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

Historical Materials from University of Nebraska-Lincoln Extension

Extension

11-1978

EC78-103 Nebraska Varietal Tests of Fall-Sown Small Grains 1978

A. F. Dreier

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

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

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

Dreier, A. F.; Schmidt, J. W.; and Nelson, Lenis Alton, "EC78-103 Nebraska Varietal Tests of Fall-Sown Small Grains 1978" (1978). *Historical Materials from University of Nebraska-Lincoln Extension*. 4498.
https://digitalcommons.unl.edu/extensionhist/4498

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.

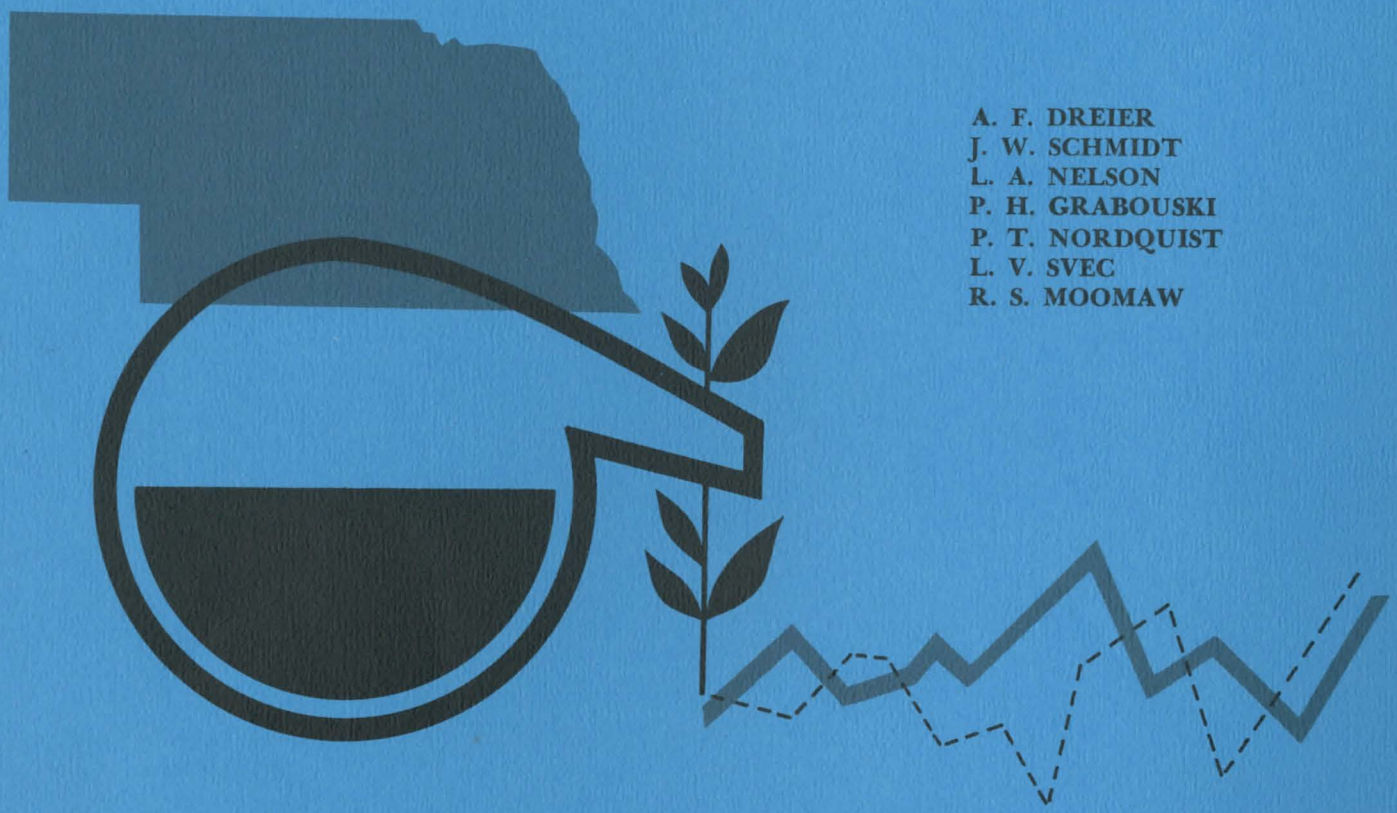
AGRI
S
85
E7 # 78-103

11/15/3

NOVEMBER 1978

E.C. 78-103

NEBRASKA VARIETAL TESTS OF FALL-SOWN SMALL GRAINS 1978



A. F. DREIER
J. W. SCHMIDT
L. A. NELSON
P. H. GRABOUSKI
P. T. NORDQUIST
L. V. SVEC
R. S. MOOMAW

Extension work in "Agriculture, Home Economics and subjects relating thereto," The Cooperative Extension Service, Institute of Agriculture and Natural Resources, University of Nebraska–Lincoln, Cooperating with the Counties and the U.S. Department of Agriculture
Leo E. Lucas, Director

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
H. W. Ottoson, Director

EXTENSION CIRCULAR 78-103

November 1978

CONTENTS

The metric system 2
Nebraska wheat production 3
Introduction 4
Map location of tests 5
Discussion
- Winter wheat varieties 8
- Variety characteristics 10
- Map suggested varieties 11
- Variety performance 12
- Winter Barley 14
- Rye 14

Winter wheat performance data
- Northeast 1976-1977 15
- Saunders County 1978 16
- Southeast and East Central 1973-1978 17
- South Central 1973-1978. 18
- Central 1974-1978 19
- Southwest 1973-1978 20
- West 1978 21
- West 1973-1978 22
- Test weight 1978 23
- Kernel weight 1978 24
- Protein 1978 25
- Protein 1971-1978 26
- Height 1978. 27
- Survival, flowering data and lodging 1978 28

Winter barley performance data
- 1978 29
- 1974-1978 30

Rye-triticale performance data
- 1978 31
- 1974-1978 32

ACKNOWLEDGMENT

This circular is a progress report of varietal tests conducted by the variety evaluation and small grain breeding projects of the Agricultural Experiment Station. Cooperating were the Agronomy Department and the Northeast, South Central, North Platte, and Panhandle Stations. The Outstate Testing Circular series is being replaced with Extension Circulars.

Acknowledgment is made to V.A. Johnson for results obtained in experiments conducted in cooperation with the U. S. Department of Agriculture, Agricultural Research Service; to C. R. Fenster for results obtained at the High Plains and Northwest Agricultural Laboratories and to County Agents and others who assisted in these tests. Special acknowledgment is made to the farmer cooperators who furnished land for the off-station trials.

THE METRIC SYSTEM

The United States is committed to changing to the metric system of weights and measures. This conversion will take time and there will be some confusion until the metric system becomes more familiar. Measurement data in this circular are given in currently used U. S. units followed by the metric units in parentheses ( ).

Among the more commonly used equivalents are:

1 centimeter (cm)	=	0.394 inches
1 meter (m)	=	39.37 inches
1 hectare (ha)	=	2.471 acres
1 kilogram (kg)	=	2.205 pounds
1 hectoliter (hl)	=	2.838 bushels
1 kilogram/hectare	=	1.121 pounds per acre

Conversion factors used in this circular were as follows:

cm	=	inches x 2.54
m	=	feet x .3048
ha	=	acres x 0.405
kg/ha	=	bu/A x 53.81 barley
	=	bu/A x 62.78 rye
	=	bu/A x 67.26 wheat
	=	lbs/A x 1.121
kg/hl	=	lbs/bu x 1.287

NEBRASKA WHEAT PRODUCTION

The following data were obtained from Nebraska Agricultural Statistics. Acreages and yield averages include both spring and winter wheat. Separate report series for spring and winter wheats began in 1909 and were discontinued in 1962.

Year	Planted 000 acres (hectares)	Harvested 000 acres (hectares)	Average yield bu/A (kg/ha)
1866	---- ----	43 (17)	14.0 (942)
1870	---- ----	170 (69)	11.5 (773)
1880	---- ----	1520 (616)	8.5 (572)
1890	---- ----	1775 (719)	12.0 (807)
1900	---- ----	2750 (1114)	13.7 (921)
1910	---- ----	2885 (1168)	15.8 (1063)
1920	3883 (1573)	3593 (1455)	16.8 (1130)
1930	4077 (1651)	3974 (1609)	18.8 (1264)
1940	3278 (1328)	2643 (1070)	13.1 (881)
1950	4346 (1760)	4051 (1641)	21.8 (1466)
1955	3484 (1411)	3141 (1272)	24.9 (1675)
1956	3549 (1437)	3324 (1346)	19.5 (1312)
1957	3294 (1334)	2920 (1183)	27.0 (1816)
1958	3620 (1466)	3442 (1394)	33.0 (2220)
1959	3408 (1380)	3104 (1257)	22.0 (1480)
1960	3306 (1339)	3011 (1219)	28.5 (1917)
1961	3339 (1352)	3220 (1304)	24.5 (1648)
1962	3060 (1239)	2760 (1118)	19.5 (1312)
1963	3244 (1314)	2815 (1140)	21.5 (1446)
1964	3147 (1275)	2871 (1163)	24.5 (1648)
1965	3273 (1326)	2727 (1104)	20.0 (1345)
1966	2980 (1207)	2860 (1158)	35.0 (2354)
1967	3520 (1426)	3265 (1322)	26.5 (1782)
1968	3240 (1312)	3070 (1243)	32.0 (2152)
1969	2910 (1179)	2650 (1073)	31.5 (2119)
1970	2565 (1039)	2410 (976)	38.0 (2556)
1971	2539 (1028)	2434 (986)	42.0 (2825)
1972	2742 (1111)	2509 (1016)	37.0 (2489)
1973	2800 (1134)	2680 (1085)	35.0 (2354)
1974	3000 (1215)	2900 (1175)	34.0 (2287)
1975	3200 (1296)	3070 (1243)	32.0 (2152)
1976	3400 (1377)	2950 (1195)	32.0 (2152)
1977	3300 (1337)	2950 (1195)	35.0 (2354)
1978 1/	2900 (1174)	2600 (1053)	32.0 (2152)

1/ August 1 estimate.

NEBRASKA VARIETAL TESTS OF FALL-SOWN SMALL GRAINS 1978

This circular is a progress report of winter wheat, winter barley, and rye variety tests conducted throughout Nebraska. Entries included varieties and promising experimental strains from the breeding programs of the Nebraska and other Experiment Stations. The state has been divided into 8 districts for purposes of varietal testing and recommendation. Locations of these districts and the 1978 variety tests are shown on the map (Page 5).

Trials were located on Experiment Stations and private farms. Names of cooperators and dates of planting and harvest are shown in Table 1. The soil type, soil test data and fertilizer applied for the 1978 crop are shown in Table 2.

