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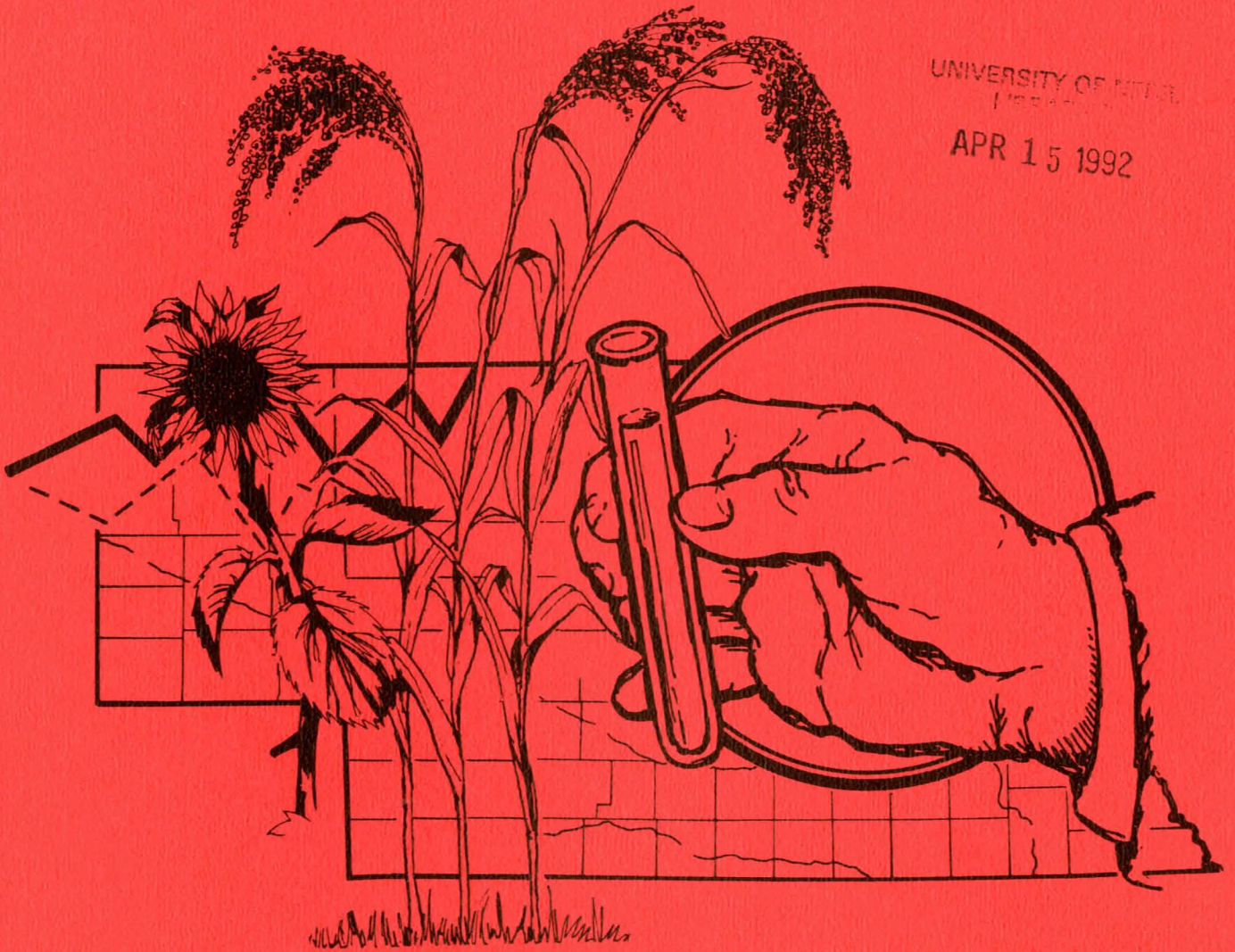
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University of Nebraska Cooperative Extension
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EC 91-107-A

