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EC91-102 C Nebraska Spring Wheat, Oats, Barley, Canola and Crambe Variety Tests 1991

Lenis Alton Nelson

University of Nebraska-Lincoln, lnelson1@unl.edu

David D. Baltensperger

University of Nebraska-Lincoln, dbaltensperger@tamu.edu

Russell S. Moomaw

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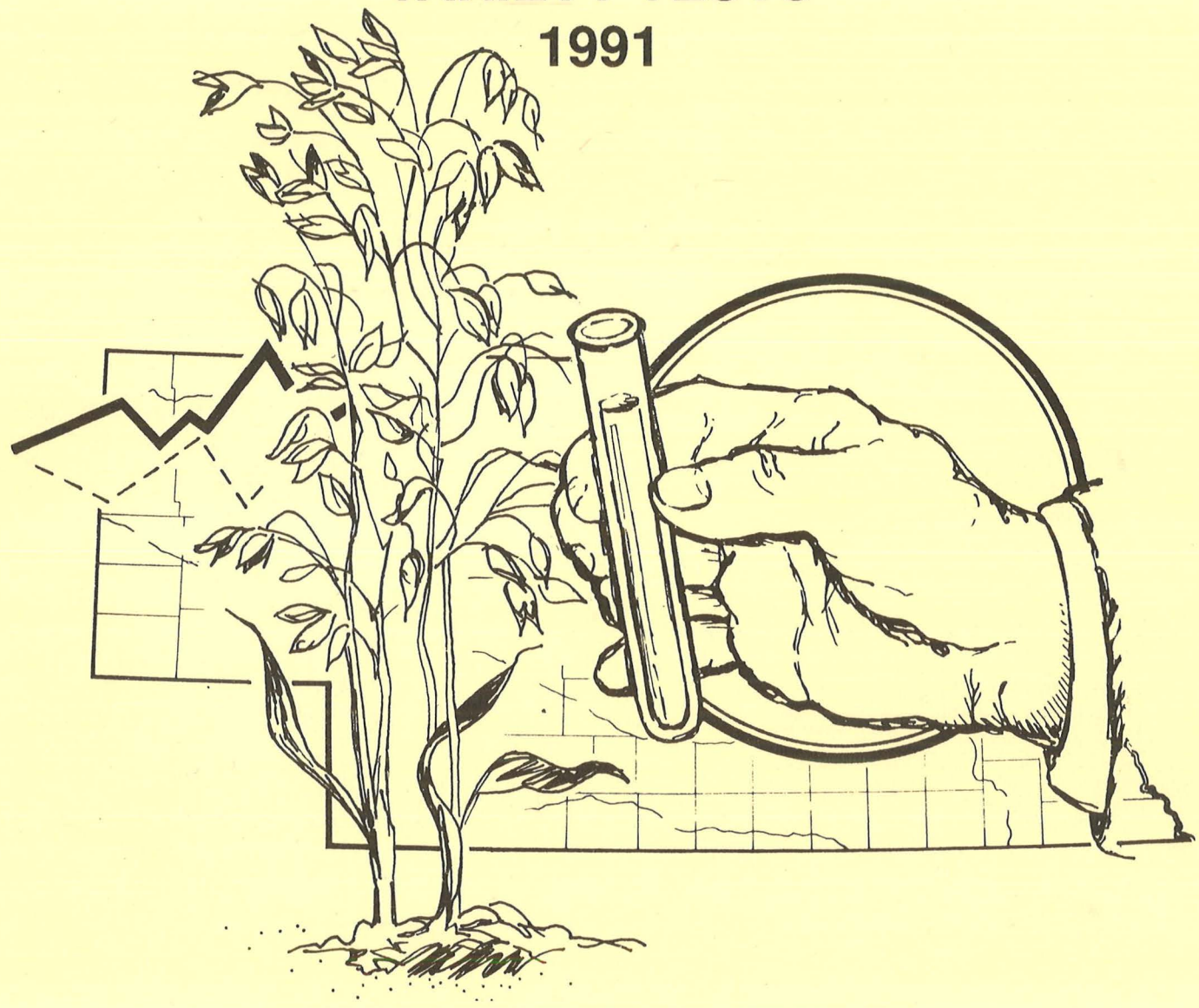
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NEBRASKA SPRING WHEAT, OATS, BARLEY, CANOLA AND CRAMBE VARIETY TESTS

1991



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EXTENSION CIRCULAR 91-102

NEBRASKA SPRING WHEAT, OATS, BARLEY CANOLA, AND CRAMBE VARIETY TESTS

October 1991

AUTHORS

Lenis A. Nelson	Department of Agronomy, Lincoln
David D. Baltensperger	Panhandle Research and Extension Center, Scottsbluff
Russell S. Moomaw	Northeast Research and Extension Center, Concord
P. Stephen Baenziger	Department of Agronomy, Lincoln
Laura E. Oberthur	Department of Agronomy, Lincoln
Alan W. Grombacher	Department of Agronomy, Lincoln

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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 91-102

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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
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	310	31.0	30	23.0
1990	280	48.0	22	40.0
1991 ¹	210	54.0	27	45.0

¹ 1991 data are preliminary. Comparable data for spring wheat are not available. Data furnished by Nebraska Agricultural Statistics Service.

NEBRASKA SPRING WHEAT, OATS, BARLEY CANOLA, AND CRAMBE VARIETY TESTS

1991 LOCATIONS

Favorable weather in the spring of 1991 allowed for normal planting of spring grain throughout the state. Most of the state got adequate rains after planting to keep the crop going. Temperatures were cooler than normal for much of the spring and rainfall was normal or above normal. Locations and dates of planting and harvest for spring small grain variety trials are shown in Table B. Soil types for harvested locations were as follows: Saunders - Sharpsburg silty clay loam; Dixon - Nora silty clay loam; Cheyenne - Keith silt loam; and Scotts Bluff - Tripp fine sandy clay loam. The Nora silt loam in Dixon County was eroded.

The Saunders County location summary for spring barley, spring wheat, and spring oat variety trials is listed in Tables 4, 5, and 7. Warm, moist conditions in April allowed good establishment of crop. Severe infestations of chinch bugs during May and June in the spring wheat and spring barley plots limited plant and grain development. Only two replications were used to calculate yield for spring wheat. Heading date for spring barley is listed as early, medium (June 1-5), and late. Rain in May and June flooded fields and caused increased lodging of spring oats. Crown rust was observed on WI X5445-4 at a 20% level on flag leaves. The grain was harvested July 17. Due to low plot yields, test weights were not determined.

The Dixon County location included

oats, barley, wheat, canola, and crambe. Moisture was good at planting and conditions were favorable throughout the spring for good spring grain yields. Some Barley Yellow Dwarf was again present and lowered yields of oats. Russian thistle problems in the canola and crambe resulted in use of a herbicide that decimated the crambe. Spring canola yields were quite respectable but crambe was not harvested.

The plots in Lancaster County were located on the Frampton Demonstration farm and consisted of crambe and canola. Yields of both were above expected levels. The canola was harvested while it was quite green because of shattering problems.

Plots of canola and crambe were planted on demonstration land furnished by the First National Bank at West Point in Cuming County. A crop of volunteer canola invaded the crambe plots and made them unusable. Thus only the canola yields are reported. The spring canola yields were better than expected based on previous years experience.

