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EC92-107 Nebraska Proso, Sunflower and Amaranth Variety Tests, 1992

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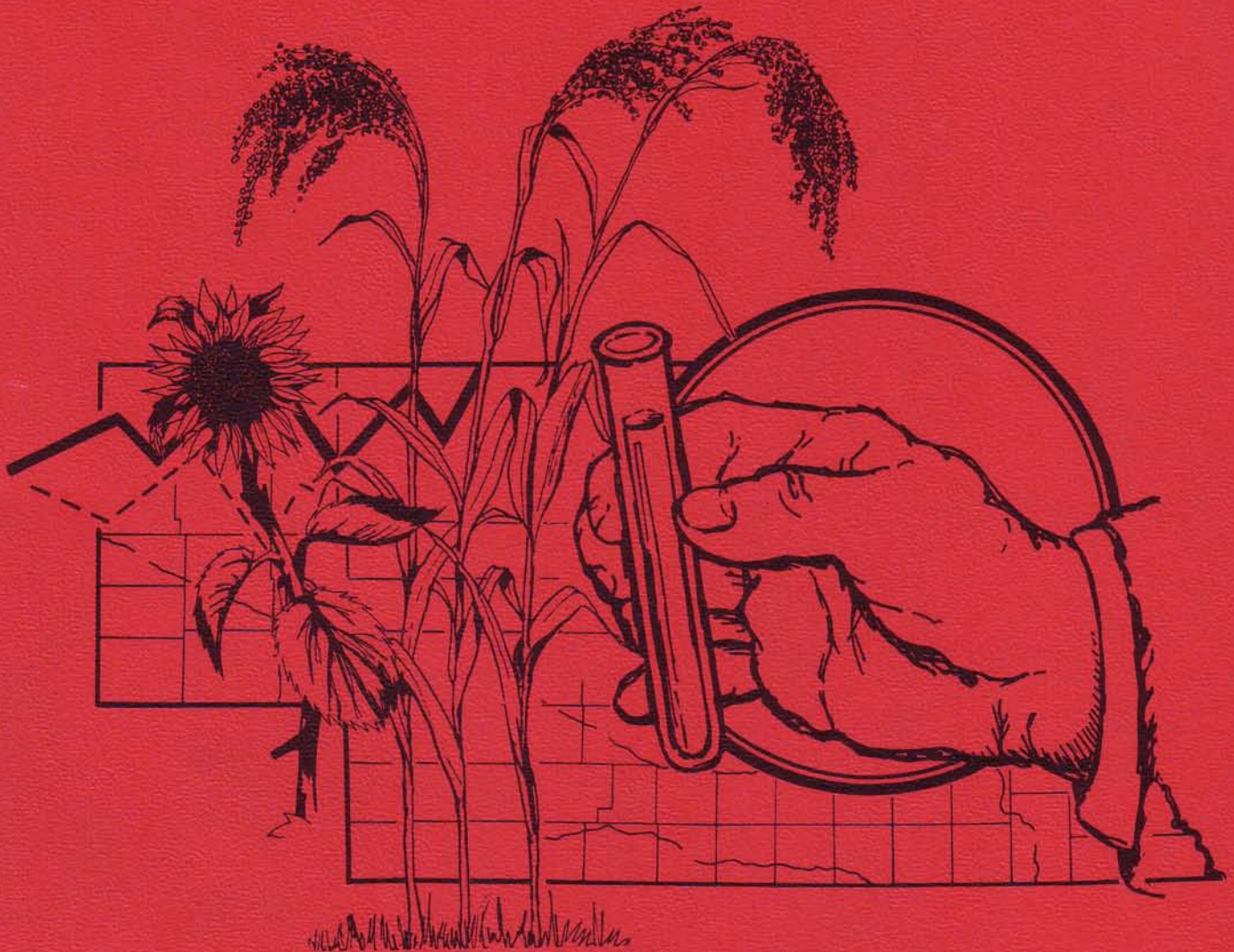
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NEBRASKA PROSO, SUNFLOWER AND AMARANTH VARIETY TESTS 1992



University of Nebraska—Lincoln
Institute of Agriculture and Natural Resources
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EXTENSION CIRCULAR 92-107

