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EC93-103-A Nebraska Fall-Sown Small Grain Variety Tests

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NEBRASKA FALL-SOWN SMALL GRAIN VARIETY TESTS 1993

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EXTENSION CIRCULAR 93-103
NEBRASKA FALL-SOWN SMALL GRAIN VARIETY TESTS

September 1993

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METRIC EQUIVALENTS

1 centimeter =	0.394 inches	cm =	inches x 2.54
1 hectare =	2.471 acres	ha =	acres x 0.405
1 kilogram =	2.205 pounds	kg =	pounds x 0.454
1 hectoliter =	2.838 bushels	hl =	bushels x 0.35

Kilogram/hectoliter = ...lb/bu x 1.287
Kilogram/hectare = ...bu/A x 53.81 (48# bushel)
Kilogram/hectare = ...bu/A x 67.26 (60# bushel)

EXTENSION CIRCULAR 93-103
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NEBRASKA WINTER WHEAT PRODUCTION

Year	Planted 000 acres (hectares)	Harvested 000 acres (hectares)	Average yield bu/a (kg/ha)
1977	3300 (1337)	2950 (1195)	35.0 (2354)
1978	2900 (1175)	2550 (1033)	32.0 (2152)
1979	3000 (1215)	2550 (1033)	34.0 (2287)
1980	3000 (1215)	2850 (1154)	38.0 (2556)
1981	3000 (1215)	2900 (1175)	36.0 (2421)
1982	3050 (1235)	2900 (1175)	35.0 (2354)
1983	2800 (1134)	2300 (932)	43.0 (2892)
1984	3200 (1296)	2250 (911)	36.0 (2421)
1985	2600 (1053)	2300 (932)	39.0 (2623)
1986	2300 (932)	2000 (810)	39.0 (2623)
1987	2200 (891)	1950 (790)	44.0 (2959)
1988	2300 (932)	2000 (810)	36.0 (2421)
1989	2300 (932)	2050 (830)	27.0 (1816)
1990	2400 (975)	2250 (911)	38.0 (2556)
1991	2350 (952)	2000 (810)	32.0 (2152)
1992	2350 (952)	1950 (790)	31.0 (2085)
1993	2350 (952)	2100 (851)	35.0 (2354)

August 1 estimate.

NEBRASKA FALL-SOWN SMALL GRAIN VARIETY TESTS 1993

The 1993 estimated winter wheat yield for Nebraska was 35 bushels per acre from 2,100,000 harvested acres. The total production of winter wheat for the state was 73,500,000 bushels.

This circular reports data from winter wheat and winter barley trials conducted throughout Nebraska. Entries included varieties or hybrids and promising experimental strains from Nebraska and surrounding states and private breeders. This was the twelfth year for privately developed varieties. The state has been divided into four districts for purposes of variety testing. Locations of the 1993 variety tests are shown on the map on page 6.

Trials were located on Research Centers and private farms. Names of cooperators and dates of planting and harvest are shown in Table A. Soil type, soil test data, and fertilizer applications are shown in Table B. Plot sizes varied with location. Drill strips were used in Lincoln (field plots). Nursery-type plots six rows wide and 15 to 35 feet long were planted at other locations. All tests were direct combined. Entries were replicated 4 to 6 times.

The 1993 season started out wetter than normal in the fall with good growth. Although wheat was greening in the spring, cool, damp weather conditions slowed the growth. Wheat progress was behind most all spring compared to normal. Scab, hail, soil borne mosaic, and wheat streak mosaic, were some of the many nuisances reported. Damp weather kept the crop from maturing at a normal pace. Harvest was slowed due to lodging, weeds, and wet weather.

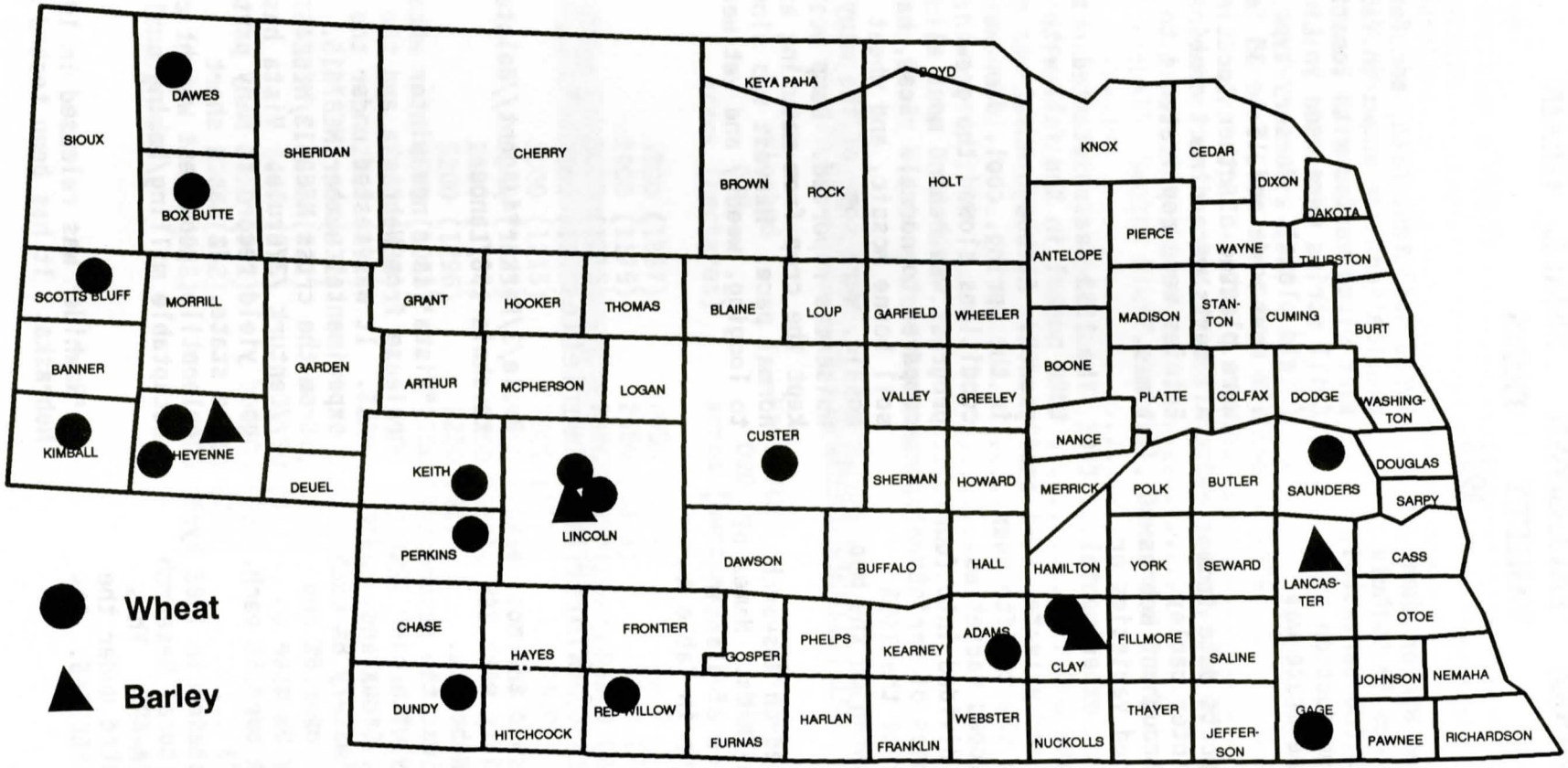
Winter Wheat Varieties

In 1993, Arapahoe was the most extensively grown variety with 29% of the wheat acres in Nebraska. AgriPro Thunderbird was the second most popular variety with over 12% followed by Centura, Siouxland, and Redland with approximately 8% each. AgriPro Abilene with over 6% and Buckskin with nearly 5% make up those varieties with over 5% each.

'Arapahoe' was released in 1988 by the Nebraska Agricultural Research Division and the USDA-ARS. This variety has been tested under the experimental number NE82656. Its parentage is: Brule/3/Parker*4/Agent//Beloterkovskaia 198/Lancer.

"Vista' is a new winter wheat release from Nebraska and the USDA-ARS. It was tested under the experimental number NE87615. It is from the cross NE68513/NE68457 //Centurk /3/Brule. Vista has had a good yield record in many parts of the state. It has a short coleoptile, good test weight and acceptable milling/baking qualities.

'Rawhide' was released in 1990 by Nebraska. It has been tested under



Locations of 1993 Nebraska winter wheat and winter barley variety tests.

the experimental number NE83498. Rawhide is a medium height semi-dwarf variety. In 1991, it lacked in consistency across the state but had several good locations. The parentage of Rawhide is Wrr*5/Agent //Kavkaz/4/Pkr*4/Agent//Belot 198 /Lcr/3/Vona

'Perkins' winter barley was released in 1989 from the Nebraska Agriculture Research Division. It was previously tested as NE851808.

Pedigrees of Nebraska experimental strains are as follows:

NE88427 - Bennett/TAM-107

NE87612 - Newton/Wrr*5//Agent/3/ NE69441

NE88595 - Arkan/Colt//Chisholm sib

NE89526 - Lancota/Sxlnd//TX792729

N87V106 - NE69565//NE65671 /NE69655 /3/Homestead /4/CTK /3/At66 /Cmn //TX2697-6

NE88584 - Centura/Dawn//Colt Sib

NE89522 - TX80GH2679/Brule

Winter Wheat Performance

Yield, bushel weight, and other agronomic data are listed in pages 13 - 27. Each district is listed on separate tables with yields of individual locations, average agronomic data, and a summary of the last five years. Page 28 summarizes the yield of each variety at each of the locations where it was entered and page 29 shows the yields as a percentage of three check varieties (Arapahoe, Redland, and Siouxland). Page 30 lists the bushel weights for the varieties at each of the locations where it was tested. Page 31 summarizes the protein data for each location.

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% and 25% levels, meaning that differences as large or larger could be expected through chance alone in 1 of 20 trials (5%) or 1 of 4 trials (25%). Even though two varieties are not statistically different, there may be other factors which influence the choice of one over the other. Such factors as their ability to complement other varieties, disease resistance, or availability of seed may influence that decision.

There were two trials conducted in the Southeast District, one in Gage County and the other in Saunders County. Page 13 lists the data from Gage County and pages 14 - 15 shows the 5 year summary from the Southeast District. Saunders County had some entries which were different and those data are shown on page 16. Moisture was good at planting time and all fall for the Gage County test. The plot looked good until harvest. Wet weather kept the combine out of the field for 3 weeks after maturity. Test weights were lowered by the delay, the average weight was 50.8 pounds.

There was a lot of heads broke off, lodging, and shattering. The Mead trial looked good up to harvest. The wet weather delayed harvest and the trial was abandoned due to weeds and lodging.

The two trials in South Central Nebraska were in Clay and Adams Counties. The data from the 1993 tests are found on page 17 and the five year averages are found on pages 18 - 19. Clay County didn't have any noticeable winter kill, but had very heavy spring grazing by deer, until well after wheat had tillered. Harvest was delayed by rains through June and July. High winds and rain led to almost 100% lodging by harvest time. Emergence and stand looked very good in early October in Adams County. There was some winter kill. Lodging was 100% and a 10% hail loss by the time it was harvested.