Cheyenne County test plots located at the High Plains Ag Lab consisted of oats, barley, spring wheat, crambe and canola. The spring was well suited to spring grain production because of cooler than average temperatures and higher than average rainfall. The good conditions are demonstrated by oat yields of over 100 bushels per acre.

Scotts Bluff County plots were located at the Panhandle Research and Extension Center and consisted of oats, barley, spring wheat, canola, and crambe. Since this plot

was irrigated, the lack of rainfall was not detrimental to yield, but warm temperatures held yields from reaching their potential.

SUGGESTED VARIETIES AND NEW RELEASES

Suggested oat and barley varieties for Nebraska are shown on the map (page 6). Characteristics of oat varieties included in recent Nebraska statewide tests are shown in Table A. Recent releases of oat, barley, and spring wheat include the following:

NEWDAK was released in 1990 jointly by North Dakota and New York. It's pedigree is RL3038 /'Goodland' // 'Ogle'. It has good rust resistance and tolerance to barley yellow dwarf virus.

DANE oat is a yellow grained variety with good agronomic performance potential and high milling yield. Grain yields are comparable to Don and Ogle. Grain has above average test weight and percent of groat protein. It is an early to medium maturing variety with very good straw strength. Dane is resistant to smut, moderately resistant to barley yellow dwarf virus, stem rust, and crown rust. Dane was developed by the Wisconsin Ag Experiment Station.

PREMIER oat is a moderately short, mid-season maturing yellow oat variety. Yield tests show Premier to be competitive with Hazel and Starter. Grain is very plump with high test weight and high milling yield. Premier is similar to Ogle and Hazel for heading date and plant

height. Straw strength is very good. It has moderate resistance to smut, crown rust, stem rust and barley yellow dwarf virus. Premier was developed by the Minnesota Ag Experiment Station.

SETTLER oat is a midseason variety with improved resistance to crown rust and more tolerance to barley yellow dwarf virus. It has white colored kernels with medium-high groat protein, high test weight, and good milling yield. It is a medium height variety with good straw strength, and good yield potential. It was developed by the South Dakota Ag Experiment Station.

STARK is a two-rowed feed barley released in 1991 by North Dakota State University. It is slightly later and taller than Bowman with better yield potential and disease resistance. It has had good yield record under dryland conditions of North and South Dakota.

SHARP hard red spring wheat is an early maturing, conventional height variety which is most comparable to Butte 86 in agronomic characteristics, milling and baking properties, yield, and adaptation. It is moderately resistant to leaf rust and resistant to stem rust. Sharp was developed by the South Dakota Agricultural Experiment Station and released in 1991.

1991 CROPS

Oats

Results from Dixon County are shown in Table 1. Yields had a wide range with early maturing varieties having the highest yields. Results of 1987-1991 oat tests in this area are shown also in Table 1.

A dryland oat test was conducted in Cheyenne County. Yields were very good because of the above average rainfall amounts and cooler than average temperatures. Yields from that test are shown in Table 2. The 1987 - 1991 data for West dryland oats is shown also in Table 2.

The irrigated oat trial in Scotts Bluff County had lower yields than previous years and had much variability. Results from Scotts Bluff County are shown in Table 3. Irrigated oat variety data for the 1987-1991 period are shown also in Table 3.

The results from the Saunders County test are shown in Table 4. These plots were quite dry and the heat was above normal most of the summer. The results of 1987-1991 oat tests are shown also in Table 4.

Barley

Five spring barley varieties were tested in the eastern tests and six in the western tests. One of these varieties, Stark, is a new entry. Barley yield and other data are shown in Tables 5 and 6.

Spring Wheat

Spring wheat data are shown in Tables 7 and 8. Eight varieties were tested in 1991 and the spring triticales were dropped from the

test. Amidon is a recent release from North Dakota tested for the third time. Sharp is a new variety released by North Dakota in 1990.

Spring Canola

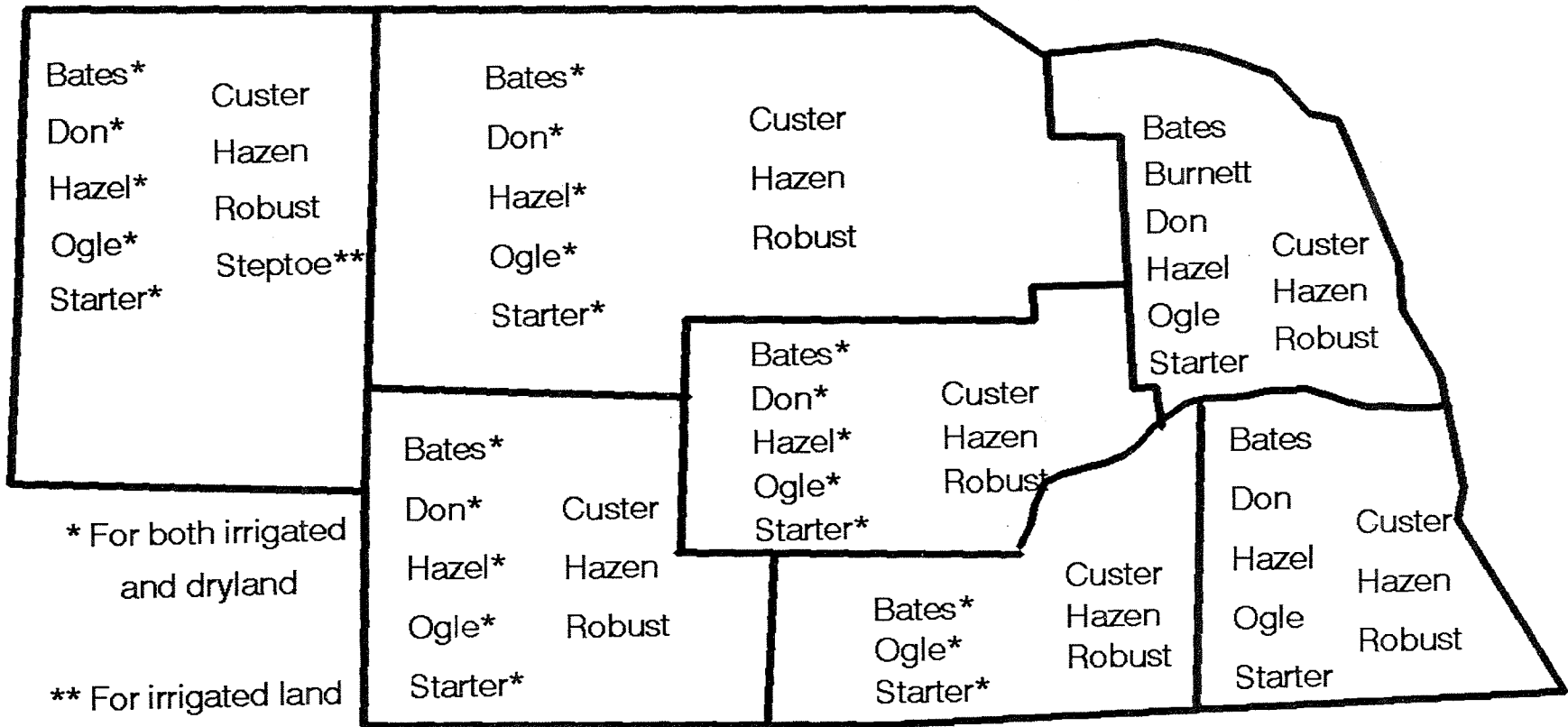
Replicated yield trials were planted Lancaster County, Cuming County, Dixon County, Scotts Bluff County, and Cheyenne County. Flea beetles were present in the Cuming County trials around March 1, and false chinch bugs were present during harvest in Cuming and Lancaster Counties. While flea beetles and false chinch bugs were present, they were not a major problem in those tests.