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METRIC EQUIVALENTS

1 centimeter = 0.394 inches

1 hectare = 2.471 acres

1 kilogram = 2.205 pounds

1 hectoliter = 2.838 bushels

cwt = hundred weight

Kilogram/hectoliter = lb/bu x 1.287

Kilograms/hectare = bu/A x 62.78 (56# bu)

cm = inches x 2.541

ha = acres x 0.405

kg = pounds x 0.454

hl = bushels x 0.352

EXTENSION CIRCULAR 92 - 107

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ECONOMICS AND HISTORICAL PRICES OF PROSO MILLET

Daryl Ellis, David Baltensperger and Drew Lyon

The 1990 Farm Bill allows the flexibility of planting alternative crops on Flex acres. In the dryland areas of Nebraska, proso millet is one possible crop alternative. Proso is primarily grown in the 4-state region of North Dakota, South Dakota, Nebraska and Colorado. Historically Nebraska produces about 16% of U.S. millet grain production with an annual acreage ranging from 35,000 to 60,000 acres. The major producing area in Nebraska is Cheyenne County and counties adjacent to it. During 1992, Cheyenne County alone raised over 39,000 acres of proso millet.

Primary uses of proso millet are bird seed, livestock feed, and human consumption. The specialty markets, bird seed and the health food industry, are the major components of millet consumption. Generally, the U.S. exports 15-20% of annual production to over 70 countries. Netherlands, Canada, Japan, and United Kingdom are the top four U.S. export destination countries. Argentina is a major U.S. competitor.

Historical millet prices were collected from regional markets in the Nebraska Panhandle. Millet prices ranged from a low of \$3.00 and a high of \$9.47 per cwt during the 1988-1991 crop marketing years. An old rule of thumb indicates millet prices are generally 80-90% of the price of sorghum, however, as indicated in Figure 1, Nebraska Panhandle proso millet prices are generally above the national sorghum price. Since 1981, the proso millet price has averaged 1.27 times the national sorghum price and 1.17 times the Nebraska Panhandle corn price. Between 1986 and 1989, proso