Seven trials were conducted in the West Central District. These were in Keith, Perkins, Dundy, Red Willow, Custer, Lincoln nursery and Lincoln field plots. The Dundy and Perkins County plots were abandoned due to hail. The 1993 results from these trials are found on page 21 and the five year averages are found on pages 22 - 23. The weather was cool and good moisture made some dandy yields in Keith County. A long filling period also helped, but did have a lot of lodging. Perkins and Dundy Counties were not harvested due to hail storms. It hailed June 10 in Perkins County and hail July 8 damaged Dundy and was finished off by a July 23 hail storm. Red Willow County test was harvested on time and the yields showed with a 56 bu/a average. Custer County trial was delayed three weeks from wet conditions, but the yields were not affected with a 60 bu\a average. Test weights were hurt a little. Lincoln nursery and field plots had a good year with a 60 bu\a and 61 bu\a average yields, respectively. Harvest was delayed a week to ten days by the wet weather.

Eight trials were conducted in the west District, they were Cheyenne Dry, Kimball, Scotts Bluff, Dawes, Box Butte, Morrill, Cheyenne irrigated, and Cheyenne ecofallow. The three trials in Cheyenne County were not harvested due to hail storms. The results of the 1993 trials are found on page 25 and the five year averages are found on pages 26 - 27. The Kimball County trial had more than normal rainfall with minor hail damage. Rain before harvest lowered test weights. Scotts Bluff County trial had considerable hail damage after heading that hurt the yields. Much above normal rainfall in the Dawes County trial made very good yields with a 69 bu\a average. Box Butte County test was a good one, it averaged 65 bu\a. The Morrill County test suffered from hail right after heading which subsequently hurt yields.

Protein and seed size was collected from two replicates of each location. The seed size data are reported as thousands of seeds per pound. Thus, a larger number represents smaller seed size. The protein data were combined within each district and reported in the district tables. They are also summarized on page 31. Protein was determined from whole grain using a Near Infrared Spectrometer. The protein analysis was done by the Soil and Plant Analysis Lab at the University of Nebraska.

WINTER BARLEY

The winter barley variety trials were conducted at five locations - Lincoln (Lancaster County), Clay Center (Clay County), North Platte (Lincoln County), McCook (Red Willow County), and Sidney (Cheyenne County). Entries were included in the trials based on previous performance in the Nebraska Winter Barley Breeding Program. Twenty-four varieties and breeding lines were tested and included four previous released winter barley varieties from the program. Previous releases include Kearney, Dundy, Hitchcock, and Perkins. 'Centurk 78' was used as a winter wheat check. Nineteen advanced winter barley breeding lines were evaluated. The purpose of the breeding program is to develop high yielding winter hardy feed barley for Nebraska. Currently, Hitchcock and Perkins are available as foundation seed.

Of the five locations tested, only three locations were harvested. The Sidney test was hailed in early June and resulted in a crop loss. Heavy summer rains prevented the timely maturing and harvest of the Clay Center plots. The North Platte yield data was not published due to combine mixing of the seed. Grain yield (bu/A) is presented from Lancaster County and Red Willow County. For two year grain yield analysis, 1992 and 1993 data from Lancaster and Red Willow counties were used.

Winter survival data was collected at Lancaster, Red Willow, and Clay counties. Lincoln County and Cheyenne County did not show significant differentiation for winter survival. For two year winter survival analysis, data was used from 1992 and 1993 Lancaster County and Clay County plots, as well as, 1993 Red Willow County plots. Plant height data was collected in Lancaster, Clay, Red Willow, and Lincoln counties. Heading date, measured when 50% of the plot contained heads extended from the boot, was calculated from the Lancaster County plots.

In Lancaster County, fall infestation of aphids with Barley Yellow Dwarf Virus (BYDV) affected both winter survival and spring tillering. Fall infected plants were severely stunted and most failed to produce tillers with viable seed. Cool, wet spring did delay the finish of the crop by 8 days. Yields were still extremely good at harvest with an average of 44.41 bu/A. Experimental line NE92711 was the highest yielding with 86.57 bu/A while the lowest yielding line, NE92705, yielded 19.44 bu/A. Hitchcock and Perkins, the two varieties currently available as either foundation or certified seed, yielded 20.29 and 38.63 bu/A, respectively.

In Red Willow County, the area particularly suited for winter barley production, yields averaged 68.96 bu/A. Grain yields ranged from 41.75 bu/A to 84.86 bu/A. Hitchcock and Perkins yielded 66.87 and 77.73 bu/A, respectively. The yield trials were grown on Randy Peters' farm near McCook. Adequate moisture and snow cover throughout the winter resulted in good plant survival. The winter barley matures approximately 10 days prior to the wheat in the same area.

Yield and agronomic performance are listed on page 32. The mean, coefficient of variance (C.V.), and Least Significant Differences (LSD) were calculated for yield and agronomic performance. The LSD was calculated at the 4% level. The pedigrees for the entries are listed on page 33.

Table A. Nebraska winter wheat variety tests 1993.

County	Cooperator	Planted	Harvested
Gage	Kenneth Thomsen, Diller	Sept. 22	July 28&29
Saunders	Agricultural Res & Dev Center	Sept. 23	----*
Clay	South Central Res & Ext Center	Sept. 22	July 21
Adams	Gayle Hupf, Holstein	Sept. 17	July 29
Keith	Jim Welsh, Brule	Sept. 9	July 26
Perkins	Tom Pankonin, Grant	Not harvested due to hail	
Dundy	Richard Keiser, Wauneta	Not harvested due to hail	
Red Willow	Art Koetter Jr., McCook	Sept. 18	July 10
Custer	Gary Widholm, Gothenburg	Sept. 17	July 29
Lincoln Ns	West Central Res & Ext Center	Sept. 11	July 22&23
Lincoln Fp	West Central Res & Ext Center	Sept. 17&18	July 23&26
Cheyenne	High Plains Ag Lab	Not harvested due to hail	
Kimball	Dewain Cockwood, Kimball	Sept. 11	July 26
Scotts Bluff	Ken Hall, Stegall	Sept. 15	July 20
Dawes	Ralph Rhodes, Chadron	Sept. 14	July 29
Box Butte	Cullan Farms, Hemingford	Sept. 9	July 28
Morrill	Phil and Ross Corman, Dalton	Sept. 11	July 19
Saunders	Agricultural Res & Dev Center	Sept. 22	July 29
Cheyenne Irr	High Plains Ag Lab	Not harvested due to hail	
Cheyenne Eco	High Plains Ag Lab	Not harvested due to hail	

* Data not used due to lodging, rain, and weeds.

Privately developed winter wheats were included in these trials. Entries were on a voluntary basis. A fee was charged to pay a portion of the testing costs. Entries and areas were selected by the seed producer.

The following made entries as indicated:

AgriPro Biosciences Inc. 806 N. 2, P.O. Box 30 Berthoud, CO 80513	Laredo, Longhorn, Ogallala, Ponderosa, Tomahawk
HybriTech Seed 5912 N. Meridan Wichita, KS 67204	QT549, QT562, QT574, QT577
Terra International, Inc. Terra Centre, 600 Fourth St. Sioux City, IA 51101	HR 153, SR 204

Some of these are varieties, others are hybrids. The entrant should be contacted for information on seed availability, adaption and agronomic characteristics.

Table B. Soil series, previous crop, and fertilizers applied. Nebraska Winter Wheat Variety Tests – 1993.

County	Soil Type	1992 Crop	pH	Nitrate lbs/a	P ppm	Organic matter %	N+P2O5+K lbs/a
Gage	Crete silty clay loam	Wheat	5.7	57.0	226.0	2.8	45–0–0
Saunders	Sharpsburg silty clay loam	Wheat	---	---	---	---	40–0–0
Clay	Hastings silt loam	Fallow	---	---	---	---	42–28–0
Adams	Hord silt loam	Fallow	---	---	---	---	11–50–2
Keith	Doroc silt loam	Fallow	---	202.0	25.0	---	6–20–0
Perkins	Kuma silt loam	Fallow	---	83.0	22.0	---	7–18–4–4–.5
Dundy	Kuma silt loam	Corn	---	142.0	25.0	---	6–20–0
Red Willow	Holdrege & Keith silt loam	Fallow	---	84.0	20.0	---	6–20–0
Custer	Holdredge silty clay loam	Corn	---	74.0	33.0	---	40–10–0
Lincoln Nursery	Hall silt loam	Fallow	---	---	---	---	-----
Lincoln Field Plot	Hall silt loam	Fallow	---	---	---	---	60–40–0
Kimball	Rosebud loam	Fallow	7.3	99.0	14.0	1.4	53–28–0
Scotts Bluff	Keith loam	Fallow	7.3	90.0	9.1	1.0	38–28–0
Dawes	Keith silt loam	Fallow	5.8	155.0	20.0	1.9	8–28–0
Box Butte	Rosebud loam	Fallow	6.6	149.0	18.0	1.9	20–50–0
Morrill	Jayem fine sandy loam	Fallow	6.7	105.0	14.0	0.8	58–28–0
Saunders	Sharpsburg silty clay loam	Fallow	---	---	---	---	40–0–0

Table C. Hard Red Winter Wheat Characteristics.

	Agronomic Characteristics [1]						Reactions [2]							
Variety	Maturity	Winter Hardiness	Straw Strength	Plant Height [4]	Col-optile Length [3]	Bushel Weight [4]	Hessian Fly	Leaf Rust	Stem Rust	Soil Borne Mosaic	Wheat Streak Mosaic	Origin	Year of Release	PVP [5]
Abilene	med early	good	very strong	short	short	very good	S	S	MR	R	LT	AgriPro	1986	yes
Arapahoe	medium	good	med stong	medium	medium	good	MR	MR-MS	R	S	S	NE	1988	yes
Buckskin	med early	fair	med strong	tall	long	good	MR	S	MS	MR	MS	NE	1973	no
Centura	med early	fair	med strong	tall	long	very good	MS	MS	MR	S	LT	NE	1983	yes
Cody	med early	good	med strong	tall	long	good	S	MS	MR	MS-MR	MS	NE	1985	yes
Colt	medium	fair	strong	short	short	good	MR	S	MR	MS	S	NE	1983	yes
HR153	medium	good	strong	medium	medium	good	S	MR	R	R	MS	Terra	1991	no
Jules	medium	fair	very strong	medium	medium	fair	–	MR-MS	MR	–	S	CO	1992	?
Karl	very early	fair	strong	med short	medium	very good	S	MS-MR	MS	R	VS	KS	1988	yes
Karl 92	very early	fair	strong	med short	short	very good	S	MS-MR	MS	R	VS	KS	1992	yes
Lamar	medium	good	medium	tall	long	good	S	MS-MR	MS-MR	S	VS	CO	1988	no
Laredo	early	fair	strong	short	med	good	S	MR-MS	MR-MS	MS	MS	AgriPro	1992	yes
Longhorn	med early	fair	strong	medium	long	very good	S	MR-MS	R	S	MT	AgriPro	1991	yes
Ogallala	med early	fair	strong	short	short	very good	S	MR-MS	MR-MS	MS	MT	AgriPro	1993	yes
Ponderosa	early	fair	strong	med short	medium	good	S	MR-MS	MR	R	S	AgriPro	1993	yes
Rawhide	med early	fair	med strong	medium	medium	good	MR	S	MR	S	VS	NE	1990	yes
Redland	medium	good	strong	medium	short	fair	R	MS-MR	MR	S	MT	NE	1985	yes
Sandy	medium	good	medium	tall	long	good	S	MR-MS	–	S	–	CO	1980	no
Scout 66	early	fair	medium	tall	long	good	MS	S	MR-MS	S	VS	NE	1966	no
Siouxland	med early [6]	fair	med strong	med tall	long	good	S	S	MR	S	LT	NE	1984	yes
TAM 107	very early	fair	very strong	med short	long	good	S	S	MR-MS	S	MT	TX	1984	yes
TAM 200	early	poor	med strong	short	short	very good	S	MS-MR	MR-MS	S	MT	TX	1987	no
Thunderbird	med early	fair	strong	medium	long	very good	S	MR-MS	MR	R	LT	AgriPro	1985	yes
Tomahawk	early	good	strong	med short	medium	good	S	MR-MS	MR	R	VS	AgriPro	1991	yes
Vista	medium	fair	med strong	med short	short	good	R	MR-MS	MR	S	MT	NE	1992	yes
Vona	early	poor	strong	med short	v short	good	MR	S	MS-MR	S	VS	CO	1976	yes
Yuma	early	poor	med strong	med short	v short	good	MS	S	MR-MS	S	VS	CO	1991	yes
549	medium	good	med strong	medium	medium	very good	S	MS	MS-MR	MR	MS	Quantum	1988	yes
562	med early	good	strong	med short	medium	very good	S	MS	MR-MS	MR	MT	Quantum	1987	yes
577	early	fair	med strong	medium	medium	good	S	MR-MS	MS	MR	–	Quantum	1990	yes
2163	med early	poor	very strong	medium	medium	good	R	MR	MS	R	LT	PIO/KSU	1989	yes

1 These comparative ratings are based on each variety's average performance within its area of adaptation under normal Nebraska growing conditions and cultural practices. This chart is updated annually. Plant appearance may be influenced by soil, weather, pests, and other production conditions.