The 1991 yields were better than the 1990 averages due to the cooler than average temperatures and adequate precipitation. Canola yields are reported in Table 9.

Crambe

Meyer exhibited low germination, and no plants survived the season. The Cheyenne County field had an infestation of flea beetles and a spraying of Sevin on June 21 controlled them.

The cooler than average temperatures and adequate precipitation created high yielding conditions at the three locations. These weather conditions were in direct contrast to the hot and dry conditions that contributed to the low 1990 yields. Crambe data are reported in Table 10 and four year average yields are reported in Table 11.



Suggested Oat and Barley varieties for Nebraska
1991

Table A. Characteristics of oat varieties in Nebraska tests.

Variety	Origin	Year released	Maturity	Plant height	Straw strength	Grain color
Bates	Missouri	1975	Early	Short	Strong	Dark
Burnett	Iowa	1957	Medium	Medium	Medium	Ivory
Dane	Wisconsin	1990	Medium	Medium	Strong	Yellow
Don	Illinois	1985	Early	Short	Strong	White
Hazel	Illinois	1985	Early	Short	Strong	Ivory
Horicon	Wisconsin	1989	Medium	Tall	Strong	Tan
Hystest	South Dakota	1986	Medium	Tall	Medium	Lt. Cream
Newdak	North Dakota	1990	Medium	Medium	Medium	White
Ogle	Illinois	1981	Medium	Short	Strong	Yellow
Premier	Minnesota	1990	Medium	Short	Medium	Yellow
Settler	South Dakota	1989	Medium	Medium	Medium	White
Starter	Minnesota	1986	Early	Short	Strong	Yellow
Valley	North Dakota	1988	Late	Medium	Strong	Ivory
Webster	Iowa	1984	Early	Short	Strong	Yellow

Grain color varies with environment.

Table B. Location and dates of planting and harvest of Nebraska spring grain tests – 1990

County	Cooperator	Planted	Harvested
Oats			
Saunders	Agricultural Res. & Dev. Center	April 14	July 17
Dixon	Northeast Res. & Ext. Center	April 5	July 16
Cheyenne	High Plains Ag. Laboratory	April 2	July 30
Scotts Bluff (irr.)	Panhandle Res. & Ext. Center	April 3	July 29
Barley			
Saunders	Agricultural Res. & Dev. Center	April 14	July 17
Dixon	Northeast Res. & Ext. Center	April 5	July 11
Cheyenne	High Plains Ag. Laboratory	April 2	July 26
Scotts Bluff (irr.)	Panhandle Res. & Ext. Center	April 3	July 29
Spring Wheat			
Saunders	Agricultural Res. & Dev. Center	April 14	July 17
Dixon	Northeast Res. & Ext. Center	April 5	July 16
Cheyenne	High Plains Ag. Laboratory	April 2	July 30
Scotts Bluff (irr.)	Panhandle Res. & Ext. Center	April 3	July 29
Spring Canola			
Lancaster	Frampton Demonstration Farm	April 1	July 12
Dixon	Northeast Res. & Ext. Center	April 5	July 23
Cuming	First National Bank Demo Area	April 4	July 16
Cheyenne	High Plains Ag. Laboratory	April 2	July 30
Scotts Bluff	Panhandle Res. & Ext. Center	April 3	July 29
Crambe			
Lancaster	Frampton Demonstration Farm	April 1	July 8
Dixon	Northeast Res. & Ext. Center	April 5	1/
Cuming	First National Bank Demo Area	April 4	1/
Cheyenne	High Plains Ag. Laboratory	April 2	July 26
Scotts Bluff	Panhandle Res. & Ext. Center	April 3	July 29

1/ Not harvested due to weeds or herbicide injury.

Table 1. Dixon County Oat Variety Test – 1991.

Variety	Yield bu/a	Bushel Weight lb/bu	BYDMV %	Lodging %	Plant Height inches	Straw Weight t/a
Horicon	107.7	27.2	1.3	28.8	37.0	9.8
Dane	107.2	24.5	1.8	20.0	36.0	6.3
Don	106.7	27.7	1.5	57.5	33.0	6.3
Ogle	106.2	24.2	1.5	26.3	37.8	9.3
Valley	103.2	25.2	3.0	36.3	38.3	13.5
O-24	102.5	25.7	1.0	56.3	37.5	11.0
Hazel	101.5	27.2	2.0	20.0	36.0	9.0
FL502	101.2	27.7	3.0	12.5	32.8	6.8
O-22	99.7	24.0	1.8	32.5	38.0	9.8
Premier	99.2	29.0	1.5	23.8	38.5	9.5
O-23	98.7	26.2	1.0	13.8	36.0	9.8
O-25	93.2	23.2	1.3	23.8	37.3	14.0
Starter	91.7	27.5	2.0	38.8	36.3	7.0
Settler	91.2	25.5	1.8	62.5	38.5	11.0
Bates	88.0	29.0	1.3	25.0	35.0	6.8
Newdak	87.7	24.7	2.5	21.3	35.8	12.0
FL501	79.2	27.7	3.0	23.8	30.5	6.5
Hyttest	67.2	29.2	3.8	28.8	42.0	10.3
Burnett	60.5	26.2	4.0	67.5	39.0	10.8
Average All Entries	94.3	26.4	2.0	32.6	36.6	9.4
Dif. Req. for Sig. 5%	13.2	2.0	0.7	17.9	2.9	1.4
25%	7.7	1.2	0.4	10.4	1.7	0.8

Northeast District Oat Test 1987–1991.

