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EC98-107 Nebraska Proso, Sunflower, Bean, Pea, Oat and Spring Wheat Variety Tests, 1998

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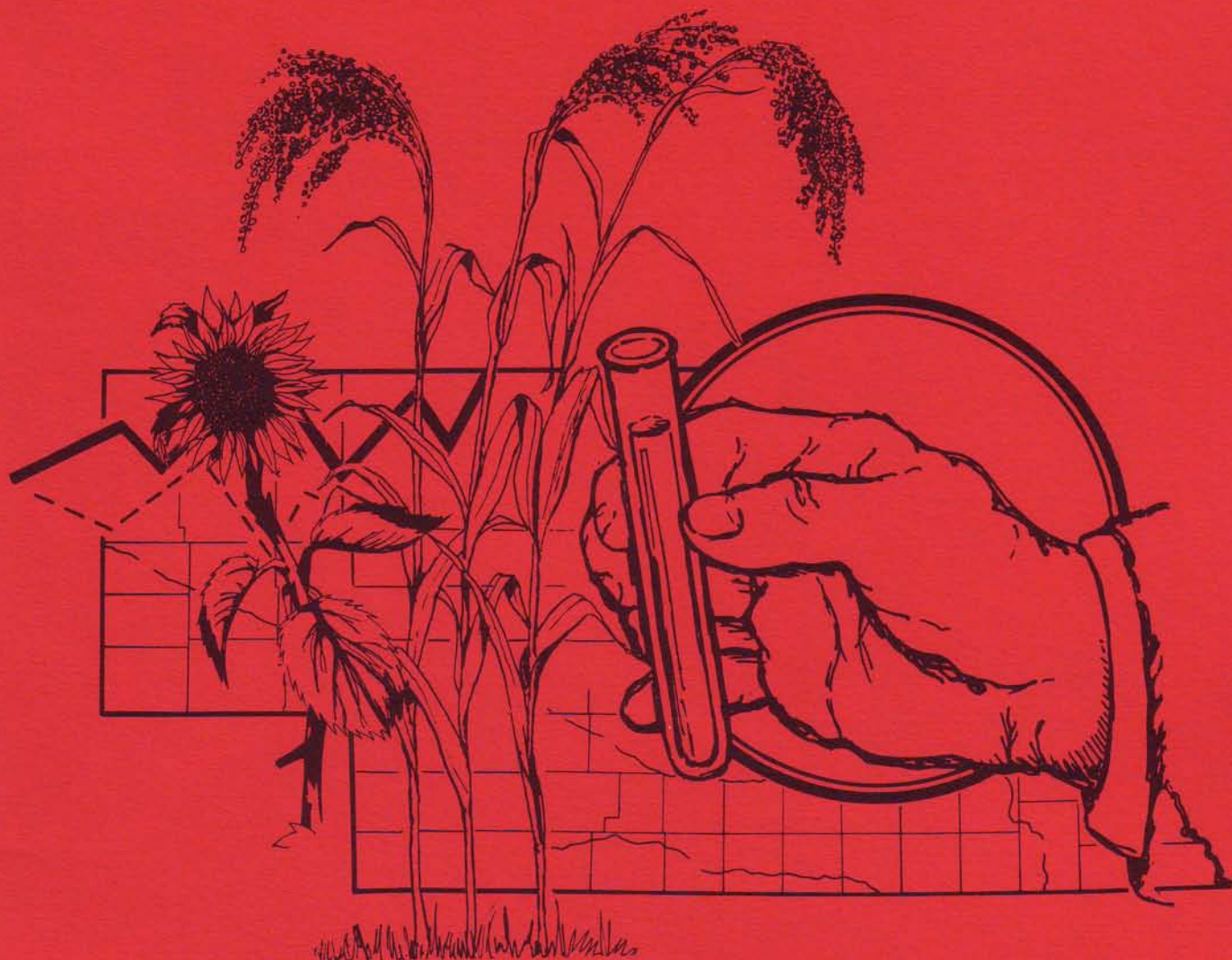
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NEBRASKA PROSO, SUNFLOWER, BEAN, PEA, OAT AND SPRING WHEAT VARIETY TESTS 1998



University of Nebraska—Lincoln
Institute of Agriculture and Natural Resources
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This circular is a progress report of spring small grain trials grown throughout Nebraska, and proso, sunflower, dry bean, and field pea variety trials conducted by the Panhandle Research and Extension Center, Scottsbluff, and the High Plains Agricultural Laboratory, Sidney. Conduct of the experiments and publication of results is a

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Thanks to Jeff Golus, John Rickertsen, Bruce Swan, John Eis, and Greg Dom for their assistance on trial maintenance and data analysis.

METRIC EQUIVALENTS

1 centimeter = 0.394 inches
 1 hectare = 2.471 acres
 1 kilogram = 2.205 pounds
 1 hectoliter = 2.838 bushels
 kg/hl = lb/bu x 1.287

cm = inches x 2.541
 ha = acres x 0.405
 kg = pounds x 0.454
 hl = bushels x 0.352
 kg/ha = bu/A x 62.71 (56# bu)

DEFINITIONS

CWT = hundred weight

L.S.D. (.05) = A statistic (calculated at the 5% probability level in this book) used to compare the difference between two entries for significance. If the difference between two entries is larger than the LSD value at the bottom of each table, it is assumed significant.

N.S. = not significant. The differences between two entries were not statistically significant.

EXTENSION CIRCULAR 98-107

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Historical Prices and Seasonal Price Patterns for Proso Millet and Sunflowers

by Paul A. Burgener, Dillon M Feuz, and Tom Holman

Over the past several years, changes in market opportunities and farm policy have caused an increase in the acres planted to proso millet and sunflowers in the Nebraska Panhandle. Proso millet harvest has increased from 95,000 acres in 1995 to 160,000 acres in 1997. For sunflowers, there has been an increase from 44,000 acres to 68,000 acres between the 1996 crop and the 1998 season.

The prices of proso millet have been inconsistent over the past five years, with an annual average high price of \$14.99 per cwt in the 1993-94 crop year and an annual average low price of \$4.13 per cwt in the 1997-98 crop year (Table 1). The variability can be attributed to a supply/demand imbalance in the 1993-94 crop year. Average monthly prices were in excess of \$20.00 per cwt in four months during 1993-94. It is unlikely that this type of imbalance will occur again, thus the 1993-94 crop year was excluded from the 4-year averages to develop a more representative set of average prices and seasonal patterns. Using a 4-year average, with the 1993-94 crop year excluded, the monthly averages range from a high of \$5.94 per cwt in November to low of \$4.94 per cwt in August just prior to new crop proso millet entering the market.

The seasonal price indices for proso millet, using the 4-year averages, range from a high of 10% above the average in November to 6% below the average in August. The seasonal pattern shows nearly 16% total change from highest to lowest prices. Different from most commodities, the highest prices are at harvest. Because of this, there is little incentive to store proso millet with the expectation of short term price gains from off season marketing. Figure 1 shows the actual seasonal price variation experienced over the crop year.

Over the past five years, the low annual average price of sunflowers has been \$10.27 per cwt in the 1994-95 crop year, while the high price of \$11.97 per cwt came in the 1995-96 crop year (Table 2). The 5-year average monthly prices show a low price of \$10.81 in March, while the average monthly high price of \$11.52 has occurred in June over the past five years.

The seasonal price index pattern for sunflowers follows the standard crop pattern of the lowest prices near harvest time, and highest prices in the spring or early summer. However, the sunflower pattern seems to go up and down several times through the year, making price predictions difficult at best. There is only an 11%

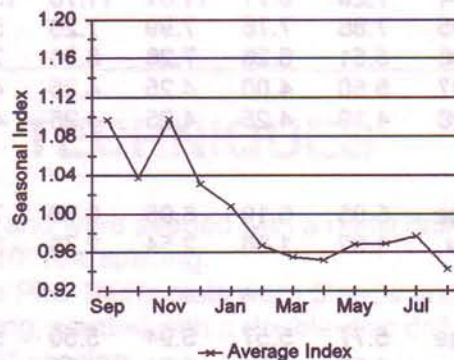


Figure 1. Seasonal Price Pattern for Proso Millet, 1993-1998.

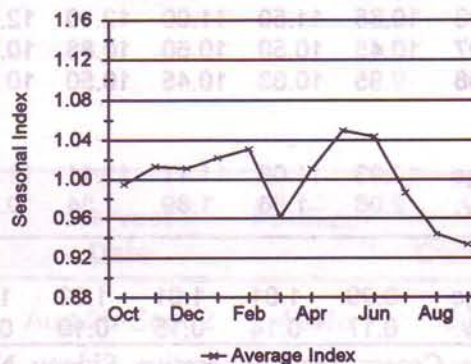


Figure 2. Seasonal Price Pattern for Sunflowers, 1993-1998.

difference between the index for the lowest month (September) and the highest month (May). Some of this variation and difference in seasonal patterns may be explained by the market structure for sunflowers. As an oilseed crop, the sunflower market is a small portion of the world oilseed market. This market is pressured by world production of safflower, canola, soybeans, peanuts, and other edible oil crops that produce good substitutes for sunflower oil. Figure 2 shows the actual seasonal price variation experienced over the crop year.