2 R=resistant; S=susceptible, MR=moderately resistant; MS=moderately susceptiable. The reation may vary depending on how favorable conditions are for disease or inspect development practices and/or plant growth or deviations are genetic resistance with the variety. Sources used to comple this information include: field and greenhouse observations and other state university materials. (a) Relative varietal reaction to wheat streak mosaic virus is based upon actual Nebraska yield data from the 1988 and 1989 crops years or other comparable tests. MT=moderate tolerance, LT-low tolerance, MS=moderately susceptible, S=susceptible.

3 If "short" stand uniformity and establishment will be reduced by sowing seed more than 2 inches deep. Deep seeding may also reduce stand of medium and long coleoptile varieties.

4 Actual height and bushel weight will vary widely with season, location, and production conditions. General bushel weight ratings: Very Good=62 lb/bu, Good=60 lb/bu, fair=56 lb/bu. General height ratings under optiumum moisture): short=30-35", medium=35-40", tall=40-45".

5 If "yes" the Plant Variety Protection Act prohibits unauthorized seed production. The seed may be sold for planting purposes only when properly grown and labeled as Certified Quality seed.

6 Maturity may become later compared to other varieties as Siouxland is moved north or west due to response to available heat units.

Southeast Nebraska Winter Wheat Variety Test – 1993
Gage County

Brand	Variety	Gage Co Yield bu/a	Plant Lodging pct	Seed weight /000 k	Grain protein pct	Bushel weight lb/bu	Plant height inches
-----	Arapahoe	46	100	18.34	12.3	52.5	33
-----	2163	41	80	16.25	12.5	53.1	32
-----	NE88427	40	60	15.19	12.4	53.1	33
-----	NE89526	40	80	16.55	12.7	53.5	35
-----	Redland	38	100	19.9	12.1	51.3	35
-----	NE89522	38	80	17.76	12.4	51.2	36
-----	Karl	38	80	18.11	12.4	53	34
-----	NE88584	38	100	17.15	12.9	51.3	37
-----	NE88595	37	100	19.87	12.5	49.7	34
-----	VISTA	37	100	20.66	12.4	46.9	33
-----	N87V106	36	100	16.28	13.1	53.5	34
-----	TAM 107	35	80	17.41	12.9	49.7	33
-----	Karl 92	35	80	17.8	12.5	53.3	33
-----	Scout66	33	100	15.22	12.6	51.9	40
Quantum	QT 574	32	100	20.07	12.3	49	36
-----	TAM 200	31	100	21.08	12.8	50.3	30
Terra	HR153	31	80	15.24	13.1	54.7	34
Quantum	QT 577	29	80	17.79	11.8	49.4	36
-----	Rawhide	29	100	21.4	12.7	50.2	35
-----	Siouxland	27	100	18.26	12.3	49	38
Terra	SR204	27	100	23.51	11.4	47.9	36
-----	Yuma	27	100	22.67	12.2	48.2	34
AgriPro	Tomahawk	25	80	18.36	13.1	49.9	34
-----	Jules	24	100	19.69	12.3	47.5	32
-----	Turkey	13	60	22.09	11.1	48.2	42
AVERAGE ALL ENTRIES		33	80	18.66	12.4	50.8	35
DIF. REQ. FOR SIG.	5%	9	10	2.56	0.7	1.7	3
	25%	5	10	1.47	0.4	1	2

See page 7 for description of "Dif. Req. for Sig."

Southeast District Winter Wheat Variety Tests 1989 – 1993.

Brand	Variety	Grain yield bu/a	Seed weight /000 k	Grain protein pct	Bushel weight lb/bu	Plant height inches
			2 YEAR AVERAGE			
-----	Arapahoe	47.0	18.0	12.6	54.1	33
-----	NE88427	45.5	15.5	12.4	55.0	32
-----	Redland	43.3	18.2	12.2	53.4	34
-----	Karl	43.0	16.7	13.1	55.1	31
-----	VISTA	42.3	18.8	12.6	51.2	31
-----	NE88595	41.8	19.0	12.4	52.3	33
-----	N87V106	38.0	17.1	13.1	54.0	30
Quantum	QT 574	37.8	17.7	12.8	52.2	32
Terra	HR153	37.3	14.9	13.2	55.4	32
AgriPro	Tomahawk	37.3	17.1	13.1	53.0	32
Quantum	QT 577	35.5	16.3	12.5	51.5	33
-----	Scout66	34.0	15.4	12.9	54.2	38
-----	Siouxland	33.8	17.6	12.7	52.4	36
-----	TAM 107	32.5	17.8	13.1	53.1	30
-----	Yuma	28.5	21.3	12.5	50.5	31
-----	Rawhide	28.5	20.2	12.8	52.1	31
-----	Turkey	23.0	19.6	12.0	52.4	40
-----	TAM 200	20.3	21.1	13.0	52.4	29
AVERAGE ALL ENTRIES		36.1	17.9	12.7	53.0	32
DIF. REQ. FOR SIG.	5%	N.S.	1.6	N.S.	N.S.	1.3
	25%	3.1	0.9	0.3	1.0	0.7
			3 YEAR AVERAGE			
-----	Karl	44.7	15.9	12.8	57.7	31
-----	Arapahoe	43.7	17.6	12.6	56.4	33
-----	Redland	43.2	17.6	12.0	55.6	34
-----	VISTA	41.8	17.8	12.4	54.2	29
AgriPro	Tomahawk	40.8	16.5	12.5	55.4	31
-----	TAM 107	38.7	16.1	12.4	55.7	30
-----	Siouxland	37.2	17.0	12.5	55.6	36
-----	Scout66	36.3	15.2	12.7	57.1	37
-----	Rawhide	34.0	18.9	12.4	55.5	31
-----	TAM 200	29.5	20.0	12.3	55.5	28
-----	Turkey	27.0	18.5	12.2	55.5	41
AVERAGE ALL ENTRIES		37.9	17.4	12.4	55.8	33
DIF. REQ. FOR SIG.	5%	N.S.	1.1	N.S.	N.S.	1
	25%	N.S.	0.6	N.S.	0.6	1

Continued on Page 2.

Southeast District Winter Wheat Variety Tests 1989 – 1993. Page 2.

Brand	Variety	Grain yield bu/a	Seed weight /000 k	Grain protein pct	Bushel weight lb/bu	Plant height inches
		4 YEAR AVERAGE				
-----	Redland	46.4	17.1	11.9	56.1	35
-----	Arapahoe	46.0	17.1	12.6	56.9	35
-----	Karl	45.5	15.5	13.3	58.4	32
-----	TAM 107	41.5	15.3	12.1	56.4	32
-----	Siouxland	40.9	16.7	12.5	56.3	38
-----	Rawhide	39.3	18.3	12.3	56.4	33
-----	TAM 200	36.6	18.9	12.1	56.9	30
-----	Scout66	35.8	14.8	12.6	57.8	39
-----	Turkey	27.8	18.2	12.5	56.0	43
AVERAGE ALL ENTRIES		40.0	16.9	12.4	56.8	35
DIF. REQ. FOR SIG.	5%	N.S.	0.9	N.S.	N.S.	1
	25%	2.7	0.5	N.S.	0.5	1
		5 YEAR AVERAGE				
-----	Redland	48.9	--	12.3	56.1	--
-----	Arapahoe	48.3	--	13.1	56.8	--
-----	Karl	45.9	--	14.1	58.2	--
-----	Siouxland	45.3	--	12.8	56.6	--
-----	Rawhide	45.0	--	12.8	56.7	--
-----	TAM 107	44.4	--	12.4	56.8	--
-----	Scout66	39.6	--	13.0	58.1	--
-----	TAM 200	39.2	--	12.6	57.5	--
-----	Turkey	31.5	--	13.1	56.2	--
AVERAGE ALL ENTRIES		43.1	--	12.9	57.0	--
DIF. REQ. FOR SIG.	5%	N.S.	--	0.5	0.9	--
	25%	2.3	--	0.3	0.5	--

Saunders County Winter Wheat Variety Test
Yield only – 1993

Brand	Variety	Grain yield bu/a
AgriPro	Longhorn	30
-----	N87V106	29
-----	Hybrid F3 #1	29
-----	Karl 92	28
-----	NE89526	28
-----	Centura	25
-----	NE88427	24
-----	NE88584	22
-----	Arapahoe	22
-----	VISTA	22
-----	Lamar	21
-----	NE88595	21
-----	Yuma	20
-----	NE89522	20
-----	Redland	20
Quantum	QT 562	20
-----	TAM 107	19
-----	Rawhide	19
-----	Cody	19
-----	TAM 200	18
Quantum	QT 549	17
-----	Scout66	17
-----	Siouxland	17
-----	Buckskin	16
-----	Sandy	15
-----	NE87612	13
-----	Turkey	13
-----	Jules	10
AVERAGE ALL ENTRIES		21
DIF. REQ. FOR SIG.	5%	4
	25%	2

South Central District Winter Wheat Variety Tests.
Clay and Adams Counties – 1993