NEBRASKA PROSO, SUNFLOWER AND AMARANTH VARIETY TESTS 1991



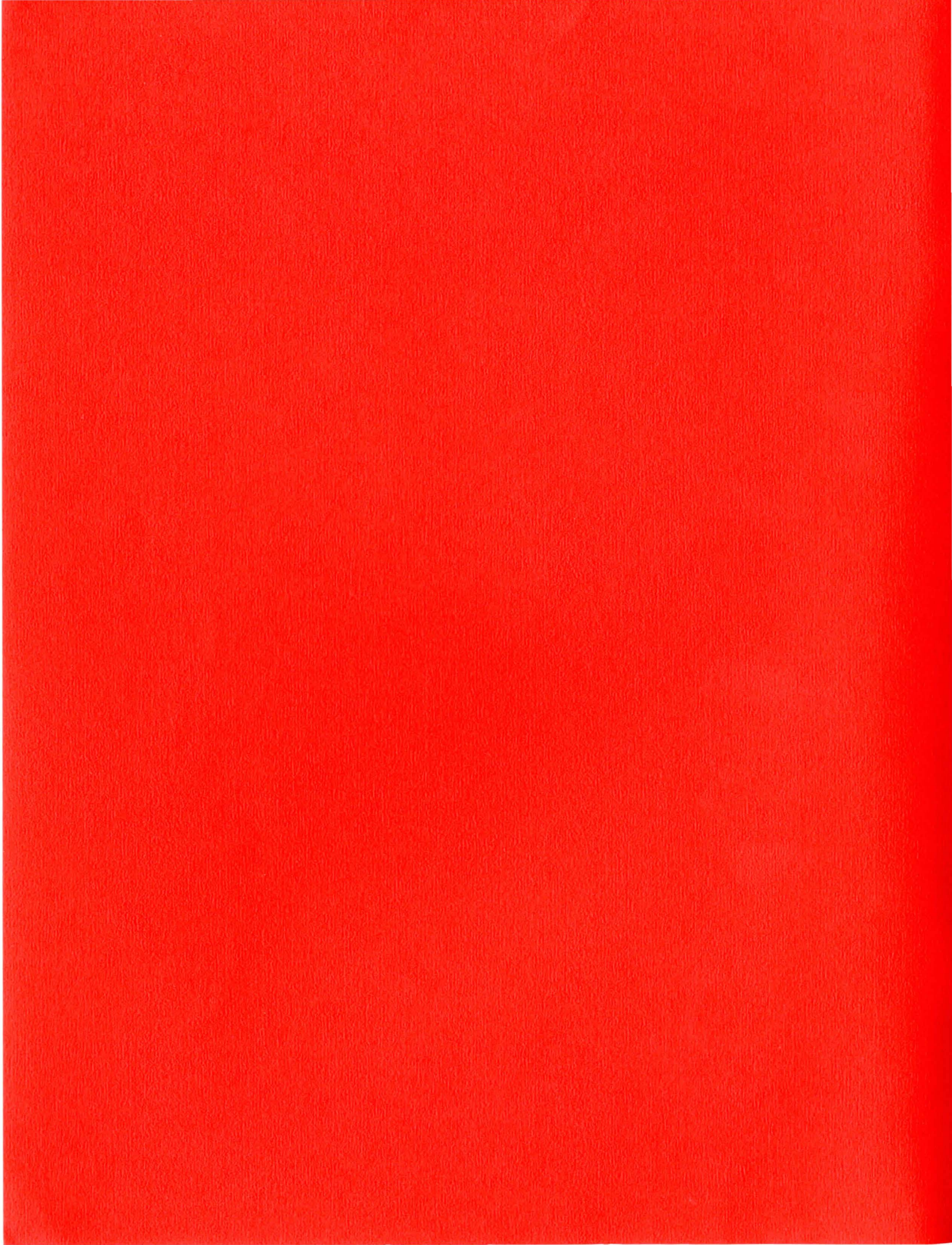
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EXTENSION CIRCULAR 91-107

FEBRUARY 1992

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ACKNOWLEDGEMENT

This circular is a progress report of proso, sunflower, and amaranth 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 joint effort of the Agricultural Research Division and the Cooperative Extension Service.

Thanks to Mark Swanson and Rex Nielsen for their efforts in trial maintenance and data analysis. Thanks to Daryl Ellis for his assistance on price and acreage history. Special thanks to Shari Bordeaux for layout and design of this publication.

All summer crops suffered from limited rainfall and high temperatures from planting to harvest. This resulted in crusting problems in several plots.

METRIC EQUIVALENTS

1 centimeter = 0.394 inches	cm = inches x 2.541
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 0.352
cwt = hundred weight	

Kilogram/hectoliter = lb/bu x 1.287
Kilograms/hectare = bu/A x 62.78 (56# bu)

EXTENSION CIRCULAR 91 - 107

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ECONOMICS AND HISTORICAL PRICES OF PROSO

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.