Table 1. Average monthly prices of proso millet, Western Nebraska, 1993-1998. (dollars per cwt)

YEAR	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	Annual Average
1993-94	7.20	8.71	11.01	11.76	13.95	17.27	21.35	22.52	20.02	20.02	18.02	8.01	14.99
1994-95	7.86	7.76	7.99	7.26	5.51	5.01	5.01	4.76	4.76	4.84	5.39	6.01	6.01
1995-96	5.51	6.26	7.26	6.26	7.50	7.00	7.25	7.75	8.00	7.50	7.00	5.25	6.88
1996-97	5.50	4.00	4.25	4.25	4.40	4.56	4.19	4.00	4.13	4.35	4.35	4.25	4.35
1997-98	4.19	4.25	4.25	4.25	4.19	4.00	4.00	4.00	4.00	4.05	4.10	4.25	4.13
<hr/>													
5-year Average	6.05	6.19	6.95	6.76	7.11	7.57	8.36	8.61	8.18	8.15	7.77	5.55	7.27
St. Dev.	1.32	1.86	2.54	2.76	3.62	4.96	6.60	7.10	6.10	6.06	5.22	1.39	3.99
<hr/>													
4-year Average	5.77	5.57	5.94	5.50	5.40	5.14	5.11	5.13	5.22	5.18	5.21	4.94	5.34
St. Dev.	1.32	1.54	1.71	1.30	1.31	1.13	1.29	1.55	1.63	1.37	1.14	0.74	1.15
<hr/>													
Price Index													
4-year Average	1.10	1.04	1.10	1.03	1.01	0.97	0.95	0.95	0.97	0.97	0.98	0.94	
St. Dev.	0.20	0.15	0.14	0.11	0.06	0.08	0.08	0.12	0.13	0.10	0.05	0.10	

Source: Crossroads Cooperative, Sidney, Nebraska.

4-year averages are used to reflect more common price ranges. It is not likely that prices will return to 1993-1994 levels.

Table 2. Average monthly prices of sunflowers, Western Nebraska, 1993-1998. (dollars per cwt)

YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Annual Average
1993-94	14.80	14.38	14.63	13.50	12.40	9.00	9.61	9.61	9.44	9.13	8.75	8.75	11.17
1994-95	8.75	8.83	9.00	9.33	10.75	10.50	10.43	10.85	11.50	11.00	11.00	11.25	10.27
1995-96	10.85	11.50	11.00	12.10	12.30	12.15	13.30	13.55	12.75	11.20	11.70	11.20	11.97
1996-97	10.45	10.50	10.60	10.88	10.75	10.50	10.80	11.50	11.38	10.90	10.00	9.75	10.80
1997-98	9.95	10.63	10.45	10.50	10.50	10.69	11.50	12.25	12.25	11.85	10.38	10.25	10.93
<hr/>													
5-year Average	10.93	11.08	11.11	11.11	11.42	10.81	10.96	11.33	11.52	11.25	11.05	11.08	11.14
St. Dev.	2.06	1.86	1.89	1.34	0.78	1.06	1.19	1.30	1.04	1.27	1.77	2.05	1.47
<hr/>													
Price Index													
5-year Average	0.99	1.01	1.01	1.02	1.03	0.96	1.01	1.05	1.04	0.99	0.94	0.93	
St. Dev.	0.17	0.14	0.15	0.10	0.05	0.08	0.08	0.10	0.10	0.10	0.09	0.10	

Source: Crossroads Cooperative, Sidney, Nebraska.

PROSO VARIETY TRIALS

1998

The 1998 proso millet tests contained 17 white seeded, and 3 red seeded entries. Huntsman, Sunrise, and Earlybird are releases from the proso breeding program at the Panhandle Research and Extension

Center. These varieties have demonstrated improved yield over other varieties and are larger seeded than Rise. Foundation and certified seed are now available.

DESCRIPTION OF PLOT TECHNIQUES

Five proso millet variety trials were conducted in 1998. Two were located at the High Plains Agricultural Laboratory (HPAL) near Sidney, Nebraska (early planted and late planted), one at the USDA Central Great Plains Research Center at Akron, CO; one on the Mark Lanning farm near Pine Bluffs, WY; and one was located on the Larry Novotny farm near Martin, South Dakota.

Due to very dry conditions, planting was delayed at the Akron plot. Germination was sporadic until rains in July.

The plot at Pine Bluffs was severely infested with volunteer millet, and was not harvested.

The Martin plots were 6' wide and 30'

long, and were seeded with a no-till drill with 10" row spacing.

The Pine Bluffs plots were 5' wide and 25' long, planted with a double-disc drill with 9" spacing.

The Sidney and Akron trials were seeded with a 6-row drill with 12" spacing. These plots were 24 feet long and six feet wide.

Plots were windrowed with a small plot swather, and then threshed. The Sidney plots were harvested progressively as the varieties matured.

Lodging was not a problem in any of the plots.

Four replications of each variety were planted and harvested.

Table 3. 1998 Proso Millet Plots

Location	Tillage System	Previous Crop	Plant Date	Harvest Date	Fertilizer	Yield Cwt/A
Sidney	Conventional	wheat	May 30	Aug.29-Sept 2	40#N	15.8
Sidney	Conventional	sunflower	June 16	Sept.3-9	50#N	17.7
Akron	No-till	wheat	June 19	Sept.11	40#N	12.6
Pine Bluffs	Conventional	hay millet	June 2	-	40#N	--
Martin	No-till	wheat	June 10	Sept.4	100#N	13.7

Table 5. Proso yields for 1998 variety trials at four locations.

ENTRY	SIDNEY Early Plant	SIDNEY Late Plant	AKRON No-Till	MARTIN No-Till	AVERAGE
	-----CWT/ACRE-----				
SUNRISE	19.0	22.1	14.3	16.0	17.8
9307	19.2	19.3	15.1	15.0	17.3
9304	18.2	18.4	14.3	17.5	17.2
9210	17.8	20.0	14.0	16.7	17.2
9217	20.7	19.4	13.2	15.3	17.2
SUNUP	18.6	18.5	13.9	16.6	17.0
EARLYBIRD	18.6	19.6	13.7	14.4	16.7
NE 1	17.1	19.6	11.2	17.8	16.5
HUNTSMAN	16.4	19.8	12.9	16.2	16.5
9308	16.0	20.3	12.3	14.7	15.8
9213	13.1	19.0	13.5	15.8	15.4
9301	15.4	15.6	12.6	14.2	14.6
COPE	11.0	16.7	11.5	13.3	13.2
9212	12.0	13.7	12.3	13.1	12.9
9239 red	11.7	12.1	13.3	11.2	12.2
DAWN	15.8	18.1	4.4	4.2	10.7
9241 red	8.9	10.5	12.8	9.7	10.6
CERISE red	12.7	11.9	11.7	5.3	10.5
RISE	18.3	21.5	-	-	-
SNOWBIRD	-	-	11.7	12.6	-
AVERAGE	15.8	17.7	12.6	13.7	15.0
L.S.D. (.05)	2.6	3.7	2.8	2.0	3.1

Table 6. Agronomic characteristics of entries in 1998 proso trials averaged over four locations.

