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Marketing Idaho Sugarbeets

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Sugarbeet production in Idaho began shortly after the turn of the century. The first processing plant or factory was put into operation at Idaho Falls (Lincoln) late in 1903. Since then the industry has had a varied history of problems and prosperity. Prices have fluctuated greatly as economic conditions changed. Government programs have also played an important role in sugar prices.

In recent years about half of the sugar consumed in the United States has been imported from foreign countries. Therefore, trade policies and government programs affecting sugar have been prominent in establishing the domestic sugar price. Before December 31, 1974, prices of sugar and consequently sugarbeets were stabilized by provisions of the U.S. Sugar Act. Two of the purposes of this act were to maintain a healthy domestic sugar industry and to assure adequate supplies of sugar to consumers at reasonable prices. The effect was to insulate the domestic market from international competition and to generally stabilize prices.

Added uncertainty resulted in the sugar market with the expiration of the Sugar Act. An attempt to remedy that was made in the Food and Agriculture Act of 1977 which provides:

... that the price of domestic sugarbeet and sugarcane growers be supported through a loan program or purchase program at a level of not less than 52.5 percent of parity, but not less than 13.5 cents per pound (raw sugar equivalent). Under the announced loan program the Commodity Credit Corporation (CCC) will offer domestic sugar processors loans of 14.24 cents per pound for refined beet sugar (increased to 15.57 cents on May 12, 1978) and 13.5 cents per pound for raw cane sugar.¹

Marketing sugarbeets is a relatively simple exercise for the typical Idaho grower. Only two sugar processing companies operate in Idaho and there is little overlap of territory. It is generally not feasible for two factories to operate in the same general area because a considerable acreage of beets is necessary for efficient operation of a plant and transporting beets more than a few miles for processing is too expensive. Idaho had four operating sugar

factories as of 1977, located in the Snake River Plain in irrigated farming areas. These plants were located at Lincoln near Idaho Falls, Paul, Twin Falls, and Nampa. U & I Incorporated operated the Lincoln factory and the Amalgamated Sugar Company operated the other three.

If a farmer chooses to raise sugarbeets he must sell them to the processor serving his area. Because of this, growers have organized into bargaining associations to negotiate contracts with the sugar company serving each area. Because the grower associations control the sugarbeet supply, they are able to bargain effectively with representatives of the sugar companies. The processors need beets to operate the factories and the growers need an outlet for their beets. This mutual interest provides the setting for contract negotiations.

The Contract

The contract between the sugarbeet grower and the company is a participating contract. The grower does not contract for a specified price for his beets. Instead the contract specifies the price as based on company sugar receipts and the quality of beets delivered by the grower. The grower receives final payment for his beets as late as October in the year following harvest although the bulk of the payment is received shortly after harvest. The final payment cannot be determined until after the sugar is processed and sold.

The contract establishes how sugar returns are to be divided. The amount of returns per unit of sugar sold depends upon the market and legislation affecting sugar marketing. How legislation will affect sugar prices in coming years has not been established.

Generally, each factory district has its own contract. However, the contracts are similar for the different districts in Idaho. Because of these similarities, the following discussion of contracts gives the general approach but a specific contract may differ slightly.

All beets are grown and marketed under contract as that is the only way a grower can be assured of a market for his product. The grower contract specifies certain rules and regulations of production as well as indicating how and when beets can be marketed. The grower agrees to prepare and cultivate the land and harvest beets in a "farmerlike" manner. Proper topping and handling of the beets are also

¹U.S. Department of Agriculture 1977. Sugar and sweetener report. SSR Vol. 2, No. 12.

specified. The beets must be protected from animals during the growing season, and from frost and sunlight during harvest. No nitrogen fertilizer is to be applied after a stated date, usually in early July. The companies can refuse delivery of beets if they are diseased, frozen, damaged, improperly topped, contaminated with unapproved chemicals, or low in sugar and purity. Beets are to be delivered within the dates given by the company or on approval at other times. Most beets are delivered from mid-October to mid-November. Dates vary somewhat depending on the climate in the area involved.²

The purpose of these rules is to encourage production of high quality beets. The higher the sugar content of beets and the fewer the impurities, the lower will be the processing cost per unit of sugar produced. The processor recovers as much of the sugar as is economically feasible because the grower is paid according to the sugar content of his beets rather than the amount actually extracted.

The price received by the grower depends primarily on the sugar content of the beets and the average net return per 100 pounds of sugar. Sugar content is determined from samples collected as the beets are delivered to the local piler. Net return for sugar is found by subtracting the company's selling cost from the gross price received for sugar. The company's sugar marketing costs include commissions and interest relating to the use of futures contracts, excise taxes, sales taxes and other customary deductions associated with the sale of sugar. Net sugar price could be \$2 to \$3 per hundredweight below the gross price received for sugar (See Table 1).

Table 1. An example of average net return calculation (the figures are illustrative and not necessarily representative. They vary by company, location and governmental policies).

Gross sales price of sugar per 100 lb.		\$17.70
Deductions:		
Federal excise tax	.45	
Freight to destination	1.16	
Cash discounts to customers	.25	
Brokerage	.09	
Loading, handling, and packaging	.27	
Storage, insurance, and taxes on storage	.21	
Costs associated with hedging on futures market	.11	
Advertising and miscellaneous expense	.16	
Total deductions		2.70
Average net return per 100 lb. of sugar		\$15.00

The following example shows how the growers' sugarbeet price is determined.