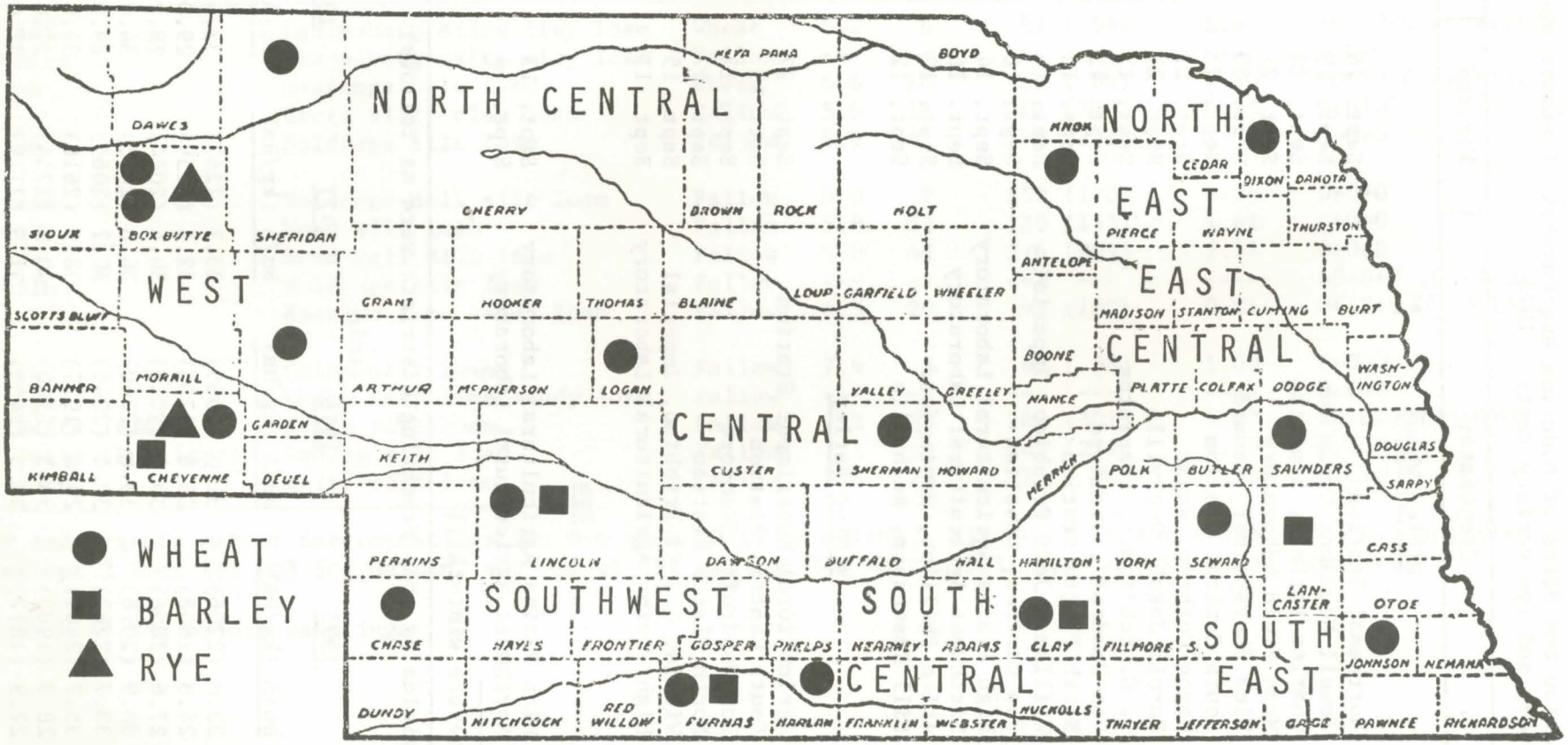
Tests on Experiment Stations were drill strips 75 to 100 feet (23 to 30 meters) long. Other plots were of the nursery type consisting of 6 rows 10 to 15 feet (3 to 5 meters) in length. Plots were replicated 3 to 6 times, depending on location.

April - September rainfall was above normal in all sections of Nebraska. Wheat was seeded under generally good conditions and emergence and fall growth were adequate. The crop entered the winter in generally good condition.

Wheat came through the winter in satisfactory condition except in East Central Nebraska. Here extreme cold accompanied by lack of snow cover caused heavy stand losses. Rainfall for the April through June period was below normal in all parts of Nebraska except the East Central and Southeast. Moisture was especially deficient in the Southwest and South Central Crop Reporting districts.

Progress of the wheat crop was slightly slower than average. During the last two weeks of June, hot weather accompanied by winds and lack of moisture, caused premature ripening of the crop. Southern and southwest Nebraska were most affected. This reduced yields and lowered test weights.

Harvest began later than normal. The final estimated yield of 32 bushels per acre (2152 kg/ha) was below the 1977 yield but equalled the acre yields obtained in 1975 and 1976. The acreage harvested was the smallest since 1972.



NEBRASKA CROP TESTING DISTRICTS AND LOCATIONS OF 1978 WINTER WHEAT, WINTER BARLEY & RYE VARIETY TESTS.

Table 1. Location and dates of planting and harvest of winter wheat, winter barley, and rye variety tests. 1978.

County	Cooperator	Planted	Harvested
	Winter Wheat		
Dixon	Northeast Station	Sept. 16	-----1/
Antelope	Jewell Neumann, Creighton	Sept. 19	-----1/
Johnson	Charles Bartels, Sterling	Sept. 28	July 5
Saunders	Mead Field Laboratory	Sept. 21	July 11
Seward	Nick Eberspacher, Seward	Sept. 20	July 7
Clay	South Central Station	Sept. 23	July 17
Harlan	Wayne Guthrie, Ragan	Sept. 21	July 11
Sherman	Harold Jakob, Rockville	Sept. 21	July 10
Logan	L. G. Schlientz, Stapleton	Sept. 12	July 5
Furnas	Don Woodruff, Stamford	Sept. 13	June 24
Lincoln	North Platte Station	Sept. 15	July 11
Chase	William & Jeff Pribbino, Imperial	Sept. 15	June 30
Garden	Ron Carlson, Lewellen	Sept. 16	July 14
Cheyenne	High Plains Agricultural Laboratory	Sept. 14	July 26
Box Butte	Northwest Agricultural Laboratory	Sept. 16	July 25
Box Butte	Arlee Phillips, Hemingford	Sept. 12	July 26
Sheridan	Bill Rasmussen, Rushville	Sept. 12	July 20
	Winter Barley		
Lancaster	Agricultural Experiment Station	Sept. 27	July 1
Clay	South Central Station	Oct. 13	July 19
Furnas	Don Woodruff, Stamford	Sept. 13	June 23
Lincoln	North Platte Station	Sept. 9	July 11
Chase	William & Jeff Pribbino, Imperial	Sept. 15	June 29
Cheyenne	High Plains Agricultural Laboratory	Sept. 13	July 26
	Rye		
Cheyenne	High Plains Agricultural Laboratory	Sept. 13	July 26
Box Butte	Northwest Agricultural Laboratory	Sept. 14	July 23

1/ Abandoned-severe winterkill

Average yields by crop reporting districts were as follows:

District	Yield 1975	1976	1977	1978
	bu/A (kg/ha)	bu/A (kg/ha)	bu/A (kg/ha)	bu/A (kg/ha)
Northwest	32.8 (2206)	31.0 (2085)	33.7 (2267)	32.4 (2179)
North	24.8 (1668)	25.8 (1735)	32.1 (2159)	29.0 (1951)
Northeast	27.6 (1856)	30.0 (2018)	30.4 (2044)	28.0 (1883)
Central	30.9 (2078)	33.6 (2260)	36.8 (2475)	34.0 (2287)
East	33.7 (2267)	30.4 (2045)	30.7 (2065)	29.0 (1951)
Southwest	35.7 (2401)	29.4 (1977)	38.9 (2616)	34.0 (2287)
South	28.3 (1903)	33.3 (2240)	40.8 (2744)	31.0 (2085)
Southeast	27.9 (1877)	36.5 (2455)	31.5 (2119)	31.0 (2085)

Table 2. Soil series, cropping history, soil test data and fertilizer applied winter wheat variety tests. 1978.

County	Soil type	1977 crop	Soil test 1/ pH	P ppm	Nitrate N lb/A (kg/ha)	Organic matter %	Fertilizer N+P+K lb/A (kg/ha)
Johnson	Sharpsburg silty clay loam	Wheat	6.2	6	53 (59)	2.60	60+20+0 (67+22+0)
Saunders	Sharpsburg silty clay loam	Fallow	---	--	--- ---	----	0+0+0
Seward	Hastings silt loam	Wheat	5.6	14	59 (66)	2.80	60+12+0 (67+13+0)
Clay	Crete silty clay loam	Fallow	5.6	11	201 (225)	0.35	0+0+0
Harlan	Holdrege silt loam	Fallow	5.9	41	179 (201)	2.36	0+0+0
Sherman	Holdrege-Hall silt loam	Fallow	6.0	9	152 (170)	0.94	0+0+0
Logan	Hord silt loam	Fallow	5.8	32	120 (135)	1.61	0+0+0
Furnas	Hord-Hall silt loam	Fallow	6.0	48	276 (309)	2.34	0+0+0
Lincoln	Holdrege silt loam	Fallow	---	--	--- ---	-----	60+0+0 (67+0+0)
Chase	Anselmo fine sandy loam	Fallow	6.5	20	91 (102)	0.81	0+12+0 2/ (0+13+0)
Garden	Colby silt loam	Fallow	7.6	8	47 (53)	1.00	0+0+0
Cheyenne	Keith very fine sandy loam	Fallow	---	--	--- ---	----	0+0+0
Box Butte (NWAL)	Keith silt loam	Fallow	7.2	55	269 (301)	1.27	40+0+0 (45+0+0)
Box Butte (Phillips)	Dunlap silt loam	Fallow	7.1	53	243 (272)	2.26	0+0+0
Sheridan	Keith silt loam	Fallow	7.6	25	77 (86)	1.39	0+0+0

1/ P and organic matter determinations for 0-6 inch (0-15 cm depth). Nitrate N is for 6 foot (183 cm) profile except 2 foot (61 cm) for Garden, and 3 foot (91 cm) for Box Butte (Phillips) and Sheridan Counties.

2/ 40# N as NH_3 before sampling.

Yields are based on harvested, not planted areas. The estimates are preliminary and subject to revision.

Yields in all districts were below 1977. Southeast District yields approached those of 1977. South Central and Southwest District yields were much lower in 1978 than in 1977.

Winter Wheat Varieties

The State-Federal Division of Agricultural Statistics makes an annual survey of wheat varieties planted. The ten-year summary of Nebraska data is shown in Table 3. This gives an indication of changes in popularity of varieties. It should be recognized that acreages of many individual varieties are concentrated in specific areas of the state. Other varieties such as Scout 66 and Centurk are widely distributed over all areas.

Characteristics of named wheat varieties included in current Nebraska tests are summarized in Table 4. These characteristics are applicable to varieties when grown in their area of adaptation. When taken out of their area of adaptation varieties may have different maturity, winterhardiness, or straw strength ratings. Several varieties adapted in western Nebraska have poor straw when grown in eastern Nebraska under more humid conditions. Races of rust and other diseases are under constant change. Varieties which in the past were resistant to stem rust are now susceptible. As rust races change, presently resistant varieties may become susceptible.

Long-time yield data, other agronomic characteristics, and current market demands were considered in the listing of wheat varieties for Nebraska shown on the map (Page 11). These varieties are considered the best available for general use in the areas shown. This map and information in Table 4 in conjunction with yield data for specific areas provide the basis for variety selection.

Brief descriptions of winter wheat varieties are given in NebGuide G 73-24. Recent changes in suggested varieties include Bennett, Centurk 78, Larned and Roughrider.

Bennett (NE73644) was selected from the cross of a sister line to Buckskin with Homestead and released in 1978. The purpose of the cross was to combine the stem rust resistance of both parents. It is not so resistant to soil borne mosaic as Homestead but is superior in straw strength to either parent. Kernel weight is high. Bennett is an early, moderately winter-hardy variety best adapted to south central and southeastern Nebraska. Bennett appears to be capable of carrying a high level of Hessian fly infestation without showing the lodging found in other susceptible varieties.

Centurk 78 (NE69291) is an increase from a 5-head selection from Centurk. It was released in 1978. It has been extensively tested and yield performance has consistently slightly exceeded Centurk.

Larned was selected in Kansas and released in 1976. The pedigree is Scout x Ottawa backcrossed to Scout 4 times. Larned is similar to Scout with improved straw strength and a much higher level of Hessian fly resistance.

Table 3. Estimated percentage of Nebraska winter wheat acreage planted to each variety. 1969-1978.

