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Sunflower Marketing Strategies

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Producer Marketing Management -- CURRENT REPORT #2

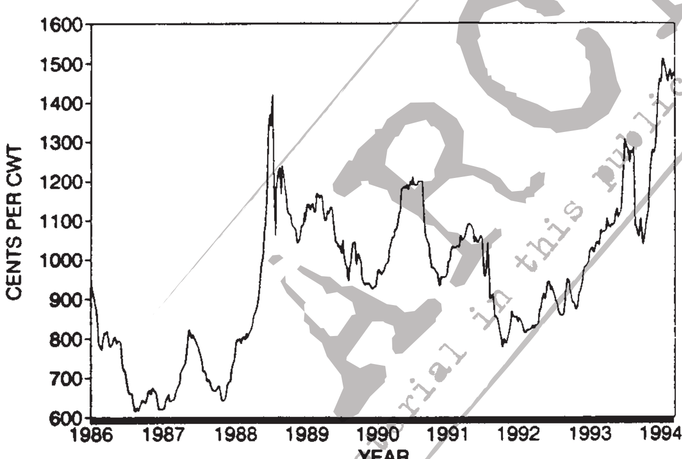
by Richard Shane and George Flaskerud[1]

Price history suggests that any remaining old crop sunseed should be sold now. The sunflower (oil type) price in early April was as high as any price since 1986 (Fig 1).

The average price of sunseed at Enderlin, N.D., from harvest in 1985 to March 1994 was 9.53 ¢/lb. Old crop price bids of 14 to 15 ¢/lb offered during early April not only exceeded the long-term average price but also exceeded the 5-year average of 10.37 ¢/lb. A premium also was paid for high oil content.

The new crop price level suggests that a step-up marketing plan for new crop should be considered. The new crop Enderlin sunseed bid exceeded the 5-year average most of the winter and was near 11 ¢/lb in early April. Farm level or local prices should have been around 10.5 ¢/lb.

Figure 1. Enderlin, N.D., cash sunflower price, 40% oil.*



*Thursday or nearest day prices were obtained from National Sun Industries, Inc., Enderlin, N.D.

Forward pricing 30 to 40% of expected 1994 production by June 1, and more later if a weather rally occurs, may be a suitable plan for many producers. The national loan rate provides a floor price of 8.72 ¢/lb in case of lower prices later in the year.

Remember, sunflowers produced on 0/92 acres as well as other acres on the same ASCS farm unit do not qualify for loan if the deficiency payment on the base crop is accepted.

Market Factors to Consider

The USDA Prospective Plantings Report released on March 31,1994, indicated that U.S. farmers plan to produce sunflowers on 3.24 million acres compared to 2.65 million acres in 1993. This increase in acreage was anticipated by market analysts because of the relatively high price and low cash cost of producing sunflowers compared to competing crops; consequently, any expanded acreage had virtually no impact on the new crop sunflower price.

Acreage and production of sunseed can increase or decrease by large amounts and still have very little impact on the price of sunseed (Fig 2). Sunseed is produced primarily for oil and is part of a much larger U.S. and world oilseed market complex. The price of sunseed is closely related to the price of other oilseeds, especially soyoil (Fig 3).

World supplies of soyoil are tight. Ending world stocks of soyoil have decreased from 2.14 million metric tons (MMT) in 1991/92 to 1.86 MMT in 1992/93 and to 1.33 MMT projected for 1993/94. U.S. ending stocks have declined over this same period from 1.02 to .43 MMT. U.S. soybean stocks also are at historically low amounts.

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Figure 2. U.S. sunflower price, harvested acreage.

