown in Table 6.

Two additional oat tests were conducted in Knox and Boyd Counties by Moomaw and Watkins. Data from these tests is included in Table 7.

Protein data from these tests is also included in Table 11.

The irrigated oat trial in Scotts Bluff County had lower yields than previous years. The very low yields from Box Butte County are the result of the hail that occurred on June 20. Results from Scotts Bluff and Box Butte County are shown in Table 8. Irrigated oat variety data for the 1985-1989 period are shown in Table 9 The variety Pennuda had very poor stand establishment accounting for it's poor performance..

A dryland oat test was conducted in Cheyenne County. Although the plot was severely hailed on May 20, the regrowth was good and yields were good in spite of the small rainfall amounts. Yields from that test are shown in Table 10.

Barley

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

Location	Barley % of Oats									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Saunders	95	--	79	73	80	114	---	86	154	77
Dixon	117	---	123	73	136	118	90	130	138	60
Cheyenne	121	73	133	101	143	105	95	96	---	218
Scotts Bluff (irr.)	141	---	125	125	101	132	---	---	106	179
Box Butte (irr.)	112	127	106	121	107	148	114	104	90	--

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 withenvironmental conditions.

Barley yield and other data from the Southeast, and Northeast non irrigated, and West Irrigated and dryland Districts are shown in Tables 12 through 15. The number of entries in barley tests was small.

Spring Wheat

Spring wheat data are shown in Tables 16 through 19. Oslo is a privately developed spring wheat variety. It was entered by the Agricultural Research Division to provide information about its performance.

Prospect and Shield are varieties that have been tested for two years and Amidon is a new release from North Dakota tested for the first time.

Two spring triticale varieties were included. These were Marval, from South Dakota and Kramer released by North Dakota. These yields are reported on a 60-pound bushel basis for ease in making direct comparisons with spring wheat on an equivalent basis. Triticale has a bushel weight of 48 pounds. The inclusion of triticale lowers the bushel weight averages in period of years after 1986.

Table 3. Southeast District spring oats variety trial - 1989

	Yield (bu/a)	Test wt (lbs/bu)	Head date (May 1)	Height (inches)
Bates	50	35	26	23
Burnett	51	32	27	28
Don	46	35	29	22
Hamilton (IA D623-15)	39	31	27	24
Hazel	41	33	29	20
Horicon (WIX4872-2)	51	31	31	23
Hytest	51	36	34	31
Kherson	35	27	37	27
Nodaway 70	44	36	27	28
Ogle	64	32	30	25
Pennuda	23	41	31	22
Pierce	44	31	41	25
Proat	50	31	39	26
Sandy	51	33	34	30
Starter	44	35	27	23
Steele	45	30	37	28
Trucker (SD810109)	49	36	35	29
Webster	39	31	26	23
O-20	57	32	33	26
O-21	52	31	31	24
O-22	54	31	30	24
Average	47	33	31	25
Dif Req Sig 5%	7	--	1	2

Table 4. Southeast District oat tests. Yield and bushel weight. 1984-1989 (1986 missing).

Variety	5yr 1984-89		4yr 1986-89		3yr 1987-89		2yr 1988-89	
	Yld	Bu wt	Yld	Bu wt	Yld	Bu wt	Yld	Bu wt
Bates	70	33.6	68	33.8	57	32.3	56	32.5
Burnett	65	31.2	64	31.5	54	30.7	49	30.5
Don	76	34.0	73	34.3	58	33.0	49	33.5
Hazel	--	---	72	32.5	54	31.0	46	31.0
Horicon (WIX4872-2)	--	---	--	---	66	30.3	59	30.0
Hytest	--	---	--	---	56	34.0	51	33.0
Kherson	41	26.8	39	26.8	35	26.0	31	25.0
Nodaway 70	--	---	--	---	41	34.0	42	34.0
Ogle	88	31.6	87	31.8	74	30.3	69	30.5
Pennuda	--	---	--	---	--	---	31	45.5
Pierce	--	---	51	30.8	42	29.0	39	27.5
Proat	--	---	58	31.0	47	28.7	41	27.5
Sandy	--	---	--	---	47	30.0	42	29.0
Starter	--	---	63	34.0	48	32.7	40	32.5
Steele	--	---	62	30.5	50	28.7	40	27.5
Trucker (SD810109)	--	---	--	---	49	32.3	40	31.0
Webster	70	31.4	67	31.3	52	29.7	44	29.5
Average	68	31.4	64	31.6	52	30.8	45	31.2
Dif Req Sig 5%	6	0.7	7	1.0	6	1.3	9	3.0