ENTRY	TEST WT Lbs/Bu	HEIGHT Inches	NO. SEEDS /5 grams	HEADING DATE Aug.
SUNRISE	55.7	35	739	5
9307	56.1	36	818	6
9304	56.5	36	759	6
9210	56.0	37	811	6
9217	56.1	33	748	5
SUNUP	56.2	36	803	6
EARLYBIRD	54.5	36	752	5
NE 1	56.2	35	799	5
HUNTSMAN	56.7	36	758	6
9308	54.9	34	735	4
9213	55.2	38	751	7
9301	56.7	38	785	6
COPE	56.4	42	777	6
9212	55.9	41	763	7
9239 red	57.9	42	844	8
DAWN	54.9	28	791	3
9241 red	58.2	43	886	10
CERISE red	58.6	40	929	5
RISE	56.8	34	807	5
SNOWBIRD	55.4	38	785	-
AVERAGE	56.2	37	792	6
L.S.D. (.05)	1.0	3	29	1

Table 7. Eight year yield summary of proso varieties included in tests

VARIETY	8 yr Avg	1998	1997	1996	1995	1994	1993	1992	1991
	-----CWT/ACRE-----								
SUNRISE	22	18	24	21	15	23	25	22	27
EARLYBIRD	22	17	25	22	14	23	22	21	28
NE 1	22	17	24	21	15	21	25	22	28
HUNTSMAN	22	17	25	22	16	22	21	24	27
SUNUP	21	17	23	21	16	22	21	24	26
COPE	19	21	21	21	13	19	18	21	18
AVERAGE	21	18	24	21	15	22	22	22	26

Table 8. Five year yield summary of proso varieties

VARIETY	5 yr Avg	1997	1996	1995	1994	1993
	-----CWT/ACRE-----					
SUNRISE	22	24	21	15	23	25
EARLYBIRD	21	25	22	14	23	22
NE 1	21	24	21	15	21	25
HUNTSMAN	21	25	22	16	22	21
SUNUP	21	23	21	16	22	21
RISE	20	20	21	16	21	22
MINCO	18	21	16	13	18	21
COPE	18	21	21	13	19	18
SNOWBIRD	17	17	17	11	18	20
PANHANDLE	16	16	17	12	17	17
MINSUM	15	18	17	12	14	16
ABARR	14	15	16	10	15	-
DAWN	13	12	13	9	14	16
AVERAGE	18	20	19	13	19	20

DRYLAND DRY BEAN TRIALS 1997-8

by David Baltensperger, Glen Frickel, David Nuland, and Drew Lyon

Dry bean variety trials were planted into a dryland situation at the High Plains Ag Lab at Sidney, NE, in 1997 and 1998.

Thirty-six varieties were planted both years, and twenty-eight others at least one of the two years. Yields are shown on the next page.

The plots were planted directly into wheat stubble with a row crop planter with 30 inch row spacing. Each plot was four rows wide and thirty feet long, and replicated four times. Seeding rate was 35,000 plants per acre.

A starter containing 7 lbs. N and 24 lbs. P_2O_5 was applied with the planter, along with 40# N broadcast.

The herbicide program was to apply Frontier preemergence for grassy weed control, and then apply additional postemergence herbicides as needed. Since weed pressure was light both years, the only additional weed control was hand roguing.

The beans were harvested by cutting with a small plot bean cutter, and then threshing with a combine.

Both growing seasons had above average temperatures, especially in the fall, that helped the beans mature. Rainfall was above average both years, but 1997 rainfall was not timely, and yields were lowered by periods of drought.

Table 9. Two year yield summary of dry bean varieties

Year	Growing Season Rainfall	Plant Date	Harvest Date	Yield Lbs/A	Number Seeds/Lb
1997	9.2 in.	6-19	9-25	630	1850
1998	8.2 in.	6-13	9-14	1060	1980

continued

Table 10. 1997-8 CHEYENNE CO NEBRASKA DRYLAND DRY BEANS

VARIETY	YIELD LBS/A			SEEDS / LB		
	2 YR AVE	1998	1997	2 YR AVE	1998	1997
NAVY						
SCHOONER	810	1090	540	3020	3150	2890
THUNDER	800	960	640	2910	3100	2730
NORSTAR	600	720	470	2850	2940	2760
VISTA	560	670	450	3080	3070	3090
ISB 1814	470	560	390	3130	3200	3070
88:409			610			2730
ISB 254-4			570			2590
ENVOY			470			2450
NEWPORT			420			2510
UPLAND			400			2800
FLEETWOOD			240			2510
HURON			240			2400
ISB 1618			150			2570
BLACK						
SHADOW	960	1190	730	2440	2570	2300
SHINY CROW	790	960	620	2600	2740	2460
MIDNIGHT	760	830	690	2910	3010	2810
BLACK JACK			700			2540
GTS-OB16-89			690			3020
GREAT NORTHERN						
HARRIS	1140	1520	770	1630	1770	1500
IVORY	1120	1450	780	1540	1700	1380
UI 425	1000	1150	840	1730	1810	1650
1140	960	1180	750	1650	1830	1480
MARQUIS	950	1010	880	1890	2040	1740
USWA-12	930	1060	800	1670	1870	1470
BERYL	890	1230	550	1980	2080	1870
EMERSON	860	1020	700	1380	1570	1180
UI 465	820	1010	630	1710	1750	1660
WEIHING		1220			1730	
TARA		1090			1790	
MATTERHORN		950			1840	
PRAIRIE			880			1460
ROG 658			660			1510
ROG 532			560			1350

continued

Table 10. 1997-8 CHEYENNE CO NEBRASKA DRYLAND DRY BEANS
continued from previous page

VARIETY	YIELD LBS/A			SEEDS / LB		
	2 YR AVE	1998	1997	2 YR AVE	1998	1997
PINTO						
ROG 179	1080	1240	920	1430	1520	1330
VISION	1040	1220	860	1680	1820	1540
NODAK	1030	1270	790	1650	1800	1490
CHASE	1000	1240	760	1560	1680	1440
OTHELLO	1000	1320	680	1550	1610	1500
BUCKSKIN	980	1350	620	1440	1530	1340
WINCHESTER	960	1170	750	1630	1790	1460
MONTROSE	930	1040	810	1720	1930	1500
BILL Z	900	1130	680	1670	1860	1470
UI 111	850	1060	630	1490	1610	1370
BURKE	800	980	620	1540	1700	1390
APACHE	800	1060	550	1550	1750	1340
UI 126	800	1010	590	1600	1730	1470
GTS-900	780	880	690	1620	1830	1410
FRONTIER	720	610	820	1650	1890	1410
MAVERICK	710	880	540	1510	1730	1280
UI 320	680	1070	300	1450	1510	1380
ELIZABETH		1160			1710	
HATTAN		1150			1610	
KODIAK		980			1600	
REMINGTON		930			1830	
CISCO		890			1620	
ISB 2001			750			1400
CO 51713			690			1520
TOPAZ			690			1370
OLE			630			1330
ARAPAHOE			530			1410
WSB 101			460			1340
RED MEXICAN						
USRM-11	830	1130	540	1480	1650	1310
NW 63	720	800	640	1920	2040	1810
88:539			730			1760
Plot Averages	790	1060	630	1920	1980	1850
L.S.D. (.05)	290	360	220	160	160	200

GRAIN PEA TRIALS 1997-1998

As more farmers diversify their cropping systems, legumes such as peas are being grown on more acres in western Nebraska to bring a broadleaf crop into the system and to add nitrogen to the soil.

Plot Techniques

In 1997, irrigated and dryland grain pea trials were grown at Sidney and an irrigated trial was grown in Scottsbluff. In 1998, irrigated and dryland trials were grown in Sidney and an irrigated trial was grown in Hemingford. In both years, the more northern irrigated trials did better than those at Sidney. Dryland trials performed so poorly at Sidney that they weren't harvested in either year.

Table 11. Average irrigated grain pea yields at three locations in two years.

Location	Year	Pea yield (lb/acre)
Scottsbluff	1997	2630
Sidney	1997	740
Hemingford	1998	1460
Sidney	1998	790

Plots were planted with a 6-row hoe drill with 12" row spacing. At Sidney in 1997, Treflan was applied the day before planting at a rate of 1 pint/acre. At Hemingford in 1998, Sonalan was applied two days before planting at a rate of 2 pints/acre. Plots were swathed by hand. At all locations except for Hemingford, peas were left in the field for a few weeks to dry and then picked up and threshed. At Hemingford, the peas were immediately picked up and air-dried before being threshed in a small plot combine.

Fifteen varieties were planted at Sidney in 1997 and 16 were planted at both Hemingford and Sidney in 1998. Only 7 varieties were planted at Scottsbluff in 1997.

In 1998 in Sidney, irrigated pea plots were damaged by cutworms early in the season, reducing stand and lowering yields. Many varieties were very slow to emerge and ultimately had low total emergence.

DESCRIPTION OF VARIETIES

Pea varieties can be classified by pea type and growth habit. The main pea types are feed peas, yellow food peas, and green food peas. Some of the food varieties have been bred to have a semi-leafless growth habit which produce tendrils in place of leaves. Such varieties are designed for direct combining and stand upright better in the field than the viney types.

MIRANDA

Miranda was one of the highest yielding varieties in 1997. Miranda is a short-vined, large-seeded yellow feed pea with medium maturity. Data were not collected in 1998 on this variety because of seed mixing.

ARVIKA

Arvika was a new entry in 1998 and performed very well in Hemingford and Sidney. Arvika is a purple-flowered feed pea good for dairy production. The high tannin content of the seed coat makes it unsuitable as hog feed, but it may be used to feed cattle and sheep.

CARNEVAL

Carneval is an upright semi-leafless variety that performed very well in Hemingford in 1998. Its low yields in Sidney could be due to loss from shattering after swathing. It is a mid maturing yellow food pea.

PROFI

Profi is a semi-leafless variety that yielded below average in all trials except Sidney in 1997. Profi is an early maturing, large yellow food pea that also may be used as a forage.