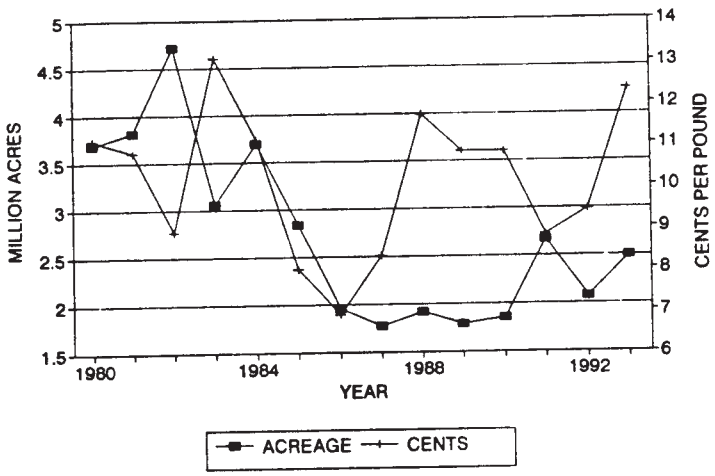
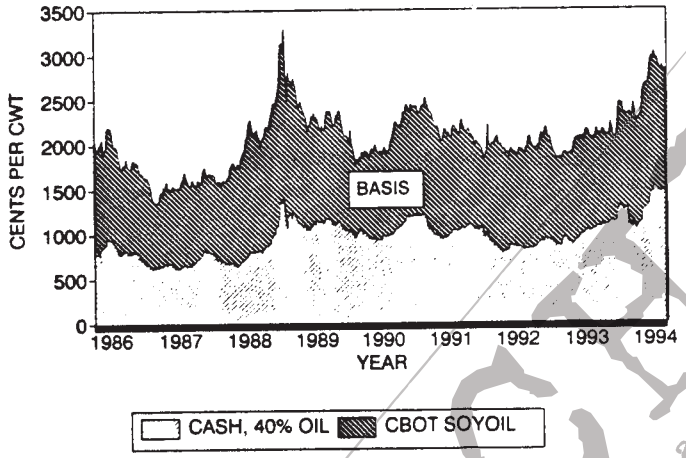


Figure 3. Enderlin, N.D., sunflower and nearby CBOT soyoil prices.*



*The nearby basis was derived by subtracting the nearest futures contract prices from the local cash price. Prices from the nearest futures contract month were used until the Thursday in the month before the futures contract month. After that, Thursday prices from the following futures contract month were used.

Two factors are working in the oilseed markets to alleviate tight supplies. First, U.S. soybean planting intentions are 107% of last year's actual planting. Second, Brazil and Argentina are harvesting a record amount of soybeans.

The large South American crop appears to be factored into the market. However, U.S. growing season weather problems could lead to very volatile soybean prices this summer. Sunseed prices also would be volatile under this scenario.

Sunflower Situation

Market expectations depend on the type of sunseed grown and geographical location. Yields vary from state to state and within state. Production also varies between oil and non-oil type sunflowers. A price premium is paid for sunflowers with a high percentage of oil. High quality oil type sunflowers are crushed for the oil and meal, and low quality oil type sunflowers are used in birdseed markets. Non-oil type sunflowers are used in confectionery and birdseed markets. Size and quality are important in the confectionery market; large seeds demand a premium price.

The net value of production to the farmer also varies depending on nearness to a processing facility and the amount of transport costs incurred in delivering the commodity.

Production

Sunseed production was initially concentrated in North Dakota, South Dakota, and Minnesota with a small amount grown in Texas. In 1988, sunseed production began moving south and west, with acreage showing up in Kansas. Colorado and Nebraska growers began to produce sunseed in 1991 and have gradually increased acreage (Table 1). It is not surprising to see expansion to these areas, as sunflowers grow well on droughty soils often planted to small grains. Sunflowers work well when planted once every 4 years in small grain rotations.

North Dakota sunflower production declined substantially over the last 7 years, while South Dakota and Minnesota production increased. Moisture and, to a lesser extent, disease and insect problems contributed to low yields in North Dakota and made sunflowers less competitive in the crop rotation. In 1993, North Dakota production was significantly reduced by the cool summer weather and early frost.

The ratio of oil to non-oil sunflowers is higher in the traditional production areas than in the more southern

Table 1. Sunflower production, by state, 1987/88 - 1993/94.

Year	CO	KS	MN	NE	ND	SD	TX	Total[1/]
				(Million pounds)				
1987	NA	NA	128	NA	2,076	387	17	2,608
1988	NA	240	64	NA	1,258	205	25	1,792
1989	NA	118	95	NA	1,235	244	67	1,759
1990	NA	82	226	NA	1,541	400	26	2,275
1991	58	120	509	43	2,235	551	32	3,613
1992	92	211	311	55	1,270	530	63	2,604
1993	89	221	382	65	967	789	32	2,597

NA = Not available. 1/ Includes some other states.

areas. The confectionery and birdseed markets are small and quickly supplied. So, as production increases, farmers turn to more oil type sunflowers to receive an acceptable price.