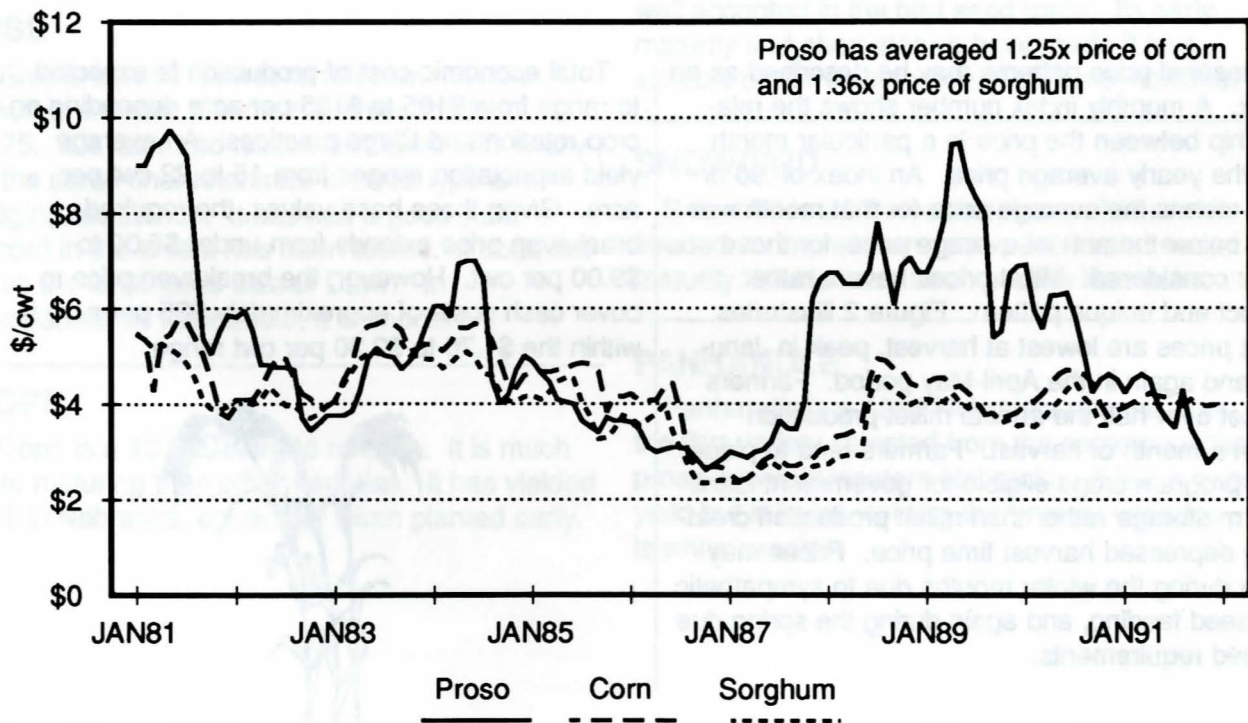
Primary uses of proso millet are bird seed, livestock feed, and human consumption. The specialty markets, bird seed and the health food industry, are the major components of millet consumption. Generally, the U.S. exports 15-20% of annual production to over 70 countries. Netherlands, Canada, Japan, and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

the top four U.S. export destination countries. Argentina is a major U.S. competitor.