Variety	% of acreage									
	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Centurk	----	----	----	2.0	22.5	31.0	33.5	32.9	35.4	39.6
Scout and Scout 66	27.6	30.6	37.2	36.9	28.8	30.2	30.3	29.0	24.1	23.3
Lancer	32.3	27.6	22.4	23.6	17.0	13.0	8.9	7.6	6.4	7.4
Warrior	13.8	12.4	10.2	11.3	10.2	9.5	7.0	5.0	5.5	5.8
Buckskin	----	----	----	----	----	.1	.8	2.5	4.2	3.7
Gage	12.6	12.4	10.7	6.3	5.4	4.9	6.2	7.1	5.7	3.3
Lancota	----	----	----	----	----	----	----	.2	1.5	2.5
Scoutland	----	----	----	1.6	1.6	3.2	4.6	4.5	3.4	2.2
Sage	----	----	----	----	----	----	.2	.9	1.7	1.7
Baca	----	----	----	----	----	----	----	.6	.8	1.5
Homestead	----	----	----	----	----	----	.2	1.0	1.7	1.5
Eagle	----	----	----	----	----	1.2	1.5	1.3	2.0	1.4
HiPlains	----	----	----	----	----	.1	1.0	1.6	1.6	1.4
Trapper	1.0	5.4	8.7	10.2	6.0	3.3	2.1	1.7	1.6	.9
Cheyenne	1.5	1.8	1.1	1.1	1.1	.8	.7	.4	.4	.7
Sentinel	----	----	----	----	----	.1	.6	.7	1.0	.6
Turkey	----	.1	----	.1	----	----	----	.1	.1	.5
Bison	.4	.5	.3	.4	.3	----	----	.1	.1	.3
Pawnee	1.4	1.3	.8	.5	.4	.3	.4	.4	.4	.3
Tam 101	----	----	----	----	----	----	----	----	.1	.3
Lindon	----	----	----	----	----	----	----	----	----	.2
Trader	.6	1.6	1.4	1.7	1.0	.4	.3	.4	.4	.2
Agate	----	----	----	----	----	----	----	----	----	.1
Sturdy	----	----	----	----	----	----	----	.2	.2	.1
Private varieties	----	----	----	----	----	----	----	----	.8	.3
Other	8.8	6.3	7.2	4.3	5.7	1.9	1.7	1.8	.9	.2

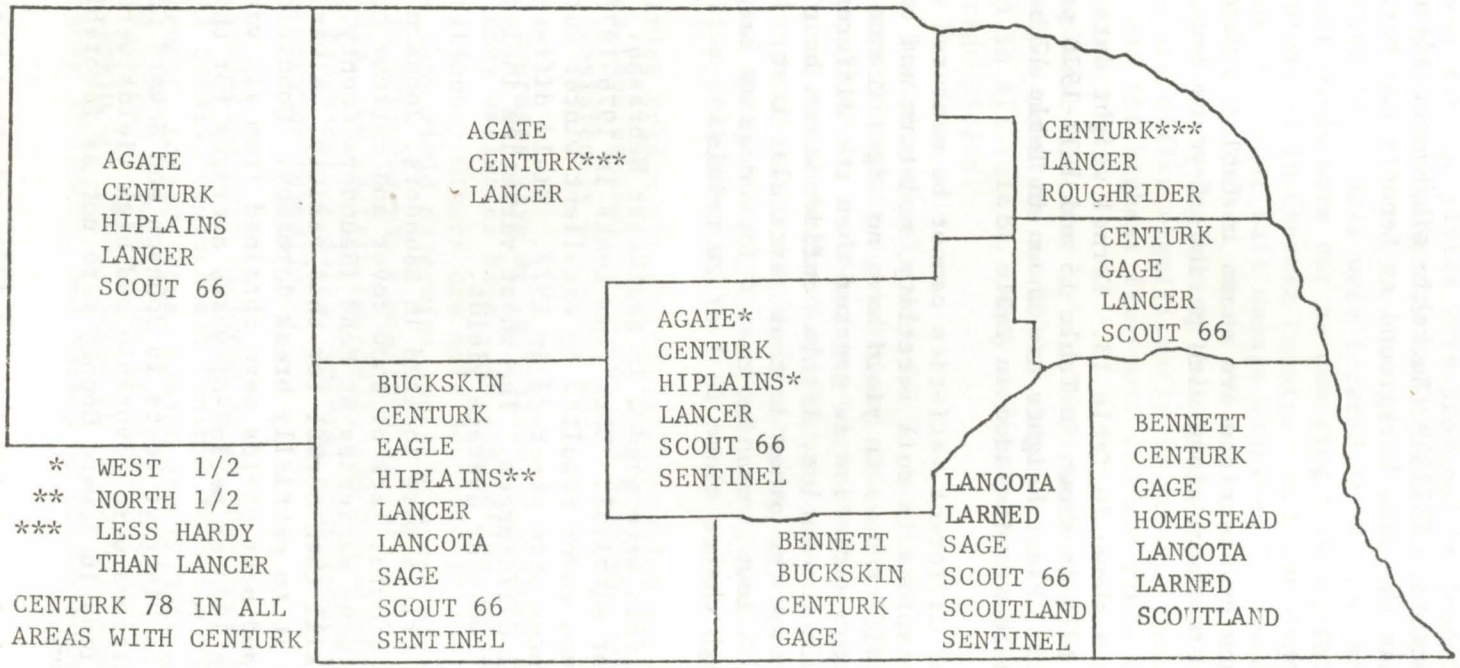
Table 4. Characteristics of winter wheat varieties included in Nebraska tests. 1978. 1/

Variety	Relative				Resistance to 2/			
	Maturity	Winter-hardiness	Straw strength	Milling & baking qualities	Hessian fly	Leaf rust	Stem rust	Soil borne mosaic 3/
Agate	Medium	Good	Medium	Good	MR	S	R	MS
Baca	Early	Fair	Medium	Excellent	MS	S	R	S
Bennett	Early	Fair	Strong	Excellent	MS	S	R	MR
Buckskin	Med. early	Fair	Strong	Excellent	MR	S	R	MR
Centurk	Med. early	Good	Strong	Excellent	MS	S	R	MS
Centurk 78	Med. early	Good	Strong	Excellent	MS	S	R	MS
Eagle	Early	Fair	Medium	Excellent	MS	S	R	S
Gage	Med. early	Fair	Med. strong	Good	MR	MR	R	MS
HiPlains	Med. early	Good	Strong	Excellent	MR	S	R	S
Homestead	Early	Fair	Strong	Excellent	S	S	R	R
Lancer	Medium	Good	Strong	Excellent	S	S	R	S
Lancota	Med. early	Fair	Med. strong	Excellent	S	MR	R	MS
Larned	Early	Fair	Med. strong	Good	R	S	R	S
Lindon	Early	Poor	Medium	Excellent	MR	S	MR	S
Roughrider	Med. late	Excellent	Medium	Good	S	S	R	--
Sage	Med. early	Fair	Med. strong	Good	MS	MS	R	S
Scout 66	Early	Fair	Medium	Excellent	MS	S	R	S
Scoutland	Early	Fair	Medium	Excellent	MS	S	R	S
Sentinel	Early	Fair	Strong	Excellent	S	S	R	MS
Turkey	Med. late	Good	Poor	Excellent	S	S	S	S
Vona	Early	Poor	Medium	Excellent	MR	S	MR	S
Warrior	Med. early	Very good	Strong	Excellent	R	S	S	S

1/ These apply to area of adaptation. When varieties are taken out of their adapted area, relative maturities, straw strength and other characteristics are subject to variations. Abnormal disease or insect infestations also cause differences in expression of plant characteristics.

2/ R = resistant, S = susceptible, MR = moderately resistant, MS = moderately susceptible.

3/ Based on limited observation and yield data.



SUGGESTED WINTER WHEAT VARIETIES FOR NEBRASKA

Roughrider was developed in North Dakota and released in 1975. It has a higher level of winterhardiness than varieties currently grown in Nebraska. It is a late variety, and under Nebraska conditions, would have a lower yield potential, except when winterkilling was severe.

One experimental strain, NE73649 (Buckskin sib/Homestead) was tested in 1978. This selection has the same background as Bennett and testing will be discontinued.

Winter Wheat Performance

Yield and other data by districts are shown in Tables 5 through 12. Results of 1978 trials are shown along with period-of-years data, where available.

Test weight data are shown in Table 13. Kernel weight data are shown in Table 14. Protein for 1978 is shown in Table 15 and 1971-1978 protein data are included in Table 16. Plant heights are shown in Table 17 and survival, flowering and lodging data are included in Table 18.

Yielding ability of different varieties cannot be measured with absolute accuracy because of variations in soil fertility, moisture and other factors. For this reason, small differences in yield have no significance. Unless the difference in yield of two varieties is greater than the difference required for significance shown in the tables, little confidence can be placed in the superiority of the one over the other in that particular test. These differences are shown at the 5% level, meaning that differences as large or larger could be expected through chance alone in 1 of 20 trials.

Two winter wheat trials were seeded in Northeast Nebraska. Both were abandoned because of poor survival. Data from tests in 1976-1977 are shown in Table 5. In 1976, snow cover resulted in excellent winter survival. Marked survival differences were observed in 1977. Yield differences were not as great as survival differences. The wheat varieties included did not differ significantly in two-year average yields.

Southeast District trials were located in Saunders, Johnson and Seward Counties. Lack of fall growth, lack of snow cover and extreme cold caused severe winterkilling of many varieties at Mead (Saunders County, Table 6). Centurk had more winterkill than normal for this variety. A warm period in January may have caused it to partially break dormancy. Conditions for recovery were not favorable and poor yields were obtained from all varieties. These data are not included in 1978 or period-of-years averages for this district.

Results of Southeast District tests in Johnson and Seward Counties are shown in Table 7. Conditions were favorable and high yields were produced in Johnson County. Conditions in Seward County were not as favorable. Hessian fly infestation was heavy.

Larned and Bennett had consistently good 1978 and three-year average yields. Centurk and/or Centurk 78 had excellent 1978 and three- and six-year yield performance. Sage was high in three- and six-year records. Lancota ranked third after Sage and Centurk in six-year average yields. Recent cold winters have not favored Lancota.

Two trials were harvested in the South Central District (Table 8). Hot winds reduced yields below earlier expectations. Test weights (Table 13) also were reduced. Yield and test weight reductions were greatest in Harlan County. NE73649, Bennett, Sage, Lindon and Vona had the highest 1978 average yields. High three-year average yields were produced by Bennett, Centurk 78, Scoutland, Sage and Lindon. Many varieties had equivalent six-year average yields.

Central District trials were located in Sherman and Logan Counties (Table 9). Hot winds were not as damaging here as farther south. Excellent yields were produced in Sherman County. In Logan County, less favorable growing conditions and light hail damage resulted in lowered yields. Centurk, Centurk 78, Warrior, Larned, Scout 66 and Vona had the highest 1978 average yields. Conditions during the 1976-1977-1978 period varied greatly and varieties did not differ significantly in yield. Centurk, Warrior, Buckskin and Scout 66 had the highest five-year average yield records.

Three Southwest District trials were harvested in 1978 (Table 10). All these had limited moisture in 1978. Centurk and Centurk 78 were consistently high in yield in all trials. Many varieties had equivalent three-year and six-year average yields.

Five West District trials were harvested in 1978 (Table 11). Yields were very high at the Northwest Agricultural Laboratory (Box Butte County). High yields were produced in Sheridan and Cheyenne Counties. Yields in Garden and an additional trial in Box Butte County were average. These trials represent a wide range of Panhandle wheat growing conditions. Early lodging reduced yields of Scout types in the NWAL trial. Many varieties had equivalent yields in the 1978 five-test averages.

West District trials for the 1973-1978 period are summarized in Table 12. Many varieties have equivalent three- and six-year average yields. Centurk and Buckskin consistently performed well.

Statewide averages give an indication of whether a variety has broad adaptation. Many varieties have wide adaptation and do well over an extended range of conditions. Others are more specific in their requirements. Often, factors other than yield determine specific areas of adaptation. Performance of varieties in Nebraska was summarized on the basis of three broad areas: the entire state, the eastern one-half, and the western one-half. The Northeast District represents a set of special conditions and results were not included in statewide summaries.

Fourteen varieties were included at 14 test locations in 1978. In an average of all trials, Centurk and Centurk 78 had a yield of 43 bushels (2890) (kg/ha) and Bennett, Larned, Vona, Lindon and NE73649 each produced 42 bushels per acre (2820 kg/ha). Production of other varieties was as follows: Sage 41 (2760), Buckskin 40 (2690), Scout 66 40 (2690), Agate 39 (2620), Lancota 39 (2620), Lancer 38 (2560), and Turkey 32 (2150) bushels per acre (kilograms per hectare).

In 1977 trials an identical 43-bushel statewide average yield was produced by Buckskin, Sage, Larned, Bennett and three experimental strains. In 1976, Bennett and a related experimental were high with 50-bushel (3360 kg/ha) average yields. Previous season high yielding varieties were as follows: 1975 Lindon 50 (3360); 1974 Centurk, Sage and Lancota 49 (3300); 1973 Sage 47 (3160); 1972 Centurk and Buckskin 48 (3230); 1969, 1970, and 1971 Centurk 42 (2820), 52 (3500) and 57 (3830) bushels per acre (kg/ha), respectively.