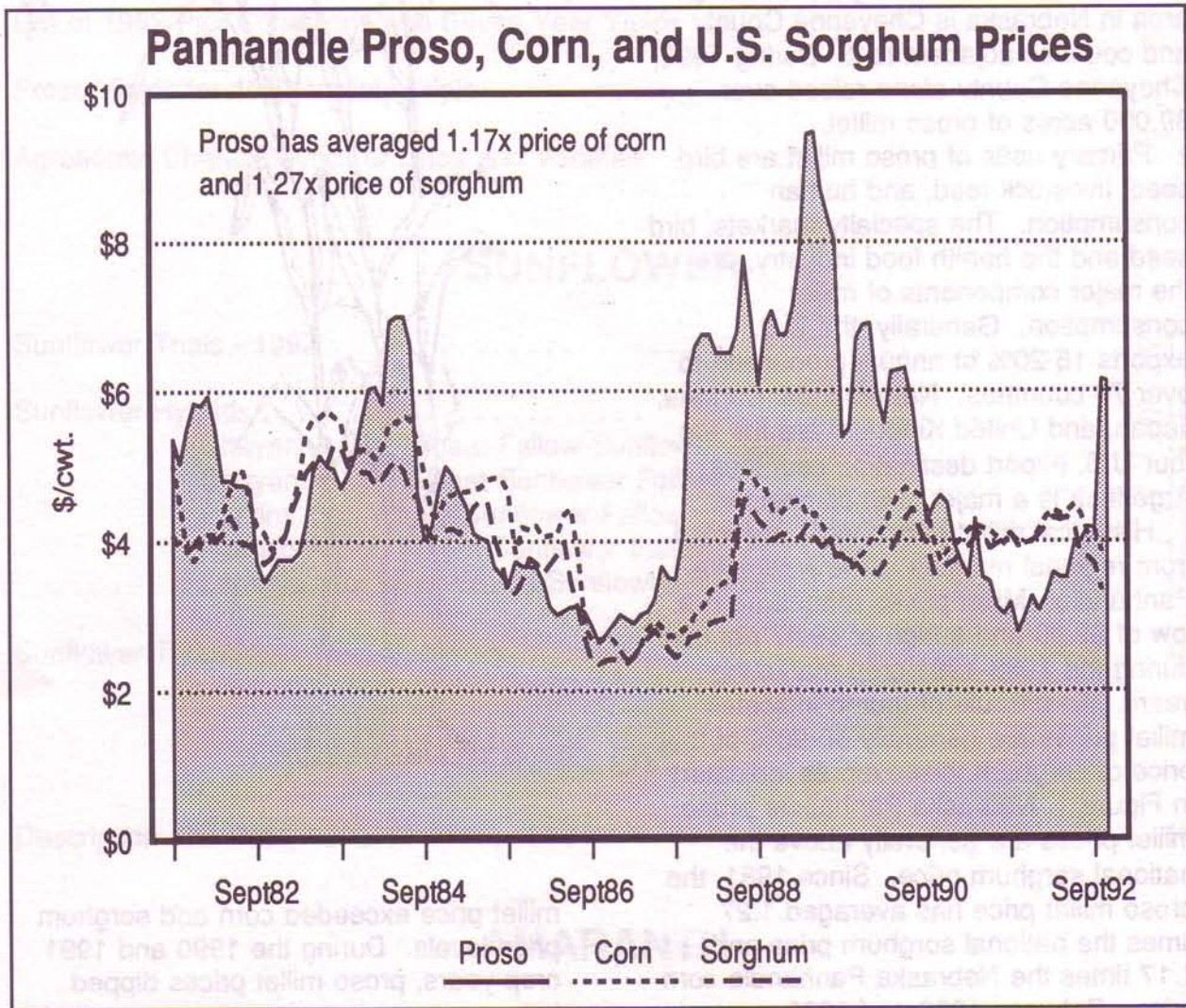


millet price exceeded corn and sorghum price levels. During the 1990 and 1991 crop years, proso millet prices dipped below corn and sorghum prices.

However during the Fall 1992, proso millet prices surpassed both corn and sorghum prices.

Historically, the upward price movement potential for proso millet has been much greater than price increases for corn and sorghum. Often proso millet prices rise rapidly, sometimes a \$2.00-\$3.00 price increase within a 60 day time period. Profit opportunities from storing proso appear to be much greater than for storing corn, sorghum, or wheat, especially when proso millet prices are below corn and sorghum prices.

Total economic cost of production is expected to range from \$105 to \$135 per acre depending on crop rotation and tillage practices. An average yield expectation ranges from 15 to 22 cwt per acre. Given these base values, the required breakeven price extends from under \$5.00 to \$9.00 per cwt. However, the breakeven price to cover cash costs of approximately \$35 per acre is within the \$1.70 to \$2.30 per cwt range.



PROSO VARIETY TRIALS

1992

David Baltensperger, Glen Frickel, Randy Anderson and Mark Swanson

The 1992 proso trials contained 31 white seeded entries of which seven were named varieties used as check varieties. The other 24 entries were selections from crosses from the proso breeding program at the Panhandle Research and Extension Center. All these selections are screened for the primary purpose

of identifying a better yielding, larger seeded variety. Sunup is the most recent variety release and has been superior to other cultivars tested. Some experimental lines appear to have improved seed size and yield potential and will be considered for release during the next year.

DESCRIPTION OF PLOT TECHNIQUES

Six proso variety trials were conducted in 1992. Four were located at the High Plains Agricultural Laboratory near Sidney, Nebraska. The irrigated trial was located at the Panhandle Research and Extension Center at Scottsbluff, Nebraska and one was located at the USDA Central Great Plains Research Center at Akron, CO.

These trials included a black fallow site, also, planted on wheat stubble, were an early planted and a late planted proso, two no-till sites, and an irrigated site. Table 1 shows the conditions of each of those sites. Plots were seeded with a 6-

row double disc or hoe drill depending on planting conditions. Each plot was 24 feet long and six feet wide, except for the 15 feet long irrigated plot. The center four rows were harvested from each plot with a self-propelled combine when the variety was mature. Four replications of each variety in each location were planted and harvested. The irrigated plot was left out of the results due to high trial variation.

The "Heading" column in each table refers to the average date of the 4 replications relative to August 1.

DESCRIPTION OF CHECK VARIETIES

SUNUP

Sunup is a 1989 release from Nebraska. It is a white seeded variety with good yield potential. Its height is greater than Rise but is not as tall as Panhandle. Sunup is as lodging resistant as Dawn and Rise in spite of its taller height. Sunup is currently the most widely grown proso variety in Nebraska.

RISE

Rise is a 1983 Nebraska release. It is the result of a Dawn X Minn 402 cross made in 1975. It is later and taller than Dawn with many of the same characteristics in head type and lodging resistance. It has had a good yield record in the time it has been tested. It does not have the large seed size of Dawn. In comparison to Panhandle, it is shorter.