Table 5. Northeast District oat data. Dixon County 1989

Variety	Yield bu/a	Bushel weight	Straw T/a	Fld June	Height inches	Lodging %
Bates	51	31.8	0.83	8	22	0
Burnett	44	30.7	0.80	8	25	1
Don	60	34.3	0.76	9	22	0
Hamilton (IA D623-15)	52	30.5	0.81	8	22	0
Hazel	48	31.3	0.88	9	21	0
Horicon (WIX4872-2)	58	31.8	0.97	11	25	0
Hytest	40	35.3	0.83	12	27	0
Kherson	32	26.7	0.94	16	27	1
Nodaway 70	41	36.6	0.79	8	27	11
Ogle	55	30.5	0.90	12	25	0
Pennuda	37	37.5	0.95	12	24	0
Pierce	27	27.6	0.92	19	22	0
Proat	39	29.5	0.92	18	28	0
Sandy	40	31.9	0.83	15	29	0
Starter	51	35.5	0.80	8	22	0
Steele	42	29.9	0.91	16	29	0
Trucker (SD810109)	49	36.5	0.98	13	28	0
Webster	49	29.8	0.86	9	24	0
O-20	49	32.0	0.87	14	24	0
O-21	53	29.9	0.87	12	26	0
O-22	59	30.6	0.88	12	26	0
Average	46	31.9	0.87	12	25	0.7
Dif Req Sig 5%	5.3	1.0	0.11	1.5	2.8	1.2

Table 6. Northeast District oat variety tests. Yield and bushel weight. 1985-1989.

Variety	5 yr 1985-89		4 yr 1986-89		3 yr 1987-89		2 yr 1988-89	
	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt
Bates	72	33.0	71	32.5	63	31.6	56	30.4
Burnett	66	32.1	64	31.9	54	31.9	50	29.9
Don	76	33.9	73	33.6	67	32.4	64	31.7
Hazel	74	33.1	71	32.6	64	31.4	57	29.7
Horicon (WIX4872-2)	--	---	--	---	--	---	59	29.4
Hytest	--	---	50	35.8	40	34.4	43	32.2
Kherson	50	27.1	47	26.2	40	26.2	35	24.4
Nodaway 70	--	---	53	34.2	45	33.2	42	31.8
Ogle	79	31.5	76	31.1	69	30.2	62	28.8
Pennuda	--	---	--	---	--	---	40	39.3
Pierce	59	32.3	55	31.4	41	29.9	35	27.3
Proat	62	32.1	57	30.9	42	29.8	36	27.8
Sandy	--	---	50	31.5	37	30.6	34	28.5
Starter	70	35.5	68	35.1	59	34.2	56	33.3
Steele	64	31.4	60	30.7	50	30.0	43	28.0
Trucker (SD810109)	--	---	--	---	38	32.5	37	30.8
Webster	67	31.4	63	31.2	56	29.9	55	28.4
Average	67	32.1	61	32.0	51	31.2	47	30.1
Dif Req Sig 5%	4	0.9	5	1.1	6	1.4	8	2.5