Brand	Varie	Average Yield bu/a	Clay Yield bu/a	Adams Yield bu/a	Plant Lodging pct	Seed weight /000 k	Grain protein pct	Bushel weight lb/bu	Plant height inches	Leaf rust pct	Scab heads pct
-----	NE89526	60	52	68	91	15.23	14.0	54.4	40	10	2.8
Quantum	QT 577	56	43	69	94	16.47	13.7	50.8	40	4	5
-----	N87V106	55	47	63	94	16.27	14.7	53.5	41	4	17.5
-----	NE88427	55	52	58	89	15.66	14.2	53.4	38	69	2.8
-----	2163	54	49	59	90	16.43	13.3	51.2	37	2	23.8
-----	Karl	53	45	60	98	17.00	14.2	54.1	38	55	1.8
AgriPro	Tomahawk	53	48	58	96	15.98	13.8	51.4	39	6	13.8
-----	Karl 92	53	45	61	100	16.29	13.8	53.6	38	60	2.5
-----	VISTA	52	46	57	98	18.06	13.9	51.1	37	11	5.8
-----	Arapahoe	52	49	55	91	17.63	14.0	51.5	41	35	1.8
-----	Redland	51	46	55	73	17.76	13.8	50.5	42	14	3.3
-----	TAM 200	51	42	60	95	20.01	13.8	49.9	36	70	47.5
-----	NE89522	49	43	54	84	17.54	13.9	50.2	42	19	9.3
-----	TAM 107	48	39	56	100	17.03	14.5	49.7	38	100	1.8
-----	NE88595	48	45	51	94	18.34	13.8	50.5	39	66	2.8
Quantum	QT 562	47	43	51	90	17.86	13.8	51.5	38	63	8.3
-----	Centura	47	47	46	93	17.96	14.1	52.0	45	8	6.8
-----	Yuma	45	37	52	88	18.40	13.8	49.7	38	66	16.3
-----	Rawhide	45	43	46	90	19.76	13.6	50.3	42	79	8.8
-----	Siouxland	45	40	49	85	17.29	13.7	52.3	45	31	2.5
-----	NE88584	42	44	39	91	16.32	14.2	53.8	46	19	3
AgriPro	Abilene	41	36	45	100	20.44	13.5	51.2	35	90	4
-----	Jules	40	33	46	68	17.65	13.5	49.3	38	19	26.3
-----	Scout66	38	41	34	98	15.56	14.6	53.1	48	66	2.5
-----	Turkey	30	29	31	91	17.37	14.1	52.4	48	34	1.8
AVERAGE ALL ENTRIES		48	43	52	91	17.38	13.9	51.6	40	40	8.9
DIF. REQ. FOR SIG. 5%		10	4	10	10	1.82	N.S.	1.4	1	15	4.4
25%		6	2	6	6	1.07	N.S.	0.8	1	9	2.6

South Central District Winter Wheat Variety Tests 1988 – 1993. (1992 missing)

Brand	Variety	Grain yield bu/a	Plant lodging pct	Bushel weight lb/bu	Plant height inches
		2 YEAR AVERAGE			
AgriPro	Tomahawk	56.0	56	53.7	37
-----	2163	54.5	49	52.6	36
-----	Karl	53.5	58	56.0	37
-----	VISTA	52.3	68	52.9	37
-----	TAM 200	51.3	73	53.3	35
-----	Arapahoe	50.5	71	53.1	41
-----	Redland	49.8	48	52.3	41
Quantum	QT 562	49.3	49	53.0	38
-----	TAM 107	46.5	54	50.9	37
-----	Centura	46.0	58	53.9	43
-----	Rawhide	45.5	71	52.0	41
AgriPro	Abilene	45.3	69	53.9	34
-----	Siouxland	41.8	55	52.1	43
-----	Scout66	36.3	82	53.8	45
-----	Turkey	30.8	66	53.1	46
AVERAGE ALL ENTRIES		47.3	62	53.1	39
DIF. REQ. FOR SIG.	5%	2.0	N.S.	N.S.	1
	25%	1.1	N.S.	0.7	1
		3 YEAR AVERAGE			
-----	TAM 200	56.2	61	54.9	35
-----	Arapahoe	56.0	52	54.2	41
-----	Karl	55.0	42	57.0	36
Quantum	QT 562	54.2	42	53.8	39
-----	Redland	53.8	39	53.4	41
AgriPro	Abilene	52.8	52	55.6	35
-----	Rawhide	51.3	54	53.7	41
-----	TAM 107	50.3	42	52.2	37
-----	Centura	49.7	46	54.8	44
-----	Siouxland	47.5	42	53.5	44
-----	Scout66	39.8	60	54.9	46
-----	Turkey	34.5	48	53.7	47
AVERAGE ALL ENTRIES		50.1	48	54.3	40
DIF. REQ. FOR SIG.	5%	2.2	N.S.	1.0	1
	25%	1.2	N.S.	0.5	1

Continued on Page 2.

South Central District Winter Wheat Variety Tests 1988 – 1993. (1992 missing). Page 2

Brand	Variety	Grain yield bu/a	Plant lodging pct	Bushel weight lb/bu	Plant height inches
		4 YEAR AVERAGE			
-----	TAM 200	50.8	--	55.6	--
-----	Arapahoe	49.5	--	54.8	--
-----	Redland	47.7	--	53.8	--
-----	Rawhide	46.5	--	54.5	--
AgriPro	Abilene	45.7	--	56.4	--
-----	TAM 107	44.6	--	53.6	--
-----	Siouxland	43.8	--	54.3	--
-----	Centura	43.6	--	55.4	--
-----	Scout66	36.5	--	55.6	--
-----	Turkey	33.6	--	54.4	--
AVERAGE ALL ENTRIES		44.2	--	54.8	--
DIF. REQ. FOR SIG.	5%	2.3	--	0.6	--
	25%	1.3	--	0.3	--
		5 YEAR AVERAGE			
-----	Arapahoe	48.5	--	55.5	--
-----	TAM 200	48.2	--	57.0	--
-----	Redland	46.6	--	54.7	--
AgriPro	Abilene	46.3	--	57.4	--
-----	TAM 107	46.3	--	54.8	--
-----	Siouxland	44.5	--	55.5	--
-----	Centura	43.6	--	56.5	--
-----	Scout66	37.5	--	56.6	--
-----	Turkey	34.5	--	55.5	--
AVERAGE ALL ENTRIES		44.0	--	56.0	--
DIF. REQ. FOR SIG.	5%	2.6	--	0.7	--
	25%	1.5	--	0.4	--

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West Central District Winter Wheat Variety Tests – 1993
Keith, Red Willow, Lincoln, and Custer Counties

Brand	=Variety	Average Yield bu/a	Keith Yield bu/a	Red Will Yield bu/a	Linc. Yield bu/a	NuLinc F1 Yield bu/a	Custer Yield bu/a	Plant Lodging pct	Seed weight /000 k	Grain protein pct	Bushel weight lb/bu	Plant height inches
-----	NE89522	70	78	73	67	64	70	13	14.24	11.5	56.5	40
-----	IKE	70	78	69	68	--	63	21	14.65	12.4	56.8	40
AgriPro	Laredo	69	82	61	66	59	77	4	13.32	12.0	56.9	35
AgriPro	Ogallala	68	81	68	68	56	68	1	15.83	12.3	58.3	35
-----	NE88427	68	78	67	62	61	70	15	14.29	12.0	57.1	38
-----	Karl 92	67	80	67	63	60	64	4	14.76	11.7	56.8	36
-----	NE89526	66	79	60	66	60	67	1	14.30	12.2	57.5	38
-----	Yuma	66	76	70	67	62	55	1	15.55	11.2	55.3	36
-----	Redland	66	78	68	63	59	64	3	15.48	11.5	55.6	40
Quantum	QT 562	66	73	62	67	63	66	3	15.22	11.6	56.1	38
-----	N87V106	65	69	69	63	59	64	4	14.20	12.0	57.3	39
-----	2163	65	78	57	69	56	67	9	14.91	11.5	55.3	34
AgriPro	Tomahawk	65	79	62	60	58	64	3	13.87	12.1	56.1	36
-----	NE88595	65	66	66	69	65	61	25	15.84	11.4	56.3	39
-----	TAM 107	64	76	61	61	56	66	1	13.70	12.0	55.8	37
-----	Karl	64	73	58	64	60	66	4	14.87	12.1	56.9	35
Quantum	QT 549	63	71	62	66	59	56	3	15.76	11.6	55.6	39
-----	VISTA	63	74	53	66	62	59	11	14.85	11.8	55.8	35
-----	Arapahoe	63	69	63	64	56	61	26	15.72	11.9	55.7	40
AgriPro	Ponderosa	63	74	63	61	51	64	7	14.55	12.4	57.0	36
AgriPro	Longhorn	62	78	58	61	53	60	5	13.58	12.2	57.8	40
-----	TAM 200	62	75	52	65	53	67	26	16.13	11.1	56.5	34
-----	Rawhide	60	65	68	62	53	54	16	16.67	11.9	56.2	40
-----	NE87612	59	67	58	65	45	59	8	14.43	11.7	55.9	40
-----	Siouxland	59	66	61	59	53	57	17	15.93	12.3	56.4	43
-----	Cody	56	58	59	55	53	57	16	16.24	11.7	57.1	42
-----	Centura	55	50	63	57	55	52	43	15.83	12.3	57.3	40
-----	NE88584	55	46	63	57	53	55	55	14.97	11.7	57.2	42
-----	Lamar	55	64	55	53	54	49	34	14.84	12.2	58.2	42
-----	Sandy	48	51	47	53	48	41	38	16.98	12.0	57.2	43
-----	Jules	48	61	32	58	38	52	6	15.62	11.2	55.9	36
-----	Scout66	47	46	50	53	50	37	75	14.05	12.3	57.1	45
-----	Turkey	40	38	47	42	44	28	72	16.36	12.7	55.7	45
AVERAGE ALL ENTRIES		61	69	60	61	56	60	17	15.08	11.9	56.4	39
DIF REQ FOR SIG. 5%		10	9	9	7	6	8	25	1.44	0.9	1.5	3
25%		6	5	5	4	3	5	15	0.84	0.5	0.9	2

West Central District Winter Wheat Variety Tests 1989 – 1993.

Brand	Variety	Grain yield bu/a	Plant lodging pct	Seed weight /000 k	Grain protein pct	Bushel weight lb/bu	Plant height inches
				2 YEAR AVERAGE			
-----	NE89522	70.7	7	13.8	11.4	58.1	40
-----	NE88595	62.7	13	15.1	11.7	57.8	34
-----	N87V106	61.4	2	13.9	12.5	58.1	36
-----	Redland	61.4	2	15	12.1	56.9	36
-----	NE88427	61.3	7	13.9	12.2	58.2	33
Quantum	QT 562	61.1	1	14.7	12.1	57.5	34
-----	Yuma	60.6	1	14.8	11.7	57.1	32
AgriPro	Laredo	60.3	2	13.6	12.5	57.8	32
Quantum	QT 549	59.3	1	15.1	12.1	57.2	35
-----	VISTA	58.6	6	14.5	12.1	57.1	31
-----	2163	58.5	4	14.6	12.2	56.3	31
-----	TAM 200	58.0	13	15.4	11.9	58.4	31
-----	TAM 107	57.9	1	13.2	12.3	57.6	32
-----	Rawhide	57.8	8	16.1	12.6	57.6	36
AgriPro	Tomahawk	57.3	2	13.8	12.7	57.4	33
AgriPro	Longhorn	56.2	3	13.2	12.6	58.8	37
-----	Arapahoe	56.0	13	15.3	12.6	56.9	35
-----	NE87612	54.7	4	14.2	12.2	57.0	36
-----	Karl	54.4	2	15	13.1	57.2	32
-----	Siouxlanc	53.5	8	15.3	12.5	57.1	39
-----	Cody	52.7	8	15.5	12.2	58.0	37
-----	Centura	51.8	23	15.3	12.6	58.5	36
-----	Lamar	49.9	19	14.3	12.4	59.0	38
-----	Sandy	48.3	23	15.9	12.2	58.6	38
-----	Scout66	45.3	49	13.9	12.5	58.4	41
-----	Turkey	40.3	44	15.5	13.0	57.5	41
AVERAGE ALL ENTRIES		56.5	10	14.6	12.3	57.7	35
DIF. REQ. FOR SIG.	5%	1.3	4	0.3	0.2	0.3	1
	25%	0.8	2	0.2	0.1	0.2	1
				3 YEAR AVERAGE			
-----	Redland	54.9	4	16	12.0	56.9	36
AgriPro	Tomahawk	53.8	3	14.3	12.5	58.1	32
-----	VISTA	53.6	7	15.6	12.1	57.7	31
Quantum	QT 562	53.2	2	15.7	12.0	57.8	33
-----	Karl	52.3	5	15.7	12.8	58.3	32
-----	Arapahoe	52.3	16	16.3	12.4	57.5	36
Quantum	QT 549	51.7	2	16.4	12.0	57.1	35
-----	TAM 200	50.3	10	16.8	12.0	59.2	30
AgriPro	Longhorn	50.1	2	14.2	12.6	59.1	36
-----	Rawhide	50.0	12	17.2	12.4	57.4	36
-----	TAM 107	49.5	4	14.5	12.3	57.6	32
-----	NE87612	49.3	5	15.3	12.0	57.1	35
-----	Siouxlanc	48.9	9	16.2	12.2	57.4	39
-----	Cody	47.7	10	16.3	12.1	57.9	37

Continued on page 2.