COPE

Cope is a 1978 Colorado release. It is much later maturing than other varieties. It has yielded well in Nebraska, especially when planted early.

MINCO

Minco is a joint Colorado-Minnesota release. It is taller and later than Panhandle. It has white seed and produces good yields.

DAWN

Dawn is a 1976 Nebraska release. It has a large seed with good white color and has been well accepted in the bird seed trade. Its early maturity and short stature have made it less suitable under environmental stress conditions.

SNOWBIRD

Snowbird is a Minnesota release. It is a white seeded variety with an open panicle and early maturity. Yields have been poor in Nebraska.

PANHANDLE

Panhandle is a 1968 Nebraska release. It is the first variety selected from the common white proso grown in western Nebraska. It has a good yield but is lower yielding than newer varieties. It is white seeded.

EXPERIMENTAL LINES

Newdawn is a selection out of Dawn for uniform maturity and plant height. It is similar in seed size to Dawn and is currently being evaluated for release as a replacement for Dawn.

870063 and 87014 are currently being considered for release as large seeded, high yield potential varieties.

Table 1. List of 1992 plot conditions.

Location	Designation	Planting date	Stand	Weed control	Yield cwt/ac	Previous crop
HPAL	Fallow	June 22	Uniform	good	24.5	fallow
HPAL	EarlyPlant	June 3	Uniform	good	17.3	wheat
HPAL	LatePlant	July 1	Uniform	good	24.4	wheat
HPAL	Notill	June 19	Uniform	good	20.4	wheat
PREC	Irrigated	June 12	Poor	poor	13.6	wheat
Akron	Notill	June 18	Uniform	poor	22.8	wheat

Table 2. Seven year yield summary of varieties included in test.

Variety	7 year Average	1992	1991	1990	1989	1988	1987	1986
----- cwt/acre -----								
Sunup	22	24	26	21	23	21	23	15
Rise	21	24	25	19	19	22	19	20
Minco	18	17	22	16	17	18	19	16
Cope	17	21	18	14	18	17	18	14
Panhandle	16	17	21	16	17	16	16	12
Dawn	12	15	15	15	12	10	12	6
Snowbird	20	17	22	-	-	-	-	-
Average	18	19	21	17	18	17	18	14

Table 3. Proso yields for 1992 variety trials at five locations.

ENTRY	EARLY CONT	LATE CONT	NO-TILL	FALLOW	NO-TILL AKRON	AVG
	-----CWT/ACRE-----					
880021	22.1	26.9	23.7	29.6	25.7	25.6
880025	20.2	26.6	24.7	26.9	27.5	25.2
870063	18.8	27.1	24.5	26.1	24.8	24.3
860214	18.4	26.8	23.3	27.7	25.1	24.3
830146	18.7	26.6	23.9	25.2	25.9	24.1
SUNUP	19.0	25.2	23.6	27.1	25.8	24.1
RISE	17.6	28.8	24.1	24.2	24.7	23.9
860201	19.3	28.0	22.4	25.8	23.5	23.8
850043	14.2	29.6	23.3	28.1	23.9	23.8
8600525B	19.8	26.6	25.6	24.1	22.4	23.7
880022	19.2	28.2	21.5	26.4	23.1	23.7
830126	20.3	25.4	21.8	28.9	22.3	23.7
880035	18.5	26.4	25.0	24.9	23.2	23.6
850093	17.0	25.4	23.4	26.6	24.0	23.3
880026	14.6	27.1	23.6	27.4	23.4	23.2
860192	17.8	25.4	21.5	25.6	24.1	22.9
880011	20.5	23.7	18.4	25.5	24.5	22.5
860053	17.3	25.3	19.7	25.8	21.9	22.0
870026	18.0	24.2	20.3	24.6	21.3	21.7
860203	17.7	21.9	18.6	26.5	23.2	21.6
8603521B	14.6	24.9	20.5	23.9	23.0	21.4
87041	15.6	24.4	20.7	23.3	22.2	21.2
760103	17.2	24.1	19.0	20.4	23.9	20.9
COPE	18.7	23.0	22.5	20.8	17.4	20.5
880017	15.7	23.4	17.9	25.0	19.2	20.2
TALL EXP	18.1	20.0	13.3	22.5	22.8	19.3
PANHANDLE	13.9	19.1	14.5	19.4	20.0	17.4
MINCO	14.2	17.1	14.8	19.2	20.8	17.2
SNOWBIRD	12.1	16.6	14.6	20.6	20.3	16.8
NEWDAWN	14.1	19.6	11.1	19.0	18.5	16.5
DAWN	11.8	18.8	9.7	17.6	18.2	15.2
MEAN	17.3	24.4	20.4	24.5	22.8	21.9
LSD 0.05	5.2	3.3	4.1	4.2	3.3	4.0

Table 4. Agronomic characteristics of lines and varieties in 1992 proso millet trials averaged over locations.