DUNDALE

This is a reselection from Wyoming of the Australian variety Dundale, a purple-flowered, early-maturing feed pea.

TRAPPER

Trapper's high yield in Hemingford 1998 gave it a high 3-year yield but it did poorly in Sidney. It is viney and has white flowers

and produces a small yellow pea used for bird food and forage. Trapper is being replaced by Arvika.

WIRREGA

Wirrega is an Australian variety bred for high yields. A viney variety, it is tall and late maturing. Seed has a creamy white seed coat and yellow cotyledons. It has excellent cooking and splitting quality.

AUSTRIAN WINTER PEA

This was an excellent biomass accumulator under dryland conditions in Wyoming. It has high protein and good winter hardiness. However, it consistently yielded poorly in the grain pea trials.

INTEGRA

Similar to Profi, it has twice the standability. A yellow pea, it may be suited for the Mexican edible pea market. It had higher than average yields in Sidney 1997 and Hemingford 1998.

PRO 2100

This is a smaller green pea with a long vine. It may be difficult to harvest because it lays down when mature. It is late maturing and produces an edible green pea. It yielded well above average at Sidney in 1997 and Hemingford in 1998.

COLUMBIAN

A standard green food pea, its white flowers develop early unless under stress. It yielded above average in Hemingford 1998 and Sidney 1997.

Table 12. Characteristics of grain pea varieties.

Variety	Type	Growth habit	Seed color	Seed size	Maturity
Pro 2100	food	viney	green	small	late
Columbian	food	viney	green	medium	early
Dundale	feed	viney	dull green	medium	early
Integra	food	semi-leafless	yellow	large	early
Highlight	food	semi-leafless	yellow	medium	early
Wirrega	food	viney	white	small	late
Trapper	feed	viney	yellow	small	late
Alma	feed	viney	dull green	medium	late
Grande	food	viney	white	large	mid
Profi	food/feed	semi-leafless	yellow	large	early
Majoret	food	semi-leafless	green	medium	mid
Early Dun	feed	viney	dull green	medium	late
Carneval	food	semi-leafless	yellow	medium	mid
Austrian winter pea	feed	viney	dark green, speckled	small	late
Arvika	feed	viney	grey-slate, speckled	medium	late
Miranda	feed	viney	yellow	large	mid-early

Table 13. Production details for grain pea trials 1997-1998.

Location	Year	Type	Planting date	Seeding rate/acre	Fertilizer/acre	Swathing date
Scottsbluff	1997	irrig	4-21-97	150 lb	60 lb N, 45 lb P ₂ O ₅	8-5-97
Sidney	1997	irrig	4-17-97	150 lb	8 lb N, 28 lb P ₂ O ₅	7-28-97
Sidney	1997	dry	4-17-97	100 lb	"	not harvested
Hemingford	1998	irrig	4-9-98	150 lb	10-34-0 @ 6 lb	7-30-98
Sidney	1998	irrig	4-2-98	150 lb	"	7-14-98
Sidney	1998	dry	4-1-98	75 lb	"	not harvested

Table 14. Yields of irrigated grain pea at three locations over two years.

Variety	3-year average	4-year average	Scottsbluff 1997	Sidney 1997	Sidney 1998	Hemingford 1998
----- lb/acre -----						
Pro 2100	1280	1530	2280	1020	920	1890
Columbian	1160	--	--	940	770	1770
Dundale	1140	1640	3170	560	1320	1370
Integra	1130	--	--	1150	770	1640
Highlight	1090	--	--	990	710	1560
Wirrega	1070	1580	3130	1080	1030	1560
Trapper	1040	--	--	720	380	1660
Alma	1040	1360	2320	610	990	970
Grande	1020	--	--	770	980	1730
Profi	1000	--	--	950	600	1440
Majoret	980	--	--	870	740	1660
Early Dun	860	1160	2040	530	750	1060
Carneval	710	--	--	330	170	1620
Austrian winter pea	400	870	2260	350	340	340
Arvika	--	--	--	--	1540	1130
Miranda	--	--	3230	1020	--	--
Average all entries	1010	1400	2630	740	800	1460
Dif req for Sig 5%	240	204	430	--	--	522

SUNFLOWER TRIALS - 1998

The 1998 dryland sunflower tests were conducted in Cheyenne County, NE; Hitchcock County, NE; Perkins County, NE; and Laramie County, WY. An irrigated sunflower trial was also conducted in Cheyenne county.

The Nebraska plots were planted with 30 inch rows, and the Wyoming plot with 14 inch rows. Plots were approximately 30 feet long. Each hybrid was replicated four times.

The two Cheyenne County trials were planted at the High Plains Agriculture Laboratory (HPAL) near Sidney, Nebraska. Seeding rates were 17,000 seeds per acre for dryland, and 23,000 seeds per acre for irrigated. A conventionally prepared seedbed was used for both plots. Above average rainfall and warm weather were beneficial and helped these trials to mature.

These trials were sprayed with Asana in August to control seed weevils. There was no lodging in these plots.

The Cheyenne County dryland trial received 50 lbs. N and 2.4 pints/acre Prowl applied preplant. A starter of 7 lbs. N and 24 lbs. P_2O_5 per acre was also applied. Harvest stand was approximately 15,000 plants/acre.

The Cheyenne County irrigated sunflower trial received 50 lbs. N and 2.4 pints/acre Prowl 3.3 applied preplant. A starter containing 7 lbs. N and 24 lbs. P_2O_5 was applied. Ground squirrels and rabbits reduced stands considerably, resulting in high coefficients of variance.

The Hitchcock County sunflower trial was planted on Ron Bley's farm near Wauneta, Nebraska. 60 lbs. N and 1.5 pints/acre Treflan were applied preplant, and incorporated in a conventionally prepared

seedbed. 18,000 seeds/acre were planted. This plot received very little rain over the summer. Very little lodging was noted.

The Perkins County sunflower trial was planted on Steve Martens' farm near Grant, Nebraska. The plot was planted into wheat stubble. A minimum tillage planter attachment was used to till just the row. 30 lbs. N and 31 lbs. P_2O_5 were applied at planting. Prowl was applied in a 12 inch band. This plot was planted at the rate of 18,000 seeds/acre. Some stand loss occurred due to crusting.

The Laramie County sunflower trial was planted on Stan Butler's farm at Carpenter, Wyoming. Tri4 was applied at 1/2 lb. per acre. 20 lbs. N and 20 lbs. P_2O_5 per acre were applied. 31,000 seeds/acre were planted. This population was too high, and caused some yield loss. Very dry conditions in late July and August also hurt the yields. No lodging occurred.

EXPLANATION OF TABLES

In the following tables, "FLWR" refers to the days after Aug 1 that the variety was judged to have half of the flowers open. "HT" is the height of the neck or the head, whichever is greatest, at harvest time.

"%>20/64" refers to confection seed size. This is the total percentage of seed that passes over a 20/64 sieve.

Oil percentage is based on 10% moisture. Analysis was provided by Dr. J.F. Miller, USDA-ARS in Fargo, North Dakota. Thanks to Dr. Miller and all of his assistants for their contributions to these tests.

Multiple year averages are shown for those hybrids that the seed companies entered in the tests year after year.

Companies Entering the 1998 Sunflower Test

Agway Royal Hybrid	Grandin, ND
Cargill Hybrid Seeds	Fargo, ND
Croplan Genetics	Minot, ND
DeKalb Genetics Corp.	Dekalb, IL
Interstate Seed Co.	West Fargo, ND
Kaystar Seed	Huron, SD
Mycogen Seeds	Eagan, MN
Pioneer Hi-Bred Int., Inc.	Lincoln, NE
Proseed	Harvey, ND
Seeds 2000	Breckenridge, MN
Sigco Sun	Breckenridge, MN
Triumph Seed Co., Inc.	Ralls, TX

Table 15. 1998 Sunflower Plot Summary.