South Dakota sunseed production is 98% oil type. In 1993, North Dakota and Kansas produced 84 and 81% oil type sunflowers, respectively. As Kansas sunflower acreage increased so did the percentage of oil type sunseed production. This will likely occur in Colorado and Nebraska as more acres of sunflower are produced there. Colorado and Nebraska produced 68 and 58% oil type sunflowers in 1993, respectively.

Oil premiums are paid for oil content over 40%. Average oil content has declined from 43.5% in 1989 to 41.3% in 1992. The National Sunflower Association has reported that the 1993 average U.S. sunflower oil content was 41.8%.

Cost of Production

A 1994 budget for sunseed production in north-central South Dakota or south-central North Dakota is presented in Table 2. Variable costs total $53.44/A, and total costs are estimated at $107/A. Yields in this region average around 1,300 lb/A, so it takes a price of 8.2 ¢/lb to cover total costs and 4.1 ¢/lb to cover variable costs. If the price at harvest is 10 ¢/lb, return to management is $23/A.

Competing Crop Comparison

Under average conditions and without government program participation, sunflowers and soybeans are projected to return the largest dollar amount to management in 1994. That is followed in order by wheat, corn, barley, and oats (Table 3). When the expected deficiency payment for program crops is added (Table 4), spring wheat is as profitable as sunflowers and soybeans, corn is at breakeven, and barley still is produced at a loss of $4.59/A (Table 5). This analysis will vary by individual farm, but it should help producers focus on the best potential crops for their situations.

Sunflower is a minor oilseed and can be grown on program crop base acres under the provisions of the 0/92 program. By growing sunflower on wheat, corn, or barley base, the return to management increases to $42.95, $43.33, and $41.30 per acre, respectively.

The largest saving to the sunflower producer is to use barley base for this program, turning the loss from growing barley into profit. The return to management from 0/92 on oats base and sunflowers is the same as sunflower without the government program because the expected oats deficiency payment is zero.

Due to rotational requirements, many producers are not able to plant their entire crop base to sunflowers. These producers can plant sunflowers on normal flex acres (15% of crop base that receives no deficiency payment). If this

Table 2. Estimated north-central South Dakota and south-central North Dakota sunseed cost of production - 1994.

	$ per acre
VARIABLE COSTS	
Seed, Chemical & Fertilizer	28.76
Fuel & Lube	4.09
Repair & Maintenance	7.65
Machine Hire & Custom	2.75
Interest on Operating	1.89
Direct Labor	6.04
Overhead	2.26
Subtotal	53.44
FIXED COSTS	
Machinery	24.86
Real Estate Taxes	3.90
Land Interest	24.80
Subtotal	53.56
TOTAL COST	107.00
Expected Yield (cwt)	13
Expected Price ($/cwt)	10
Expected Revenue ($/A)	130.00
Return to Management ($/A)	23

Derived from budgets developed at South Dakota State University by Donald L. Peterson.

Table 3. Costs of production and returns to management for crops in north-central South Dakota and south-central North Dakota, without government program - 1994.

Crop	Variable Cost	Total Cost	Yield	Price	Sales Revenue	Return to Management
	($/A)	($/A)	(bu/A)*	($/bu)*	($/A)	($/A)
Barley	51.02	107.73	45	1.85	83.25	(24.48)
Corn	99.93	165.28	65	2.20	143.00	(22.28)
Oats	48.63	104.54	55	1.35	74.25	(30.29)
Soybeans	74.29	128.34	27	5.65	152.55	24.21
Sunflower	53.44	107.00	1300	10	130.00	23.00
Sp.Wheat	43.73	91.40	30	3.10	93.00	1.60

Derived from budgets developed at South Dakota State University by Donald L. Peterson.

Table 4. Returns from various government farm program alternatives - 1994.