In four Southeast and South Central District trials, NE 73649 produced 46 (3090) and Bennett 45 bushels (3030) in 1978. Other varieties produced as follows: Sage and Larned 44 (2960); Homestead 43 (2890), Centurk 78, Lindon and Sentinel 42 (2820); Scoutland, Vona, and Scout 66 41 (2760), Centurk 40 (2690), Buckskin, Lancota and Lancer 39 (2620), Agate 37 (2490), Gage 36 (2420), and Turkey 31 (2090) bushels per acre (kg/ha).

In 10 experiments in the western one-half of Nebraska, Centurk and Centurk 78 averaged 44 bushels per acre (2960). Other varieties produced as follows: Vona 43 (2890); Lindon and Larned 42 (2820), Bennett and Buckskin 41 (2760), Scout 66, NE73649, Agate and Sage 40 (2690), Lancota, Hi Plains and Lancer 38 (1560), Roughrider 36 (2420), and Turkey 33 (2220) bushels per acre (kg/ha). Varietal yield differences were generally small.

Test weights of winter wheat varieties are shown in Table 13. Low test weights at several locations are a reflection of premature ripening caused by heat in June. Kernel weight data given in Table 14 give another indication of the same factors. Kernel size was smallest in Harlan, Clay and Furnas Counties. Protein data for 1978 are included in Table 15 and 1971-1978 average data are shown in Table 16. Lancota and Turkey were consistently highest in grain protein content.

Plant height data are shown in Table 17. Turkey, Agate, Buckskin and Lancer were tallest and Lindon and Vona shortest of varieties tested. Survival, flowering and lodging data are included in Table 18. Lodging in Seward County resulted from a heavy Hessian fly infestation.

Winter Barley

Winter barley yield and survival data were obtained from six locations in 1978 (Table 19). Winter survival ranged from poor in Lancaster County to good in Cheyenne County. Spring conditions were not generally favorable and winter barley yields were lowest of any of the last five years (Table 20).

Rye

Rye data from 1978 are shown in Table 21. Four rye varieties and four experimental winter triticale strains were tested at two locations. Five year summary data are included in Table 22.

Rymin rye had a consistently good yield record. Van Lochow also was productive but is more wintertender. The winter triticale strains are still in the experimental stage and further improvement would be desirable.

Table 5 . Northeast District winter wheat variety tests. 1976-1977.

Variety	Knox County 1976				1977 average (2 tests)						1976-1977 average (3 tests)	
	Yield bu/A (kg/ha)	Weight lbs/bu (kg/hl)	Prot. %	Gms/1000 seeds	Surv. %	Ht. in. (cm)	Yield bu/A (kg/ha)	Weight lbs/bu (kg/hl)	Prot. %	Gms/1000 seeds	Yield bu/A (kg/ha)	Weight lbs/bu (kg/hl)
Agate	38 (2560)	58.8 (75.7)	14.9	27.5	68	41 (104)	46 (3090)	59.4 (76.4)	13.8	34.3	42 (2820)	59.1 (76.1)
Buckskin	37 (2490)	57.3 (73.7)	15.5	22.1	43	42 (106)	42 (2820)	57.6 (74.1)	13.0	28.5	40 (2690)	57.5 (74.0)
Centurk	42 (2820)	58.1 (74.8)	13.5	22.7	63	37 (94)	42 (2820)	57.0 (73.4)	13.9	23.4	42 (2820)	57.6 (74.1)
HiPlains	30 (2020)	55.7 (71.7)	15.2	22.5	--	--	--	----	----	----	--	----
Lancer	35 (2350)	58.1 (74.8)	15.1	22.7	82	40 (102)	39 (2620)	58.2 (74.9)	12.9	28.1	37 (2490)	58.2 (74.9)
Roughrider	--	----	----	----	95	40 (102)	40 (2690)	57.6 (74.1)	14.2	25.9	--	----
Sage	47 (3160)	60.0 (77.2)	15.4	26.3	--	--	--	----	----	----	--	----
Scout 66	46 (3090)	59.9 (77.1)	14.6	28.8	32	40 (102)	43 (2890)	58.3 (75.0)	12.9	31.1	45 (3030)	59.1 (76.1)
Sentinel	--	----	----	----	31	35 (89)	31 (2090)	56.2 (72.3)	14.0	26.2	--	----
Nebar (w. barley)	48 (2580)	48.5 (62.4)	----	----	Tr	--	0	----	----	----	24 (1290)	----
Dif. req. for sig.	9.6 (946)	----	7.3 (491)	----	17.1	2.1 (5)	10.8 (726)	N.S.	0.8	2.7	N.S.	1.2 (1.5)

Location of tests (counties): 1976 Knox; 1977 Dixon, Knox.

Table 6. Wheat variety test. Mead Field Laboratory. 1978.

Variety	Saunders County	
	Survival %	Yield bu/A (kg/ha)
Agate	69	4.6 (309)
Bennett	70	5.0 (336)
Buckskin	41	3.7 (249)
Centurk	19	1.4 (94)
Centurk 78	19	0.9 (61)
Gage	34	3.2 (215)
Homestead	58	3.7 (249)
Lancer	59	5.1 (343)
Lancota	13	2.0 (135)
Larned	21	1.7 (114)
Lindon	8	0.7 (47)
Sage	74	4.6 (309)
Scout 66	59	4.7 (316)
Scoutland	66	4.0 (269)
Sentinel	70	4.8 (323)
Turkey	78	7.1 (478)
Vona	4	0.5 (34)
NE73649	56	3.9 (262)
Dif. req. for sig.	13.7	1.8 (121)

Table 7. Southeast and East Central District winter wheat variety tests, 1973-1978.

Variety	Grain yield, bu/A (kg/ha)					Weight, lbs/bu (kg/hl)		
	Johnson County 1978	Seward County 1978	1978 average (2 tests)	1976-78 average (7 tests)	1973-78 average (15 tests)	1978 average (2 tests)	1976-78 average (7 tests)	1973-78 average (15 tests)
Sage	52 (3500)	46 (3090)	49 (3300)	53 (3560)	57 (3830)	59.3 (76.3)	59.8 (77.0)	60.8 (78.2)
Lancota	53 (3560)	40 (2690)	47 (3160)	49 (3300)	54 (3630)	59.1 (76.1)	59.0 (75.9)	60.2 (77.5)
Centurk	56 (3770)	37 (2490)	47 (3160)	52 (3500)	54 (3630)	58.4 (75.2)	58.4 (75.2)	59.3 (76.3)
Scout 66	53 (3560)	42 (2820)	48 (3230)	49 (3300)	53 (3560)	59.1 (76.1)	59.1 (76.1)	60.1 (77.3)
Buckskin	51 (3430)	43 (2890)	47 (3160)	50 (3360)	53 (3560)	59.0 (75.9)	58.7 (75.5)	59.6 (76.7)
Scoutland	52 (3500)	42 (2820)	47 (3160)	49 (3300)	52 (3500)	59.6 (76.7)	59.8 (77.0)	60.9 (78.4)
Agate	51 (3430)	41 (2760)	46 (3090)	47 (3160)	52 (3500)	60.3 (77.6)	59.7 (76.8)	60.4 (77.7)
Homestead	55 (3700)	43 (2890)	49 (3300)	51 (3430)	52 (3500)	58.6 (75.4)	58.4 (75.2)	59.4 (76.4)
Sentinel	57 (3830)	42 (2820)	50 (3360)	51 (3430)	52 (3500)	58.2 (74.9)	57.9 (74.5)	58.9 (75.8)
Lancer	52 (3500)	45 (3030)	49 (3300)	47 (3160)	50 (3360)	59.6 (76.7)	59.1 (76.1)	60.2 (77.5)
Turkey	41 (2760)	36 (2420)	39 (2620)	37 (2490)	38 (2560)	58.6 (75.4)	57.4 (73.9)	58.0 (74.6)
Bennett	55 (3700)	45 (3030)	50 (3360)	54 (3630)	-- ----	58.9 (75.8)	59.3 (76.3)	---- ----
Larned	58 (3900)	47 (3160)	53 (3560)	52 (3500)	-- ----	59.1 (76.1)	59.0 (75.9)	---- ----
Centurk 78	57 (3830)	42 (2820)	50 (3360)	51 (3430)	-- ----	58.7 (75.5)	58.3 (75.0)	---- ----
Lindon	52 (3500)	42 (2820)	47 (3160)	50 (3360)	-- ----	58.0 (74.6)	58.7 (75.5)	---- ----
Gage	51 (3430)	33 (2220)	42 (2820)	45 (3030)	-- ----	58.2 (74.9)	58.0 (74.6)	---- ----
NE73649	59 (3970)	44 (2960)	52 (3500)	-- ----	-- ----	59.3 (76.3)	---- ----	---- ----
Vona	52 (3500)	36 (2420)	44 (2960)	-- ----	-- ----	56.9 (73.2)	---- ----	---- ----
Dif. sig.	4.4 (296)	4.4 (296)	6.0 (404)	3.8 (256)	3.2 (215)	1.4 (1.8)	1.0 (1.3)	0.6 (0.8)

Location of tests (counties): 1973 Jefferson, Saunders, Seward; 1974 Lancaster, Saunders; 1975 Saline, Saunders, Butler; 1976 Gage, Saunders; 1977 Nemaha, Saunders, Jefferson; 1978 Johnson, Seward.

Table 8. South Central District winter wheat variety tests. 1973-1978.

Variety	Grain yield, bu/A (kg/ha)					Weight, lbs/bu (kg/hl)		
	Clay County 1978	Harlan County 1978	1978 average (2 tests)	1976-78 average (7 tests)	1973-78 average (14 tests)	1978 average (2 tests)	1976-78 average (7 tests)	1973-78 average (14 tests)
Sage	44 (2960)	34 (2290)	39 (2620)	41 (2760)	44 (2960)	56.9 (73.2)	58.7 (75.5)	59.6 (76.7)
Scoutland	38 (2560)	32 (2150)	35 (2350)	41 (2760)	42 (2820)	56.7 (73.0)	59.2 (76.2)	60.2 (77.5)
Centurk	35 (2350)	31 (2090)	33 (2220)	38 (2560)	42 (2820)	54.6 (70.3)	56.8 (73.1)	58.0 (74.6)
Scout 66	35 (2350)	32 (2150)	34 (2290)	39 (2620)	41 (2760)	55.8 (71.8)	57.9 (74.5)	59.1 (76.1)
Lancota	35 (2350)	29 (1950)	32 (2150)	36 (2420)	41 (2760)	56.4 (72.6)	57.5 (74.0)	58.7 (75.5)
Homestead	43 (2890)	29 (1950)	36 (2420)	39 (2620)	41 (2760)	54.8 (70.5)	57.6 (74.1)	58.4 (75.2)
Sentinel	39 (2620)	30 (2020)	35 (2350)	38 (2560)	41 (2760)	53.8 (69.2)	56.5 (72.7)	57.7 (74.3)
Eagle	35 (2350)	30 (2020)	33 (2220)	38 (2560)	40 (2690)	55.3 (71.2)	58.0 (74.6)	59.1 (76.1)
Buckskin	36 (2420)	27 (1820)	32 (2150)	36 (2420)	40 (2690)	54.5 (70.1)	56.2 (72.3)	57.8 (74.4)
Agate	27 (1820)	27 (1820)	27 (1820)	35 (2350)	39 (2620)	57.8 (74.4)	58.6 (75.4)	59.3 (76.3)
Lancer	34 (2290)	25 (1680)	30 (2020)	34 (2290)	38 (2560)	56.8 (73.1)	57.8 (74.4)	58.9 (75.8)
Turkey	25 (1680)	21 (1410)	23 (1550)	26 (1750)	27 (1820)	56.4 (72.6)	55.7 (71.7)	56.5 (72.7)
Bennett	44 (2960)	35 (2350)	40 (2690)	44 (2960)	-- ----	55.2 (71.0)	58.0 (74.6)	---- ----
Lindon	46 (3090)	29 (1950)	38 (2560)	41 (2760)	-- ----	55.9 (71.9)	58.4 (75.2)	---- ----
Centurk 78	38 (2560)	32 (2150)	35 (2350)	41 (2760)	-- ----	54.5 (70.1)	56.9 (73.2)	---- ----
Larned	36 (2420)	34 (2290)	35 (2350)	39 (2620)	-- ----	55.4 (71.3)	57.6 (74.1)	---- ----
Gage	31 (2090)	28 (1880)	30 (2020)	33 (2220)	-- ----	53.2 (68.5)	55.5 (71.4)	---- ----
NE73649	46 (3090)	34 (2290)	40 (2690)	-- ----	-- ----	55.8 (71.8)	---- ----	---- ----
Vona	42 (2820)	33 (2220)	38 (2560)	-- ----	-- ----	54.8 (70.5)	---- ----	---- ----
Dif. sig.	3.9 (262)	3.3 (222)	6.4 (430)	5.5 (370)	3.3 (222)	2.3 (3.0)	1.9 (2.4)	1.1 (1.4)

Location of tests (counties): 1973 Clay, Franklin; 1974 Fillmore, Clay, Kearney; 1975 Nuckolls, Clay; 1976 Thayer, Clay; 1977 York, Clay, Phelps; 1978 Clay, Harlan.