Location	Rotation	Plant Date	Harvest Date	Yield Lbs/A	Oil % / Conf > 20/64
Cheyenne County, NE	Wheat-Sunflower-Fallow	6-6	9-30	Oils 1340	37.8
				Conf 1560	68
Cheyenne County, NE	Irrigated Corn-Sunflower	6-12	10-21	Oils 1800	39.7
				Conf 2120	68
Hitchcock County, NE	Wheat-Sunflower-Fallow	6-12	10-9	Oils 1530	43.2
				Conf 1550	87
Perkins County, NE	Wheat-Sunflower-Fallow	6-4	11-17	Oils 1300	42.7
				Conf 1410	57
Laramie County, WY	Wheat-Sunflower-Fallow	6-10	10-14	Oils 680	42.4

Table 16. 1998 CHEYENNE CO NEBRASKA SUNFLOWER HYBRIDS**DRYLAND****OIL TYPES**

BRAND	HYBRID	YIELD LBS/A	TEST WT Lbs/Bu	HT Inches	FLWR Aug	LODG Pct	OIL Pct
DeKalb	DK3790	1630	24.8	60	11	4	39.2
Cargill	SF187	1520	23.5	51	13	1	35.6
Pioneer	XF4714	1500	21.5	51	8	14	37.9
Cargill	SF270	1480	22.1	49	6	12	37.9
Proseed	141	1480	21.7	59	8	15	37.0
DeKalb	DK3881	1470	22.9	55	15	4	36.7
Interstate Seed Co	IS6077	1420	23.7	60	11	10	38.7
DeKalb	DK3875	1410	25.3	56	15	5	36.3
DeKalb	DK3806	1410	24.7	59	10	4	39.1
Proseed	140	1410	21.6	56	9	14	37.5
Interstate Seed Co	ISX33204	1380	25.2	68	15	4	39.0
Proseed	MonosunE9149	1370	23.4	56	12	5	36.4
Proseed	E9612	1370	26.3	63	15	7	37.2
Pioneer	XF379	1350	22.8	65	15	5	36.4
Proseed	MonosunE9717	1350	20.4	55	13	6	33.2
Croplan Genetics	CL253	1350	24.2	63	14	4	37.0
Pioneer	XF4728	1350	22.7	54	11	6	38.2
Croplan Genetics	CL810	1340	22.2	59	14	7	38.1
Interstate Seed Co	IS54454MD	1330	24.5	57	13	7	37.6
Pioneer	63A51	1320	24.6	57	9	12	39.1
Triumph	562	1320	23.0	54	10	15	38.0
Croplan Genetics	CL821	1320	23.1	62	14	4	36.9
DeKalb	DK3900	1310	26.1	53	15	12	39.3
Interstate Seed Co	IS6767	1300	23.8	57	14	7	38.7
DeKalb	DK3868	1300	24.5	52	12	11	37.9
Mycogen	8488NS	1300	24.8	59	13	4	37.9
Cargill	SF290NL	1280	22.9	52	13	5	37.4
Pioneer	6338	1270	24.3	59	15	2	37.6
Pioneer	6451	1240	24.6	57	14	5	39.6
Mycogen	8372	1230	23.5	55	9	6	38.4
Croplan Genetics	CL815	1230	24.6	58	15	6	39.0
Croplan Genetics	CL757	1220	23.2	60	14	9	37.9
Kaystar	9501	1200	25.3	59	15	13	34.9
Pioneer	64A61	1180	24.6	69	14	7	39.5
Mycogen	Cavalry	1120	24.4	64	15	7	38.9
Interstate Seed Co	Hysun311	1120	23.0	57	9	14	39.7
AVERAGES		1340	23.7	58	12	6	37.8
L.S.D. (.05)		270	1.0	6	2	8	1.0

*Analysis of variance showed the following probability of greater F values for variety differences: Yield, 0.22; Test Wt, 0.00; Lodging, 0.00; Plant Height, 0.00; Oil Pct, 0.00

Table 17. 1998 CHEYENNE CO NEBRASKA SUNFLOWER HYBRIDS
DRYLAND CONFECTION TYPES

BRAND	HYBRID	YIELD	TEST WT	HT	FLWR	SEED SIZE	
		LBS/A	Lbs/Bu	Inches	Aug	%>22/64	%>20/64
Triumph	520C	1730	16.0	62	9	24	84
Pioneer	63C71	1730	16.9	58	12	20	63
Triumph	760C	1700	16.5	59	10	36	84
Interstate Seed Co	IS X49097	1660	17.8	60	8	32	83
Sigco Sun	SS-62	1640	17.5	59	8	10	48
Sigco Sun	954	1600	17.0	61	11	12	57
Croplan Genetics	CL EX 753	1590	15.7	57	14	28	74
Triumph	765C	1540	16.3	60	10	42	85
Seed 2000	Kodiak	1490	17.5	59	10	8	39
Sigco Sun	9490 RT	1490	16.5	62	12	15	67
Pioneer	DE-1998	1470	17.9	56	10	4	50
Croplan Genetics	CL EX 304	1460	16.6	61	13	67	91
Croplan Genetics	CL EX 25	1410	17.7	66	13	21	75
Pioneer	6946	1370	17.4	56	13	7	48
AVERAGES		1560	17.0	60	11	23	68
L.S.D. (.05)		230	0.7	4	2	14	13

Table 18. 1998 CHEYENNE CO NEBRASKA SUNFLOWER HYBRIDS

IRRIGATED CONFECTION TYPES

BRAND	HYBRID	YIELD	TEST WT	HT	FLWR	SEED SIZE	
		LBS/A	Lbs/Bu	Inches	Aug	%>22/64	%>20/64
Agway Royal Hybrid	RH 2073	2780	19.6	73	14	55	82
Agway Royal Hybrid	RH 2373	2410	19.3	75	14	37	78
Pioneer	DE-1998	2310	21.4	63	14	14	61
Pioneer	6946	2310	20.6	69	15	17	70
Pioneer	63C71	2240	19.3	70	14	16	59
Interstate Seed Co	ISX49097	2110	22.3	68	14	26	73
Triumph	520C	2000	20.4	77	15	18	66
Triumph	765C	1800	19.3	74	15	31	76
Seed 2000	Kodiak	1640	20.6	76	15	6	45
Triumph	760C	1560	19.7	74	15	14	66
AVERAGES		2120	20.3	72	14	23	68
L.S.D. (.05)		840	1.4	5	1	24	19

*Analysis of variance showed the following probability of greater F values for hybrid differences: Yield, 0.13; Test Wt, 0.001; Lodging, 0.08; Plant Height, 0.00; Head date, 0.13

Table 19. 1998 CHEYENNE CO NEBRASKA SUNFLOWER HYBRIDS

IRRIGATED		OIL TYPES					
BRAND	HYBRID	YIELD LBS/A	TEST WT Lbs/Bu	HT Inches	FLWR Aug	LODG Pct	OIL Pct
Interstate Seed Co	IS54454MD	2430	27.1	69	18	5	39.0
DeKalb	DK3881	2340	25.6	62	17	7	39.3
Pioneer	63A51	2320	27.4	69	15	11	40.8
Pioneer	6338	2100	27.8	73	17	7	40.4
Pioneer	XF379	2030	24.5	74	17	13	37.0
Triumph	562	2030	25.6	73	16	6	39.3
Triumph	545	2010	27.2	69	16	5	42.6
Pioneer	XF4714	2000	25.5	66	15	4	42.0
DeKalb	DK3875	1970	26.6	63	17	8	38.0
Pioneer	XF4728	1940	27.0	70	16	11	41.0
DeKalb	DK3806	1930	28.2	70	15	6	43.3
DeKalb	DK3900	1870	27.2	64	19	5	41.0
Mycogen	8372	1840	27.3	66	15	8	40.6
Mycogen	Cavalry	1830	26.8	77	17	5	40.9
DeKalb	DK3868	1810	26.4	61	16	7	39.1
Proseed	MonosunE9149	1800	25.8	68	16	5	36.8
Kaystar	9501	1790	26.5	78	17	5	35.9
Interstate Seed Co	ISX33204	1740	27.7	75	18	6	41.0
Pioneer	64A61	1720	25.3	76	18	5	40.6
Cargill	SF187	1680	25.2	67	17	5	36.0
Cargill	SF290NL	1630	25.9	65	18	4	38.8
Proseed	E9612	1620	27.8	74	17	9	38.2
Proseed	140	1590	25.2	66	15	6	39.0
DeKalb	DK3790	1550	27.8	68	15	14	40.1
Mycogen	8488NS	1480	27.1	73	17	4	39.0
Interstate Seed Co	IS6767	1460	27.3	70	16	10	40.9
Pioneer	6451	1450	27.2	65	16	9	40.7
Interstate Seed Co	Hysun311	1440	26.7	70	15	23	42.1
Cargill	SF270	1390	25.8	60	14	6	38.7
Proseed	MonosunE9717	1150	24.3	62	16	15	36.4
AVERAGES		1800	26.4	69	16	8	39.7
L.S.D. (.05)		840	1.7	6	2	8	2.2

*Analysis of variance showed the following probability of greater F values for hybrid differences: Yield, 0.71; Test Wt, 0.00; Lodging, 0.00; Plant Height, 0.00; Oil Pct, 0.00