Variety	Two Yr Ave		Three Yr Ave		Four Yr Ave		Five Yr Ave	
	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt
Bates	81.5	30.7	71.3	31.1	68.8	30.6	70.4	31.2
Burnett	64.8	27.9	57.8	28.8	57.1	28.9	58.5	30.3
Don	95.4	30.0	83.6	31.4	79.4	30.8	78.5	31.4
Hazel	88.3	29.9	74.8	30.4	72.6	29.8	73.5	30.8
Horicon	89.4	27.9	78.9	29.2	74.2	28.7	--	--
Hyttest	57.1	30.0	51.4	31.8	49.8	31.1	46.6	32.7
Newdak	72.9	27.2	--	--	--	--	--	--
Ogle	94.1	26.7	81.1	28.0	78.1	27.7	79.2	28.8
Premier	90.1	29.7	--	--	--	--	--	--
Starter	84.9	29.6	73.6	31.5	70.2	31.4	69.5	32.3
Valley	77.1	26.1	--	--	--	--	--	--
O-22	89.9	26.4	79.6	27.8	--	--	--	--
O-23	85.4	29.3	--	--	--	--	--	--
Average	82.3	28.6	72.5	30.0	68.8	29.9	68.1	31.1
Dif. Req. for Sig. 5%	10.7	1.3	6.6	1.0	5.3	0.8	4.6	0.8
25%	6.0	0.7	3.7	0.6	3	0.5	2.6	0.5

Table 2. Panhandle dryland oat test – 1991

Variety	Yield bu/a	Bushel		Plant height inches	Flower date June
		weight lb/bu	Lodging %		
Ogle	117.0	31.3	25.0	38.3	15.0
O-22	111.8	30.9	32.5	38.5	15.3
FL502	106.5	35.3	5.0	28.8	9.5
Starter	105.8	35.0	37.5	38.8	10.8
O-23	103.3	31.2	10.0	35.3	12.0
Hazel	100.3	31.7	20.0	35.0	11.8
Horicon	99.0	31.4	45.0	39.8	14.0
Valley	97.3	32.2	35.0	37.5	16.5
Dane	96.5	31.2	32.5	37.3	9.5
Don	95.8	33.5	70.0	35.8	10.8
Premier	95.0	34.3	50.0	37.5	14.5
FL501	94.8	33.7	20.0	30.8	9.0
O-24	94.0	27.9	67.5	36.3	15.8
O-25	90.8	26.8	52.5	36.5	18.8
Bates	90.3	34.7	60.0	36.5	10.3
Newdak	89.8	30.1	70.0	38.5	14.8
Settler	76.5	32.9	80.0	39.0	15.0
Hyttest	73.5	38.5	72.5	44.3	16.5
Russell	59.3	27.9	92.5	41.0	18.5
Average	94.6	32.1	46.2	37.1	13.6
Dif Req for Sig 5%	12.2	1.7	24.1	2.5	1.1
25%	7.1	1.0	14.0	1.4	0.6

Panhandle Dryland Oat Tests 1987 – 1991

Variety	Two Year Ave		Three Year Ave		Four Year Ave		Five Year Ave	
	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt
Bates	55.2	30.2	50.8	31.2	58.8	32.5	64.3	32.9
Don	55.9	29.5	49.6	30.2	58.0	31.8	63.8	32.4
Hazel	57.2	28.2	51.1	29.9	62.3	31.4	67.1	31.8
Horicon	61.0	27.5	53.0	28.8	64.5	30.5	--	--
Hyttest	43.8	33.3	39.2	33.3	48.4	35.0	54.5	35.8
Newdak	53.9	26.3	--	--	--	--	--	--
Ogle	74.0	27.1	63.3	28.4	75.5	30.2	79.8	30.4
Premier	59.0	31.9	--	--	--	--	--	--
Starter	60.4	30.7	51.3	31.8	60.2	33.3	64.6	33.7
Valley	55.7	28.8	--	--	--	--	--	--
O-22	68.9	26.6	58.9	27.9	--	--	--	--
O-23	59.2	29.2	--	--	--	--	--	--
FL501	57.4	30.9	46.3	30.1	--	--	--	--
FL502	58.3	32.8	46.2	33.0	--	--	--	--
Average	58.5	29.5	51.0	30.5	61.1	32.1	65.7	32.8
Dif Req for Sig 5%	NS	1.4	6.2	1.3	4.8	0.7	4.1	0.7
25%	4.2	0.8	3.5	0.8	2.7	0.4	2.3	0.4

Table 3. Panhandle Irrigated Oat Test – 1991.

Variety	Yield bu/a	Bushel		Plant height inches	Flower date June
		weight lb/bu	Lodging %		
Valley	139.0	40.1	0.0	113.0	17.0
O-22	133.2	36.1	0.0	117.0	14.0
O-24	132.5	33.8	0.0	116.0	17.0
Don	130.5	38.4	1.0	107.0	10.0
O-25	130.2	34.0	0.0	111.0	19.0
O-23	125.5	37.1	0.0	104.0	14.0
Hazel	125.2	36.4	0.0	102.0	13.5
Bates	121.7	37.9	17.0	116.0	10.5
Premier	114.0	39.3	0.0	110.0	13.5
Newdak	112.2	34.4	0.0	116.0	14.7
Ogle	111.2	35.6	0.0	115.0	11.5
Starter	106.7	37.2	0.0	111.0	10.0
Dane	106.5	34.2	0.0	108.0	10.0
FL501	102.7	38.2	0.0	90.0	10.0
Horicon	89.5	32.8	0.0	115.0	14.0
Settler	88.0	35.7	17.0	117.0	14.0
FL502	85.7	37.1	0.0	82.0	10.0
Russell	69.0	32.6	10.0	123.0	19.0
Hystest	62.7	34.2	12.0	131.0	17.0
Average all entries	109.8	36.1	3.0	110.7	13.6
Dif. Req. for Sig. 5%	18.2	1.7	NS	5.3	1.8
25%	10.6	1.0	8.2	3.1	1.1

Panhandle Irrigated Oat Tests 1987–1991

Variety	Two Yr Ave		Three Yr Ave		Four Yr Ave		Five Yr Ave	
	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt
Bates	87.9	34.0	77.6	33.8	79.4	33.9	85.1	34.1
Don	91.8	34.2	79.5	33.6	83.1	33.7	89.9	34.1
Hazel	83.6	33.1	78.7	33.0	83.8	33.0	87.4	33.8
Horicon	82.3	30.6	70.8	30.6	76.6	30.7	83.7	31.5
Hystest	56.9	31.2	50.2	31.1	57.7	32.1	65.1	33.9
Newdak	89.6	30.4	--	--	--	--	--	--
Ogle	86.1	32.6	78.1	32.4	82.8	32.0	91.2	32.4
Premier	83.5	34.7	--	--	--	--	--	--
Starter	80.4	31.7	69.2	32.2	74.2	32.6	77.9	33.5
Valley	97.5	34.0	--	--	--	--	--	--
O-22	94.6	29.7	86.4	30.5	--	--	--	--
O-23	96.8	34.1	--	--	--	--	--	--
FL501	89.9	35.9	74.6	34.2	--	--	--	--
FL502	68.9	35.1	60.6	34.7	--	--	--	--
Average	85.0	32.9	72.6	32.6	76.8	32.6	82.9	33.3
Dif Req for Sig 5%	NS	NS	NS	NS	NS	1.0	7.7	NS
25%	NS	1.2	7.0	0.9	5.4	0.5	4.4	0.6

Table 4. Saunders County Oat Test – 1991.