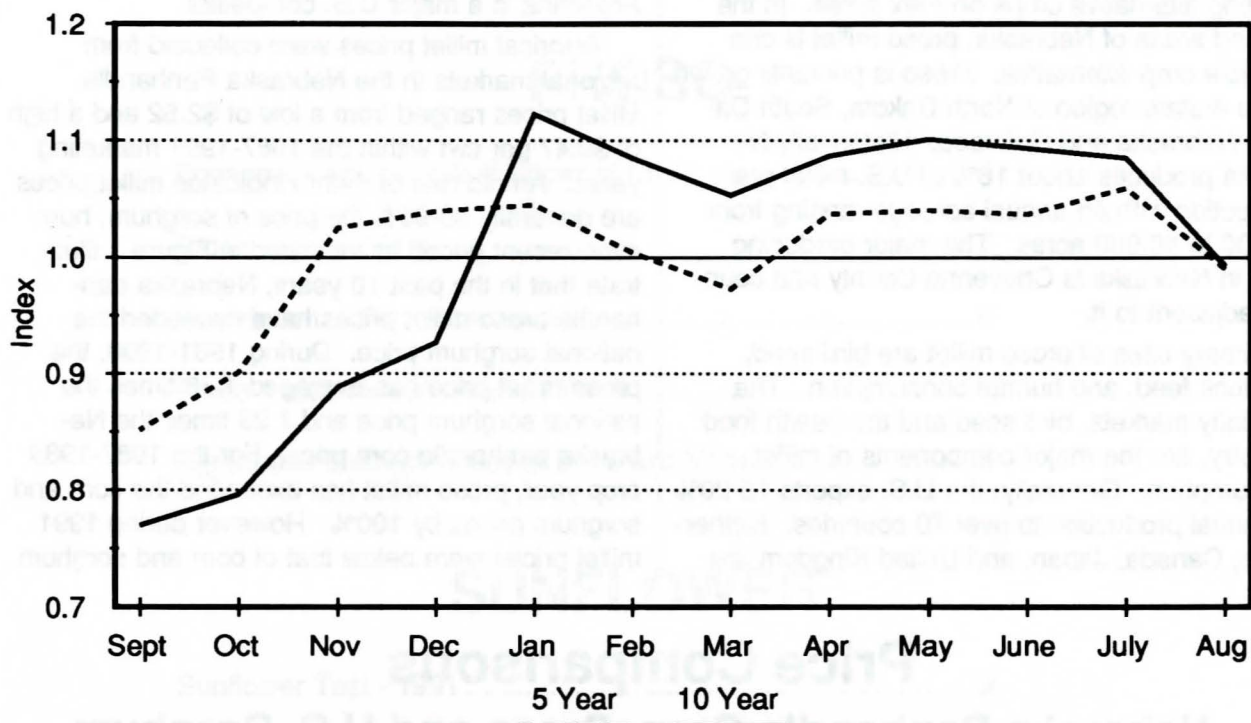
Historical millet prices were collected from regional markets in the Nebraska Panhandle. Millet prices ranged from a low of \$2.62 and a high of \$9.47 per cwt within the 1987-1991 marketing years. An old rule of thumb indicates millet prices are generally 80-90% the price of sorghum, however, recent prices as indicated in Figure 1 illustrate that in the past 10 years, Nebraska panhandle proso millet prices have exceeded the national sorghum price. During 1981-1990, the proso millet price has averaged 1.36 times the national sorghum price and 1.25 times the Nebraska panhandle corn price. For the 1987-1989 crop year, proso millet has exceeded the corn and sorghum prices by 100%. However during 1991 millet prices were below that of corn and sorghum.

Price Comparisons

Nebraska Panhandle Corn, Proso and U.S. Sorghum



Proso Seasonal Price Pattern Nebraska Panhandle



Seasonal price patterns may be described as an index. A monthly index number shows the relationship between the price in a particular month and the yearly average price. An index of .90 or 90% means the average price for that month was 10% below the annual average price, for those years considered. Millet prices have a rather distinct and unique pattern. Figure 2 illustrates millet prices are lowest at harvest, peak in January, and again in the April-May period. Farmers market over half the annual millet production within a month of harvest. Farmers tend to place farm program crops eligible for government loans in farm storage rather than millet production creating a depressed harvest time price. Prices may spike during the winter months due to sympathetic bird seed feeding, and again during the spring due to seed requirements.

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

1991

David Baltensperger, Glen Frickel, Randy Anderson and Ardel Halvorsen

The 1991 proso test contained 29 white seeded entries of which seven were named varieties used as check varieties. The other 22 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 taller, better yielding, larger seeded variety. Sunup is a new release from the crosses and has demonstrated improved height and yield over other varieties and is larger seeded than Rise.

DESCRIPTION OF CHECK VARIETIES

SUNUP

Sunup is a 1989 release from Nebraska. It is 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.

DESCRIPTION OF PLOT TECHNIQUES

Six proso variety trials were conducted in 1991. Four were located at the High Plains Agricultural Laboratory near Sidney, Nebraska. The irrigated trial was located at the Panhandle Research and Extension Center in Scottsbluff, Nebraska and one was located at the USDA Central Great Plains Research Center at Akron, CO.

These trials included a black fallow site, a early continuous cropping site, a late continuous cropping site, two notill 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 22 feet long and six feet wide. 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 plot at Akron was treated with a pre-emergence herbicide, atrazine, for weed control. Both continuous trials were left out of the results because of high trial variation.

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

Table 1. List of 1991 plot conditions.