Table 9. Central District winter wheat variety tests. 1974-1978.

Variety	Yield bu/A (kg/ha)					Weight, lbs/A (kg/hl)		
	Sherman County 1978	Logan County 1978	1978 average (2 tests)	1976-78 average (4 tests)	1974-78 average (6 tests)	1978 average (2 tests)	1976-78 average (4 tests)	1974-78 average (6 tests)
Centurk	48 (3230)	31 (2090)	40 (2690)	44 (2960)	52 (3500)	60.0 (77.2)	59.9 (77.1)	60.6 (78.0)
Warrior	45 (3030)	33 (2220)	39 (2620)	43 (2890)	50 (3360)	60.1 (77.3)	58.9 (75.8)	60.1 (77.3)
Scout 66	45 (3030)	30 (2020)	38 (2560)	42 (2820)	49 (3300)	61.0 (78.5)	59.7 (76.8)	60.8 (78.2)
Buckskin	46 (3090)	27 (1820)	37 (2490)	39 (2620)	49 (3300)	59.9 (77.1)	58.6 (75.4)	59.9 (77.1)
Sage	43 (2890)	29 (1950)	36 (2420)	39 (2620)	48 (3230)	60.5 (77.9)	59.7 (76.8)	60.7 (78.1)
HiPlains	39 (2620)	25 (1680)	32 (2150)	37 (2490)	47 (3160)	61.6 (79.3)	59.4 (76.4)	60.3 (77.6)
Eagle	40 (2690)	28 (1880)	34 (2290)	37 (2490)	46 (3090)	60.4 (77.7)	59.5 (76.6)	60.5 (77.9)
Sentinel	45 (3030)	28 (1880)	37 (2490)	39 (2620)	46 (3090)	59.5 (76.6)	57.9 (74.5)	59.3 (76.3)
Lancota	42 (2820)	28 (1880)	35 (2350)	35 (2350)	45 (3030)	60.7 (78.1)	59.0 (75.9)	60.2 (77.5)
Lancer	39 (2620)	24 (1610)	32 (2150)	37 (2490)	45 (3030)	61.0 (78.5)	58.6 (75.4)	60.1 (77.3)
Agate	45 (3030)	25 (1680)	35 (2350)	36 (2420)	45 (3030)	60.9 (78.4)	59.1 (76.1)	59.8 (77.0)
Turkey	36 (2420)	25 (1680)	31 (2090)	30 (2020)	36 (2420)	61.0 (78.5)	58.0 (74.6)	58.8 (75.7)
Larned	49 (3300)	29 (1950)	39 (2620)	42 (2820)	-- ----	60.1 (77.3)	59.6 (76.7)	---- ----
Bennett	44 (2960)	29 (1950)	37 (2490)	42 (2820)	-- ----	59.9 (77.1)	59.4 (76.4)	---- ----
Centurk 78	48 (3230)	32 (2150)	40 (2690)	42 (2820)	-- ----	60.3 (77.6)	59.2 (76.2)	---- ----
Lindon	42 (2820)	31 (2090)	37 (2490)	37 (2490)	-- ----	61.2 (78.8)	59.6 (76.7)	---- ----
Vona	46 (3090)	29 (1950)	38 (2560)	-- ----	-- ----	60.0 (77.2)	---- ----	---- ----
NE73649	43 (2890)	28 (1880)	36 (2420)	-- ----	-- ----	60.3 (77.0)	---- ----	---- ----
Roughrider	40 (2690)	28 (1880)	34 (2290)	-- ----	-- ----	61.2 (78.8)	---- ----	---- ----
Dif. sig.	4.5 (303)	4.2 (282)	4.2 (282)	N.S.	6.4 (430)	0.9 (1.2)	N.S.	N.S.

Location of tests (counties): 1974-1977 Custer; 1978 Sherman, Logan.

Table 10 . Southwest District winter wheat variety tests. 1973-1978.

Variety	Grain yield, bu/A (kg/ha)						Weight, lbs/bu (kg/hl)	
	Furnas County 1978	Lincoln County 1978	Chase County 1978	1978 average (3 tests)	1976-78 average (8 tests)	1973-78 average (10 tests)	1976-78 average (8 tests)	1973-78 average (10 tests)
Centurk	48 (3230)	36 (2420)	44 (2960)	43 (2890)	44 (2960)	47 (3160)	59.8 (77.0)	60.3 (77.6)
Scout 66	47 (3160)	35 (2350)	35 (2350)	39 (2620)	42 (2820)	46 (3090)	60.5 (77.9)	61.4 (79.0)
Eagle	47 (3160)	34 (2290)	35 (2350)	39 (2620)	43 (2890)	45 (3020)	60.9 (78.4)	61.6 (79.3)
Sage	46 (3090)	36 (2420)	34 (2290)	39 (2620)	41 (2760)	45 (3020)	60.0 (77.2)	61.1 (78.6)
Buckskin	41 (2760)	34 (2290)	40 (2690)	38 (2560)	41 (2760)	45 (3020)	59.0 (75.9)	60.1 (77.3)
Sentinel	43 (2890)	33 (2220)	33 (2220)	36 (2420)	43 (2890)	45 (3020)	58.8 (75.7)	59.6 (76.7)
Lancota	36 (2420)	33 (2220)	32 (2150)	34 (2290)	40 (2690)	44 (2960)	59.8 (77.0)	60.5 (77.9)
Agate	45 (3030)	32 (2150)	39 (2620)	39 (2620)	40 (2690)	44 (2960)	59.3 (76.3)	59.9 (77.1)
Warrior	38 (2560)	36 (2420)	37 (2490)	37 (2490)	39 (2620)	43 (2890)	58.9 (75.8)	59.8 (77.0)
HiPlains	42 (2820)	33 (2220)	34 (2290)	36 (2420)	38 (2560)	42 (2820)	59.4 (76.4)	60.2 (77.5)
Lancer	39 (2620)	30 (2020)	38 (2560)	36 (2420)	37 (2490)	42 (2820)	59.1 (76.1)	60.2 (77.5)
Turkey	34 (2290)	29 (1950)	33 (2220)	32 (2150)	31 (2090)	35 (2350)	58.0 (74.6)	58.7 (75.5)
Centurk 78	47 (3160)	36 (2420)	40 (2690)	41 (2760)	45 (3030)	-- ----	60.1 (77.3)	---- ----
Lindon	42 (2820)	35 (2350)	33 (2220)	37 (2490)	44 (2960)	-- ----	60.7 (78.1)	---- ----
Bennett	44 (2960)	35 (2350)	35 (2350)	38 (2560)	44 (2960)	-- ----	60.1 (77.3)	---- ----
Larned	48 (3230)	31 (2090)	38 (2560)	39 (2620)	43 (2890)	-- ----	60.0 (77.2)	---- ----
Vona	48 (3230)	34 (2290)	35 (2350)	39 (2620)	-- ----	-- ----	---- ----	---- ----
NE73649	49 (3300)	33 (2220)	33 (2220)	38 (2560)	-- ----	-- ----	---- ----	---- ----
Roughrider	34 (2290)	33 (2220)	33 (2220)	33 (2220)	-- ----	-- ----	---- ----	---- ----
Dif. sig.	6.3 (424)	N.S.	3.2 (215)	5.0 (336)	4.3 (289)	2.6 (175)	1.1 (1.4)	0.7 (0.9)

Location of tests (counties): 1973 Lincoln, Dundy; 1974 Lincoln, Chase; 1975 Gosper, Keith; 1976 Frontier, Lincoln; 1977 Lincoln, Dundy, Keith; 1978 Furnas, Lincoln, Chase.

Table 11. West District winter wheat variety tests. 1978.

Variety	Grain yield, bu/A (kg/ha)					1978 average 5 tests	
	Garden County 1978	Cheyenne County 1978	Box Butte County NWAL 1978	Box Butte County Phillips 1978	Sheridan County 1978	Yield bu/A (kg/ha)	Weight lb/bu (kg/hl)
Agate	30 (2020)	41 (2760)	58 (3900)	34 (2290)	52 (3500)	43 (2890)	58.8 (75.7)
Baca	30 (2020)	47 (3160)	53 (3560)	31 (2090)	48 (3230)	42 (2820)	59.8 (77.0)
Bennett	30 (2020)	48 (3230)	66 (4440)	38 (2560)	45 (3030)	45 (3030)	59.0 (75.9)
Buckskin	30 (2020)	45 (3030)	64 (4300)	34 (2290)	48 (3230)	44 (2960)	59.2 (76.2)
Centurk	32 (2150)	46 (3090)	71 (4780)	32 (2150)	54 (3630)	47 (3160)	58.6 (75.4)
Centurk 78	34 (2290)	46 (3090)	70 (4710)	26 (1750)	56 (3770)	46 (3090)	58.6 (75.4)
HiPlains	25 (1680)	44 (2960)	67 (4510)	23 (1550)	48 (3230)	41 (2760)	59.2 (76.2)
Lancer	28 (1880)	42 (2820)	62 (4170)	28 (1880)	48 (3230)	42 (2820)	59.2 (76.2)
Lancota	27 (1820)	45 (3030)	66 (4440)	28 (1880)	47 (3160)	43 (2890)	58.7 (75.5)
Larned	29 (1950)	44 (2960)	69 (4640)	34 (2290)	46 (3090)	44 (2960)	59.7 (76.8)
Lindon	29 (1950)	51 (3430)	75 (5040)	33 (2220)	48 (3230)	47 (3160)	59.3 (76.3)
Roughrider	25 (1680)	37 (2490)	53 (3560)	30 (2020)	45 (3030)	38 (2560)	59.2 (76.2)
Sage	31 (2090)	50 (3360)	56 (3770)	29 (1950)	43 (2890)	42 (2820)	59.5 (76.6)
Scout 66	29 (1950)	44 (2960)	58 (3900)	33 (2220)	46 (3090)	42 (2820)	59.8 (77.0)
TAM W-101	-- ----	42 (2820)	-- ----	-- ----	-- ----	-- ----	---- ----
Triumph	-- ----	47 (3160)	-- ----	-- ----	-- ----	-- ----	---- ----
Turkey	25 (1680)	33 (2220)	54 (3630)	24 (1610)	38 (2560)	35 (2350)	58.0 (74.6)
Vona	32 (2150)	52 (3500)	78 (5450)	23 (1550)	49 (3300)	47 (3160)	59.0 (75.9)
NE73649	25 (1680)	49 (3300)	64 (4300)	34 (2290)	43 (2890)	43 (2890)	58.8 (75.7)
Dif. sig.	3.4 (229)	7.3 (491)	13.7 (921)	6.1 (410)	5.1 (343)	5.4 (363)	N.S.

Table 12. West District winter wheat variety tests. 1973-78.