ENTRY	HEADING August	SEEDS /5g	TEST WEIGHT Lbs/Bu	HEIGHT Inches	H ₂ O %
880021	8.6	774	55.7	31.8	28.2
880025	8.5	774	56.0	32.4	27.6
870063	6.6	716	56.3	29.1	26.9
860214	6.8	729	55.8	27.8	27.8
830146	5.6	727	56.5	29.7	26.9
SUNUP	5.7	751	55.9	31.3	27.0
RISE	4.3	769	55.6	29.9	26.3
860201	5.4	747	55.9	27.2	25.5
850043	7.1	733	55.4	29.5	28.1
8600525B	4.8	699	55.3	27.5	25.5
880022	8.6	780	55.5	30.5	28.2
830126	8.3	755	55.5	33.5	28.4
880035	7.5	752	56.0	27.5	27.6
850093	5.4	717	55.6	28.5	26.7
880026	8.6	777	55.6	30.0	28.3
860192	4.6	733	56.4	29.1	26.2
880011	5.9	698	54.7	27.4	26.5
860053	3.9	702	55.8	27.3	25.5
870026	4.3	812	52.3	29.1	28.5
860203	3.7	768	56.2	25.4	22.7
8603521B	3.4	705	55.1	26.5	24.6
87041	2.3	693	55.3	25.2	23.7
760103	1.9	705	55.2	28.4	23.0
COPE	5.8	737	55.3	37.0	28.5
880017	6.6	694	55.1	26.7	25.4
TALL EXP	4.3	738	55.7	27.5	23.7
PANHANDLE	1.3	747	55.9	31.7	22.3
MINCO	2.4	750	56.0	31.4	20.7
SNOWBIRD	0.5	738	55.8	31.3	21.5
NEWDAWN	1.2	707	56.4	26.8	19.5
DAWN	1.6	715	56.1	25.8	20.3
MEAN	5.0	737	55.6	29.1	26.2
LSD 0.05	0.7	12	0.5	1.8	1.7

SUNFLOWER TRIALS - 1992

David D. Baltensperger, Glen Frickel,
Robert N. Klein, James Krall, and Mark Swanson

The 1992 dryland sunflower trials were conducted in Cheyenne County, NE, Hitchcock County, NE, Perkins County, NE, and Laramie County, WY. An irrigated sunflower trial was also conducted at the Panhandle Research and Extension Center at Scottsbluff, Nebr. Each plot consisted of four, 30 inch rows and each hybrid was replicated four times. Plots were approximately 30 feet long. Of the four planted rows, the two center rows were harvested with a small plot combine. The growing season had above average moisture and considerably below average temperatures at all locations.

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.

The Cheyenne County wheat-fallow-sunflower-fallow trial was planted at the High Plains Agriculture Laboratory near Sidney, Nebr. 1.5 pints/acre Prowl was applied preplant. 7 lbs. N and 24 lbs. P starter was applied at planting. Harvest stand was approximately 17,000 plants/acre. The plants were killed by frost on Oct. 8.

The Cheyenne County wheat-sunflower-fallow trial was planted at the

High Plains Agriculture Laboratory near Sidney, Nebr. 40 lbs. N and 1.5 pints/acre Prowl were applied preplant. 7 lbs. N and 24 lbs. P starter was applied at planting. Harvest stand was approximately 17,000 plants/acre. The plants were killed by frost on Oct. 8.

The Hitchcock County sunflower trial was planted on Jim Faimon's farm south of Trenton, Nebr. 50 lbs. N and 1 pint/acre Treflan were applied preplant. 18,300 seeds/acre were planted and harvest stand was good. The plot was sprayed with Asana XL and Methyl Parathion for head moth control at 10-20% flower.