Table 20. 1998 HITCHCOCK CO NEBRASKA SUNFLOWER HYBRIDS

DRYLAND			OIL TYPES		
BRAND	HYBRID	YIELD LBS/A	TEST WT Lbs/Bu	HT Inches	OIL Pct
Proseed	E9612	2010	31.7	56	43.3
Interstate Seed Co	IS54454MD	2000	31.7	55	41.5
Interstate Seed Co	IS6767	1830	30.1	49	41.7
DeKalb	DK3875	1710	30.7	47	42.8
Pioneer	6338	1700	32.0	53	43.7
Cargill	SF187	1700	30.2	51	42.4
Triumph	562	1670	30.9	56	44.7
DeKalb	DK3900	1670	32.8	48	44.1
Pioneer	63A51	1660	32.0	53	43.5
DeKalb	DK3806	1640	32.6	51	44.4
Interstate Seed Co	ISX33204	1630	30.0	56	43.0
Mycogen	8488NS	1590	32.3	53	43.0
Cargill	SF270	1580	32.7	41	42.7
Pioneer	XF4714	1570	31.5	44	44.4
Cargill	SF290NL	1550	28.4	46	42.1
Pioneer	XF379	1550	30.0	53	41.4
Proseed	141	1550	30.4	52	44.3
Pioneer	6451	1550	30.4	50	44.6
DeKalb	DK3881	1540	30.6	46	43.0
Pioneer	64A61	1510	30.6	58	42.5
Triumph	540	1510	30.6	44	44.6
Mycogen	Cavalry	1500	32.7	54	44.0
Cargill	SF100	1450	31.7	43	44.8
Pioneer	XF4728	1440	30.8	52	42.7
DeKalb	DK3790	1370	33.0	48	43.0
Proseed	MonosunE9149	1370	30.7	50	43.5
Cargill	SF128	1340	32.2	46	43.7
Interstate Seed Co	IS6077	1340	29.7	54	41.0
DeKalb	DK3868	1290	32.9	46	42.7
Proseed	140	1270	29.0	49	41.7
Interstate Seed Co	Hysun311	1010	30.3	46	43.3
Proseed	MonosunE9717	980	27.0	42	43.6
AVERAGES		1530	31.0	50	43.2
L.S.D. (.05)		420	2.0	6	2.8

*Analysis of variance showed the following probability of greater F values for variety differences: Yield, 0.002; Test Wt, 0.00; Plant Height, 0.00; Oil %, 0.34

Table 21. 1998 HITCHCOCK CO NEBRASKA SUNFLOWER HYBRIDS**DRYLAND CONFECTION TYPES**

BRAND	HYBRID	YIELD LBS/A	TEST WT Lbs/Bu	HT Inches	SEED %>22/64	SIZE %>20/64
Interstate Seed Co	IS X49097	1830	20.3	57	65	88
Triumph	520C	1760	22.8	59	47	81
Triumph	765C	1620	22.4	59	56	85
Pioneer	DE-1998	1590	24.2	58	64	88
Pioneer	6946	1580	24.2	53	72	91
Agway Royal Hybrid	RH 2073	1510	24.6	55	59	83
Triumph	760C	1440	22.2	58	72	91
Seed 2000	Kodiak	1430	24.5	56	49	80
Pioneer	63C71	1390	21.6	51	68	90
Agway Royal Hybrid	RH 2373	1380	22.1	58	76	91
AVERAGES		1550	22.9	56	62	87
L.S.D. (.05)		340	2.1	5	19	8

*Analysis of variance showed the following probability of greater F values for hybrid differences: Yield, 0.23; Test Wt, 0.00; Height, 0.03.

Table 22. 1998 PERKINS CO NEBRASKA SUNFLOWER HYBRIDS**DRYLAND CONFECTION TYPES**

BRAND	HYBRID	YIELD LBS/A	TEST WT Lbs/Bu	HT Inches	LODG Pct	SEED %>22/64	SIZE %>20/64
Sigco Sun	SS-62	1460	27.6	65	15	20	58
Seeds 2000	Kodiak	1460	27.6	68	9	21	64
RRC	9490	1450	28.1	67	13	15	54
Sigco Sun	9490 RT	1340	29.2	70	19	13	54
Sigco Sun	954	1310	28.4	69	11	18	59
AVERAGES		1410	28.2	68	13	17	87
L.S.D. (.05)		N.S.	N.S.	3	6	N.S.	N.S.

*Analysis of variance showed the following probability of greater F values for variety differences: Yield, 0.002; Test Wt, 0.00; Plant Height, 0.00; Oil, 0.34.

Table 23. 1998 PERKINS CO NEBRASKA SUNFLOWER HYBRIDS**DRYLAND OIL TYPES**

BRAND	HYBRID	YIELD LBS/A	TEST WT Lbs/Bu	HT Inches	LODG Pct	OIL Pct
Proseed	E9612	1870	33.8	66	8	42.8
Proseed	MonosunE9149	1560	28.4	61	6	41.0
Interstate Seed Co	ISX33204	1520	30.6	65	4	43.3
Triumph	562	1500	32.1	65	13	43.7
Interstate Seed Co	IS6077	1410	29.3	63	13	42.5
Proseed	140	1410	30.0	65	10	44.2
DeKalb	DK3806	1390	32.0	60	7	43.9
Interstate Seed Co	IS54454MD	1380	33.1	63	15	42.5
DeKalb	DK3881	1320	30.1	61	8	42.0
Proseed	141	1320	29.1	66	8	42.7
Mycogen	8372	1320	31.8	65	24	43.8
Pioneer	6451	1310	30.2	64	8	43.6
DeKalb	DK3900	1280	32.7	62	14	43.3
DeKalb	DK3868	1280	30.7	58	15	41.9
Mycogen	Cavalry	1270	31.3	67	8	42.8
Cargill	SF187	1210	30.1	61	23	43.2
Cargill	SF290NL	1190	29.0	61	12	42.6
Proseed	MonosunE9717	1180	29.1	57	26	40.6
Cargill	SF270	1120	30.0	54	26	42.1
DeKalb	DK3790	1080	31.0	64	5	43.2
Interstate Seed Co	IS6767	1080	31.8	61	8	41.8
DeKalb	DK3875	1030	31.0	64	11	42.7
Interstate Seed Co	Hysun311	820	31.0	66	18	42.8
AVERAGES		1300	30.8	63	13	42.7
L.S.D. (.05)		370	2.6	5	13	1.9

Table 24. 1998 LARAMIE CO WYOMING SUNFLOWER HYBRIDS**DRYLAND****OIL TYPES**

BRAND	HYBRID	YIELD LBS/A	TEST WT Lbs/Bu	HT Inches	OIL Pct
Cargill	SF290NL	850	25.0	47	43.1
Pioneer	6451	840	27.5	47	43.4
DeKalb	DK3875	820	26.8	48	39.8
DeKalb	DK3806	760	27.4	50	44.3
Interstate Seed Co	IS6077	750	25.3	53	41.2
DeKalb	DK3881	730	26.9	45	41.5
Mycogen	8372	730	25.7	47	41.5
Cargill	SF187	720	25.2	44	40.2
Cargill	SF270	700	25.5	44	43.0
Triumph	540	700	24.9	46	43.4
DeKalb	DK3868	690	26.8	44	41.2
DeKalb	DK3900	670	26.3	46	42.2
Interstate Seed Co	IS6767	670	27.5	49	43.7
Mycogen	658	660	27.6	50	46.8
Interstate Seed Co	IS54454MD	650	25.8	52	40.3
Interstate Seed Co	ISX33204	630	28.4	50	44.3
Proseed	140	620	23.6	48	40.0
Proseed	141	620	23.6	49	40.5
Proseed	E9612	600	27.8	50	42.6
Interstate Seed Co	Hysun311	580	24.8	50	42.0
DeKalb	DK3790	570	26.6	46	42.3
Mycogen	8488NS	470	27.7	50	45.4
AVERAGES		680	26.2	48	42.4
L.S.D. (.05)		170	1.0	4	1.8

Table 25. Cheyenne County Dryland Sunflower Hybrids

AVERAGED OVER FOUR YEARS

BRAND	HYBRID	YIELD LBS/ACRE						OIL %					
		AVERAGES						AVERAGES					
		95-98	97-98	1998	1997	1996	1995	95-98	97-98	1998	1997	1996	1995
Oil Types													
Cargill	SF187	1440	1270	1520	1010	2010	1230	39.4	39.0	35.6	42.3	43.8	36.0
Dekalb	DK3790	1410	1360	1630	1080	1610	1300	42.9	41.8	39.2	44.3	46.6	41.4
Dekalb	DK3868	1330	1230	1300	1150	1650	1230	41.5	40.0	37.9	42.0	45.1	41.0
Proseed	140	1330	1200	1410	980	1610	1300	40.0	38.8	37.5	40.1	44.0	38.5
Mycogen	Cavalry	1330	1140	1120	1160	2020	1020	43.5	42.8	38.9	46.7	46.5	41.9
Dekalb	DK3881	1320	1270	1470	1060	1710	1040	41.0	39.0	36.7	41.2	45.5	40.6
Proseed	141	1310	1230	1480	980	1390	1380	40.5	38.4	37.0	39.8	45.6	39.7
Cargill	SF270	1260	1180	1480	880	1540	1140	40.6	39.3	37.9	40.7	44.1	39.5
Triumph	562	-	1390	1320	1460	-	-	-	40.7	38.0	43.4	-	-
Dekalb	DK3875	-	1270	1410	1120	-	-	-	38.8	36.3	41.3	-	-
Averages		1340	1250	1410	1090	1690	1200	41.2	39.8	37.5	42.2	45.2	39.8