Table 7. Northeast District oat variety tests Boyd and Knox Counties - 1989

Variety	Boyd County tests			Knox County Tests					Average 2 Sites		
	Yield bu/a	Bushel weight	BYDMV 0-5	Yield bu/a	Bushel weight	Straw t/a	Height inches	BYDMV 0-5	Yield bu/a	Bushel weight	BYDMV 0-5
Burnett	59	35.1	2.8	38	34.6	0.67	28	2.3	49	34.9	2.5
Don	65	35.3	1.8	47	35.0	0.68	22	1.5	56	35.2	1.6
Hazel	50	30.6	1.0	35	31.9	0.68	20	2.5	43	31.3	1.8
Hytest	60	35.1	1.3	40	38.8	0.76	30	1.5	50	37.0	1.4
Kelly	59	33.6	1.3	32	37.0	0.65	25	1.0	46	35.3	1.1
Nodaway 70	46	35.1	1.3	24	35.8	0.51	26	1.5	35	35.5	1.4
Ogle	61	31.7	1.0	39	31.3	0.64	25	1.3	50	31.5	1.1
Otee	60	35.5	1.3	40	35.4	0.74	24	1.3	50	35.5	1.3
Porter	59	30.2	0.8	39	33.4	0.63	26	0.8	49	31.8	0.8
Starter	57	35.2	2.0	35	36.3	0.63	24	1.5	46	35.8	1.8
Average	58	33.7	1.4	37	34.9	0.66	25	1.5	47	34.3	1.45
Dif Req Sig 5%	N.S.	1.4	0.8	10.5	1.4	N.S.	1.9	1.0	2.5	1.9	0.8

Data from Moomaw and Watkins

Table 8. West District irrigated oat test - 1989.

Variety	Scotts Bluff County				Box Butte County			Average 2 tests		
	Yield bu/a	Bushel weight	Head date	Height inches	Yield bu/a	Bushel weight	Height inches	Yield bu/a	Bushel weight	Height inches
Bates	82	34.4	7	22	32	32.3	26	57	33.4	24
Burnett	90	32.4	8	22	32	31.4	30	61	31.9	26
Don	86	34.7	8	21	24	29.8	25	55	32.3	23
Hamilton (IA D623-15)	102	33.3	8	21	22	27.3	25	62	30.3	23
Hazel	95	33.3	9	21	42	32.7	27	69	33.0	24
Horicon (WIX4872-2)	66	30.4	11	22	30	30.7	32	48	30.6	27
Hytest	44	32.1	11	22	29	29.8	32	37	31.0	27
Kherson	65	27.7	15	19	28	28.8	31	47	28.3	25
Nodaway 70	67	34.4	8	23	19	30.4	31	43	32.4	27
Ogle	82	31.4	10	22	42	32.3	31	62	31.9	27
Pennuda	56	38.5	11	20	15	33.7	28	36	36.1	24
Pierce	78	32.1	17	20	21	27.6	25	50	29.9	23
Proat	72	32.4	15	21	26	31.5	28	49	32.0	25
Sandy	75	25.8	13	21	30	31.7	31	53	28.8	26
Starter	57	34.5	8	20	37	31.7	31	47	33.1	26
Steele	75	30.7	12	21	25	24.1	29	50	27.4	25
Trucker (SD810109)	60	33.3	11	22	30	31.0	31	45	32.2	27
Webster	60	31.9	8	20	25	26.7	27	43	29.3	24
O-20	85	30.3	15	20	44	30.9	32	65	30.6	26
O-21	81	31.2	12	21	--	---	--	--	---	--
O-22	70	32.0	10	21	--	---	--	--	---	--
FL501	62	34.2	5	17	25	27.6	24	44	30.9	21
FL502	62	35.3	5	17	26	32.9	22	44	34.1	20
Average	73	32.4	10	21	29	30.3	28	51	31.4	25
Dif Req Sig 5%	25	4.7	2.2	3.1	11.7	3.5	3	NS	NS	2

Head date = days after June 1

Table 9. West District oat variety tests. 1985-1989. Yield and bushel weight.