Location	Designation	Planting date	Stand	Weed control	Yield cwt/ac	Previous crop
HPAL	Fallow	June 18	Uniform	good	19.5	fallow
HPAL	EarlyCont.	June 12	Poor	good	20.9	wheat
HPAL	Late Cont.	June 28	Poor	good	7.1	wheat
HPAL	Notill	June 11	Uniform	good	21.3	wheat
PREC	Irrigated	June 20	Uniform	good	32.4	wheat
Akron	Notill	June 11	Uniform	good	23.2	wheat

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

Variety	7 year Average	1991	1990	1989	1988	1987	1986	1985
cwt/ac								
Sunup	21	26	21	23	21	23	15	19
Rise	20	25	19	19	22	19	20	15
Minco	18	22	16	17	18	19	16	18
Cope	16	18	14	18	17	18	14	15
Panhandle	16	21	16	17	16	16	12	12
Dawn	12	15	15	12	10	12	6	12
Snowbird	-	22	-	-	-	-	-	-
Average	17	21	17	18	17	18	14	15

Table 3. Proso yields for 1991 variety trials at the High Plains Ag Lab and Akron, CO.

ENTRY	NO-TILL	FALLOW	IRRIG	NO-TILL AKRON	AVERAGE
-----CWT/ACRE-----					
860203	24.5	23.3	36.3	29.6	28.4
87041	26.9	24.4	37.0	25.1	28.4
860053	24.7	23.0	35.8	26.3	27.4
760103	24.8	22.1	31.9	28.2	26.7
870063	23.6	21.1	37.0	24.5	26.6
SUNUP	22.3	22.5	32.7	27.7	26.3
860201	21.3	20.2	36.8	26.8	26.3
RISE	22.1	19.7	35.2	25.1	25.5
8603525B	24.9	23.3	29.9	23.8	25.5
850043	23.5	19.0	38.0	20.5	25.3
860214	20.4	18.7	37.3	24.3	25.2
850093	22.7	21.9	32.4	23.4	25.1
830146	21.2	20.5	31.9	24.9	24.7
8600525B	20.6	21.1	32.1	23.5	24.3
880017	21.6	20.4	30.7	24.1	24.2
880026	21.8	19.4	35.2	20.2	24.2
860192	18.7	18.3	34.8	24.0	23.9
830126	20.6	18.5	34.1	22.0	23.8
880035	23.7	22.6	29.6	19.5	23.8
880011	21.0	19.5	33.5	20.9	23.7
870026	23.0	17.5	30.0	24.0	23.6
880022	21.2	14.9	33.5	21.3	22.7
MINCO	18.4	20.7	25.0	26.2	22.6
880021	20.3	16.8	32.3	20.8	22.5
880025	18.7	15.9	31.5	21.1	21.8
SNOWBIRD	18.7	19.9	27.4	20.8	21.7
PANHANDLE	18.2	16.2	27.5	20.2	20.5
COPE	17.9	12.2	25.1	17.8	18.3
DAWN	9.8	9.3	24.3	16.9	15.1
MEAN	21.3	19.5	32.4	23.3	24.1
LSD 0.05	4.4	2.8	7.1	3.5	2.4

Table 4. Agronomic characteristics of lines and varieties in 1991 proso millet trials averaged over locations.

ENTRY	HEADING August	H ₂ O %	HEIGHT Inches	SEEDS /5g	TEST WEIGHT Lbs/Bu
860203	1.4	16.8	28.6	743	56.7
87041	0.7	18.4	30.6	681	56.2
860053	1.6	17.9	31.1	683	56.7
760103	0.5	17.9	33.5	698	55.3
870063	3.3	19.9	32.6	703	57.3
SUNUP	1.3	19.9	32.5	746	56.4
860201	2.1	19.3	30.9	753	56.4
8603525B	1.4	17.4	30.0	697	56.4
RISE	0.8	18.4	30.5	753	55.7
850043	3.8	22.6	32.3	734	56.2
860214	3.5	21.3	31.5	714	56.5
850093	2.6	19.7	32.1	709	56.2
830146	2.7	20.7	33.5	710	57.3
8600525B	2.3	20.3	30.6	703	56.0
880026	5.6	23.4	34.8	778	55.9
880017	3.0	20.9	31.9	685	55.5
860192	2.1	19.5	31.9	727	56.5
830126	5.0	23.8	34.5	772	55.7
880035	4.5	22.7	32.0	766	56.2
880011	3.4	20.8	33.7	683	55.4
870026	1.6	20.5	31.0	786	53.9
880022	5.5	23.6	32.8	789	55.7
MINCO	1.0	16.2	34.1	738	56.7
880021	5.3	23.0	33.7	791	55.8
880025	5.6	23.1	33.0	774	55.6
SNOWBIRD	-0.5	16.0	32.6	724	56.5
PANHANDLE	0.7	16.8	32.8	729	56.3
COPE	4.2	23.1	38.6	752	54.8
DAWN	-1.3	14.9	24.5	707	56.8
MEAN	2.5	20.0	32.2	732	56.1
LSD 0.05	0.8	1.1	2.0	14	0.5