West Central District Winter Wheat Variety Tests 1989 – 1993. Page 2.

Brand	Variety	Grain yield bu/a	Plant lodging pct	Seed weight /000 k	Grain protein pct	Bushel weight lb/bu	Plant height inches
				3 YEAR AVERAGE (continued)			
-----	Centura	46.9	19	15.9	12.4	58.7	37
-----	Lamar	45.1	15	15	12.3	58.6	37
-----	Scout66	41.5	55	14.9	12.4	58.6	40
-----	Sandy	41.2	26	17	12.1	58.3	38
-----	Turkey	36.0	46	16.5	12.8	57.2	40
AVERAGE ALL ENTRIES		48.9	13.3	15.8	12.3	57.9	35
DIF. REQ. FOR SIG.	5%	1.3	3	0.9	0.2	0.4	1
	25%	0.7	2	0.5	0.1	0.2	1
				4 YEAR AVERAGE			
-----	Redland	55.0	6	16.1	11.6	56.9	37
Quantum	QT 562	54.9	3	16	11.8	57.8	34
-----	Karl	53.9	5	15.7	12.5	58.8	33
Quantum	QT 549	53.7	2	16.4	11.8	57.3	36
-----	Arapahoe	53.6	18	16.3	12.2	57.4	36
-----	TAM 200	51.8	12	16.9	11.8	59.1	31
-----	Rawhide	51.4	15	17	12.2	57.7	37
-----	TAM 107	51.1	3	14.7	12.2	57.6	33
-----	Siouxlanc	49.8	10	16.3	12.0	57.7	39
-----	Cody	48.8	14	16.5	11.9	57.9	38
-----	Centura	48.4	22	16	12.2	58.7	38
-----	Lamar	47.3	18	15.2	12.2	58.8	38
-----	Scout66	42.6	57	15	12.3	58.8	40
-----	Sandy	42.3	23	17	11.9	58.4	39
-----	Turkey	37.6	48	16.3	12.6	57.4	41
AVERAGE ALL ENTRIES		49.5	17	16.1	12.1	58.0	36
DIF. REQ. FOR SIG.	5%	1.1	3	0.2	0.2	0.3	1
	25%	0.6	2	0.1	0.1	0.2	1
				5 YEAR AVERAGE			
-----	Redland	47.4	--	--	12.1	56.7	--
-----	Arapahoe	47.1	--	--	12.8	56.7	--
-----	Karl	46.9	--	--	13.5	58.1	--
-----	Rawhide	46.1	--	--	12.8	57.1	--
-----	Siouxlanc	45.9	--	--	12.5	56.9	--
-----	TAM 107	45.7	--	--	12.6	57.3	--
-----	TAM 200	44.1	--	--	12.4	58.6	--
-----	Centura	44.1	--	--	12.8	58.4	--
-----	Cody	43.2	--	--	12.5	57.2	--
-----	Scout66	39.6	--	--	12.8	57.8	--
-----	Turkey	35.6	--	--	13.1	56.8	--
AVERAGE ALL ENTRIES		44.2	--	--	12.7	57.4	--
DIF. REQ. FOR SIG.	5%	1.6	--	--	0.2	0.4	--
	25%	0.9	--	--	0.1	0.2	--

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West District Winter Wheat Variety Tests – 1993
Morrill, Kimball, Scotts Bluff, Dawes, and Box Butte Counties

Brand	Variety	Average Yield bu/a	Morrill Yield bu/a	Kimball Yield bu/a	Scotts Yield bu/a	Dawes Yield bu/a	Box But Yield bu/a	Plant Lodging pct	Seed weight /000 k	Grain protein pct	Bushel weight lb/bu	Plant height inches
-----	NE88595	57	40	59	35	75	78	0	13.46	11.7	58.7	31
-----	NE89522	56	34	60	37	76	72	0	12.89	12.3	58.9	34
-----	Jules	55	37	60	47	67	63	0	13.59	11.9	58.9	31
-----	TAM 107	54	37	59	34	73	66	0	12.81	12.9	58.9	29
Quantum	QT 549	54	30	57	36	72	73	0	14.35	12.8	58.7	33
-----	VISTA	54	34	59	38	70	69	0	13.05	12.4	58.8	28
-----	TAM 200	52	28	53	34	76	69	0	14.67	13.6	60.8	28
-----	Arapahoe	51	33	53	33	69	66	0	15.13	13.5	57.9	34
-----	Redland	51	30	54	29	72	70	0	14.28	13.1	57.6	34
-----	Yuma	50	28	57	27	73	64	0	13.5	12.4	59.1	28
-----	Sandy	50	38	52	35	66	61	0	14.56	12.8	60	35
Quantum	QT 562	49	31	45	32	73	66	0	13.98	12.5	58.8	31
-----	NE88584	49	27	58	26	70	63	6	13.69	12.3	59	36
-----	Rawhide	49	26	50	31	71	66	0	15.47	13.2	59.1	33
-----	Lamar	48	27	54	31	67	63	0	13.38	13.5	60.4	34
-----	NE88427	48	29	48	31	68	62	0	12.7	12.8	59.1	30
-----	Centura	48	26	54	26	67	69	0	14.36	12.6	59.7	34
-----	Cody	48	27	51	32	67	63	0	14.96	13.2	58.7	35
-----	Scout66	47	25	55	30	63	64	9	12.98	13.5	59.5	38
-----	Karl 92	47	31	49	29	65	61	0	14.21	14.5	57.7	28
AgriPro	Longhorn	47	28	45	31	63	66	0	12.96	13.3	59.3	32
-----	Buckskin	46	24	50	29	67	60	0	13.4	12.7	60	38
-----	Siouxland	46	25	45	29	63	66	0	15.28	12.9	58.3	36
-----	Hybrid F3	46	30	47	29	69	57	0	14.26	12.6	58.2	34
-----	N87V106	45	25	46	20	73	63	0	13.7	13.4	58.5	32
-----	NE87612	45	28	43	24	71	59	0	13.49	13.1	58.2	33
-----	NE89526	43	26	42	33	61	53	0	14.08	13.9	58.4	32
-----	Turkey	40	23	39	24	54	62	33	14.26	14.1	58.2	39
AVERAGE ALL ENTRIES		49	29	51	30	69	65	2	13.83	13	58.7	33
DIF REQ FOR SIG 5%		5	7	7	6	5	5	5	0.56	0.8	1.1	3
25%		3	4	4	3	3	3	3	0.33	0.5	0.6	2

West District Winter Wheat Variety Tests 1989 – 1993.

Brand	Variety	Grain yield bu/a	Plant lodging pct	Seed weight /000 k	Grain protein pct	Bushel weight lb/bu	Plant height inches
				2 YEAR AVERAGE			
Quantum	QT 549	49.0	3	13.8	12.8	59.4	30
-----	NE88595	47.5	2	13.5	12.1	58.8	27
-----	VISTA	46.7	3	13.0	12.8	58.7	25
-----	Sandy	46.6	3	14.3	12.6	60.0	31
-----	TAM 107	45.7	1	12.4	12.9	58.6	26
Quantum	QT 562	44.2	3	13.5	12.8	59.3	28
-----	Lamar	43.7	3	13.0	13.2	60.4	31
-----	TAM 200	43.5	2	14.7	13.4	60.5	25
-----	NE88427	43.0	2	12.8	13.0	59.4	27
-----	Buckskin	42.2	5	13.2	12.9	59.9	34
-----	Arapahoe	42.1	2	14.8	13.7	58.0	30
-----	Scout66	42.0	10	13.0	13.4	59.3	33
-----	Cody	41.8	2	14.9	13.1	58.9	32
-----	Redland	41.5	2	14.1	13.1	57.5	30
-----	Centura	41.0	2	14.2	12.9	59.8	29
-----	Yuma	40.9	1	13.5	12.5	58.5	25
-----	Rawhide	40.9	2	15.2	13.4	59.0	30
-----	Siouxlanc	40.8	2	14.9	13.1	58.7	32
-----	NE87612	39.2	2	13.4	13.2	58.3	29
-----	N87V106	37.5	2	13.8	13.9	58.3	28
-----	Turkey	36.5	23	14.1	13.9	58.4	36
AVERAGE ALL ENTRIES		42.7	4	13.8	13.1	59.0	29
DIF. REQ. FOR SIG.	5%	1.2	3	0.2	0.2	0.3	1
	25%	0.7	2	0.1	0.1	0.2	1
				3 YEAR AVERAGE			
Quantum	QT 549	48.1	2	15.0	12.4	59.0	32
-----	VISTA	47.2	3	13.8	12.7	58.9	26
-----	TAM 107	43.9	1	13.2	12.6	58.6	27
-----	Arapahoe	43.8	1	15.4	13.5	58.6	31
-----	NE87612	43.3	1	14.0	12.6	58.7	30
Quantum	QT 562	43.1	2	14.6	12.6	59.0	29
-----	Sandy	42.7	2	15.7	12.3	59.8	32
-----	Buckskin	42.5	6	14.0	12.6	59.9	36
-----	Redland	42.5	1	14.7	12.7	57.8	31
-----	Lamar	42.2	2	13.8	13.1	60.6	32
-----	Cody	42.0	1	15.6	12.8	58.8	33
-----	Siouxlanc	41.4	1	15.3	12.9	59.1	33
-----	Rawhide	41.1	1	15.8	13.0	59.4	31

Continued on Page 2.

West District Winter Wheat Variety Tests 1989 – 1993. Page 2.