Crop	Deficiency Payments 15% Flex*	0/92 Payment**	0/85 Payment	Deficiency Payment 25% Flex
		($ per acre)		
Barley	19.89	18.30	16.91	17.55
Corn	22.10	20.33	18.79	19.50
Sp.Wheat	21.68	19.95	18.43	19.13

*Expected deficiency payment rates assumed were barley $.52, corn $.40, and wheat $.85, all per bushel; ASCS and actual yields are equal; 15% normal flex acres.

**0/92 provisions apply when minor oilseeds are planted on base crop acres.

Table 5. Crop returns to management with various government farm program alternatives in north-central South Dakota and south-central North Dakota - 1994.

Crop	Without Gov't	Gov't Program No Flex	Sunflower on 0/92	Sunflower on Normal Flex	Sunflower on NFA & OFA
			($ per acre)		
Barley	(24.48)	(4.59)	41.30	2.53	4.94
Corn	(22.28)	(0.18)	43.33	6.61	8.54
Sp.Wheat	1.60	23.28	42.95	26.49	26.08
Oats	(30.29)	(30.29)	23.00	(22.30)	(16.97)

Table 6. U.S. sunflower seed crushing plants.

Plant	Crushing Capacity (Ton/day)	% Protein Meal Produced
Cargill, Inc. West Fargo, ND	1,250	30
Archer Daniels Midland Red Wing, MN	1,000	28
National Sun Industries Enderlin, ND	1,500	35
National Sun Industries Goodland, KS	500	28
Agrigenetics/SVO Culbertson, MT	275	28
Others - TX & OK	230	28

Source: National Sunflower Association

were done on barley base, a $2.53/A return to management can be realized compared to a loss when barley is planted on the entire base. The profitability of corn and wheat base also increases with this alternative (Table 5). The loss from oats production is less because the sunflowers return a profit on the percent of base devoted to sunflower.

Another alternative is to give up deficiency payment on an additional 10% of the crop base (optional flex) and plant sunflowers on 25% of the base. Under this scenario, return to management increases from the normal flex scenario for barley, corn, and oats but decreases for wheat (Table 5).

Given this crop production analysis, it is understandable why farmers intend to increase sunflower production in 1994. The cost of any new equipment that must be purchased to grow sunflowers should be considered. Rotational plans must be a part of the final decision.

Processing

Sunseed crushing plants are located near the source of supply and appear to have sufficient capacity to handle the 1994 crop. The four major plants are located in West Fargo, N.D., Enderlin, N.D., Red Wing, Minn., and Goodland, Kans. Plants with smaller crushing capacity are located in Montana, Texas, and Oklahoma (Table 6). The southern plants normally crush cottonseed and crush sunseed on a custom basis. The total crushing capacity is 4.755 thousand tons per day. If 900 thousand tons are crushed in 1993/94, these plants could operate for 189.3 days or at 51.8% capacity, on average. The crushing process produces meal, hulls, and oil.

Sunseed oil is dependent on the international market for demand. In 1992 and 1993, 75% of the sunoil produced in the U.S. was exported. Nearly all sunflower meal is consumed in the domestic feed market. Mexico is a major market for both products. Algeria and the Netherlands are traditionally good customers for U.S. produced sunoil.

Marketing Alternatives

Every farmer should develop a crop marketing plan which details the price desired, acceptable pricing alternatives, timing of pricing decisions, and evaluation techniques. If more than one person is involved, responsibility should be divided for executing each part of the marketing plan.

Cash Market

Most sunflower producers market their crop at harvest or after harvest, using only the cash market and storage. Seasonal price patterns are characterized by lows at harvest time with some price appreciation into the spring months (Fig 4). However, this pattern does not always occur, and storage costs may exceed price appreciation after harvest. Costs of storing sunflowerseed are presented in Table 7.

Figure 4. Sunflower seasonal price pattern, Enderlin, N.D., 40% oil - 1986-92.