Variety	Grain yield, bu/A (kg/ha)						Weight, lbs/bu (kg/hl)	
	1975 average (5 tests)	1976 average (6 tests)	1977 average (5 tests)	1978 average (5 tests)	1976-78 average (16 tests)	1973-78 average (31 tests)	1976-78 average (16 tests)	1973-78 average (31 tests)
Centurk	45 (3030)	45 (3030)	35 (2350)	47 (3160)	42 (2820)	42 (2820)	59.1 (76.1)	58.7 (75.5)
Buckskin	43 (2890)	43 (2890)	38 (2560)	44 (2960)	42 (2820)	41 (2760)	59.2 (76.2)	58.7 (75.5)
Sage	44 (2960)	42 (2820)	35 (2350)	42 (2820)	40 (2690)	40 (2690)	59.8 (77.0)	59.8 (77.0)
Scout 66	43 (2890)	39 (2620)	36 (2420)	42 (2820)	39 (2620)	40 (2690)	59.5 (76.6)	59.7 (76.8)
HiPlains	42 (2820)	43 (2890)	32 (2150)	41 (2760)	39 (2620)	38 (2560)	59.6 (76.7)	59.2 (76.2)
Lancer	39 (2620)	41 (2760)	35 (2350)	42 (2820)	39 (2620)	38 (2560)	59.6 (76.7)	59.0 (75.9)
Lancota	39 (2620)	41 (2760)	33 (2220)	43 (2890)	39 (2620)	38 (2560)	58.7 (75.5)	58.9 (75.8)
Agate	39 (2620)	40 (2690)	37 (2490)	43 (2890)	40 (2690)	38 (2560)	59.1 (76.1)	58.8 (75.7)
Turkey	35 (2350)	37 (2490)	29 (1950)	35 (2350)	34 (2290)	33 (2220)	58.3 (75.0)	58.0 (74.6)
Baca	43 (2890)	40 (2690)	35 (2350)	42 (2820)	39 (2620)	-- ----	59.5 (76.6)	---- ----
Centurk 78	-- ----	47 (3160)	34 (2290)	46 (3090)	42 (2820)	-- ----	59.6 (76.7)	---- ----
Lindon	46 (3090)	44 (2960)	33 (2220)	47 (3160)	41 (2760)	-- ----	60.0 (77.2)	---- ----
Bennett	-- ----	43 (2890)	35 (2350)	45 (3030)	41 (2760)	-- ----	58.9 (75.8)	---- ----
Larned	-- ----	39 (2620)	37 (2490)	44 (2960)	40 (2690)	-- ----	59.1 (76.1)	---- ----
Vona	-- ----	-- ----	36 (2420)	47 (3160)	-- ----	-- ----	---- ----	---- ----
NE73649	-- ----	-- ----	34 (2290)	43 (2890)	-- ----	-- ----	---- ----	---- ----
Roughrider	-- ----	-- ----	32 (2150)	38 (2560)	-- ----	-- ----	---- ----	---- ----
Dif. sig.	4.1 (276)	3.7 (249)	3.8 (256)	5.4 (363)	2.1 (141)	1.7 (114)	N.S.	2.0 (2.6)

Location of tests (counties): 1975 Cheyenne (2), Morrill, Box Butte, Dawes; 1976 Deuel, Cheyenne (2), Scotts Bluff, Box Butte, Sheridan; 1977 Kimball, Cheyenne, Morrill, Box Butte, Dawes; 1978 Garden, Cheyenne, Box Butte (2), Sheridan.

Table 13. Test weight of winter wheat varieties in Nebraska tests. 1978.

Variety	Test weight, lbs/bu 1/														
	Johnson County	Seward County	Clay County	Harlan County	Sherman County	Logan County	Furnas County	Lincoln County	Chase County	Garden County	Cheyenne County	Box Butte County NWAL	Box Butte County Phillips	Sheridan County	Average 14 tests
Agate	60.5	60.1	58.4	57.1	61.2	60.6	57.2	59.0	61.0	61.0	57.3	55.5	59.0	61.0	59.2
Baca	----	----	----	----	----	----	----	----	----	61.0	58.0	60.3	58.0	61.5	----
Bennett	60.0	57.8	54.5	55.9	60.5	59.3	58.2	60.0	60.6	59.5	57.6	59.8	57.0	61.0	58.7
Buckskin	59.2	58.8	56.6	52.3	60.4	59.3	57.7	59.0	59.8	61.0	56.1	59.8	58.0	61.0	58.5
Centurk	59.0	57.7	55.5	53.6	60.8	59.1	58.9	60.0	60.0	60.5	55.8	59.5	56.5	60.5	58.4
Centurk 78	59.4	58.0	55.3	53.6	60.9	59.6	59.3	60.0	60.8	61.0	56.1	58.5	56.5	61.0	58.6
Eagle	----	----	54.7	55.8	60.9	59.9	60.4	60.5	61.8	----	----	----	----	----	----
Gage	59.3	57.1	54.3	52.1	----	----	----	----	----	----	----	----	----	----	----
HiPlains	----	----	----	----	61.6	61.5	58.0	60.0	60.1	61.0	57.3	59.0	58.0	60.5	----
Homestead	60.0	57.1	54.9	54.7	----	----	----	----	----	----	----	----	----	----	----
Lancer	60.0	59.1	57.9	55.7	61.0	61.0	57.6	59.5	60.7	61.0	56.7	59.5	57.5	61.5	59.2
Lancota	60.0	58.2	57.1	55.6	61.2	60.1	56.7	59.5	61.0	60.5	56.8	58.3	57.5	60.5	58.8
Larned	60.2	57.9	55.8	54.9	61.1	59.1	59.6	59.5	60.4	60.5	58.0	61.0	57.0	62.0	59.1
Lindon	59.6	58.0	55.4	56.4	61.7	60.6	58.6	61.5	61.8	61.0	57.6	58.8	57.5	61.5	59.3
Roughrider	----	----	----	----	61.4	61.0	55.9	59.0	60.0	61.0	56.6	56.8	59.0	62.5	----
Sage	60.4	58.2	57.7	56.1	61.2	59.8	59.3	60.5	60.6	60.5	58.8	60.3	56.5	61.5	59.4
Scout 66	60.2	57.9	55.2	56.3	61.5	60.5	60.1	60.0	61.1	61.5	58.0	60.3	57.0	62.0	59.4
Scoutland	60.9	58.3	56.3	57.0	----	----	----	----	----	----	----	----	----	----	----
Sentinel	59.0	57.3	54.6	53.0	59.8	59.1	57.4	59.0	58.0	----	----	----	----	----	----
TAM W-101	----	----	----	----	----	----	----	----	----	----	54.9	----	----	----	----
Triumph	----	----	----	----	----	----	----	----	----	----	58.4	----	----	----	----
Turkey	58.3	58.0	57.4	55.4	61.0	60.9	55.9	58.5	60.4	60.5	54.4	56.8	58.0	60.5	58.3
Vona	58.4	55.3	54.5	55.1	60.2	59.7	59.0	60.5	61.3	61.0	57.0	60.0	55.0	62.0	58.5
Warrior	----	----	----	----	60.2	60.0	57.1	59.0	60.3	----	----	----	----	----	----
NE73649	60.4	58.2	55.8	55.7	61.1	59.4	59.2	60.0	60.9	60.0	57.7	58.5	57.0	61.0	58.9
Dif. sig.	----	----	----	----	----	----	----	----	----	N.S.	2.9	2.9	1.0	0.9	0.7

1/ Metric conversion for test weight: 1.287 x lbs/bu = kilograms/hectoliter.

Table 14. Kernel weight of winter wheat varieties in Nebraska tests. 1978.

Variety	Weight of 1000 kernels, grams											
	Johnson County	Seward County	Clay County	Harlan County	Sherman County	Logan County	Furnas County	Chase County	Garden County	Box Butte Co. Phillips	Sheridan County	Average 11 tests
Agate	32.2	34.9	28.2	25.8	32.5	30.6	28.4	31.8	34.9	32.9	38.4	31.9
Baca	----	----	----	----	----	----	----	----	30.9	29.8	36.5	----
Bennett	30.8	31.6	26.3	25.7	31.6	30.0	27.8	30.1	30.5	30.4	35.9	30.1
Buckskin	28.3	29.5	23.3	22.2	29.7	27.7	24.5	29.0	30.3	28.8	34.6	28.0
Centurk	25.5	26.3	20.6	21.8	26.7	26.4	22.8	26.8	26.0	23.8	32.0	25.3
Centurk 78	24.4	26.5	20.2	19.9	25.8	25.6	22.6	25.1	25.7	24.1	32.1	24.7
Eagle	----	----	27.8	25.4	33.7	30.4	29.9	32.4	----	----	----	----
Gage	28.9	28.8	23.8	22.9	----	----	----	----	----	----	----	----
HiPlains	----	----	----	----	29.1	27.1	22.9	27.2	28.1	27.2	34.3	----
Homestead	30.4	31.2	25.9	24.0	----	----	----	----	----	----	----	----
Lancer	28.0	29.2	24.0	22.2	29.1	25.8	23.2	27.8	29.9	26.7	33.5	27.2
Lancota	30.0	30.5	26.2	24.6	31.4	30.2	26.0	30.8	30.4	29.1	35.8	29.5
Larned	31.3	32.7	26.5	26.0	32.0	30.8	29.9	33.9	33.4	30.9	38.2	31.4
Lindon	26.0	26.6	22.6	21.8	26.4	27.4	22.8	26.2	26.7	23.9	31.3	25.6
Roughrider	----	----	----	----	28.1	27.4	22.0	25.6	27.4	27.1	32.4	----
Sage	30.4	32.4	27.5	25.1	32.9	29.8	29.3	30.0	32.5	28.9	36.3	30.5
Scout 66	30.9	32.4	26.7	25.4	33.0	31.2	29.4	32.7	33.5	31.3	38.5	31.4
Scoutland	29.6	30.7	24.6	25.7	----	----	----	----	----	----	----	----
Sentinel	29.0	30.3	24.3	22.8	29.5	28.0	25.9	27.5	----	----	----	----
Turkey	25.6	28.7	22.9	21.2	29.3	28.1	22.4	27.6	27.9	26.2	31.8	26.5
Vona	26.6	26.9	23.6	23.4	29.0	27.4	23.3	28.2	28.6	24.5	32.1	26.7
Warrior	----	----	----	----	28.2	27.6	22.6	28.0	----	----	----	----
NE73649	29.8	30.3	25.1	25.1	30.3	28.5	25.9	29.0	29.2	28.1	33.9	28.7
Average	28.8	30.0	24.7	23.7	29.9	28.4	25.3	28.9	29.8	27.9	34.6	28.4
Dif. req. sig.	1.1	1.2	2.2	2.0	1.3	2.3	2.0	1.2	1.5	1.9	1.8	0.70

Table 15. Protein content of winter wheat varieties in Nebraska tests. 1978.

Variety	Johnson County	Seward County	Clay County	Harlan County	Sherman County	Logan County	Furnas County	Chase County	Garden County	Box Butte Co. Phillips	Sheridan County	Average 11 tests
Agate	13.0	15.2	16.0	17.1	12.0	12.6	15.2	9.9	11.7	15.1	9.7	13.4
Baca	----	----	----	----	----	----	----	----	11.7	14.4	9.6	----
Bennett	12.4	15.1	16.5	14.8	12.4	12.2	14.9	10.6	12.2	14.9	11.3	13.4
Buckskin	11.9	14.3	16.7	17.4	11.6	11.6	16.1	10.3	13.1	15.0	10.8	13.5
Centurk	11.5	14.4	16.8	16.6	11.8	11.0	15.3	9.6	11.5	15.7	9.6	13.1
Centurk 78	11.8	14.3	16.6	16.4	11.4	11.2	15.3	9.8	11.6	15.3	10.2	13.1
Eagle	----	----	16.1	16.2	12.0	11.9	15.4	10.2	----	----	----	----
Gage	12.3	14.6	17.6	17.3	----	----	----	----	----	----	----	----
HiPlains	----	----	----	----	12.1	11.9	15.2	10.2	11.6	15.4	10.0	----
Homestead	13.0	14.7	16.1	16.2	----	----	----	----	----	----	----	----
Lancer	11.9	14.3	15.6	15.6	11.9	12.7	15.7	10.5	11.1	15.5	10.1	13.2
Lancota	12.7	14.9	17.3	18.2	12.7	12.6	16.0	10.6	13.0	15.5	11.2	14.1
Larned	11.8	13.9	16.1	15.0	11.4	11.3	14.8	10.0	11.4	15.0	9.7	12.8
Lindon	12.3	14.2	14.8	16.2	11.3	11.6	14.5	11.7	12.1	14.4	10.5	13.1
Roughrider	----	----	----	----	12.8	12.6	17.2	10.1	12.5	16.0	10.6	----
Sage	12.8	14.1	16.5	15.5	11.6	11.6	14.3	10.4	12.2	15.0	10.1	13.1
Scout 66	12.4	14.5	16.0	16.0	12.0	11.6	14.5	9.7	12.1	14.7	10.6	13.1
Scoutland	12.4	15.3	17.0	15.9	----	----	----	----	----	----	----	----
Sentinel	13.4	15.2	17.0	16.3	12.7	13.9	16.2	10.5	----	----	----	----
Turkey	12.8	14.8	16.9	17.9	11.9	12.5	17.2	10.4	12.4	16.3	10.0	13.9
Vona	12.1	14.3	15.8	16.0	10.9	10.4	14.3	10.2	11.3	14.0	10.1	12.7
Warrior	----	----	----	----	11.4	11.3	15.7	9.3	----	----	----	----
NE73649	13.0	15.2	16.3	15.7	12.6	12.6	15.3	10.0	12.9	15.5	11.1	13.7
Average	12.4	14.6	16.4	16.3	11.9	12.0	15.4	10.2	12.0	15.2	10.3	13.3
Dif. req. sig.	N.S.	N.S.	N.S.	1.2	N.S.	N.S.	N.S.	N.S.	N.S.	0.9	0.9	0.4

Protein on 14% moisture basis.