SUNFLOWER TEST - 1991

The 1991 dryland sunflower tests were conducted in Cheyenne County. They were planted in a sunflower field at the High Plains Agricultural Lab near Sidney, Nebraska. Two dryland trials were conducted involving a wheat-fallow, sunflower-fallow rotation (planted June 18) and a wheat-sunflower-fallow rotation (planted June 17). An irrigated sunflower trial was added with nine entries at the Panhandle Research and Extension Center at Scottsbluff, Nebraska this year. It was planted on June 11. Each plot consisted of four, 30 inch rows and each hybrid was replicated four times. Plots were planted 30 feet long of which 25 feet were harvested. Four rows were planted and the center two of each were harvested with a small plot combine. Seeding

rate was 18,000 seeds per acre dryland and 21,000 irrigated. Eight companies entered 17 hybrids in the fallow test and 14 hybrids in the other dryland test. The herbicide used on each test was Prowl at a rate of 1 1/2 pints/acre. The plots were harvested on October 14.

Sunflower yields were approximately 20% below average in both the fallow trials and the continuous trial. Bird damage was estimated and is shown as "Bird" for the irrigated trial.

Oil percentage is based on 0% moisture. Analysis was provided by Dr. J. F. Miller, USDA-ARS in Fargo, North Dakota. Samples were cleaned of all foreign material prior to analysis. Thanks to Dr. Miller and all his assistants for their contributions to these tests.

Companies entering the 1991 Sunflower Test

Data Seeds Inc.,	DS	Bruce, SD 57220
DeKalb Plant Genetics,	DK	Dekalb, IL 60115
Interstate Payco Seed Co.,	I	West Fargo, ND 58078
Cargill Hybrid Seeds,	CG	Minneapolis, MN 55440
Jacques Seed Co.,	J	Prescott, WI 54021-1499
Triumph Seed Co.,	TRI	Ralls, TX 79357
Garst Seed Co.,	HYSUN	Kindred, ND 58051
Genetic Resources Inc.,	GRI	Philo, IL 61864

Table 5. 1991 Sunflower plot culture summary.

Location	Designation	Water	Planting date	Weed control	Stand	Harvest date
HPAL	Wheat-fallow Sunflower-fallow	Dryland	June 18	Good	Good	Oct. 2
HPAL	Wheat-Sunflower- Fallow	Dryland	June 17	Good	Fair	Oct. 10
PREC	Wheat	Irrigated	June 11	Good	Good	Sept. 27

Table 6. Irrigated sunflower hybrids grown at the Panhandle Research and Extension Center in 1991.

ENTRY	FLOWER August	YIELD Lbs/Ac	TEST WEIGHT	HEIGHT Inches	OIL %	BIRD %	H ₂ O %
TRI 565	10.5	2,936	29.5	75	48.3	5	15.7
GRI 881	8.7	2,489	28.4	70	46.8	12	14.0
GRI 90142	14.0	2,483	25.7	74	45.1	6	21.0
DK 3904	11.0	2,470	27.6	68	44.4	12	14.1
TRI 560A	9.7	2,400	28.9	80	49.9	15	14.2
TRI 548A	11.0	1,944	26.6	67	47.5	22	15.0
DK 3890	12.7	1,742	26.3	64	44.6	17	14.2
TRI 550	11.0	1,550	27.6	68	49.9	27	12.0
DK 3861	11.0	1,429	25.9	66	47.2	35	12.2
MEAN	11.0	2,274	27.4	70.5	47.1	17	14.7
LSD 0.05	0.5	350	1.4	10.6	1.2	12.8	3.0

Table 7. Sunflower hybrids grown at the High Plains Ag Lab in 1991 in a wheat-sunflower-fallow rotation.