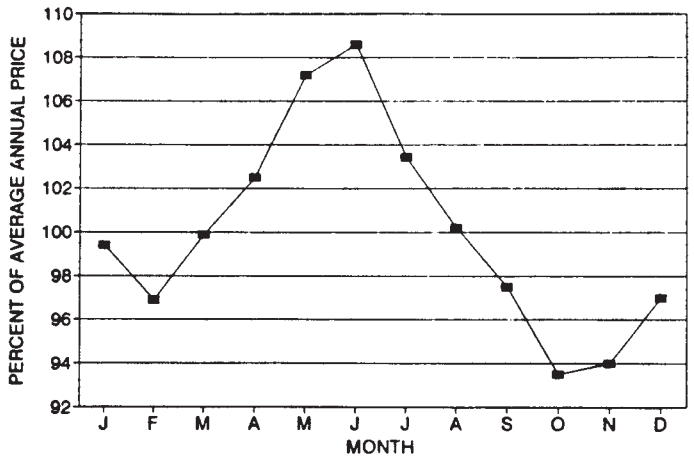


Table 7. Cumulative variable costs per month for sunflower seed storage on the farm.

Months in Storage	Pre-Harvest	Post Harvest
	($/cwt)	
1	0.2412	0.0839
2	0.3251	0.1678
3	0.4090	0.2518
4	0.4929	0.3357
5	0.5768	0.4196
6	0.6608	0.5035
7	0.7447	0.5874
8	0.8286	0.6713
9	0.9125	0.7553
10	0.9964	0.8392
11	1.0803	0.9231
12	1.1643	1.0070

When the storage decision is being made prior to harvest, the appropriate cost is $.24 for one month to $1.16 per cwt for 12 months. For a selling decision made after the crop is in the bin, the appropriate cost per hundredweight is $.08 for one month up to $1.01 for twelve months. The inclusion of costs for bin preparation, chemical treatment, auguring, and shrink cause pre-harvest storage costs to exceed post-harvest storage costs. Returns to storing sunseed for crop years 1985/86-1992/93 are presented in Fig 5. A profit from storage can be realized most years, but the timing of sales to acquire the profit is not consistent.

Cash Forward Contract

Grain elevators offer farmers the opportunity to set their harvest time price for sunflowers through the use of a cash forward contract. The farmer agrees to deliver sunflowers at harvest and the price is set when the contract is signed. Forward price bids were around 10 ¢/lb during early April, depending on location. Enderlin, N.D., bids were around 10.5 ¢/lb. This price level is historically high (Fig 3) and should be given serious consideration in market planning for the 1994 crop. Confectionery sunflower forward contract bids were around 14 ¢ in mid April.

With contracting, the risks to the producer are in not having the sunflowerseed to deliver and in seeing the price go higher at harvest. The elevator will most likely transfer its risk to someone else through hedging or forward contracting to a terminal elevator.

A farmer can use the soyoil futures price to evaluate a cash forward bid for sunflowers. Normally, sunflower forward price bids are around 42% of the price of soyoil (horizontal line, Fig 6). The ratio of sunflower price to soyoil price since 1988 almost always has been greater than 42%. Elevators apparently use this percentage to obtain protection against a drop in the price ratio such as happened in 1991 and 1992. Continuation of the government's Sun Oil Assistance Program (SOAP), which began in 1988, has apparently had a major impact on this price relationship. If this ratio continues to average around 50%, a different marketing method may be desirable for the farmer who is willing to assume basis risk.

Cross Hedging

A marketing alternative that may allow the sunflower producer to net a price higher than from the cash forward contract is cross hedging.

When a futures market for a commodity does not exist, it may be possible to use the futures market of a different commodity for hedging. For this to be possible there must be a predictable relationship between both commodities. This relationship is commonly referred to as basis.

The sunseed price and soyoil price have a predictable relationship (Fig 6). The difference between the price of sunseed at Enderlin, N.D., and the Chicago Board of Trade nearby soyoil price is presented in Fig 7. This basis averaged 11 ¢/lb for 1986-1993. The Enderlin sunflower price was 11 ¢/lb less than CBOT soyoil price, on average. With a CBOT price of 26 ¢/lb, one can expect a 15 ¢/lb price for sunflowers in Enderlin, on average.

The basis is seasonal, and producers should keep their own basis table to identify the appropriate basis for the time of the year they market their product.