Variety	5yr 1985-89		4yr 1986-89		3 yr 1987-89		2 yr 1988-89	
	Yld	Bushel	Yld	Bushel	Yld	Bushel	Yld	Bushel
Bates	92	35.3	86	35.1	83	34.1	71	33.7
Don	--	---	--	---	--	---	75	33.2
Hazel	--	---	--	---	--	---	84	33.0
Horicon (WIX4872-2)	--	---	--	---	--	---	71	30.8
Hytest	--	---	71	37.5	71	35.7	59	33.0
Kherson	75	30.7	68	30.3	70	29.1	61	27.7
Nodaway 70	--	---	63	35.6	65	33.8	57	33.2
Ogle	106	33.4	99	33.2	95	32.3	80	31.5
Pennuda	--	---	--	---	--	---	50	38.6
Pierce	90	35.0	85	34.5	83	33.0	71	31.0
Proat	85	35.0	79	34.8	77	33.3	65	31.5
Sandy	--	---	80	33.7	79	32.3	72	29.4
Starter	86	35.8	78	35.5	76	34.7	68	33.6
Steele	89	32.7	83	32.1	80	30.5	66	28.2
Trucker (SD810109)	--	---	--	---	68	34.4	64	32.1
Webster	87	33.3	81	32.8	76	31.4	66	30.7
Average	89	35.9	79	34.1	77	32.9	67	31.9
Dif Req Sig 5%	3	0.7	5	1.1	5	1.4	5	1.3

Table 10. West District dryland oat test Cheyenne County - 1989

Variety	Yield bu/a	Bushel weight	Head date	Height inches
BATES	42	33.2	16	22
BURNETT	38	30.1	17	24
DON	37	31.7	15	20
HAMILTON (IA D623-15)	38	31.3	17	23
HAZEL	39	33.3	18	19
HORICON (WIX4872-2)	37	31.5	19	24
HYTEST	30	33.2	21	27
KHERSON	34	26.8	21	26
NODAWAY 70	29	33.9	20	26
OGLE	42	31.1	19	23
PENNUDA	16	37.4	20	22
PIERCE	28	32.2	24	23
PROAT	32	32.0	22	24
SANDY	32	31.9	23	27
STARTER	33	34.2	16	22
STEELE	26	29.8	22	25
TRUCKER (SD810109)	29	32.6	21	26
WEBSTER	36	31.1	17	24
O-20	38	31.4	21	24
O-21	39	30.9	21	22
O-22	39	30.5	19	24
Fl 501	24	28.6	15	17
Fl 502	22	33.5	16	17
Average	33	31.8	19	23
Dif Req Sig 5%	3.3	1.3	1.2	1.8

Table 11. Northeast District oat tests protein content. 1989.

Variety	Protein %			
	Dixon Co	Boyd	Knox	Average Knox and Boyd
Bates	14.7	---	---	---
Burnett	15.4	15.0	14.8	14.9
Don	13.5	13.7	14.5	14.1
Hamilton (IA D623-15)	14.3	---	---	---
Hazel	15.2	14.7	14.6	14.7
Horicon (WIX4872-2)	14.2	---	---	---
Hytest	15.3	14.5	15.8	15.1
Kherson	16.4	---	---	---
Nodaway 70	15.7	16.0	15.8	15.9
Ogle	13.3	14.0	13.6	13.8
Pennuda	17.0	---	---	---
Pierce	15.9	---	---	---
Proat	16.1	---	---	---
Sandy	14.6	---	---	---
Starter	15.3	14.3	16.0	15.2
Steele	14.9	---	---	---
Trucker (SD810109)	15.7	---	---	---
Webster	13.9	---	---	---
O-20	13.0	---	---	---
O-21	13.9	---	---	---
O-22	13.4	---	---	---
KELLY	---	15.8	16.1	16.0
OTEE	---	15.6	15.9	15.7
PORTER	---	15.3	13.7	14.5
Average	14.8	14.9	15.1	15.0
Dif Req Sig 5%	1.5	N.S.	0.5	1.5

Table 12. Saunders and Dixon Counties spring barley variety trial - 1989

Variety	Saunders County Yield (bu/a)	Bushel weight	Heading date	height inches	Dixon County Yield bu/a	Bushel weight
Bowman	20	53	6	24	27	51.0
Custer	27	51	1	23	31	45.3
Hazen	23	51	5	21	25	45.3
Robust	25	53	4	22	25	47.3
Average	24	52	4	22	27	47.2
Dif Req Sig 5%	N.S.	--	1	2	N.S.	N.S

Heading date = days after June 1.

Table 13. Scotts Bluff County irrigated and Cheyenne County dryland barley test 1989.