Table 26. Cheyenne County Irrigated Sunflower Hybrids
AVERAGED OVER THREE YEARS (1997 plot hailed out)

BRAND	HYBRID	YIELD LBS/ACRE					OIL %				
		AVERAGE					AVERAGE				
		95-98	96-98	1998	1996	1995	95-98	96-98	1998	1996	1995
Oil types											
Cargill	SF187	2030	2250	1680	2820	1600	37.7	38.7	36.0	41.4	35.7
Mycogen	Cavalry	2010	2260	1830	2680	1510	41.5	42.4	40.9	43.8	39.9
Cargill	SF270	1940	2020	1390	2650	1780	39.7	40.9	38.7	43.1	37.3
Proseed	140	1830	2030	1590	2470	1440	40.3	41.3	39.0	43.6	38.3
Pioneer	6338	-	2720	2100	3330	-	-	41.6	40.4	42.7	-
DeKalb	DK3881	-	2610	2340	2870	-	-	41.2	39.3	43.1	-
Triumph	545	-	2230	2010	2450	-	-	44.7	42.6	46.8	-
DeKalb	DK3868	-	2200	1810	2580	-	-	41.3	39.1	43.5	-
Pioneer	6451	-	2140	1450	2820	-	-	42.9	40.7	45.1	-
Interstate Seed Co	IS6767	-	2090	1460	2710	-	-	42.3	40.9	43.7	-
DeKalb	DK3790	-	2040	1550	2520	-	-	42.6	40.1	45.1	-
Oil Averages		1950	2240	1750	2720	1580	39.8	41.8	39.8	43.8	37.8
Confection types							% over 20/64				
Triumph	520C	2070	2110	2000	2220	1990	70	73	66	79	65
Pioneer	6946	-	2430	2310	2540	-	-	70	70	69	-
Confection Averages		2070	2270	2160	2380	1990	70	71	68	74	65

Table 27. Hitchcock County Sunflower Hybrids

AVERAGED OVER FOUR YEARS

BRAND	HYBRID	YIELD LBS/ACRE						OIL %					
		AVERAGES						AVERAGES					
		95-98	97-98	1998	1997	1996	1995	95-98	97-98	1998	1997	1996	1995
Oil Types													
Cargill	SF187	2010	2100	1700	2490	1740	2120	43.2	43.8	42.4	45.1	43.0	42.4
Cargill	SF270	1990	1950	1580	2320	2220	1840	44.2	44.0	42.7	45.2	45.1	43.6
Interstate Seed Co	IS6767	1980	1950	1830	2070	2280	1740	44.5	43.5	41.7	45.3	45.3	45.7
Dekalb	DK3881	1960	2020	1540	2500	1600	2180	44.6	43.7	43.0	44.3	45.7	45.5
Pioneer	6451	1860	1990	1550	2430	1610	1830	46.4	46.5	44.6	48.4	47.0	45.7
Cargill	SF128	1860	1950	1340	2560	2140	1410	43.7	44.5	43.7	45.2	44.7	41.2
Dekalb	DK3868	1810	1710	1290	2130	2130	1700	44.3	43.1	42.7	43.5	45.8	45.0
Dekalb	DK3790	1760	1810	1370	2250	1860	1560	44.8	44.1	43.0	45.1	45.8	45.3
Mycogen	Cavalry	1750	1910	1500	2320	1810	1360	46.7	46.7	44.0	49.3	46.5	46.8
Proseed	141	1670	1940	1550	2320	1310	1480	44.7	44.5	44.3	44.6	44.7	45.0
Proseed	140	1670	1880	1270	2480	1590	1320	44.3	44.0	41.7	46.3	44.4	44.6
Triumph	562	-	2140	1670	2610	-	-	-	45.4	44.7	46.0	-	-
Dekalb	DK3875	-	2110	1710	2500	-	-	-	43.6	42.8	44.3	-	-
Pioneer	6338	-	2080	1700	2400	2140	-	-	44.3	43.7	45.6	43.7	-
Pioneer	63A51	-	2000	1660	2330	-	-	-	44.1	43.5	44.6	-	-
Oil Averages		1850	1970	1550	2380	1870	1690	44.7	44.4	43.2	45.5	45.1	44.6
Confection Types								% over 20/64					
Triumph	520C	1700	1970	1760	2170	1960	900	78	83	81	84	75	73
Triumph	765C	-	1960	1620	2300	-	-	-	88	85	90	-	-
Triumph	760C	-	1690	1440	1940	-	-	-	93	91	95	-	-
Confection Averages		1700	1870	1610	2140	1960	900	78	88	86	90	75	73

Table 28. Perkins County Sunflower Hybrids**AVERAGED OVER THREE YEARS (1995 plot hailed out)**

		YIELD LBS/ACRE				OIL %			
BRAND	HYBRID	AVE				AVE			
		96-98	1998	1997	1996	96-98	1998	1997	1996
Oil Types									
Proseed	141	1740	1320	2390	1500	43.0	42.7	43.1	43.2
Proseed	140	1700	1410	2410	1280	43.3	44.2	42.8	43.0
Mycogen	Cavalry	1690	1270	1960	1850	44.7	42.8	46.8	44.6
Cargill	SF187	1670	1210	2010	1790	42.4	43.2	40.8	43.3
Cargill	SF270	1600	1120	1870	1810	42.6	42.1	42.9	42.7
Interstate Seed Co	IS6767	1360	1080	1730	1260	42.6	41.8	41.8	44.1
Oil Averages		1630	1240	2060	1580	43.1	42.8	43.0	43.5
Confection Types							% over 20/64		
Seeds 2000	Kodiak	1390	1460	1190	1530	71	64	63	86
Sigco Sun	9490 RT	1410	1340	1480	-	68	54	82	-
Sigco Sun	954	1360	1310	1410	-	68	59	76	-
Confection Averages		1390	1370	1360	1530	70	60	70	86

Table 29. Laramie County Wyoming Sunflower Hybrids**AVERAGED OVER THREE YEARS (1996 plots hailed out)**

		YIELD LBS/ACRE				OIL %			
BRAND	HYBRID	AVE 95-98	1998	1997	1995	AVE 95-98	1998	1997	1995
Oil Types									
Cargill	SF187	780	720	1030	590	40.0	40.2	41.1	38.6
Cargill	SF270	700	700	840	560	42.4	43.0	43.7	40.5
Mycogen	658	700	660	730	-	45.8	46.8	44.8	-
Averages		730	690	870	580	42.7	43.3	43.2	39.6

Saunders County Oat Variety Test - 1998

Variety	Grain yield bu/a	Bushel weight lb/bu	Plant height inches	Flower date June
Blaze	69	36.0	31	16
WI x6165-6	66	35.0	32	20
Rodeo	64	35.0	31	18
Chaps	63	37.0	31	14
Jud	61	34.0	31	22
Burton	54	34.0	30	19
Jerry	51	37.0	32	18
Don	50	33.0	26	13
Riser	49	35.0	29	12
Russell	47	36.0	31	19
Settler	47	32.0	31	18
Belle	46	35.0	29	23
Gem	43	32.0	28	19
Troy	39	33.0	30	20
Ogle	39	37.5	26	25
Ida	36	27.0	30	24
Jim	35	33.0	28	16
Chairman	27	26.0	24	24
Average all entries	49	33.8	29	19
Dif Req for Sig 5%	14	NA	2	2
25%	8	NA	1	1

Southeast Dryland Oat Variety Test Saunders County 1994-1998

Variety	Grain yield bu/a	Bushel weight lb/bu	Plant height inches
Two Year Average			
Blaze	61.5	35.3	29
Rodeo	56.0	34.3	28
Burton	54.5	34.7	29
Chaps	50.0	36.4	30
Riser	49.5	34.4	29
Don	47.0	33.2	24
Belle	46.0	34.5	27
Gem	45.0	32.7	28
Jerry	44.5	36.9	31
Jim	43.0	34.7	28
Russell	41.0	34.7	29
Ogle	40.5	35.0	27
Settler	38.5	33.0	30
Troy	34.0	33.3	28
Average all entries	46.5	34.5	28
Dif Req for Sig 5%	NS	NS	2
25%	4.6	NS	1
Three Year Average			
Blaze	70.0	34.5	28
Rodeo	65.0	33.9	28
Chaps	60.7	35.0	30
Burton	59.7	33.6	29
Don	56.7	33.2	25
Belle	55.7	34.2	26
Jerry	54.3	35.9	31
Jim	53.3	34.0	28
Ogle	52.7	33.5	27
Gem	51.7	32.4	28
Settler	51.0	32.9	29
Russell	48.0	33.5	29
Troy	46.7	33.3	28
Average all entries	55.8	33.8	28
Dif Req for Sig 5%	5.78297454458632	NS	1
25%	3.3	NS	1