ENTRY	FLOWER August	YIELD Lbs/Ac	TEST WEIGHT	HEIGHT Inches	OIL %	H ₂ O %
TRI 550	21.2	988	25.7	51.2	42.0	5.2
TRI 565	20.5	957	24.3	55.0	43.7	6.9
HYSUN 354	22.5	943	22.5	48.5	41.5	6.2
I 61121	20.5	925	22.8	54.0	40.0	7.7
HYSUN 340	18.0	917	20.2	48.0	41.4	5.3
DK 3890	21.7	911	22.0	48.0	40.9	8.8
DK 3861	21.2	887	23.8	48.0	41.2	4.9
DK 3904	21.0	880	21.0	43.0	40.2	6.0
J COMMANCHE	21.2	843	25.0	49.7	43.3	6.6
I 33263	19.5	841	21.8	52.5	40.1	6.4
TRI 560A	19.7	812	23.4	54.0	43.2	7.0
TRI 548A	21.5	784	24.0	48.0	42.0	6.0
I 3311	18.7	780	23.5	48.5	39.9	5.5
J COMMANDO	18.5	744	23.0	49.0	38.1	6.9
MEAN	20.4	872	23.1	49.8	41.3	6.4
LSD 0.05	1.5	242	2.0	5.9	1.4	2.4

Table 8. Sunflower hybrids grown at the High Plains Ag Lab in 1991 in a wheat-fallow-sunflower-fallow rotation.

ENTRY	FLOWER August	YIELD Lbs/Ac	TEST WEIGHT	HEIGHT Inches	OIL %	H ₂ O %
I 61121	20.7	1413	24.3	66.2	40.3	15.6
I 3311	19.0	1207	24.6	61.0	40.2	10.4
HYSUN 360	22.0	1206	24.4	69.5	38.8	19.9
I 33263	19.7	1155	22.9	64.5	40.4	14.3
HYSUN 354	19.0	1130	22.6	61.2	40.2	8.7
J COMMANDO	18.0	1124	24.3	57.7	38.1	9.0
J COMMANCHE	20.7	1090	26.1	60.2	41.7	8.7
DS 901SX	17.7	1054	23.2	59.0	39.5	13.9
CG SF100	19.7	1036	23.9	47.7	37.2	7.1
CG X16270	16.0	1033	23.2	47.0	38.6	9.9
HYSUN 340	17.2	1024	22.4	59.2	40.2	9.5
GRI 881	18.0	971	25.9	63.7	39.3	7.0
DS 902SX	17.5	951	23.1	56.7	38.1	16.4
DK 3890	21.5	878	23.6	62.7	39.7	13.0
GRI 90142	24.2	864	23.5	67.0	38.6	15.5
DK 3904	20.7	862	24.4	55.0	39.2	6.3
DK 3861	21.0	838	23.4	55.0	40.6	6.2
MEAN	19.6	1050	23.9	59.6	39.5	11.3
LSD 0.05	1.1	365	1.5	4.4	1.4	8.3

Table 9. Two year summary of yield and percent oil data of sunflower entries in western Nebraska. 1990-1991.

(CROP SYSTEM)		1991		1990		2 YR AVERAGE	
COMPANY	HYBRID	YIELD Lbs/Ac	OIL %	YIELD Lbs/Ac	OIL %	YIELD Lbs/Ac	OIL %
(Fallow sunflower)							
Garst Hysun	354	1130	40.2	838	39.8	984	40
Jacques	Commando	1124	38.1	913	36.7	1018	37.4
Cargill	SF 100	1036	37.2	872	33.7	954	35.4
GRI	GRI 881	982	39.9	971	39.3	976	39.6
(Wheat Sunflower)							
Garst	Hysun 354	943	41.5	576	41.7	760	41.6
Triumph	560A	812	43.2	519	43.3	666	43.2
Triumph	565	957	43.7	486	42.9	722	43.3
Jacques	Commando	744	38.1	474	38.4	609	38.2
Triumph	548A	784	42.0	468	42.4	626	42.2

DESCRIPTION OF SAFFLOWER PLOTS

The 1991 Safflower trial was conducted at the High Plains Agriculture Laboratory near Sidney, Nebraska. These plots were planted May 13, 1991 with a 6 row double disk drill with a 12 inch row spacing. The 6 feet by 15 feet plots were trimmed to 13 feet prior to harvest on September 23 and 4 rows were harvested out of the center. Plots were treated prior to

planting with 1 1/2 pints of Treflan/acre. Seeding rate was 20 lbs/acre. Plots were fertilized with 90 lbs/acre 10-34-0 at planting. The column in table 10 titled "Flower" refers to average date of flowering in July for the four replications. Oil % is at 0 % moisture. Thanks to Dr. Jerry Miller and his USDA/ARS staff at Fargo, ND assistance in oil analysis.