Many in the trade use the ratio of sunseed price to soyoil price to estimate the potential price of sunflowers. It is common to use a ratio of .41 to .42 for this purpose. With this method, a 26 ¢ price of soyoil leads to a potential price of sunflower at delivery time of 11 ¢/lb ($.26 x .42 = $.11). Using the ratio of .42 gives a conservative estimate of potential price (Fig 6).

Figure 5. Sunflower: cash price vs. cost of storage.

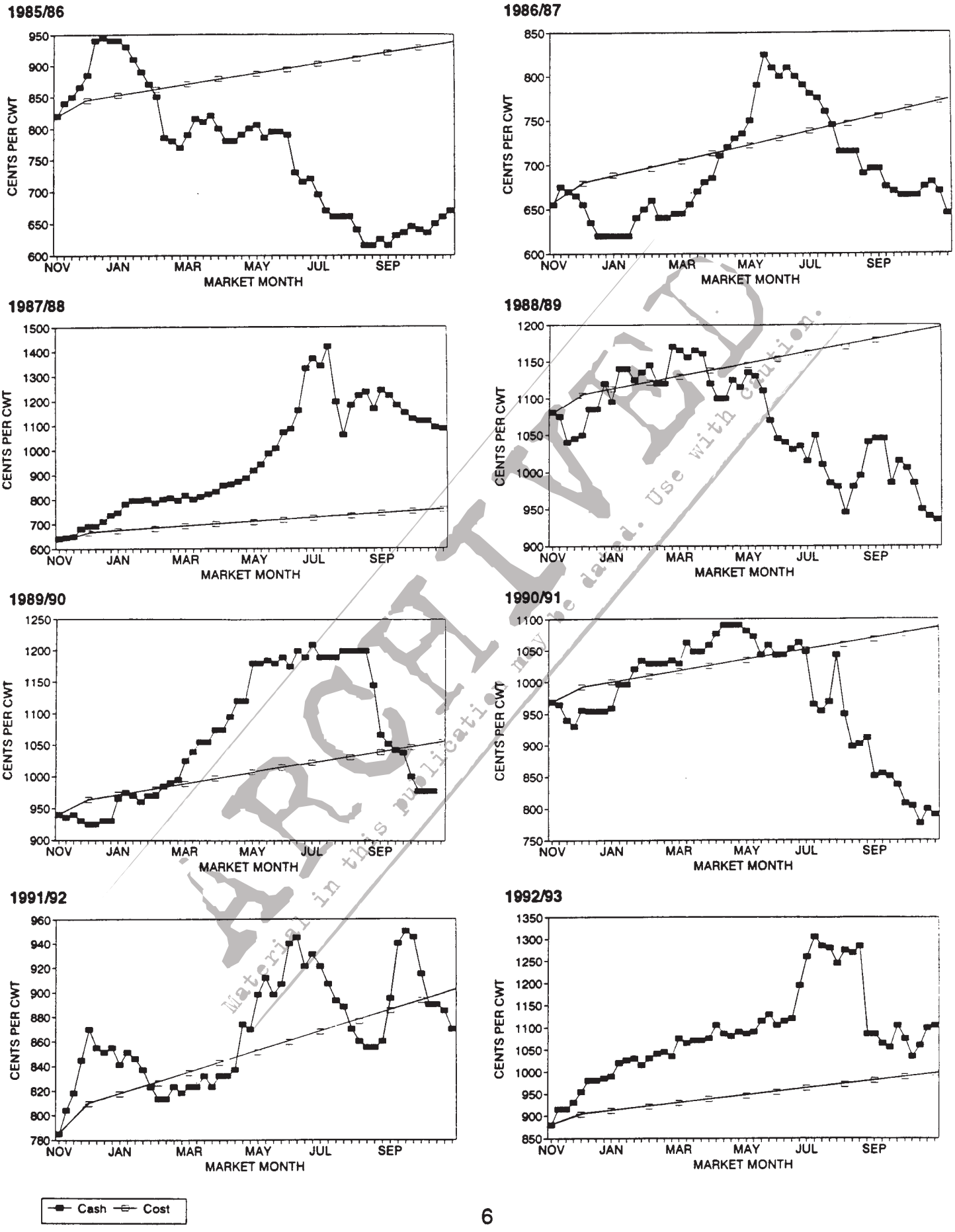


Figure 6. Enderlin, N.D., sunflower price, 40% oil, relative to nearby CBOT soyoil price.