Southeast Dryland Oat Variety Test

Saunders County 1994-1998 Page 2

Variety	Grain yield bu/a	Bushel weight lb/bu	Plant height inches
Four Year Average			
Rodeo	66.5	33.4	30
Chaps	65.3	34.5	31
Don	64.5	33.8	28
Burton	62.0	33.6	31
Jerry	60.5	36.1	33
Ogle	56.5	33.6	28
Jim	55.8	34.0	29
Settler	54.8	33.5	31
Belle	52.5	33.8	28
Troy	52.3	33.5	30
Russell	43.3	33.1	30
Average all entries	57.6	33.9	30
Dif Req for Sig 5%	6.9	NS	1
25%	3.9	NS	1
Five Year Average			
Rodeo	63.4	32.2	31
Chaps	61.2	33.4	32
Jerry	60.8	35.0	33
Don	57.4	32.3	28
Ogle	55.8	32.0	29
Jim	55.2	32.9	30
Settler	52.8	32.7	32
Troy	52.2	32.2	32
Russell	41.6	32.2	32
Average all entries	55.6	32.8	31
Dif Req for Sig 5%	6.2	NS	1
25%	3.5	0.5	1

Cheyenne County Dryland Spring Oat Variety Test 1998

Variety	Grain yield bu/a	Bushel weight lb/bu	Plant height inches
Riser	28	26.0	25
Chairman	27	24.4	26
Ogle	23	21.8	25
Chaps	22	24.4	25
WI x6165-6	21	25.1	29
Jim	20	23.9	25
Burton	20	24.1	26
Don	19	24.8	23
Rodeo	18	24.7	24
Settler	18	24.9	25
Jud	17	24.3	26
Jerry	16	27.3	27
Ida	15	22.5	24
Troy	15	24.4	24
Gem	13	25.7	24
Blaze	13	24.3	25
Russell	13	25.1	25
Belle	10	25.7	24
Average all entries	18	24.6	25
Dif Req for Sig 5%	6	NS	3
25%	3	1.6	2

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West Dryland Oat Variety Test

Cheyenne Co 1994 - 1998

Variety	Grain yield bu/a	Bushel weight lb/bu	Plant height inches
Two Year Average			
Belle	21.5	27.5	24
Blaze	30.5	27.3	25
Burton	33.5	26.7	25
Chaps	38.5	26.7	25
Don	40.0	28.3	22
Gem	30.0	26.9	25
Jerry	35.0	29.1	27
Jim	39.5	27.1	26
Ogle	37.0	24.5	25
Riser	41.0	29.6	25
Rodeo	39.0	26.8	25
Russell	21.5	26.5	25
Settler	28.5	26.9	24
Troy	31.0	27.0	26
Average all entries	33.3	27.2	25
Dif Req for Sig 5%	4.7	0.9	NS
25%	2.7	0.5	1
Three Year Average			
Belle	31.7	28.0	27
Burton	41.7	28.6	28
Chaps	49.7	27.7	28
Don	45.3	29.8	26
Jerry	43.7	30.5	30
Jim	50.7	28.5	29
Ogle	51.3	26.5	28
Rodeo	53.0	27.9	28
Russell	30.7	27.4	29
Settler	38.3	28.5	28
Troy	37.7	27.6	30
Average all entries	43.1	28.3	28
Dif Req for Sig 5%	4.8	0.8	1
25%	2.7	0.4	0

Continued on page 2

West Dryland Oat Variety Test

Cheyenne Co 1994 - 1998 Page 2

Variety	Grain yield bu/a	Bushel weight lb/bu	Plant height inches
Four Year Average			
Chaps	48.3	28.5	27
Don	40.8	30.8	25
Jerry	43.0	31.5	29
Jim	49.5	29.5	28
Ogle	49.0	27.5	26
Rodeo	51.3	28.6	27
Russell	34.5	28.6	28
Settler	37.5	30.0	27
Troy	38.0	28.5	28
Average all entries	43.5	29.3	27
Dif Req for Sig 5%	4.8	0.6	1
25%	2.7	0.3	0
Five Year Average			
Don	39.6	31.3	25
Ogle	50.0	28.6	26
Russell	37.8	29.7	28
Settler	38.0	31.2	27
Troy	41.8	29.9	28
Average all entries	41.4	30.1	27
Dif Req for Sig 5%	NS	0.8	1
25%	3.1	0.4	0

Saunders County Spring Wheat Variety Test - 1998

Variety	Grain yield bu/a	Bushel weight lb/bu	Plant height inches	Flower date June
Sharp	11	50.5	27	14
Oxen	11	52.0	23	14
Russ	11	52.0	25	15
Ingot	10	54.0	28	14
Butte 86	9	49.0	26	15
Forge	8	49.5	25	14
Argent	8	49.0	25	19
2375	8	49.0	24	14
Ernest	6	47.0	25	21
Average all entries	9	50.2	25	16
Dif Req for Sig 5%	3	NA	2	1
25%	2	NA	1	1

Cheyenne County Dryland Spring Wheat Variety Test 1998

Variety	Grain yield bu/a	Bushel weight lb/bu	Plant height inches
2375	16	54.0	28
Oxen	15	51.1	24
Ingot	14	55.6	29
Ernest	13	52.9	27
Sharp	13	53.8	28
Russ	13	52.8	26
Argent	10	51.2	27
Butte 86	10	53.2	27
Forge	10	51.9	27
Average all entries	13	52.9	27
Dif Req for Sig 5%	2	2.8	2
25%	1	1.6	1

Dif Req for Sig 5%

25%

Continued on page 2

Southeast Spring Wheat Variety Test

Saunders County 1994 - 1998

Variety	Grain yield bu/a	Bushel weight lb/bu	Plant height inches
Two Year Average			
Russ	31.0	54.4	31
Sharp	28.5	54.2	29
Ingot	28.0	56.0	28
Forge	25.0	53.8	25
Butte 86	24.5	52.5	25
Oxen	24.0	54.0	24
2375	24.0	53.4	24
Ernest	23.0	51.8	23
Average all entries	26.0	53.7	26
Dif Req for Sig 5%	NS	NS	1
25%	1.7	NS	1
Three Year Average			
Russ	33.3	55.7	33
Sharp	30.3	56.1	30
Oxen	29.0	54.9	29
Butte 86	27.3	54.6	27
2375	27.0	55.3	27
Ernest	24.0	53.9	24
Average all entries	28.5	55.1	28
Dif Req for Sig 5%	NS	NS	1
25%	1.6	NS	0
Four Year Average			
Russ	35.3	56.7	35
Sharp	32.0	57.5	32
Oxen	31.5	56.2	32
Butte 86	28.8	55.9	29
2375	27.3	56.6	27
Ernest	24.5	55.3	25
Average all entries	29.9	56.3	30
Dif Req for Sig 5%	2.4	NS	1
25%	1.4	0.5	0
Five Year Average			
Sharp	31.0	55.9	31
Butte 86	26.6	53.8	27
Ernest	22.6	53.3	23
Average all entries	26.7	54.4	32
Dif Req for Sig 5%	1.6	0.6	NS
25%	0.9	0.3	1

West Dryland Spring Wheat Variety Test

Cheyenne County 1994 - 1998

Variety	Grain yield bu/a	Bushel weight lb/bu	Plant height inches
Two Year Average			
Oxen	26.0	54.0	26
2375	25.5	56.8	26
Sharp	23.5	57.0	24
Russ	22.0	55.3	22
Ernest	20.5	55.3	21
Butte 86	19.5	55.4	20
Average all entries	22.8	55.6	31
Dif Req for Sig 5%	NS	0.6	NS
25%	1.1	0.3	NS
Three Year Average			
2375	26.3	57.3	26
Sharp	24.7	57.7	25
Butte 86	21.7	55.9	22
Ernest	21.3	55.5	21
Average all entries	23.5	56.6	29
Dif Req for Sig 5%	1.7	0.6	NS
25%	0.9	0.3	1
Four Year Average			
Sharp	28.3	58.6	28
Butte 86	24.0	56.5	24
Average all entries	26.1	57.5	30
Dif Req for Sig 5%	NS	0.8	NS
25%	1.1	0.4	NS
Five Year Average			
Sharp	31.7	58.8	32
Butte 86	27.0	56.5	27
Average all entries	29.4	57.7	30
Dif Req for Sig 5%	1.7	0.7	NS
25%	0.8	0.3	NS



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