TABLE 10. Safflower grown in a wheat-fallow-safflower-fallow rotation at the High Plains Ag Lab in 1991.

ENTRY	FLOWER July	HEIGHT Inches	TEST WEIGHT	OIL %	H2O %	YIELD Lbs/Ac
MONTOLA	25.6	16.6	42.0	44.7	4.6	1259
OKER	26.3	20.0	39.8	44.3	4.3	1198
S317	26.0	22.0	40.5	43.1	4.5	1186
S541	27.3	23.3	41.6	46.4	4.5	1174
CENTENNIAL	27.6	21.6	40.6	47.4	4.5	1133
S208	28.6	20.6	40.9	42.4	4.6	1132
GIRARD	26.6	23.6	41.7	41.7	4.7	1077
SAFFIRE	25.0	21.3	42.0	36.5	4.9	1017
FINCH	30.6	21.0	44.4	40.8	4.8	938
MT3697	29.6	18.6	42.1	43.8	4.6	868
MEAN	27.4	20.9	41.6	43.1	4.6	1098
LSD 0.05	2.1	1.6	0.8	1.5	0.1	170

DESCRIPTION OF AMARANTH PLOTS

The 1991 Amaranth trial was conducted at the High Plains Agriculture Laboratory near Sidney Nebraska. These plots were planted June 17 with a 4 row corn planter. Each plot was 30 feet long and 4 rows wide. The two center rows were harvested on September 24. No fertilizer, herbicides or insecticides were applied. The column in table 11 headed "FLOWER" refers to the average date of flowering of the 4

replications relative to August 1.

Plainsman grain amaranth was released to certified seed growers in 1991 and will be 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 11. 1991 Amaranth yield trial, Sidney, Nebraska.

ENTRY	FLOWER August	MOISTURE %	BROKEN PLANTS	HEIGHT Inches	# OF PLANTS	TEST WEIGHT	YIELD Lbs/Ac
D107	13.0	16.3	3.0	51	87	65.7	896
D34-1-1	9.0	16.3	4.5	59	76	65.3	858
K709	13.0	18.0	4.7	60	45	64.1	841
K549	9.7	14.3	3.5	60	94	66.0	829
PLAINSMAN	11.2	13.8	8.7	62	107	66.1	821
D43B	10.2	15.8	1.7	57	65	64.9	810
D106	12.0	15.9	3.7	55	87	65.8	798
D113	12.0	16.0	3.0	54	139	65.6	792
K578	10.0	14.0	4.2	50	78	65.7	752
K433B	11.7	13.6	6.5	46	75	65.5	732
K551	10.2	13.9	4.7	51	99	66.0	699
K433	11.7	15.0	1.5	47	53	64.8	677
K432B	11.0	14.4	1.5	47	69	64.9	676
D108	8.7	15.3	1.7	52	82	65.3	660
K583	13.5	17.0	4.2	55	82	64.6	653
A5198	13.2	18.6	7.2	63	76	63.3	650
AMONT	15.0	22.1	2.2	67	43	60.6	648
K591	11.2	15.1	5.2	55	97	65.4	645
D70-1	14.5	21.0	3.2	46	72	62.1	621
K432	11.2	13.9	1.5	49	47	65.0	610
D141	13.2	15.3	6.7	57	59	65.0	596
A5188	13.0	19.7	5.2	65	79	61.6	574
D110	13.0	17.7	6.7	52	105	64.1	558
A5187	14.0	19.3	7.2	65	75	62.7	525
A200D	14.7	21.7	4.0	71	48	61.4	518
K593	13.0	14.2	9.7	50	69	65.0	507
A5183	13.5	21.7	9.5	63	103	61.5	501
K283	13.0	19.1	1.2	59	42	62.6	501
A5483	14.7	22.8	7.7	71	58	59.7	478
A5194	13.2	20.5	7.2	65	73	61.2	460
D56A	14.7	22.9	0.0	57	50	60.8	439
A5200	13.2	16.9	10.2	57	80	64.0	427
A5192	11.2	22.9	30.5	58	114	62.3	419
A5196	13.2	15.9	6.2	47	91	63.7	389
A5199	13.0	18.4	2.5	57	59	62.3	378
K266	14.5	19.3	1.7	54	28	62.8	359
K436	15.7	24.3	1.5	52	20	59.3	274
D136-1	18.0	19.5	0.0	52	28	59.0	212
MEAN	12.6	17.7	5.1	56	72	63.6	599
LSD 0.05	1.0	3.6	6.8	10	30	2.1	295



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