The Perkins County sunflower trial was planted on Steve Martens' farm east of Grant, Nebr. 60 lbs. N and 1 pint/acre Treflan were applied preplant. 8 lbs. N and 28 lbs. P starter was applied at planting. 18,300 seeds/acre were planted and harvest stand was good. Parathion was sprayed for head moth control at 85% flower.

The Laramie County sunflower trial was planted on Stan Butler's farm at Carpenter, Wyoming. 1.5 pints/acre Treflan was applied preplant. No fertilizer was used. Harvest stand was 16,600 plants/acre.

Companies entering the 1992 Sunflower Test

Kaystar Seed,	KAY	Huron, SD 57350
DeKalb Plant Genetics,	DEK	Dekalb, IL 60115
Cargill Hybrid Seeds,	CAR	Minneapolis, MN 55440
Jacques Seed Co.,	JAQ	Prescott, WI 54021-1499
Pioneer Hi-Bred Inc.,	PIO	Tipton, IN 46072-9423
Interstate Payco Seed Co.,	INT	West Fargo, ND 58078
Sigco Research,	SIG	Breckenridge, MN 56520
Triumph Seed Co., Inc.,	TRI	Ralls, TX 79357
Dahlgren & Company, Inc.,	DAH	Crookston, MN 56716
ICI Seeds,	ICI	Kindred, ND 58051

Table 5. 1992 Sunflower plot culture summary.

Location	Rotation	Soil type	Weed control	Plant date	Harvest date
Cheyenne County, NE	Wheat-Sunflower-Fallow	Alliance silt loam	Good	June 17	October 18
Cheyenne County, NE	Wheat-Fallow-Sunflower-Fallow	Duroc loam	Good	June 17	October 20
Hitchcock County, NE	Wheat-Sunflower-Fallow	Keith silt loam	Good	June 19	October 21
Laramie County, WY	Wheat-Sunflower-Fallow	Sandy loam	Good	June 6	October 9
Perkins County, NE	Wheat-Sunflower-Fallow	Alliance silt loam	Good	June 11	October 23
Scottsbluff County, NE	Irrigated Wheat-Sunflower	Tripp vf sandy loam	Good	June 11	-

Table 6. Sunflower hybrids grown at the High Plains Ag Lab in 1992 in a wheat-fallow-sunflower-fallow rotation.

HYBRID	YIELD Lbs/Ac	OIL %	TEST WEIGHT	FLOWER August	HEIGHT Inches
DAH DO707	1900	32.6	25.6	17.5	63.8
DAH DO855	1820	33.2	25.6	20.3	63.8
DAH DO725	1770	33.1	24.9	19.3	63.3
INT IS3353	1640	32.3	27.4	24.0	71.0
KAY 8806	1630	32.2	27.2	22.5	67.8
KAY 8803	1590	33.5	26.8	27.3	75.0
INT IS3311	1580	32.8	26.7	21.0	64.3
ICI HYSUN354	1570	32.2	23.8	21.8	64.5
ICI HYSUN360	1500	32.6	25.7	24.0	74.0
INT IS3130	1380	31.5	25.3	27.3	76.3
ICI HYSUN33	1340	32.2	27.3	27.8	78.8
MEAN	1610	32.6	26.0	23.0	69.3
LSD 0.05	210	0.7	1.5	1.0	5.3

Table 7. Sunflower hybrids grown at the High Plains Ag Lab in 1992 in a wheat-sunflower-fallow rotation.

HYBRID	YIELD Lbs/Ac	OIL %	TEST WEIGHT	FLOWER August	HEIGHT Inches
SIG 658	1420	36.5	27.2	20.5	55.0
INT IS6111	1360	33.5	28.7	17.5	50.0
ICI HYSUN354	1360	33.6	24.5	20.8	52.0
SIG 452	1320	35.1	27.1	19.8	56.5
INT IS3311	1300	35.5	28.1	20.8	53.0
TRI 546	1270	36.1	27.3	21.3	61.5
KAY 8803	1260	36.0	25.7	25.3	62.3
JAQ CADILLAC	1250	35.7	27.6	20.8	57.0
ICI HYSUN321	1240	34.4	26.1	20.8	53.8
KAY 8806	1240	34.9	27.0	22.5	61.5
SIG 675	1210	36.7	26.6	23.0	60.5
TRI 565	1180	37.4	26.9	23.0	57.8
TRI 560A	1160	37.2	27.4	22.8	59.8
INT IS3353	1070	33.8	28.8	24.0	60.3
MEAN	1260	35.4	27.1	21.6	57.2
LSD 0.05	260	1.5	1.3	1.2	6.9

Table 8. Sunflower hybrids grown in Perkins County, Nebraska in 1992 in a wheat-sunflower-fallow rotation.