Brand	Variety	Grain yield bu/a	Plant lodging pct	Seed weight /000 k	Grain protein pct	Bushel weight lb/bu	Plant height inches
				3 YEAR AVERAGE (Continued)			
-----	Scout 66	41.4	17	13.6	13.3	59.7	35
-----	Centura	41.1	2	14.9	12.8	59.4	31
-----	TAM 200	39.9	2	16.0	13.1	60.4	26
-----	Turkey	36.6	28	15.0	13.6	58.8	37
AVERAGE ALL ENTRIES		42.5	4	14.7	12.9	59.2	31
DIF. REQ. FOR SIG.	5%	N.S.	8	0.3	0.2	0.3	1
	25%	0.8	5	0.2	0.1	0.2	1
				4 YEAR AVERAGE			
Quantum	QT 549	46.9	1	16.0	12.3	58.3	31
-----	TAM 107	43.9	1	13.7	12.4	58.4	27
-----	Arapahoe	43.6	1	16.2	13.2	58.1	31
Quantum	QT 562	42.9	1	15.8	12.5	58.3	29
-----	Sandy	42.8	2	16.8	12.2	59.4	33
-----	Buckskin	42.6	5	14.9	12.6	59.3	36
-----	Redland	42.5	1	15.6	12.5	57.3	31
-----	Rawhide	42.4	1	16.5	12.8	59.0	31
-----	Lamar	42.3	2	14.6	12.9	60.3	33
-----	Cody	41.7	1	16.5	12.7	58.2	33
-----	Siouxlanc	41.3	1	16.1	12.8	58.6	34
-----	Centura	41.3	2	15.8	12.7	58.9	32
-----	Scout66	41.1	16	14.2	12.9	59.4	35
-----	TAM 200	40.2	1	17.0	12.8	60.1	26
-----	Turkey	36.9	23	15.7	13.3	58.5	37
AVERAGE ALL ENTRIES		42.1	4	15.7	12.7	58.8	32
DIF. REQ. FOR SIG.	5%	1.0	3	0.3	0.2	0.3	1
	25%	0.6	2	0.2	0.1	0.2	1
				5 YEAR AVERAGE			
Quantum	QT 562	42.3	--	--	12.1	58.8	--
-----	TAM 107	42.1	--	--	12.1	58.7	--
-----	Arapahoe	41.7	--	--	13.0	58.4	--
-----	Redland	41.2	--	--	12.2	57.7	--
-----	Rawhide	41.1	--	--	12.5	59.4	--
-----	Buckskin	40.8	--	--	12.5	59.7	--
-----	Cody	40.0	--	--	12.4	58.8	--
-----	Siouxlanc	39.8	--	--	12.5	59.1	--
-----	Centura	39.8	--	--	12.5	59.4	--
-----	Scout66	39.3	--	--	12.5	59.8	--
-----	TAM 200	38.8	--	--	12.5	60.7	--
-----	Turkey	35.7	--	--	13.0	59.0	--
AVERAGE ALL ENTRIES		40.2	--	--	12.5	59.1	--
DIF. REQ. FOR SIG.	5%	0.7	--	--	0.2	0.3	--
	25%	0.4	--	--	0.1	0.2	--

Winter Wheat yields at all locations in 1993

Brand	Variety	Gage	Clay	Adams	Keith	Lincoln	Lincoln	Red Wil	Custer	Morrill	Kimball	Scotts 1	Dawes	Box But	Average
		Yield in bu/a													
-----	Arapahoe	45.8	49.0	54.8	69.4	62.8	63.5	56.4	60.8	33.3	52.5	32.8	69.0	66.5	55.1
-----	Buckskin	.	.	.	.	.	.	.	.	24.3	49.8	29.2	67.3	59.6	46.0
-----	Centura	.	47.0	45.5	50.4	63.0	57.3	54.8	52.0	26.0	54.3	26.3	67.0	69.0	51.1
-----	Cody	.	.	.	58.2	59.3	55.0	53.2	56.6	26.5	50.5	31.5	66.5	62.5	52.0
-----	IKE	.	.	.	77.8	68.8	.	62.8	67.8	.	.	.	.	.	69.3
-----	Jules	23.5	32.8	46.3	61.4	32.0	58.3	37.6	52.2	37.0	60.0	46.7	67.2	62.5	47.5
-----	Karl	38.4	45.0	60.0	72.8	57.8	64.3	60.4	66.2	.	.	.	.	.	58.1
-----	Karl 92	35.0	44.5	60.5	79.8	67.3	63.0	60.2	64.2	30.8	48.8	28.8	65.0	61.4	54.6
-----	Lamar	.	.	.	64.0	55.3	52.8	53.8	49.4	26.7	53.5	30.5	66.7	62.5	51.5
-----	NE87612	.	.	.	66.6	58.3	64.5	44.8	59.2	27.5	42.5	23.5	71.3	58.6	51.7
-----	NE88427	40.2	51.5	58.3	77.6	67.0	62.0	60.6	70.4	29.3	48.0	31.0	68.3	61.9	55.9
-----	NE88584	38.4	43.8	39.0	46.0	62.5	57.0	53.0	54.6	26.8	57.8	25.8	69.7	63.1	49.0
-----	NE88595	37.0	44.8	51.3	65.6	65.8	68.5	64.6	60.6	39.8	58.8	35.3	74.8	77.6	57.3
-----	NE89522	38.0	43.3	54.0	77.6	73.0	66.5	64.2	69.6	34.0	59.5	37.0	75.8	72.4	58.8
-----	NE89526	39.6	52.0	67.7	78.6	60.3	66.3	59.8	67.2	26.0	42.3	32.5	60.8	53.1	54.3
-----	N87V106	36.2	47.0	63.3	68.8	69.0	63.0	58.8	64.4	25.2	46.3	19.5	73.2	63.0	53.7
-----	Rawhide	29.2	43.3	45.8	65.4	67.5	62.0	53.4	54.2	25.5	49.8	31.0	70.8	66.0	51.1
-----	Redland	38.4	45.5	55.3	78.2	68.3	62.8	59.2	64.2	29.5	53.8	28.8	71.5	69.8	55.8
-----	Sandy	.	.	.	50.6	47.3	52.8	47.6	41.2	37.8	51.5	34.8	66.2	61.0	49.1
-----	Scout66	32.6	41.0	33.5	46.0	49.5	52.8	49.8	36.8	25.3	54.8	30.2	62.8	64.1	44.6
-----	Siouxland	27.4	40.3	48.5	65.6	61.0	59.3	53.2	56.6	24.5	45.3	29.3	63.2	65.8	49.2
-----	Turkey	13.0	28.7	31.0	37.6	46.8	41.8	43.8	28.0	23.3	39.2	24.0	54.2	61.9	36.4
-----	TAM 107	35.2	38.5	56.0	76.2	61.3	60.5	55.6	65.6	36.8	59.0	33.7	72.5	65.9	55.1
-----	TAM 200	31.0	41.7	59.8	75.0	52.3	64.8	52.8	66.6	27.8	53.0	34.0	76.3	69.4	54.2
-----	VISTA	36.6	46.3	56.5	74.4	52.5	66.3	61.6	58.8	34.2	58.7	37.8	69.5	69.3	55.6
-----	Yuma	27.4	37.0	52.0	76.0	70.0	66.5	62.4	55.4	28.2	57.0	26.5	72.8	64.1	53.5
-----	2163	40.8	49.0	58.5	77.8	57.3	69.3	55.8	67.4	.	.	.	.	.	59.5
AgriPro	Abilene	.	36.0	44.8	.	.	.	.	.	.	.	.	.	.	40.4
AgriPro	Laredo	.	.	.	82.0	61.0	66.0	58.8	76.6	.	.	.	.	.	68.9
AgriPro	Longhorn	.	.	.	77.6	58.3	61.3	53.4	60.2	27.7	44.5	31.3	63.2	65.9	54.3
AgriPro	Ogallala	.	.	.	81.0	68.0	68.0	55.6	68.4	.	.	.	.	.	68.2
AgriPro	Ponderosa	.	.	.	73.8	62.5	61.0	51.2	63.8	.	.	.	.	.	62.5
AgriPro	Tomahawk	25.4	48.3	58.0	79.4	61.5	60.3	58.0	64.0	.	.	.	.	.	56.9
Quantum	QT 549	.	.	.	70.8	61.5	66.0	59.0	55.6	30.0	56.5	36.2	71.5	73.0	58.0
Quantum	QT 562	.	43.3	51.3	73.2	62.0	67.3	63.4	66.0	31.0	45.3	31.7	73.3	65.6	56.1
Quantum	QT 574	32.0	.	.	.	.	.	.	.	.	.	.	.	.	32.0
Quantum	QT 577	28.8	43.0	69.3	.	.	.	.	.	.	.	.	.	.	47.0
Terra	HR153	30.8	.	.	.	.	.	.	.	.	.	.	.	.	30.8
Terra	SR204	26.6	.	.	.	.	.	.	.	.	.	.	.	.	26.6

Winter Wheat Yields as % of Checks
Checks = Arapahoe, Redland, and Siouxland

Brand	Variety	Gage	Clay	Adams	Keith	Lincoln	Lincoln	Red Wil	Custer	Morrill	Kimball	Scotts 1	Dawes	Box But	Average
		Yield as % of check													
-----	Arapahoe	123	109	104	98	98	103	100	100	114	104	108	102	99	105
-----	Buckskin	.	.	.	.	.	.	.	.	84	99	96	99	88	93
-----	Centura	.	105	86	71	98	93	97	86	89	107	87	99	102	93
-----	Cody	.	.	.	82	93	89	95	94	91	100	104	98	93	94
-----	IKE	.	.	.	109	107	.	112	112	.	.	.	.	.	110
-----	Jules	63	73	88	86	50	94	67	86	127	119	154	99	93	92
-----	Karl	103	100	113	102	90	104	107	109	.	.	.	.	.	104
-----	Karl 92	94	99	114	112	105	102	107	106	106	97	95	96	91	102
-----	Lamar	.	.	.	90	86	85	96	82	92	106	101	98	93	93
-----	NE87612	.	.	.	94	91	104	80	98	95	84	78	105	87	91
-----	NE88427	108	115	110	109	105	100	108	116	101	95	102	101	92	105
-----	NE88584	103	97	74	65	98	92	94	90	92	114	85	103	94	92
-----	NE88595	99	100	97	92	103	111	115	100	137	116	117	110	115	109
-----	NE89522	102	96	102	109	114	107	114	115	117	118	122	112	107	110
-----	NE89526	106	116	128	111	94	107	106	111	89	84	107	90	79	102
-----	N87V106	97	105	120	97	108	102	105	106	87	92	64	108	94	99
-----	Rawhide	78	96	87	92	105	100	95	90	88	99	102	104	98	95
-----	Redland	103	101	105	110	107	102	105	106	101	106	95	105	104	104
-----	Sandy	.	.	.	71	74	85	85	68	130	102	115	97	91	92
-----	Scout66	88	91	63	65	77	85	89	61	87	108	100	92	95	85
-----	Siouxland	74	90	92	92	95	96	95	94	84	90	97	93	98	91
-----	Turkey	35	64	59	53	73	68	78	46	80	78	79	80	92	68
-----	TAM 107	95	86	106	107	96	98	99	108	126	117	111	107	98	104
-----	TAM 200	83	93	113	106	82	105	94	110	96	105	112	112	103	101
-----	VISTA	98	103	107	105	82	107	109	97	118	116	125	102	103	106
-----	Yuma	74	82	98	107	109	107	111	92	97	113	87	107	95	98
-----	2163	110	109	111	109	89	112	99	111	.	.	.	.	.	106
AgriPro	Abilene	.	80	85	.	.	.	.	.	.	.	.	.	.	82
AgriPro	Laredo	.	.	.	115	95	107	105	127	.	.	.	.	.	110
AgriPro	Longhorn	.	.	.	109	91	99	95	99	95	88	103	93	98	97
AgriPro	Ogallala	.	.	.	114	106	110	99	113	.	.	.	.	.	108
AgriPro	Ponderosa	.	.	.	104	98	99	91	105	.	.	.	.	.	99
AgriPro	Tomahawk	68	107	110	112	96	97	103	106	.	.	.	.	.	100
Quantum	QT 549	.	.	.	100	96	107	105	92	103	112	119	105	108	105
Quantum	QT 562	.	96	97	103	97	109	113	109	107	90	105	108	97	102
Quantum	QT 574	86	.	.	.	.	.	.	.	.	.	.	.	.	86
Quantum	QT 577	77	96	131	.	.	.	.	.	.	.	.	.	.	101
Terra	HR153	83	.	.	.	.	.	.	.	.	.	.	.	.	83
Terra	SR204	72	.	.	.	.	.	.	.	.	.	.	.	.	72