VARIETY	YIELD (bu/A)	HDDATE June	LODGING %
O-22	77.7	6	50.0
Ogle	74.6	5	45.0
O-24	71.7	7	35.0
O-23	63.6	6	60.0
Horicon	63.2	6	17.5
Hazel	61.0	5	75.0
Don	60.1	2	65.0
Starter	59.6	3	55.0
FL502	57.4	6	100.0
O-26	56.1	7	27.5
Valley	54.2	9	30.0
Newdak	53.3	7	25.0
Settler	51.4	7	12.5
Premier	48.1	6	37.5
Dane	45.4	1	25.0
Bates	44.0	4	10.0
O-25	43.1	9	17.5
FL501	38.8	5	95.0
Hyttest	28.9	7	50.0
Average	55.4	5.6	43.9
Dif. Req. for Sig. 4%	10.7	--	42.3
25%	6.3	--	14.7

Southeast Dryland Oat Tests 1987 – 1991

Variety	Two Yr.	Three Yr.	Four Yr.	Five Yr.
	Yield (bu/a)			
Bates	36.9	41.3	46.2	49.2
Don	40.3	42.2	44.7	50.7
Hazel	42.0	41.6	44.0	49.2
Horicon	47.5	48.7	53.3	58.8
Hyttest	23.6	32.7	37.0	43.2
Newdak	35.5	--	--	--
Ogle	70.7	68.4	69.6	72.7
Premier	35.3	--	--	--
Starter	42.4	43.0	41.0	45.8
Valley	39.5	--	--	--
O-22	62.5	59.6	--	--
O-23	50.0	--	--	--
Average	43.8	47.2	48.0	52.8
Dif. Req. for Sig. 5%	8.3	8.1	6.7	5.5
25%	4.5	4.5	3.8	3.1

Table 5. Dixon and Saunders County Spring Barley Data. 1991.

Variety	Dixon County				Saunders County		
	Yield bu/a	Bushel weight lb/bu	Lodging %	Flower date June	Yield bu/a	Stand (%)	Flower date
Hazen	57.7	36.0	5.0	5.7	20.57	97.5	LATE
Robust	51.7	37.9	10.0	5.7	18.54	93.8	MEDIUM
Custer	47.0	35.4	28.8	3.7	14.75	96.2	MEDIUM
Stark	45.0	40.8	11.3	5.7	17.22	92.5	MEDIUM
Bowman	37.0	42.8	12.5	5.7	7.97	88.8	EARLY
Average	47.7	38.5	13.5	5.3	15.8	93.7	
Dif. Req. for Sig. 5%	5.9	2.5	NS	0.8	3.7	4.5	
25%	3.3	1.4	NS	0.4	2.1	2.5	

Dixon County Barley Tests 1987 – 1991.

Variety	Two Year Ave		Three Year Ave		Four Year Ave		Five Year Ave	
	Yield	Bushel	Yield	Bushel	Yield	Bushel	Yield	Bushel
Bowman	44.0	49.4	44.3	48.3	47.5	46.7	49.8	47.0
Custer	49.0	45.0	49.3	45.6	51.3	44.7	52.2	45.3
Hazen	42.5	44.4	42.7	45.9	46.5	45.2	49.0	45.8
Robust	40.0	46.2	41.0	47.8	43.3	46.8	45.0	47.3
Average	43.9	46.2	44.3	46.9	47.1	45.9	49.0	46.4
Dif Req. for Sig. 5%	3.7	1.5	1.9	NS	2.4	NS	2.1	NS
25%	1.7	0.7	1.0	NS	1.2	NS	1.2	NS

Saunders County Barley Tests 1987 – 1991

Variety	Yield in bu/a			
	2 Year	3 Year	4 Year	5 Year
Bowman	18.2	18.8	24.4	26.9
Custer	26.5	26.7	31.7	32.2
Hazen	27.1	25.7	31.3	32.4
Robust	28.4	27.2	31.7	32.7
Average	25.0	24.6	29.8	31.1
Dif. Req. for Sig. 5%	NS	2.8	2.0	2.0
25%	2.2	1.4	1.1	1.1

Table 6. Panhandle Dryland & Irrigated Spring Barley Test – 1991.

Variety	Dryland					Irrigated				
	Yield bu/a	Bushel weight lb/bu	Lodging %	Plant height inches	Flower date June	Yield bu/a	Bushel weight lb/bu	Lodging %	Plant height inches	Flower date June
Bowman	90.7	48.5	55.0	39.0	9.7	85.0	51.0	30.0	116.7	10.0
Stark	89.0	48.3	50.0	40.5	10.2	83.0	50.3	10.0	112.2	11.5
Steptoe	85.5	40.2	67.5	37.5	11.5	64.5	41.5	65.0	114.0	10.0
Custer	77.7	44.0	88.7	39.0	10.0	54.5	44.4	95.0	111.7	7.0
Hazen	69.2	46.3	62.5	41.8	12.0	76.0	46.8	1.2	121.7	12.0
Robust	61.2	43.7	60.0	40.3	11.0	70.0	46.8	7.5	116.2	10.0
Average all entries	78.9	45.2	64.0	39.7	10.7	72.2	46.8	34.8	115.4	10.1
Dif. Req. for Sig. 5%	8.7	1.8	22.0	2.0	0.7	NS	2.3	17.9	2.9	0.6
25%	4.9	1.0	12.4	1.2	0.4	14.1	1.3	10.1	1.7	0.3

Panhandle Dryland Barley Tests 1987–1991.

Variety	Two Yr Ave		Three Yr Ave		Four Yr Ave		Five Yr Ave	
	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt
Bowman	56.4	43.6	55.6	44.7	56.4	45.2	55.1	45.0
Custer	49.4	37.5	50.6	38.8	51.7	40.9	53.3	41.7
Hazen	42.6	38.5	42.4	39.9	44.8	41.9	45.0	42.6
Robust	38.1	38.1	37.1	39.3	39.6	41.6	39.6	42.5
Steptoe	54.8	36.8	54.5	37.9	57.1	39.7	55.3	40.3
Average	48.2	38.9	48.0	40.1	49.9	41.9	49.7	42.4
Dif. Req. for Sig. 5%	8.3	3.3	4.2	1.6	3.1	1.5	3.1	1.3
25%	4.0	1.6	2.3	0.8	1.7	0.8	1.8	0.7

Panhandle Irrigated Barley Tests 1987–1991.

Variety	Two Yr Ave		Three Yr Ave		Four Yr Ave		Five Yr Ave	
	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt
Bowman	80.0	49.7	84.3	50.9	75.5	45.7	74.4	46.0
Custer	55.8	44.8	63.5	45.8	63.1	41.9	64.5	43.1
Hazen	75.0	46.3	80.3	47.4	72.8	43.3	71.2	44.5
Robust	65.5	46.7	67.0	46.9	61.5	42.9	60.4	44.1
Steptoe	71.8	42.3	81.8	44.1	75.9	40.3	76.7	41.5
Average	69.6	45.9	75.4	47.0	69.8	42.8	69.4	43.8
Dif. Req. for Sig. 5%	9.8	1.6	7.1	1.2	6.9	1.2	5.6	1.1
25%	4.7	0.8	3.8	0.7	3.2	0.7	3.1	0.6

Table 7. Dixon & Saunders Co Spring Wheat Variety Tests – 1991.