Variety	Scotts Bluff County Yield bu/a	Bushel weight	Heading date	Height inches	Cheyenne County Yield bu/a	Bushel weight	Heading date	Height inches
BOWMAN	93	53.4	7	25	54	46.8	19	23
CUSTER	79	47.9	7	27	53	41.5	19	25
HAZEN	91	49.8	8	26	42	42.8	23	23
ROBUST	70	47.3	8	27	35	41.8	26	23
STEPTOE	102	47.7	7	25	54	40.2	20	23
Average	87	49.2	7	26	48	42.6	21	23
Dif Req Sig 5%	14	1.6	0.8	1.0	7.2	2.3	2.2	N.S.

Heading date = days after June 1

Table 14. Northeast District and Southeast District barley yield and bushel weights 1985-1989

Variety	NORTHEAST DISTRICT				DIXON COUNTY			
	5 yr 1985-89		4 yr 1986-89		3 yr 1987-89		2 yr 1988-89	
	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight
BOWMAN	50	47.3	47	46.8	43	46.3	36	48.5
CUSTER	51	46.1	49	45.5	46	44.8	41	46.2
HAZEN	49	46.9	46	46.4	42	45.8	34	47.2
ROBUST	46	48.3	43	47.9	39	47.4	34	49.2
Average	49	47.2	46	46.7	43	46.1	36	47.7
Dif Req Sig 5%	1	N.S.	2	N.S.	NS	N.S.	1	N.S.
	SOUTHEAST DISTRICT				SAUNDERS COUNTY			
BOWMAN	49	46.2	43	46.5	33	46.7	31	48.5
CUSTER	47	47.0	42	47.5	36	48.3	37	50.0
HAZEN	58	47.0	50	46.5	36	47.0	36	48.5
ROBUST	55	47.8	48	48.3	36	48.7	35	50.0
Average	52	47.0	46	47.2	35	47.7	35	49.3
Dif Req Sig 5%	NS	NS	NS	NS	NS	NS	NS	NS

Table 15. West District Irrigated and Dryland barley tests.

IRRIGATED 1985-1989

Variety	5 yr 85-89		4 YR 86-89		3 YR 87-89		2 YR 88-89	
	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight
Bowman	75	45.7	69	44.9	71	43.5	71	41.7
Custer	72	43.6	70	43.2	70	42.0	71	39.0
Hazen	75	45.4	68	44.5	69	43.3	71	40.4
Robust	65	45.3	58	44.1	57	42.4	58	39.2
Steptoe	84	42.9	77	42.2	80	40.9	80	38.4
Average	74	44.6	68	43.8	69	42.4	70	39.7
Dif Req Sig 5%	3	0.7	3	N.S.	4	N.S.	NS	N.S.

DRYLAND 1984-1989 1988 MISSING

Bowman	54	45.1	51	45.1	54	45.9	56	46.8
Custer	56	44.2	52	43.9	56	44.4	54	44.2
Hazen	50	45.2	47	45.2	47	45.3	47	45.3
Robust	--	---	41	45.6	41	45.4	41	45.2
Steptoe	57	42.3	55	42.3	56	42.6	59	42.7
Average	54	44.2	49	44.4	51	44.7	52	44.9
Dif Req Sig 5%	NS	0.8	4	1.1	4	N.S.	4	N.S.

Table 16. Southeast and Northeast Districts spring wheat variety trial - 1989

	Southeast District Saunders Co.				Northeast District Dixon Co.				
	Yield (bu/a)	Bushel weight	Head date	Height (inches)	Yield bu/a	Bushel weight	Flwr date	Height inches	Lodging %
Amidon	10	55	7	27	18	58.3	9	22	0
Butte 86	13	58	2	25	16	56.5	5	22	0
Guard	9	54	3	22	20	55.5	5	22	0
Oslo	10	54	1	19	19	55.6	5	21	0
Prospect	9	55	3	23	14	57.3	7	21	0
Shield	13	56	2	24	16	56.7	6	23	0
Stoa	11	54	7	26	14	55.8	13	22	0
Kramer (triticale)	8	47	1	24	16	46.9	6	25	0
Marval (triticale)	8	43	6	30	14	44.2	10	30	6
Average	10	53	4	2	16	54.1	7	23	0.7
Dif Req Sig 5%	2.6	--	1	1.5	N.S	1.0	1.4	2.3	1.2

Flower and heading date = days after June 1.