Winter Wheat Bushel weights at all locations – 1993

Brand	Variety	Gage	Clay	Adams	Keith	Lincoln	Lincoln	Red Wil	Custer	Morrill	Kimball	Scotts	Dawes	Average
		Bushel weight in lb/bu												
-----	Arapahoe	52.5	52.7	50.2	54.7	57.4	56.1	55.4	55.1	57.0	57.1	57.2	60.2	55.5
-----	Buckskin	.	.	.	.	.	.	.	.	59.7	59.5	58.9	61.7	60.0
-----	Centura	.	54.2	49.8	56.5	58.5	56.8	57.5	57.1	58.6	59.2	59.3	61.6	57.2
-----	Cody	.	.	.	56.3	57.7	56.0	57.0	58.3	57.4	58.1	58.6	60.6	57.8
-----	Ike	.	.	.	56.0	58.5	.	56.6	56.0	.	.	.	.	56.8
-----	Jules	47.5	49.4	49.2	54.3	57.4	55.3	55.4	57.0	56.8	57.4	60.4	61.0	55.1
-----	Karl	53.0	54.5	53.7	56.1	58.0	56.3	57.2	56.9	.	.	.	.	55.7
-----	Karl 92	53.3	53.7	53.4	57.6	58.0	56.3	57.2	55.1	56.5	57.7	56.4	60.0	56.3
-----	Lamar	.	.	.	57.9	60.1	56.6	58.2	58.0	58.9	60.2	60.3	62.3	59.2
-----	NE87612	.	.	.	55.5	58.1	55.7	55.8	54.6	57.9	57.4	57.1	60.5	57.0
-----	NE88427	53.1	53.8	53.0	56.6	58.5	56.5	57.0	56.9	58.7	58.1	58.8	60.9	56.8
-----	NE88584	51.3	54.6	52.9	57.0	57.9	56.8	57.6	56.8	57.8	58.5	58.5	61.2	56.7
-----	NE88595	49.7	52.5	48.5	55.8	57.4	56.5	56.5	55.4	58.1	57.6	58.6	60.6	55.6
-----	NE89522	51.2	50.4	49.9	56.4	58.0	56.6	56.8	54.8	58.2	57.8	58.5	61.0	55.8
-----	NE89526	53.5	54.9	53.8	57.0	58.2	56.9	57.1	58.5	57.0	57.7	58.6	60.2	57.0
-----	N87V106	53.5	53.2	53.7	58.7	58.2	56.0	57.5	56.2	57.7	57.8	57.8	60.7	56.8
-----	Rawhide	50.2	51.6	48.9	55.3	57.8	56.1	56.2	55.6	57.9	58.2	59.0	61.1	55.7
-----	Redland	51.3	51.1	49.9	55.2	56.9	55.3	55.1	55.6	57.2	57.2	56.5	59.6	55.1
-----	Sandy	.	.	.	57.8	58.5	54.8	57.7	57.4	58.6	59.6	59.8	62.1	58.5
-----	Scout66	51.9	54.7	51.5	57.3	58.7	56.0	58.0	55.3	59.0	58.7	58.8	61.3	56.8
-----	Siouxland	49.0	52.6	51.9	55.9	57.2	56.0	56.6	56.1	57.2	57.5	57.9	60.4	55.7
-----	Turkey	48.2	53.5	51.2	55.6	57.8	54.0	56.7	54.3	57.1	57.3	57.4	60.9	55.3
-----	TAM 107	49.7	47.8	51.5	56.1	58.1	55.3	56.2	53.4	58.9	57.9	58.2	60.7	55.3
-----	TAM 200	50.3	50.9	48.9	58.1	57.2	54.2	57.0	56.1	60.4	60.4	60.4	62.0	56.3
-----	VISTA	46.9	51.9	50.3	55.1	57.4	56.7	53.9	55.7	57.7	58.5	58.3	60.5	55.2
-----	Yuma	48.2	49.7	49.7	56.5	57.4	56.0	54.6	52.2	58.0	58.4	59.1	60.8	55.1
-----	2163	53.1	51.9	50.5	56.1	56.9	55.7	54.1	53.6	.	.	.	.	54.0
AgriPro	Abilene	.	52.6	49.7	.	.	.	.	.	.	.	.	.	51.2
AgriPro	Laredo	.	.	.	56.9	58.0	57.0	56.4	56.0	.	.	.	.	56.9
AgriPro	Longhorn	.	.	.	57.8	58.2	57.0	58.4	57.6	58.5	58.8	58.2	61.5	58.4
AgriPro	Ogallala	.	.	.	57.8	59.3	57.6	59.0	57.7	.	.	.	.	58.3
AgriPro	Ponderosa	.	.	.	57.3	58.3	57.0	56.4	56.0	.	.	.	.	57.0
AgriPro	Tomahawk	49.9	51.6	51.1	56.9	57.8	55.7	55.4	54.6	.	.	.	.	54.1
Quantum	QT 549	.	.	.	55.4	57.3	55.3	56.4	53.6	57.2	57.5	59.2	60.7	57.0
Quantum	QT 562	.	51.7	51.2	55.3	57.7	55.6	56.1	55.7	58.1	57.6	58.9	60.4	56.2
Quantum	QT 574	49.0	.	.	.	.	.	.	.	.	.	.	.	49.0
Quantum	QT 577	49.4	49.9	51.7	.	.	.	.	.	.	.	.	.	50.3
Terra	HR153	54.7	.	.	.	.	.	.	.	.	.	.	.	54.7
Terra	SR204	47.9	.	.	.	.	.	.	.	.	.	.	.	47.9

Winter Wheat Protein content at all locations – 1993

Brand	Variety	Gage	Clay	Adams	Keith	Lincoln Nursery	Lincoln Fld Plt.	Red Willow	Custer	Morrill	Kimball	Scotts Bluff	Dawes	Average
		% Protein												
-----	Arapahoe	12.3	14.9	13.0	13.0	12.5	11.8	10.3	11.9	13.8	12.3	14.5	13.5	12.8
-----	Buckskin	.	.	.	.	.	.	.	.	12.9	11.7	13.6	12.4	12.7
-----	Centura	.	14.9	13.2	13.9	12.0	12.0	11.3	12.2	13.4	10.8	13.7	12.6	12.7
-----	Cody	.	.	.	12.3	12.1	11.3	11.2	11.8	13.6	12.6	13.4	13.0	12.4
-----	Hybrid F3 #1	.	.	.	.	.	.	.	.	13.2	10.9	13.6	12.8	12.6
-----	IKE	.	.	.	13.0	12.2	.	12.1	12.2	.	.	.	.	12.4
-----	Jules	12.3	14.9	12.1	10.6	10.9	11.4	11.6	11.4	12.3	12.9	11.6	10.8	11.9
-----	Karl	12.4	15.2	13.2	12.5	12.6	11.8	12.0	11.5	.	.	.	.	12.7
-----	Karl 92	12.5	15.1	12.5	11.9	12.4	11.6	11.3	11.4	14.3	15.0	15.3	13.2	13.0
-----	Lamar	.	.	.	13.0	12.5	12.0	11.4	12.1	13.5	13.5	13.7	13.2	12.8
-----	NE87612	.	.	.	11.7	12.1	11.3	11.0	12.2	12.6	14.6	13.5	11.8	12.3
-----	NE88427	12.4	15.4	12.9	12.7	12.1	12.1	11.3	12.0	12.6	12.7	13.4	12.4	12.7
-----	NE88584	12.9	15.0	13.4	12.8	12.1	10.8	11.2	11.6	12.9	10.1	13.8	12.3	12.4
-----	NE88595	12.5	15.0	12.5	11.8	11.4	11.1	10.8	11.8	11.8	10.9	13.0	11.1	12.0
-----	NE89522	12.4	15.0	12.7	12.0	11.4	11.6	11.3	11.3	11.8	12.7	13.3	11.3	12.2
-----	NE89526	12.7	15.0	12.9	12.3	12.4	12.1	11.9	12.3	13.3	14.5	13.7	14.2	13.1
-----	N87V106	13.1	15.0	14.4	12.2	12.5	11.7	11.2	12.3	13.7	12.3	14.5	13.0	13.0
-----	Rawhide	12.7	14.8	12.4	12.4	12.1	11.4	11.9	11.8	13.2	13.1	13.8	12.5	12.7
-----	Redland	12.1	15.1	12.5	11.4	11.6	11.1	11.8	11.8	13.5	12.6	13.9	12.2	12.5
-----	Sandy	.	.	.	12.0	11.6	12.0	12.0	12.2	12.5	12.1	13.9	12.7	9.3
-----	Scout66	12.6	15.0	14.1	13.3	11.9	11.9	11.7	12.9	13.9	13.2	13.9	13.1	13.1
-----	Siouxland	12.3	14.9	12.5	12.4	12.0	12.0	12.9	12.2	13.6	12.3	13.7	11.9	12.7
-----	Turkey	11.1	15.0	13.2	12.9	12.6	12.4	12.2	13.3	13.9	13.5	14.8	14.0	13.2
-----	TAM 107	12.9	15.3	13.6	12.3	12.3	11.6	11.6	12.0	13.1	12.4	13.7	12.4	12.8
-----	TAM 200	12.8	15.1	12.5	10.9	11.6	10.8	11.2	11.0	14.2	14.1	14.4	11.7	12.5
-----	VISTA	12.4	14.8	13.0	12.0	12.2	11.6	11.3	12.0	11.9	12.0	13.2	12.3	12.4
-----	Yuma	12.2	15.0	12.5	10.8	11.4	11.0	11.8	11.2	13.0	11.6	13.3	11.6	12.1
-----	2163	12.5	14.8	11.8	11.5	11.8	11.3	11.9	11.1	.	.	.	.	12.1
AgriPro	Abilene	.	14.8	12.1	.	.	.	.	.	.	.	.	.	13.5
AgriPro	Laredo	.	.	.	11.9	12.4	12.3	11.5	11.8	.	.	.	.	12.0
AgriPro	Longhorn	.	.	.	12.7	12.8	12.2	10.9	12.6	13.2	13.6	13.9	12.3	12.7
AgriPro	Ogallala	.	.	.	13.2	12.9	12.4	11.1	12.0	.	.	.	.	12.3
AgriPro	Ponderosa	.	.	.	12.9	13.0	12.3	11.4	12.5	.	.	.	.	12.4
AgriPro	Tomahawk	13.1	14.6	13.0	12.0	12.4	12.6	11.5	11.9	.	.	.	.	12.6
Quantum	QT 549	.	.	.	11.4	11.8	11.2	11.6	11.9	12.9	13.7	12.5	12.0	12.1
Quantum	QT 562	.	15.1	12.5	11.9	11.9	11.1	11.8	11.5	12.8	12.4	13.2	11.4	12.3
Quantum	QT 574	12.3	.	.	.	.	.	.	.	.	.	.	.	12.3
Quantum	QT 577	11.8	15.1	12.3	.	.	.	.	.	.	.	.	.	13.1
Terra	HR153	13.1	.	.	.	.	.	.	.	.	.	.	.	13.1
Terra	SR204	11.4	.	.	.	.	.	.	.	.	.	.	.	11.4