HYBRID	YIELD Lbs/Ac	OIL %	TEST WEIGHT	HEIGHT Inches
PIO 6451	2410	39.5	27.6	52.2
INT IS6111	2350	38.3	28.9	46.2
CAR SF270	2220	38.8	28.3	47.2
CAR SF100	2150	35.4	28.9	54.2
JAQ COMMANDO	2110	37.5	30.2	54.2
SIG 675	2100	39.6	29.7	52.2
KAY 8806	2090	39.5	28.0	53.7
SIG 452	2030	37.5	28.3	56.2
CAR SF187	2020	37.2	27.4	49.7
INT IS3311	1940	38.4	28.2	55.2
PIO 6445	1930	39.7	27.4	53.5
PIO 6322	1930	38.3	27.7	58.0
PIO 6440	1900	37.7	28.8	66.0
PIO XF599	1890	38.4	27.0	60.7
PIO 6425HO	1880	37.3	28.5	53.2
PIO 6400HO	1880	38.6	28.5	51.2
SIG 658	1870	39.6	29.0	54.0
JAQ EX3511	1870	39.6	28.7	60.2
PIO XF429	1810	39.4	27.4	66.5
KAY SUNBIRD	1730	32.9	29.2	47.0
INT IS3353	1730	38.1	29.1	60.0
MEAN	1990	38.2	28.4	54.8
LSD 0.05	310	2.2	1.9	4.0

Table 9. Sunflower hybrids grown in Hitchcock County, Nebraska in 1992 in a wheat-sunflower-fallow rotation.

HYBRID	YIELD Lbs/Ac	OIL %	TEST WEIGHT	HEIGHT Inches
PIO 6400HO	2430	36.1	30.4	53.3
DEK EX5322	2410	36.1	28.7	52.3
DEK DK3904	2350	35.0	23.1	53.5
JAQ EX3511	2340	38.4	26.2	60.8
KAY 9101	2240	32.5	27.1	56.8
CAR SF100	2170	35.3	28.7	48.8
PIO 6451	2160	38.0	29.3	53.3
CAR SF187	2150	35.1	27.0	49.3
JAQ COMMANDO	2130	36.2	31.3	54.3
CAR SF270	2110	36.7	30.0	51.0
PIO 6440	2070	36.3	29.5	57.5
KAY 8806	2060	34.8	28.0	58.8
FARM ENT#2	2040	38.2	30.8	55.3
DEK DK3790	2030	37.8	32.2	54.0
PIO 6445	2030	37.6	30.5	54.8
PIO XF599	2020	38.5	29.0	63.5
PIO XF429	1990	37.6	29.2	64.5
PIO 6425HO	1930	35.7	27.9	58.5
PIO 6322	1800	37.0	30.1	56.3
FARM ENT#1	1680	38.1	31.1	56.8
MEAN	2110	36.6	29.0	55.6
LSD 0.05	290	1.4	3.7	6.4

Table 10. Sunflower hybrids grown in Laramie County, Wyoming in 1992 in a wheat-sunflower-fallow rotation.

HYBRID	YIELD Lbs/Ac	OIL %
CAR SF100	1430	30.9
SIG 860	1410	-
CAR SF187	1340	31.4
JAQ COMET	1250	35.9
CAR SF270	1240	35.1
JAQ CADILLAC	1240	37.1
SIG 642	1210	-
SIG 675	1140	-
TRI 565	970	36.5
MEAN	1250	34.5
LSD 0.05	280	1.5

Table 11. Three year summary of yield and percent oil data of sunflower entries in western Nebraska. 1990-1992.