Variety	Dixon County				Saunders County	
	Yield bu/a	Lodging %	Plant height inches	Flower date June	Yield bu/a	Flower date June
Shield	32.7	3.2	34.0	5.0	12.7	2
Butte 86	30.5	1.5	35.5	4.5	9.6	3
Sharp	29.7	3.2	34.2	4.5	7.6	2
Prospect	27.2	2.0	33.2	5.3	7.0	4
Guard	26.5	2.0	30.5	6.3	11.3	4
Stoa	24.2	4.2	38.2	9.5	7.6	8
Oslo	22.2	1.5	30.5	4.0	4.0	2
Amidon	17.7	3.5	38.0	9.8	6.8	5
Average All Entries	26.3	2.6	34.3	6.1	8.3	4
Dif Req for Sig 5%	2.6	1.9	2.9	1.0	2.5	0.9
25%	1.5	1.1	1.6	0.6	1.4	0.5

Northeast Spring Wheat Tests 1987–1991

Variety	2 Yr Ave	3 Yr Ave	4 Yr Ave	5 Yr Ave
Yield (bu/a)				
Amidon	12.0	--	--	--
Butte 86	19.5	18.7	23.5	--
Guard	17.0	17.7	21.5	23.6
Oslo	18.5	18.7	21.8	22.6
Prospect	15.0	16.0	--	--
Shield	22.0	21.3	--	--
Stoa	13.5	14.3	21.3	24.0
Average	16.8	17.8	22.0	23.4
Dif Req for Sig 5%	3.6	3.0	2.0	NS
25%	1.9	1.7	1.2	NS

Southeast Spring Wheat Tests 1987–1991

Variety	2 yr ave	3 yr ave	4 yr ave	5 yr ave
Yield (bu/a)				
Amidon	9.8	9.9	--	--
Butte 86	9.4	10.6	14.4	16.1
Guard	12.0	11.0	14.2	16.0
Oslo	4.6	6.4	11.6	12.6
Prospect	10.5	10.0	14.0	--
Shield	13.3	13.2	17.1	--
Stoa	8.4	9.2	12.9	14.9
Average	9.7	10.0	14.0	14.9
Dif Req for Sig 5%	2.4	NS	NS	NS
25%	1.2	1.0	0.9	0.9

Table 8. Panhandle spring wheat test – 1991.

Variety	Irrigated				Dryland			
	Yield bu/a	Bushel weight lb/bu	Plant height inches	Flower date June	Yield bu/a	Bushel weight lb/bu	Plant height inches	Flower date June
Shield	58.5	61.0	114.0	12.0	42.5	56.7	47.7	13.2
Prospect	56.7	58.6	96.0	12.0	44.0	56.5	33.7	15.2
Sharp	56.5	61.1	108.0	11.0	45.5	60.0	38.2	13.2
Stoa	55.5	58.8	120.0	16.0	35.2	53.8	42.5	17.7
Amidon	51.7	58.4	119.0	17.0	38.7	55.9	44.0	18.0
Oslo	51.2	56.6	88.0	12.0	40.2	53.3	30.2	15.2
Butte 86	50.7	59.3	107.0	11.0	39.2	56.6	36.5	14.2
Guard	49.5	59.9	93.0	14.0	44.5	57.8	35.0	16.0
Average all entries	53.8	59.2	105.6	13.1	41.2	56.3	38.5	15.3
Dif Req for Sig 5%	8.9	1.4	5.8	1.1	6.2	1.2	8.1	0.7
25%	5.0	0.8	3.3	0.7	3.6	0.7	4.6	0.4

Irrigated spring wheat tests 1987–1991

Variety	Two Yr Ave		Three Yr Ave		Four Yr Ave		Five Yr Ave	
	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt
Amidon	38.9	54.3	45.2	55.1	--	--	--	--
Butte 86	40.4	56.1	43.9	56.6	41.2	55.5	43.1	56.0
Guard	35.3	54.8	41.8	55.1	38.9	54.1	40.9	55.0
Oslo	36.1	52.3	40.1	52.9	37.3	51.8	40.2	52.5
Prospect	40.9	55.6	46.9	55.9	43.2	54.6	--	--
Shield	45.3	56.6	47.5	57.6	43.1	55.9	--	--
Stoa	38.3	55.3	42.2	55.4	38.9	53.9	39.9	54.3
Average all entries	39.3	55.0	43.9	55.5	40.4	54.3	41.0	54.5
Dif. Req. for Sig. 5%	NS	NS	NS	0.8	NS	0.7	NS	0.6
25%	2.0	0.7	1.8	0.5	1.4	0.4	NS	0.4

Dryland spring wheat tests 1987–1991

Variety	Two Yr Ave		Three Yr Ave		Four Yr Ave		Five Yr Ave	
	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt	Yield	Bu wt
Amidon	22.9	51.5	21.2	52.4	--	--	--	--
Butte 86	23.6	51.8	21.1	52.6	18.6	53.8	--	--
Guard	26.3	51.9	23.2	52.8	19.6	53.4	22.3	54.0
Oslo	24.1	48.9	21.4	50.8	19.6	51.5	22.4	52.0
Prospect	27.0	52.8	23.7	53.6	--	--	--	--
Shield	25.8	52.1	23.8	52.7	--	--	--	--
Stoa	20.1	50.4	18.4	51.0	16.3	51.7	18.4	51.9
Average all entries	24.2	51.3	21.8	52.3	18.5	52.6	21.1	52.6
Dif. Req. for Sig. 5%	1.8	1.4	1.4	1.0	3.2	1.0	1.7	1.0
25%	0.9	0.7	0.8	0.6	1.7	0.6	0.9	0.5

Table 9. Spring Canola Tests – 1991.**Lancaster County Spring Canola Test**

Variety	Yield lb/a	Height inches	Lodging %	Bushelwt lb/bu
Legend	1299.6	35.8	71.3	42.7
Westar	1071.1	35.8	96.3	39.5
Global	989.0	40.3	98.8	39.8
Tobin	858.1	34.0	16.3	51.0
Alto	834.1	37.0	96.3	41.8
Bingo	766.7	43.3	66.3	38.9
A-114	656.4	38.8	73.8	40.5
Topas	644.7	39.8	17.5	41.1
A-112	635.7	37.3	76.0	40.4
Average	861.7	38.0	68.1	41.7
Dif Req for Sig 5%	NS	3.3	27.4	2.7
25%	261.9	1.9	15.7	1.6

Cuming County Spring Canola Test

Variety	Yield lb/a	Height inches	Lodging %	Bushelwt lb/bu
Legend	1077.8	41.3	76.3	47.1
A-112	974.6	40.0	71.3	46.8
Westar	956.2	40.3	35.0	48.3
Alto	946.7	41.5	60.0	46.9
Global	943.2	45.8	88.8	46.3
A-114	870.7	41.5	89.5	48.4
Topas	838.8	41.3	82.5	46.4
Tobin	816.7	45.5	62.5	48.0
Bingo	638.8	46.5	77.3	41.6
Average	895.9	42.6	71.5	46.6
Dif Req for Sig 5%	223.5	3.7	25.6	NS
25%	128.0	2.1	14.7	2.5

Dixon County Spring Canola Test

Variety	Yield lb/a	Flower June
A-114	1397.5	7.0
Global	1367.3	9.8
A-112	1361.3	8.0
Bingo	1200.0	10.0
Alto	1124.5	3.8
Legend	1074.3	4.0
Topas	971.0	8.3
Westar	--	--
Tobin	--	--
Average	1014.1	5.7
Dif Req for Sig 5%	264.8	2.7
25%	150.0	1.5