Table 17. Southeast and Northeast District spring wheat tests 1985 - 1989

Southeast District Saunders County

Variety	5 yr 85-89		4 yr 86-89		3 yr 87-89		2 yr 88-89	
	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight
Butte 86	--	---	25	55.5	21	55.7	20	55.8
Guard	27	54.5	24	54.5	19	53.9	17	53.0
Oslo	26	52.6	23	52.8	18	53.1	19	53.5
Prospect	--	---	--	---	--	---	18	53.5
Shield	--	---	--	---	--	---	21	53.5
Stoa	--	---	19	52.6	19	52.6	18	52.0
Kramer (triticale)	--	---	20	41.2	16	41.6	15	42.5
Marval (triticale)	--	---	18	39.1	15	38.9	13	39.3
Average	26	53.5	22	49.1	18	49.3	17	50.4
Dif Req Sig 5%	NS	NS	2	1.3	NS	1.8	2	2.2

Northeast District Dixon County

Butte 86	--	---	--	---	23	56.0	15	55.8
Guard	28	55.9	23	55.0	20	54.2	14	53.6
Oslo	26	53.1	22	52.1	20	52.3	15	52.5
Prospect	--	---	--	---	--	---	14	53.8
Shield	--	---	--	---	--	---	17	55.1
Stoa	30	56.8	26	56.0	23	54.9	14	53.6
Kramer (triticale)	--	---	23	44.5	19	44.2	12	44.8
Marval (triticale)	--	---	22	42.8	19	42.5	11	41.9
Average	28	55.3	23	50.0	21	50.7	14	51.4
Dif Req Sig 5%	NS	1.2	NS	1.2	NS	1.3	NS	1.2

Table 18. West District irrigated and dryland spring wheat test - 1989

Variety	Scotts Bluff Co Irrigated				Cheyenne Co Dryland			
	Yield bu/a	Bushel weight	Head date	Height inches	Yield bu/a	Bushel weight	Head date	Height inch
Amidon	58	56.8	9	25	18	54.1	23	26
Butte 86	51	57.8	8	22	16	54.3	22	24
Guard	55	55.7	8	20	17	54.6	19	20
Oslo	48	54.2	8	19	16	54.7	19	20
Prospect	59	56.5	8	21	17	55.2	22	22
Shield	52	59.6	8	23	20	53.9	21	24
Stoa	50	55.6	8	24	15	52.3	25	25
Kramer (triticale)	51	43.3	8	22	8	---	19	21
Marval (triticale)	51	41.8	8	27	13	40.0	21	28
Average	53	53.5	8	23	16	51.8	21	23
Dif Req Sig 5%	N.S.	1.9	N.S	1.3	3.4	1.0	1.2	2.4

Heading date = days after June 1.

Table 19. West District irrigated and dryland spring wheat tests.