(CROP SYSTEM)		2 YR AVERAGE		3 YR AVERAGE	
COMPANY	HYBRID	YIELD Lbs/Acre	OIL %	YIELD Lbs/Acre	OIL %
(Fallow-sunflower)					
ICI HYSUN	360	1353	33.8	-	-
ICI HYSUN	354	1350	34.2	1179	34.7
INTERSTATE	IS3311	1394	34.5	-	-
(Wheat-sunflower)					
INTERSTATE	IS3311	1040	35.7	-	-
ICI HYSUN	354	1152	35.5	960	36.2
TRIUMPH	565	1069	38.4	874	38.4
TRIUMPH	560A	1206	38.1	977	38.4

DESCRIPTION OF SAFFLOWER PLOTS

David D. Baltensperger, Glen Frickel, and Mark Swanson

The 1992 safflower trial was conducted at the High Plains Agriculture Laboratory near Sidney, Nebraska. These plots were planted April 29, 1992 on fallowed ground with a 6 row double disk drill with a 12 inch row spacing. The 6 feet by 17 feet plots were trimmed to 10 feet prior to harvest on September 28 and 4 rows were harvested out of the center. Plots were treated prior to planting with 1 pint of Treflan/acre. Seeding rate was 15 lbs/acre. Plots were fertilized with 8 lbs.

N and 28 lbs. P starter at planting. The column in table 12 titled "Flower" refers to average date of flowering in July for the four replications. Oil % is at 10 % moisture. Thanks to Dr. Jerry Miller and his USDA/ARS staff at Fargo, ND for their assistance with oil analysis. All entries designated with an S were provided by Seed Tec International. Thanks to Dr. Jerald Bergman, Eastern Montana Research Center, for providing the other entries.

TABLE 12. Safflower grown in a wheat-fallow-safflower-fallow rotation at the High Plains Ag Lab in 1992.

ENTRY	YIELD Lbs/Ac	OIL %	TEST WEIGHT	FLOWER July	HEIGHT Inches	STAND RATING
S317	1950	35.5	37.1	31.0	28.5	3.3
GIRARD	1940	35.2	39.9	31.3	32.8	3.3
S208	1820	34.6	38.0	29.0	30.0	3.5
S541	1760	37.6	38.3	30.0	28.5	3.5
MONTOLA	1710	36.6	37.8	27.5	22.8	2.8
CENTENNIAL	1690	37.2	36.7	30.5	30.3	3.8
MORLIN	1680	34.5	37.5	32.0	28.5	3.0
FINCH	1620	32.5	41.6	28.3	27.8	3.0
S501	1460	35.4	33.8	26.3	24.8	3.3
OKER	1410	35.1	36.7	31.3	27.0	1.3
MT3697	1240	34.9	36.3	30.8	27.0	2.5
MEAN	1660	35.4	37.6	29.8	28.0	3.0
LSD 0.05	200	0.6	1.0	1.1	1.3	0.9

DESCRIPTION OF AMARANTH PLOTS

David D. Baltensperger, Glen Frickel, and Mark Swanson

The 1992 amaranth trial was conducted at the High Plains Agriculture Laboratory near Sidney, Nebraska. These plots were planted June 19 on fallowed ground with a 4-30 inch row corn planter. Each plot was 30 feet long and 2 rows wide. 8 lbs. N and 24 lbs. P starter fertilizer was applied at planting. No herbicides or insecticides were applied. After a killing frost on October 8, the plots were harvested on October 12. The column in table 13 headed "FLR" refers to the average date of flowering

relative to August 1.

Plainsman grain amaranth was released to certified seed growers in 1991 and was commercially available for planting in 1992. It represents the first amaranth variety to be released by the University of Nebraska. Plainsman is shorter statured than Amont and has a dark red or purple head that produces a light tan seed. Plainsman is earlier in maturity and less susceptible to lodging than Amont when both are mature.

Table 13. 1992 Amaranth yield trial, High Plains Ag Lab.

ENTRY	YIELD Lbs/Ac	TEST WT	HT In	H ₂ O %	FLR Aug	LODG %	STD %
K593	1600	63.0	52.3	17.6	10	10	10
PLAINSMAN	1550	62.3	55.5	19.4	9	5	10
A200D	1490	62.7	55.0	21.9	17	5	10
D70-1	1480	63.0	56.8	21.0	14	10	10
K432	1460	64.2	39.8	13.2	8	10	9
K433	1330	63.0	42.8	16.5	12	0	10
AMONT	1090	61.2	54.0	22.5	16	8	9
D136-1	980	62.3	47.5	20.1	17	3	9
K283	780	61.5	47.5	17.8	10	3	9
K266	760	62.2	53.5	19.6	13	13	7
K436	630	55.7	53.3	19.0	17	5	7
MEAN	1190	61.9	50.7	18.9	13	6	9
LSD 0.05	310	1.6	3.9	2.2	4	7	1



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