Cheyenne County Spring Canola Test

Variety	Yield lb/a	Height inches	Lodging %	Flower June
Bingo	1222.3	51.3	0.0	9.3
Global	1200.0	49.3	15.0	6.8
A-112	1144.2	40.0	0.0	8.5
Topas	1119.4	46.0	10.0	9.0
A-114	1066.1	40.3	0.0	11.0
Legend	868.6	42.3	35.0	5.3
Alto	803.1	42.3	50.0	5.0
Westar	778.2	40.3	30.0	7.8
Tobin	--	34.0	40.0	4.8
Average	1025.2	42.9	20.0	7.5
Dif Req for Sig 5%	225.1	3.0	20.0	1.2
25%	127.7	1.7	11.3	0.7

Scotts Bluff County Spring Canola Test

Variety	Yield lb/a	Height inches	Flower June
Topas	1488.1	49.1	11.0
A-114	1428.9	49.4	14.0
A-112	1376.0	46.3	11.5
Tobin	1236.7	41.4	6.0
Global	1173.0	53.1	12.0
Legend	1063.4	48.3	7.0
Westar	1006.7	45.2	14.0
Bingo	997.9	53.5	12.0
Alto	669.4	50.2	7.0
Average	1160.0	48.5	10.5
Dif Req for Sig 5%	NS	2.5	0.8
25%	207.0	1.5	0.4

Average of five Spring Canola Tests

Variety	Yield lb/a	Height inches	Lodging %	Bushelwt lb/bu	Flower June
Global	1140.4	47.1	78.0	43.1	9.5
A-112	1108.6	40.9	58.9	44.1	9.3
Legend	1076.7	41.9	66.0	44.9	5.4
A-114	1065.8	42.5	65.3	45.0	10.7
Topas	1012.4	44.0	42.0	44.1	9.4
Bingo	961.5	48.6	57.4	40.5	10.4
Tobin	946.3	38.7	39.5	49.5	5.4
Westar	945.4	40.4	58.5	43.9	10.9
Alto	911.9	42.7	72.5	44.7	5.3
Average	1018.8	43.0	59.8	44.4	8.5
Dif Req for Sig 5%	NS	1.8	15.5	1.9	0.9
25%	NS	1.0	8.2	1.1	0.5

Table 10. Crambe Tests – 1991.**Lancaster County Crambe Test**

Variety	Yield lb/a	Plant height inches	Lodging %	Bushel weight lb/bu	Flower date June
NM#89	1546.3	33.8	0.3	20.4	28.0
NM#98	1544.2	32.5	0.0	21.4	26.8
NM#28	1527.0	33.5	0.8	19.1	28.3
NM#2	1493.7	31.8	0.5	20.4	28.0
NM#100	1460.2	32.3	2.0	19.5	21.3
NM#61	1437.0	32.8	2.3	20.3	28.0
NM#65	1427.5	33.5	1.0	20.0	27.3
NM#33	1386.0	32.8	1.3	19.8	22.3
NM#41	1339.2	32.3	0.0	19.1	28.0
NM#97	1305.5	33.5	3.5	17.9	28.8
NM#1	1198.3	31.8	1.0	16.9	28.5
NM#55	1151.3	31.0	0.5	17.0	28.0
Average	1401.4	32.6	1.1	19.3	26.9
Dif Req for Sig 5%	NS	NS	NS	NS	N.S.
25%	173.2	NS	1.4	1.7	NS

Cheyenne County Crambe Test

Variety	Yield lb/a	Plant height inches	Flower date June
NM #2	1815.2	31.3	5.8
NM #89	1810.4	30.5	5.3
NM #28	1776.2	31.0	7.8
NM #98	1707.9	32.3	6.3
NM #100	1674.9	28.8	6.5
NM #41	1625.1	31.3	5.3
Meyer	1596.9	30.5	8.0
NM #97	1549.6	32.0	8.5
NM #61	1518.9	28.5	5.5
NM #33	1508.2	32.0	9.0
NM #65	1489.6	30.8	6.0
NM #1	1423.0	29.5	7.5
NM #55	955.3	28.5	9.0
Average	1573.2	30.5	6.9
Dif Req for Sig 5%	257.9	NS	1.4
25%	148.8	1.7	0.8

Scotts Bluff County Crambe Test			
Variety	Yield lb/a	Plant height inches	Flower date June
NM #98	2419.7	46.1	12.5
NM #100	2395.1	42.3	13.5
Meyer	2310.5	41.4	13.5
NM #33	2302.7	46.0	13.5
NM #97	2294.4	52.8	13.5
NM #28	2286.5	43.7	12.5
NM #89	2250.6	47.1	13.0
NM #2	2221.2	46.5	12.5
NM #65	2101.2	41.4	11.5
NM #41	2015.5	44.8	13.0
NM #61	1974.7	41.5	12.5
NM #55	1848.2	42.1	13.3
NM #1	1785.2	43.3	13.5
Average	2169.7	44.5	12.9
Dif Req for Sig 5%	NS	3.3	NS
25%	NS	1.9	NS
Combined Crambe Tests—3 locations.			
Variety	Yield lb/a	Plant height inches	Flower date June
Meyer	1953.7	36.0	5.8
NM #98	1890.6	36.9	5.3
NM #89	1869.1	37.1	5.4
NM #28	1863.3	36.1	6.2
NM #100	1843.4	34.4	3.8
NM #2	1843.3	36.5	5.4
NM #33	1732.3	39.9	4.9
NM #97	1716.5	39.4	6.9
NM #65	1672.8	35.2	4.9
NM #41	1659.9	36.1	5.4
NM #61	1643.6	34.3	5.3
NM #1	1468.9	34.9	6.5
NM #55	1318.3	33.1	7.1
Average	1728.9	36.1	5.6
Dif Req for Sig 5%	246.1	1.7	NS
25%	144.2	1.0	NS

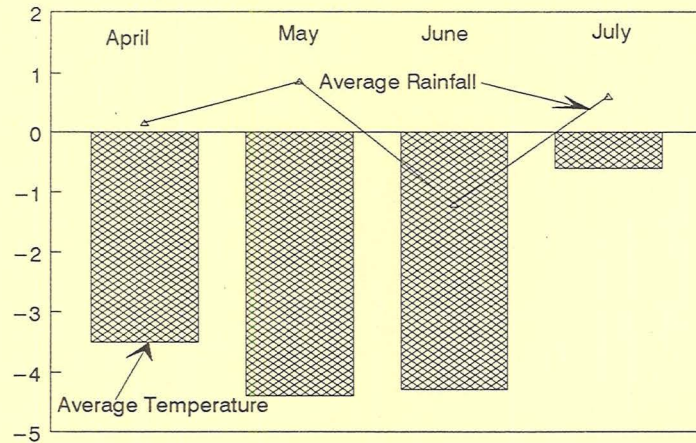
**Table 11. Crambe yields at all Nebraska locations.
1988 – 1991.**

Variety	Two-Year 1990–1991 Seven locations	Three-Year 1989–1991 Eight locations	Four-Year 1988–1991 Nine locations
NM#1	904.9	933.5	984.9
NM#2	1117.9	1120.6	1173.5
NM#28	1863.2	1678.1	1620.1
NM#33	1732.3	—	—
NM#41	1030.1	—	—
NM#55	832.4	—	—
NM#61	993.2	—	—
NM#65	934.1	—	—
NM#89	1173.4	1142.2	1184.5
NM#97	1001.6	991.9	1036.8
NM#98	1023.5	1014.9	1057.2
NM#100	1162.4	—	—
Meyer	1053.9	1037.7	1068.4
Average	1140.2	1131.3	1160.8
Dif Req for Sig 5%	62.6	95.2	84.1
25%	38.1	52.4	47.4