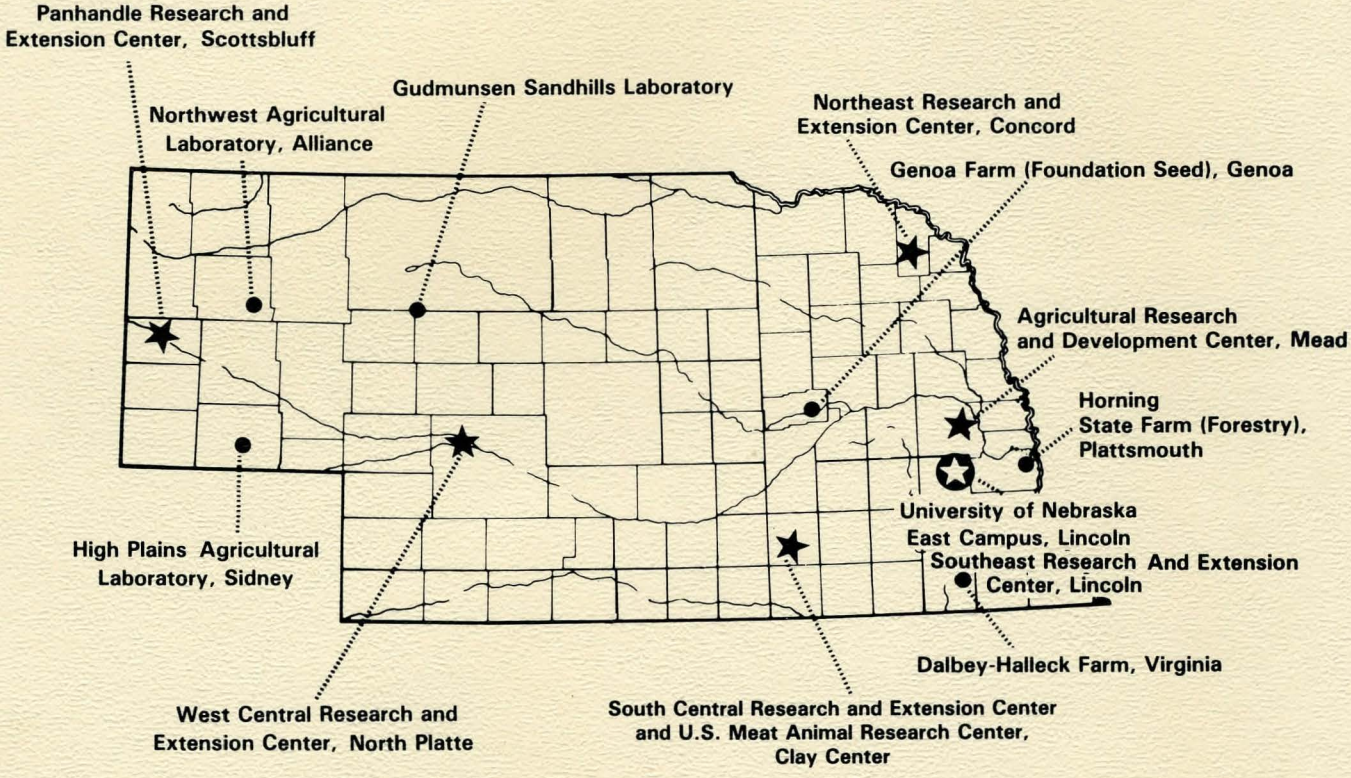
Scotts Bluff County Irrigated 1985 - 1989.

Variety	5 yr 85-89		4 yr 86-89		3 yr 87-89		2 yr 88-89	
	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight	Yld bu/a	Bushel weight
Butte 86	--	---	--	---	45	56.0	42	54.9
Guard	49	57.1	44	56.4	45	55.2	43	53.5
Oslo	49	55.2	43	54.5	43	52.6	39	51.4
Prospect	--	---	--	---	--	---	46	53.7
Shield	--	---	--	---	--	---	41	55.3
Stoa	49	56.1	42	55.0	41	53.7	40	52.4
Kramer (triticale)	--	---	--	---	48	45.5	41	42.4
Marval (triticale)	--	---	42	44.2	42	42.8	40	40.1
Average	49	56.1	42	52.5	44	51.0	44	50.4
Dif Req Sig 5%	NS	0.7	NS	1.0	NS	1.6	NS	1.7

Cheyenne County Dryland 1984-1989 1988 missing

Butte 86	--	---	--	--	--	---	14	55.8
Guard	25	55.9	22	55.6	20	55.5	13	54.9
Oslo	25	54.6	2	54.6	2	54.1	15	54.2
Stoa	25	54.5	21	53.8	17	53.0	13	53.1
Kramer (triticale)	--	---	--	---	25	44.7	22	47.1
Marval (triticale)	--	---	--	---	24	43.8	19	43.4
Average	25	55.0	22	54.7	21	50.6	15	51.8
Dif Req Sig 5%	NS	NS	NS	NS	NS	2.2	NS	3.5

AGRICULTURAL RESEARCH AND EXTENSION FOR ALL OF NEBRASKA



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The Cooperative Extension Service transmits data and provides interpretation to users through Extension Agents and Specialists. Extension Agents may be contacted through 85 local Extension offices for additional information 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 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.