Table 16. Protein content of winter wheat varieties in Nebraska tests. 1971-1978.

Variety	1971 14 tests	1972 13 tests	1973 12 tests	1974 13 tests	1975 13 tests	1976 12 tests	1977 15 tests	1978 11 tests	1976-78 average
Agate	----	----	12.4	11.8	12.9	13.2	12.9	13.4	13.2
Baca	----	----	----	11.9	12.8	----	----	----	----
Bennett	----	----	----	----	----	12.8	13.1	13.4	13.1
Buckskin	11.5	11.7	12.4	11.6	12.7	12.8	12.7	13.5	13.0
Centurk	11.5	11.7	12.0	11.8	12.9	12.8	12.5	13.1	12.8
Centurk 78	----	----	----	----	----	12.6	12.5	13.1	12.7
Eagle	12.0	11.9	12.5	12.6	13.4	----	----	----	----
HiPlains	11.2	11.9	12.2	11.6	13.1	13.3	----	----	----
Homestead	12.2	12.2	12.9	12.6	----	----	----	----	----
Lancer	11.3	11.5	12.2	11.6	12.9	12.9	12.7	13.2	12.9
Lancota	----	12.6	13.3	12.9	13.7	13.5	13.4	14.1	13.7
Larned	----	----	----	----	----	12.6	12.4	12.8	12.6
Lindon	----	----	----	----	12.5	12.5	12.5	13.1	12.7
Sage	----	----	12.7	12.3	13.3	12.8	12.9	13.1	12.9
Scout 66	11.5	11.8	12.1	11.8	13.0	12.7	12.6	13.1	12.8
Scoutland	12.3	12.4	12.7	12.6	13.7	----	----	----	----
Sentinel	12.2	12.3	13.0	12.4	13.6	----	----	----	----
Turkey	12.1	12.0	13.1	12.1	12.9	14.1	13.4	13.9	13.8
Vona	----	----	----	----	----	----	----	12.7	----
NE73649	----	----	----	----	----	----	13.0	13.7	----
Average	11.8	12.0	12.6	12.1	13.1	12.9	12.9	13.3	13.0
Dif. sig.	----	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.1

Protein on 14% moisture basis.

Table 17. Height of winter wheat varieties in Nebraska tests. 1978.

Variety	Plant height, inches (centimeters)										
	Johnson County	Seward County	Clay County	Harlan County	Sherman County	Logan County	Furnas County	Garden County	Box Butte Co. Phillips	Sheridan County	Average 10 tests
Agate	46 (117)	41 (104)	40 (102)	40 (102)	43 (109)	41 (104)	35 (89)	37 (94)	42 (107)	40 (102)	41 (104)
Baca	-- ---	-- ---	-- ---	-- ---	-- ---	-- ---	-- --	37 (94)	43 (109)	41 (104)	-- ---
Bennett	38 (97)	35 (89)	37 (94)	35 (89)	38 (97)	36 (91)	31 (79)	32 (81)	39 (99)	33 (84)	35 (89)
Buckskin	44 (112)	40 (102)	42 (107)	40 (102)	45 (114)	42 (107)	35 (89)	37 (94)	44 (112)	41 (104)	41 (104)
Centurk	41 (104)	36 (91)	40 (102)	39 (99)	41 (104)	40 (102)	32 (81)	35 (89)	41 (104)	38 (97)	38 (97)
Centurk 78	41 (104)	36 (91)	38 (97)	38 (97)	41 (104)	41 (104)	32 (81)	35 (89)	42 (107)	39 (99)	38 (97)
Eagle	-- ---	-- ---	38 (97)	37 (94)	-- ---	39 (99)	32 (81)	-- --	-- ---	-- ---	-- ---
Gage	43 (109)	38 (97)	43 (109)	40 (102)	41 (104)	-- ---	-- --	-- --	-- ---	-- ---	-- ---
HiPlains	-- ---	-- ---	-- ---	-- ---	45 (114)	39 (99)	31 (79)	34 (86)	41 (104)	41 (104)	-- ---
Homestead	37 (94)	35 (89)	36 (91)	32 (81)	-- ---	-- ---	-- --	-- --	-- ---	-- ---	-- ---
Lancer	45 (114)	41 (104)	42 (107)	42 (107)	45 (114)	40 (102)	32 (81)	36 (91)	42 (107)	41 (104)	41 (104)
Lancota	42 (107)	39 (99)	40 (102)	39 (99)	44 (112)	40 (102)	32 (81)	35 (89)	41 (104)	39 (99)	39 (99)
Larned	42 (107)	40 (102)	39 (99)	38 (97)	42 (107)	40 (102)	32 (81)	34 (86)	41 (104)	35 (89)	38 (97)
Lindon	35 (89)	31 (79)	33 (84)	33 (84)	34 (86)	33 (84)	31 (79)	29 (74)	35 (89)	34 (86)	33 (84)
Roughrider	-- ---	-- ---	-- ---	-- ---	46 (117)	42 (107)	34 (86)	37 (94)	43 (109)	42 (107)	-- ---
Sage	41 (104)	38 (97)	40 (102)	39 (99)	42 (107)	39 (99)	31 (79)	35 (89)	43 (109)	37 (94)	39 (99)
Scout 66	42 (107)	41 (104)	41 (104)	40 (102)	44 (112)	40 (102)	34 (86)	37 (94)	43 (109)	39 (99)	40 (102)
Scoutland	42 (107)	38 (97)	39 (99)	38 (97)	-- ---	-- ---	-- --	-- --	-- ---	-- ---	-- ---
Sentinel	40 (102)	36 (91)	37 (94)	36 (91)	39 (99)	36 (91)	31 (79)	-- --	-- ---	-- ---	-- ---
Turkey	48 (122)	41 (104)	43 (109)	43 (109)	48 (122)	44 (112)	34 (86)	39 (99)	43 (109)	43 (109)	43 (109)
Vona	32 (81)	28 (71)	28 (71)	30 (76)	30 (76)	30 (76)	29 (74)	27 (69)	32 (81)	31 (79)	30 (76)
Warrior	-- ---	-- ---	-- ---	-- ---	43 (109)	41 (104)	31 (79)	-- --	-- ---	-- ---	-- ---
NE73649	38 (97)	35 (89)	38 (97)	36 (91)	39 (99)	35 (89)	30 (76)	31 (79)	40 (102)	34 (86)	36 (91)
Dif. sig.	1.7 (4)	1.3 (3)	2.0 (5)	2.2 (6)	1.8 (5)	2.6 (7)	2.7 (7)	1.8 (5)	1.7 (4)	2.2 (6)	1.2 (3)

Table 18. Survival, flower date and lodging of winter wheat varieties in Nebraska tests. 1978.

Variety	Survival %					Flower, June		Lodging %
	Seward County	Clay County	Harlan County	Sherman County	Average 4 tests	Clay County	Lincoln County	Seward County
Agate	97	100	89	89	94	9	8	T
Bennett	99	100	92	91	96	2	6	2
Buckskin	97	100	91	85	93	6	8	1
Centurk	88	100	93	90	93	4	7	7
Centurk 78	88	98	91	88	91	4	7	3
Eagle	--	95	93	78	--	4	5	--
Gage	90	98	92	--	--	4	--	12
HiPlains	--	---	--	83	--	--	8	--
Homestead	99	98	91	--	--	3	--	5
Lancer	99	98	--	--	--	7	8	7
Lancota	95	94	88	87	91	6	8	7
Larned	98	91	93	86	92	4	6	2
Lindon	90	94	84	77	86	4	7	0
Roughrider	--	---	--	94	--	--	9	--
Sage	99	100	92	91	96	4	6	25
Scout 66	98	96	91	86	93	3	6	10
Scoutland	97	100	91	--	--	4	--	8
Sentinel	99	97	91	88	94	4	6	3
Turkey	99	100	93	92	96	10	10	20
Vona	58	83	85	70	74	3	7	0
Warrior	--	---	--	92	--	--	8	--
NE73649	99	100	93	89	95	3	6	3
Average	94.1	96.9	90.7	86.2	91.7	4.6	7.2	7.7
Dif. sig.	7.9	3.7	2.2	4.6	6.4	0.7	--	6.4

Table 19. Winter barley variety tests. 1978.

Variety	Lancaster County		Clay County		Furnas County		Lincoln County		Chase County		Cheyenne County	
	Surv. %	Yield bu/A (kg/ha)	Surv. %	Yield bu/A (kg/ha)	Surv. %	Yield bu/A (kg/ha)	Surv. %	Yield bu/A (kg/ha)	Surv. %	Yield bu/A (kg/ha)	Surv. %	Yield bu/A (kg/ha)
Kearney	13	3 (160)	51	21 (1130)	75	42 (2260)	34	5 (270)	67	26 (1340)	87	49 (2640)
Nebar	11	5 (270)	25	16 (860)	68	51 (2740)	45	12 (650)	77	32 (1720)	76	62 (3340)
NE73104 1/	7	2 (110)	16	10 (540)	53	52 (2800)	34	11 (590)	55	34 (1830)	70	65 (3500)
NE73264 2/	3	2 (110)	14	13 (700)	55	43 (2310)	43	10 (540)	67	34 (1830)	59	54 (2910)
NE73266 2/	12	6 (320)	23	14 (750)	45	42 (2260)	35	16 (860)	68	37 (1990)	59	51 (2740)
NE76103 3/	65	36 (1940)	50	28 (1510)	82	54 (2910)	83	20 (1080)	73	42 (2260)	78	47 (2530)
NE76126 4/	8	6 (320)	11	13 (700)	47	55 (2960)	51	16 (860)	62	35 (1880)	87	69 (3710)
NE76129 5/	60	38 (2040)	54	33 (1780)	88	65 (3500)	63	10 (540)	51	31 (1670)	64	69 (3710)
NE76138 6/	73	35 (1880)	50	29 (1560)	90	66 (3550)	78	15 (810)	67	38 (2040)	76	71 (3820)
NE76141 7/	48	28 (1510)	55	21 (1130)	87	56 (3010)	70	18 (970)	75	39 (2100)	70	42 (2260)
NE76142 7/	71	23 (1240)	65	22 (1180)	79	54 (2910)	86	20 (1080)	68	30 (1610)	76	45 (2420)
NE76143 7/	66	38 (2040)	51	26 (1400)	78	49 (2640)	73	16 (860)	70	35 (1880)	70	51 (2740)
NE76144 8/	79	36 (1940)	46	25 (1350)	78	60 (3230)	58	13 (700)	72	37 (1990)	61	58 (3120)
NE76145 8/	78	37 (1990)	35	28 (1510)	68	59 (3170)	56	19 (1020)	65	36 (1940)	56	51 (2740)
NE76146 9/	70	32 (1720)	46	23 (1240)	75	62 (3340)	54	17 (910)	73	32 (1720)	76	64 (3440)
NE76147 9/	88	50 (2690)	55	27 (1450)	82	60 (3230)	84	22 (1180)	82	35 (1880)	78	61 (3280)
NE76148 10/	74	39 (2100)	53	28 (1510)	83	66 (3550)	71	15 (810)	62	36 (1940)	50	43 (2310)
NE76156 10/	54	30 (1610)	51	24 (1290)	77	66 (3550)	70	18 (970)	72	41 (2210)	53	47 (2530)
NE76162 10/	64	36 (1940)	39	27 (1450)	77	59 (3170)	68	21 (1130)	62	41 (2210)	50	45 (2420)
NE76163 10/	10	7 (380)	18	17 (910)	58	50 (2690)	46	10 (540)	64	40 (2150)	50	47 (2530)
Centurk (w.w.)	95	35 (1880)	89	30 (1610)	100	51 (2740)	100	30 (1610)	100	38 (2040)	100	51 (2740)
Dif. req. sig.	15.1	9.2 (495)	16.2	7.7 (414)	12.2	10.7 (576)	23.0	12.4 (667)	14.3	6.8 (366)	15.6	11.4 (613)

1/ Will//Sabbaton/Meimi
2/ Sabbaton/Meimi//Decatur
3/ Hudson Sel/3/Sabbaton/Meimi//Decatur
4/ Sabbaton/Meimi//Will/3/Paoli
5/ Sabbaton/Meimi//Decatur/3/Paoli
6/ Dicktoo/Reno//Shonan/Randolph/3/OAC 2-11/Decatur
7/ Decatur/Chase/3/Sabbaton/Meimi//Will
8/ Decatur/Chase/3/Mo.1222//Sabbaton/Meimi
9/ Decatur/Chase//OAC 2-11/Decatur
10/ Sabbaton/Meimi//Will/3/Sabbaton/Meimi//Decatur

Table 20. Winter barley variety tests. 1974-1978.