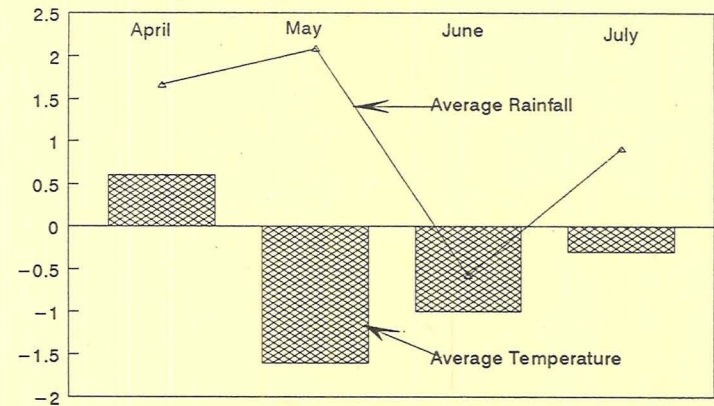
Temperature and Rainfall Data in 1991.

Deviation from 30 year average

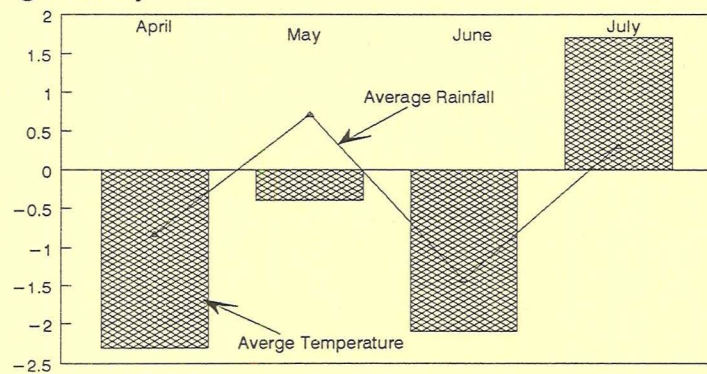
Lancaster County



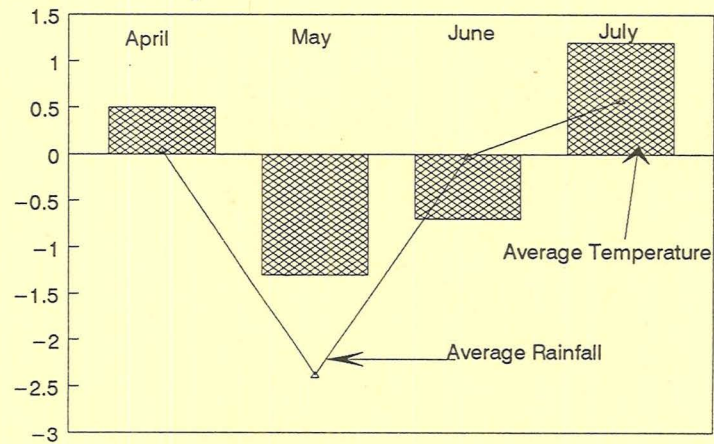
Cheyenne County



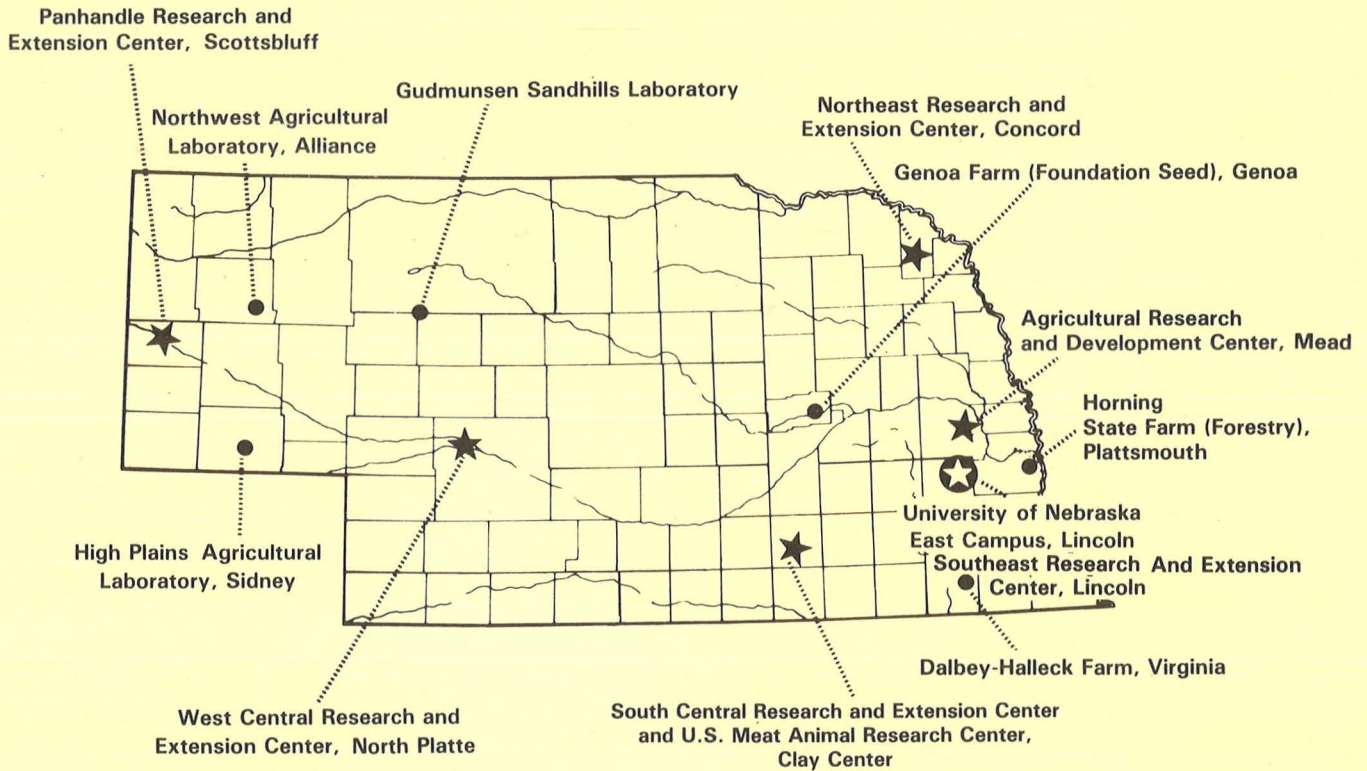
Cuming County



Scotts Bluff County



AGRICULTURAL RESEARCH AND EXTENSION FOR ALL OF NEBRASKA



The Agricultural Research Division of the Institute of Agriculture and Natural Resources is responsible for studies to broaden our basis of knowledge for agricultural production. Research centers and field laboratories provide applied information for development of Nebraska's largest industry — agriculture.

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.