Winter Barley Variety Tests – 1993
Lancaster, Lincoln, and Red Willow Counties

VARIETY	YIELD 2-YEAR AVERAGE	YIELD LINCOLN & MCCOOK	YIELD LINCOLN	YIELD MCCOOK	Bushel Wt McCook	WINTER SURVIVAL 2-YEAR	WINTER SURVIVAL LINCOLN	WINTER SURVIVAL MCCOOK	WINTER SURVIVAL CLAY CENT	HEIGHT LINCOLN	HEIGHT MCCOOK	HEIGHT CLAY Center	HDDATE LINCOLN (Days after May 1)	BYDV LINCOLN
	bu/a				lb/bu	%				inches				(%)
NE92711		85.71	86.57	84.86	48.67		93.75	97.50	45.00	30.8	30.8	27.6	22	5.0
NE92714		75.72	79.28	70.16	48.00		87.50	97.50	45.00	30.0	29.8	27.0	24	13.8
NE92716		69.31	62.69	75.94	48.33		81.25	95.00	60.00	31.6	33.3	29.5	23	15.0
NE92715		69.06	63.75	74.38	47.67		86.25	96.25	45.00	29.8	29.8	28.3	24	13.8
NE92702		68.77	55.10	82.44	49.33		92.50	96.25	62.50	31.6	31.5	30.5	23	13.8
NE92717		62.30	60.79	63.82	50.00		85.00	95.00	56.25	29.3	30.3	28.0	22	27.5
NE91722	43.93	62.03	40.57	83.50	50.00	76.00	71.25	98.75	75.00	33.9	35.3	33.5	25	52.5
NE91702	51.13	61.70	59.19	64.21	52.33	72.75	80.00	88.75	60.00	31.4	31.5	29.0	23	32.5
NE86954	52.29	60.21	49.41	71.17	48.67	86.00	87.50	97.50	90.00	28.8	28.8	30.3	24	20.0
PERKINS	44.30	58.18	38.63	77.73	50.00	86.75	90.00	100.00	78.75	32.5	34.0	30.3	23	32.5
NE90721	42.91	57.59	40.22	74.97	48.67	84.75	86.25	97.50	75.00	30.9	30.0	30.3	25	26.3
NE90710	46.02	56.58	35.66	77.51	51.00	80.00	83.75	97.50	80.00	31.4	32.3	31.5	24	33.8
NE89725	43.19	54.39	38.63	70.54	48.67	82.75	81.25	92.50	78.75	33.0	36.8	31.5	23	58.8
NE90701	40.98	52.82	28.25	77.39	48.67	79.50	82.50	98.75	78.75	31.8	33.3	32.0	28	38.8
NE92718		52.56	43.63	61.49	48.00		71.25	90.00	61.25	29.0	31.0	28.3	26	42.5
DUNDY	41.41	52.41	36.38	68.44	48.00	88.50	86.25	93.75	78.75	28.3	30.3	28.8	25	23.8
NE92719		50.24	35.94	64.54	48.33		67.50	93.75	66.25	31.1	32.0	31.0	25	38.8
NE92709		50.06	30.57	69.56	49.00		75.00	95.00	67.50	30.1	31.0	30.3	27	32.5
KEARNEY	33.49	47.65	32.04	63.26	48.33	79.00	73.75	100.00	60.00	34.8	37.5	30.8	28	50.0
NE92713		45.65	33.32	57.99	49.33		72.50	92.50	56.25	28.3	29.3	26.8	28	37.5
NE91710	37.82	45.24	29.82	60.67	52.67	85.00	75.00	95.00	91.25	31.4	33.5	31.8	24	50.0
CENTURK 78	41.50	43.73	45.70	41.75	54.67	94.25	93.75	98.75	95.00	43.4	42.5	40.5	27	17.8
HITCHCOCK	34.68	43.58	20.29	66.87	46.33	88.75	81.25	98.75	80.00	30.3	33.0	28.8	27	41.3
NE92705		35.61	19.44	51.78	46.33		47.50	92.50	76.25	26.3	28.3	27.8	25	45.0
MEAN	42.56	56.68	44.41	68.96	49.21	83.39	80.52	97.78	69.27	31.2	32.3	30.2	25	31.7
LSD	7.36	13.12	14.77	14.06	2.88	6.52	14.80	6.10	19.24	2.3	2.9	2.3	2	21.7
CV (4%)	23.60	22.36	22.47	13.77	3.39	11.95	12.41	4.30	18.76	7.2	6.0	5.2	4.56	46.3

Parentage of winter barley varieties tested in 1993

VARIETY	PEDIGREE
Centurk 78	winter wheat
Kearney	
Hitchcock	Dicktoo/Reno//Shanon/Randolph/3/OACW82–11/Decatur
Dundy	Sabbaton/Meimi//Decatur/3/Paoli
Perkins	NE851808 = Nebar sel./Dundy
NE90721	Dundy/OK77559
NE90710	NE80725 sel./OK77422
NE90701	NE80725 sel./OK77422
NE89725	Dundy//MD45–488–13
NE86954	Hitchcock/Maury//Hitchcock
NE91702	NE81713/Wysor
NE91710	NE81707//NE62203/Boyer
NE91722	Hitchcock/Start
NE92702	Dundy/Pennco
NE92705	Dundy/ORWF8410
NE92709	Dundy/ORWF158–1
NE92711	Dundy/Pennco
NE92713	Dundy/Pennco
NE92714	Dundy/Pennco
NE92715	Dundy/Pennco
NE92716	Dundy/Pennco
NE92717	Dundy/Pennco
NE92718	Dundy/Pennco
NE92719	Hitchcock/USS

Weather data for 1992–93 in counties where Winter Wheat plots were located
Monthly average of daily high and low temperatures and rainfall

Month	County											
	Keith			Scotts Bluff			Kimball			Box Butte		
	High	Low	Rainfall	High	Low	Rainfall	High	Low	Rainfall	High	Low	Rainfall
Sept	78.5	48.2	0.5	80.0	44.8	0.1	78.4	44.6	0.2	77.2	47.4	0.0
Oct	66.0	34.7	1.2	66.9	33.5	1.1	66.7	33.6	0.0	63.7	36.8	0.5
Nov	43.1	22.7	0.5	43.0	20.3	0.3	42.3	20.3	0.4	40.5	23.1	0.5
Dec	33.7	9.0	0.7	31.6	6.9	0.4	34.7	10.3	0.4	31.0	11.7	0.2
Jan	29.0	10.0	0.6	31.2	10.3	0.4	33.7	12.7	0.3	30.0	11.8	0.3
Feb	28.5	8.3	1.5	28.6	7.0	0.7	33.5	11.2	0.8	28.7	9.4	1.0
Mar	48.1	24.5	1.4	47.8	24.2	0.8	50.0	28.0	0.8	45.9	26.7	1.2
Apr	56.2	33.4	1.6	62.0	32.9	1.3	56.6	33.6	2.2	53.4	33.7	1.9
May	71.2	44.4	4.7	74.1	43.0	0.7	72.2	43.2	0.9	69.2	45.0	1.4
June	78.0	52.4	3.4	76.2	49.7	4.8	75.9	49.0	3.0	74.3	51.0	5.3
July	83.7	58.9	2.3	72.5	44.3	2.8	83.9	55.3	1.2	80.9	53.9	0.2
Aug	84.3	58.2	1.1	NA	NA	NA	82.2	55.6	0.8	NA	NA	NA

Month	County											
	Custer			Gage			Dawes			Lincoln		
	High	Low	Rainfall	High	Low	Rainfall	High	Low	Rainfall	High	Low	Rainfall
Sept	78.4	49.1	0.5	78.3	52.6	2.8	77.1	43.2	0.2	78.9	45.1	0.0
Oct	64.8	35.9	1.5	67.2	41.3	3.2	68.2	35.2	0.4	65.7	33.2	1.0
Nov	41.1	23.5	0.2	41.2	28.1	3.0	42.7	24.1	0.6	43.2	21.9	0.1
Dec	32.4	11.0	0.5	37.0	20.2	1.2	31.4	9.1	0.0	35.4	11.0	0.1
Jan	28.0	8.7	0.5	28.8	10.9	1.3	28.2	10.3	0.0	33.1	8.0	0.2
Feb	26.5	8.3	1.4	30.4	14.3	1.0	27.3	10.1	2.1	29.3	6.3	0.4
Mar	47.6	27.0	1.1	46.8	27.1	2.5	48.1	25.3	1.3	49.7	25.0	0.3
Apr	58.3	35.3	1.7	58.5	36.3	2.6	57.1	34.3	1.1	58.0	33.0	1.7
May	72.2	47.5	3.1	70.5	50.0	4.3	74.0	45.3	1.0	71.4	44.7	1.8
June	78.9	56.0	4.8	81.6	57.7	11.1	72.6	49.6	7.4	77.7	52.8	5.8
July	83.5	61.6	6.5	84.6	65.8	13.1	82.0	56.4	1.1	81.6	59.7	3.7
Aug	NA	NA	NA	67.8	50.6	1.2	52.0	34.7	0.5	74.8	52.7	1.9

Month	County											
	Morrill			Clay			Saunders			Red Willow		
	High	Low	Rainfall	High	Low	Rainfall	High	Low	Rainfall	High	Low	Rainfall
Sept	82.7	47.8	0.0	79.0	49.4	0.6	78.1	49.3	2.2	81.5	48.4	0.0
Oct	67.7	35.1	1.3	66.3	37.7	2.8	66.8	36.7	2.2	68.5	36.5	1.1
Nov	44.0	22.8	0.6	41.7	26.0	0.2	40.1	27.1	1.7	44.3	22.6	0.0
Dec	34.1	9.3	0.3	33.7	15.8	0.0	35.6	17.0	0.5	36.1	11.9	0.0
Jan	32.8	11.5	0.4	27.4	8.0	0.0	28.6	6.9	0.2	32.4	10.0	0.0
Feb	30.4	9.2	0.9	26.6	11.2	0.0	27.6	11.3	0.3	32.8	10.1	0.0
Mar	52.8	27.4	1.3	44.1	27.0	0.0	43.4	26.4	2.0	51.6	25.7	0.4
Apr	61.7	35.9	1.2	58.0	36.5	2.2	58.7	35.8	2.6	59.6	33.9	0.1
May	76.5	45.6	1.1	70.1	47.9	3.7	71.9	49.1	2.7	73.1	46.4	2.4
June	81.5	51.9	4.7	79.3	56.6	6.0	80.7	58.0	7.7	82.5	55.6	0.1
July	85.9	57.5	2.7	82.3	64.0	11.3	83.8	65.3	6.8	85.1	62.8	7.4
Aug	83.3	55.7	0.8	83.3	62.4	1.8	85.7	62.5	1.8	84.6	60.8	1.7

Planting dates for winter wheat in Nebraska

The planting date of winter wheat varies considerably as we move across the state. Research to establish the optimum planting date began many years ago. Each year these dates are validated through observation of fields which are planted earlier and later than the optimum date. Some years an earlier planting may have an advantage and some years a later date may have an advantage. Our observation is that in the long term, the optimum date will give the highest average yield.

We also recognize that as the number of acres increase, the length of time to plant increases, and more of the wheat must be planted both before and after the optimum date. As a starting point, you should try to have half the wheat seeded by the optimum date. You can also improve on the average by planting the higher elevation fields and those containing sandy soil first and leave the lower fields and those with higher clay content until last.

The dates listed on the map below take into account several factors. In the panhandle, the dates are based on elevation. Using this method, producers can find the optimum date for each field by knowing the elevation. Using a starting point of September 15 for 3500 feet, add one day for each 100 feet lower and subtract 1 day for each 100 feet higher in elevation. For the rest of the state, the dates September 25 and later are set to avoid Hessian fly infestation. The date is late enough to consider fly free. Other reasons for delaying planting include avoidance of wheat streak mosaic virus, Russian Wheat Aphid, crown and root rot, and too much fall growth. Excessive fall growth causes moisture depletion and stress. Reasons for planting early include adequate ground cover to avoid erosion, adequate plant growth to assure winter hardiness, and early enough planting to hasten ripening the following summer to avoid excessive heat stress.

The following map is intended as a guide rather than an absolute deadline. Each producer will make modifications to make the date fit the conditions of their farm.