Variety	1974 1/ 3 tests	1975 3 tests		1976 4 tests		1977 3 tests		1978 average 6 tests		
	Yield bu/A (kg/ha)	Surv. %	Yield bu/A (kg/ha)	Surv. %	Yield bu/A (kg/ha)	Surv. %	Yield bu/A (kg/ha)	Surv. %	Yield bu/A (kg/ha)	Weight 2/ lb/bu (kg/hl)
Kearney	39 (2100)	94	53 (2850)	57	33 (1780)	85	37 (1990)	55	24 (1290)	48.8 (62.8)
Nebar	71 (3820)	81	72 (3870)	62	37 (1990)	71	53 (2850)	50	30 (1610)	49.8 (64.1)
Paoli	68 (3660)	85	69 (3710)	45	36 (1940)	50	42 (2260)	--	-- ----	---- ----
NE73104 3/	-- ----	86	70 (3770)	56	48 (2580)	63	47 (2530)	39	29 (1560)	47.2 (60.7)
NE73264 4/	89 (4790)	90	75 (4040)	57	45 (2420)	41	37 (1990)	40	26 (1400)	49.1 (63.2)
NE73266 4/	87 (4680)	94	73 (3930)	52	44 (2370)	56	49 (2640)	40	28 (1510)	48.2 (62.0)
NE76103 5/	-- ----	--	-- ----	--	-- ----	75	55 (2960)	72	38 (2040)	48.8 (62.8)
NE76126 6/	-- ----	--	-- ----	--	-- ----	71	53 (2850)	44	32 (1720)	48.8 (62.8)
NE76129 7/	-- ----	--	-- ----	--	-- ----	65	44 (2370)	63	41 (2210)	47.4 (61.0)
NE76138 8/	-- ----	--	-- ----	--	-- ----	83	62 (3340)	72	42 (2260)	48.6 (62.5)
NE76141 9/	-- ----	--	-- ----	--	-- ----	82	58 (3120)	68	34 (1830)	46.7 (60.1)
NE76142 9/	-- ----	--	-- ----	--	-- ----	86	58 (3120)	74	32 (1720)	44.6 (57.4)
NE76143 9/	-- ----	--	-- ----	--	-- ----	73	52 (2800)	68	36 (1940)	47.6 (61.3)
NE76144 10/	-- ----	--	-- ----	--	-- ----	66	52 (2800)	66	38 (2040)	47.8 (61.5)
NE76145 10/	-- ----	--	-- ----	--	-- ----	57	50 (2690)	60	38 (2040)	46.8 (60.2)
NE76146 11/	-- ----	--	-- ----	--	-- ----	70	50 (2690)	66	38 (2040)	48.1 (61.9)
NE76147 11/	-- ----	--	-- ----	--	-- ----	80	59 (3170)	78	43 (2310)	46.4 (59.7)
NE76148 12/	-- ----	--	-- ----	--	-- ----	82	64 (3440)	66	38 (2040)	47.7 (61.4)
NE76156 12/	-- ----	--	-- ----	--	-- ----	79	60 (3230)	63	38 (2040)	50.0 (64.4)
NE76162 12/	-- ----	--	-- ----	--	-- ----	63	52 (2800)	60	38 (2040)	47.8 (61.5)
NE76163 12/	-- ----	--	-- ----	--	-- ----	55	52 (2800)	41	29 (1560)	48.0 (61.8)
Centurk (w.w.)	-- ----	--	-- ----	99	57 (3830)	98	61 (4100)	97	39 (2620)	58.6 (75.4)
Pawnee (w.w.)	49 (3300)	--	-- ----	99	47 (3160)	--	-- ----	--	-- ----	---- ----
Dif. req. sig.	12.6 (678)	--	9.5 (511)	N.S.	11.1 (597)	15	11.5 (619)	15.3	8.9 (479)	1.6 (2.1)

1/ 1974-100% survival on all. Survival data are from locations where differentials were observed.
2/ Average 4 locations
3/ Will//Sabbaton/Meimi
4/ Sabbaton/Meimi//Decatur
5/ Hudson Sel/3/Sabbaton/Meimi//Decatur
6/ Sabbaton/Meimi//Will/3/Paoli
7/ Sabbaton/Meimi//Decatur/3/Paoli
8/ Dicktoo/Reno//Shonan/Randolph/3/OAC 2-11/Decatur
9/ Decatur/Chase/3/Sabbaton/Meimi//Will
10/ Decatur/Chase/3/Mo. 1222//Sabbaton/Meimi
11/ Decatur/Chase//OAC 2-11/Decatur
12/ Sabbaton/Meimi//Will/3/Sabbaton/Meimi//Decatur

Table 21. Rye-triticale variety tests. 1978.

Variety	Cheyenne County						Box Butte County				
	Flower June	Ht. in. (cm)	Yield lbs/A (kg/ha)	Weight lbs/bu (kg/hl)	Grams 1000 seeds	Protein %	Ht. in. (cm)	Yield lbs/A (kg/ha)	Weight lbs/bu (kg/hl)	Grams 1000 seeds	Protein %
Rye											
Cougar	12	54 (137)	1260 (1410)	47.8 (61.5)	24.1	17.1	52 (132)	3070 (3440)	50.8 (65.4)	26.7	12.0
Puma	12	57 (145)	1520 (1700)	48.2 (62.0)	21.7	15.8	55 (140)	3770 (4230)	51.6 (66.4)	24.5	11.5
Rymin	11	57 (145)	1710 (1920)	48.2 (62.0)	26.5	16.2	54 (137)	3780 (4240)	51.3 (66.0)	27.0	11.9
Von Lochow	11	58 (147)	1300 (1460)	49.0 (63.1)	25.1	15.9	54 (137)	3510 (3930)	51.6 (66.4)	28.8	11.8
Triticale											
76H70	14	47 (119)	2100 (2350)	40.3 (51.9)	20.2	19.8	44 (112)	3560 (3990)	49.6 (63.8)	36.4	15.4
77T5	15	55 (140)	1480 (1660)	40.3 (51.9)	14.0	19.3	55 (140)	1550 (1740)	49.8 (64.1)	37.6	15.8
77T6	14	54 (137)	1770 (1980)	44.8 (57.7)	16.1	17.5	52 (132)	2160 (2420)	50.3 (64.7)	38.8	16.2
77T7	14	55 (140)	1760 (1970)	45.6 (58.7)	17.8	19.7	53 (135)	2160 (2420)	50.1 (64.5)	37.8	18.0
Dif. sig.	2.1	1.3 (3.3)	322 (361)	----	3.0	1.6	3.5 (8.9)	450 (504)	----	2.8	1.2

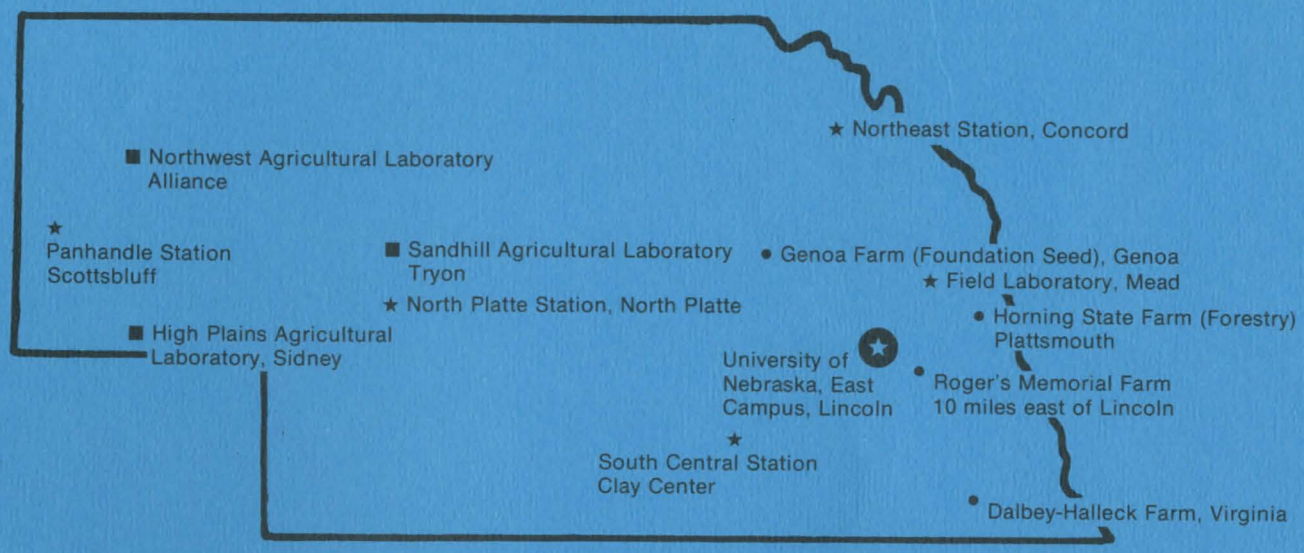
Protein on 12% moisture basis.

Table 22. Rye-triticale variety tests. 1974-1978.

Variety	1974 (2 tests)		1975 (2 tests)		1976 (2 tests)		1977 (2 tests)		1978 (2 tests)	
	Yield lbs/A (kg/ha)	Weight lbs/bu (kg/hl)	Yield lbs/A (kg/ha)	Weight lbs/bu (kg/hl)	Yield lbs/A (kg/ha)	Weight lbs/bu (kg/hl)	Yield lbs/A (kg/ha)	Weight lbs/bu (kg/hl)	Yield lbs/A (kg/ha)	Weight lbs/bu (kg/hl)
Rye										
Cougar	1510 (1690)	50.9 (65.5)	2410 (2700)	52.3 (67.3)	1620 (1820)	49.6 (63.8)	2630 (2950)	53.0 (68.2)	2170 (2430)	49.3 (63.4)
Puma	---- ----	---- ----	2130 (2390)	53.0 (68.2)	1400 (1570)	47.2 (60.7)	2970 (3330)	53.6 (68.9)	2650 (2970)	49.9 (64.2)
Rymin	1620 (1820)	51.9 (66.8)	2410 (2700)	53.7 (69.1)	2070 (2320)	49.5 (63.7)	2910 (3260)	54.6 (70.3)	2750 (3080)	49.8 (64.1)
Von Lochow	---- ----	---- ----	2410 (2700)	54.0 (69.5)	2070 (2320)	50.7 (65.3)	3080 (3450)	54.1 (69.6)	2410 (2700)	50.3 (64.7)
Triticale										
NE73T125	1900 (2130)	45.6 (58.7)	1628 (1820)	47.0 (60.5)	1400 (1570)	46.4 (59.7)	---- ----	---- ----	---- ----	---- ----
KS76H70	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	2830 (3170)	45.0 57.1
NE77T5	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	1520 (1700)	45.1 58.0
NE77T6	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	1970 (2210)	47.6 61.3
NE77T7	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	1960 (2200)	47.8 61.5
Dif. sig.	N.S.	----	230 (258)	1.0 (1.3)	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.

Location of tests (Counties): 1974-1978 Cheyenne 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 or national origin.