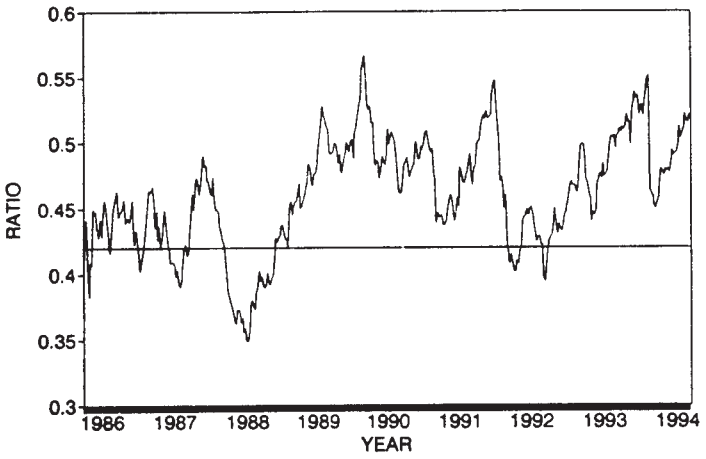
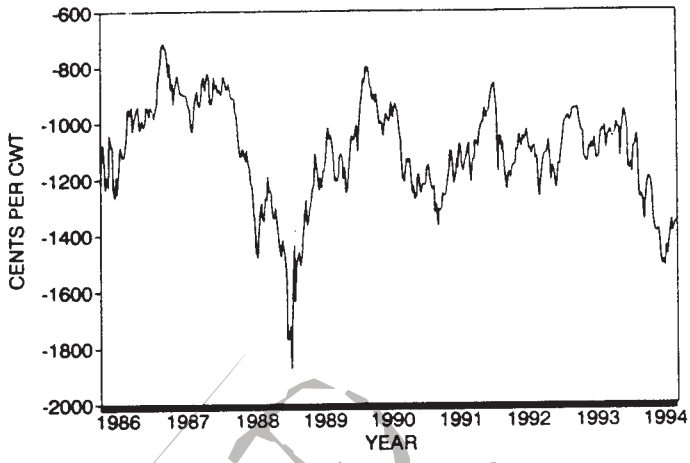


Figure 7. Enderlin, N.D., sunflower basis cash, 40% oil, nearby CBOT soyoil price.*



*Thursday or nearest day cash futures and closing prices were used.

Using the data in this figure, it seems that a ratio of .45 to .48 does not lead to a great risk of overstating the potential sunflower price from cross hedging, assuming SOAP is continued. Using the ratio of .48 yields a sunflower price estimate of 12.5 ¢ and a basis of minus 13.5 ¢/lb. The data in Fig 7 support using this basis level for Enderlin, as the basis is not often any wider.

Finally, the producer must calculate how much sunflower production can be cross hedged using one contract of CBOT soyoil. One contract of soyoil is 60,000 lb. If the sunflower yield is 1,300 lb/A and the oil content is 41.8%, production from 110.42 A of sunflowers could be hedged with one CBOT soyoil contract (60,000/1,300 x .413).

The December CBOT soyoil price was 25.15 ¢/lb in early April. If a sunflower producer would have sold one CBOT soyoil contract, the potential price at harvest would have been 12.1 ¢/lb ($.2515 x .48). Using the more traditional ratio of .42, the potential price would have been 10.6 ¢/lb of sunseed.

If the price of soyoil actually turns out to be 23.15 ¢ at harvest time and the price of sunseed is 11.1 ¢, the sunseed price would be one cent less than the potential determined at the time the hedge was initiated. But this one cent decrease would be offset in this example by the profit obtained when buying back the futures contract.

In effect, if the cash forward contract bid at Enderlin is 10.5 ¢, the producer can take this price by contracting. Alternatively, the producer could cross hedge and seek the potential price of 12.1 ¢/lb suggested by the basis and ratio information available. Each producer must make this decision based on individual preferences and risk position. This decision becomes a part of the farmer's marketing plan for sunflowers.

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