1. Grower A's average sugar content is based on his sample values. We will assume for our example that it is 16.129%.
2. The average sugar content of each grower is multiplied by his tonnage delivered:

$$\text{Grower A: } 16.129\% \times 1,200 \text{ tons} = 193.55$$

All individual grower sugar content totals are then added together (80,000 tons for our example) and this sum is divided by the total tonnage of beets delivered to the factory (512,500) to get the average of the individual sugar content tests:

$$\text{Average of individual sugar} = \frac{80,000}{512,500 \text{ tons}} = 15.61\%$$

3. The average sugar content of beets sliced at the factory is then divided by this average individual sugar content to get an adjustment factor:

$$\text{Adjustment factor} = \frac{15.00}{15.60} = .962$$

4. The grower's average sugar content is multiplied by the adjustment factor to get this adjusted sugar content. For Grower A, this is:

$$16.129 \times .962 = 15.5$$

5. Grower A will then receive the district price for sugarbeets plus an additional amount because his adjusted sugar content was 0.5% above the average sugar content for the district. If the average net return for 100 pounds of sugar is \$15, grower A will receive about \$23 per ton plus a quality factor of about \$1.15, or a total price of \$24.15 per ton of beets delivered. Table 2 gives a composite of prices for beets based on the contract for the Idaho Falls District and the Mini-Cassia-Twin Falls District for 1977.

Fig. 1 illustrates how the price per ton of sugarbeets varies as sugar content and sugar price vary. Note that the relationship is constant for each sugar content listed. In other words, the price per ton of sugarbeets increases at a constant rate as the net price of sugar increases.

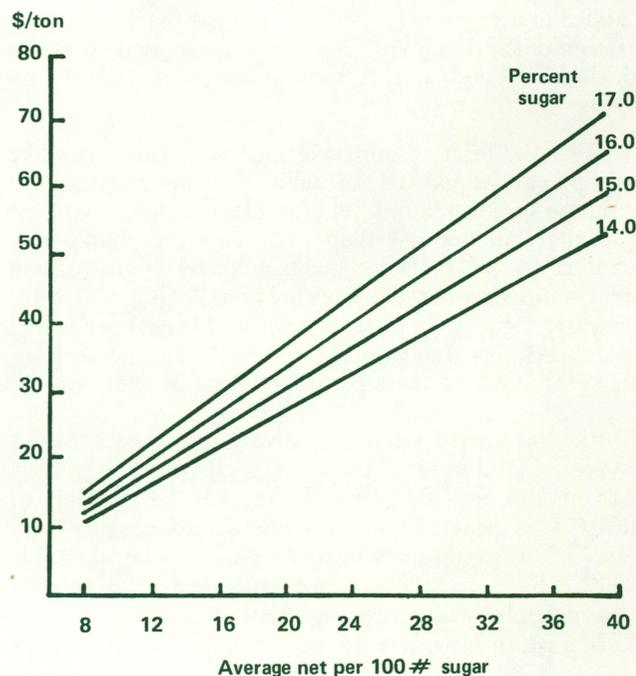


Fig. 1. Price per ton of sugarbeets related to net sugar price and sugar content of beets (based on Idaho grower contracts for 1977).

²1977 grower contracts for Idaho districts of the U & I and Amalgamated sugar companies.

Fig. 1 also illustrates that the increase in price of sugarbeets per ton is the same when the sugar content increases from 14 to 15% as when it increases from 17 to 18% or any other unit change listed. Because extraction cost per unit declines as sugar content increases one would expect a greater increase between 17 and 18 than between 14 and 15. Extraction costs decline with percent sugar increase because less material must be processed to extract a given amount of sugar. The growers apparently are aware of this but are not concerned about the small difference that would result from changing this practice. If it were changed the low sugar content beets would net a lower price and above average beets would return a slightly higher price.

Table 3 gives the approximate gross return per acre for various yields and sugar content at two different net sugar prices. This table demonstrates the importance of producing beets with high sugar content. If the grower must choose between high yield per acre and high sugar content he may be better off to try for high sugar. The table shows that a 16-ton-per-acre yield having 17% sugar is worth more than a 20-ton yield with only 14% sugar.

The emphasis is on sugar production per acre, not beet yield per acre. A 16-ton-per-acre crop with 17% sugar and 85% extraction yields 4,624 pounds of sugar per acre compared to 4,648 pounds for a 20-ton crop with 14% sugar and 83% extraction. Sugar company field men can assist growers in their efforts to increase sugar production per acre. Planting date, fertilization practices, water management, seed varieties and other factors including weather affect the sugar content of harvested beets.

Table 3 also shows the effects of a \$5 change in the price of sugar. The difference ranges from \$82 per acre with 12 tons of 14% beets to \$215 per acre with 24 tons of 17% beets, or an increase of one-third in gross receipts. These calculations were based on 1977 Idaho contracts. The 1978 contracts were changed only slightly.

Idaho sugarbeet acreage has fluctuated between 91,000 and 185,000 acres since 1960 (Fig. 2). Weather, sugarbeet prices, prices of alternative crops, grower dissatisfaction

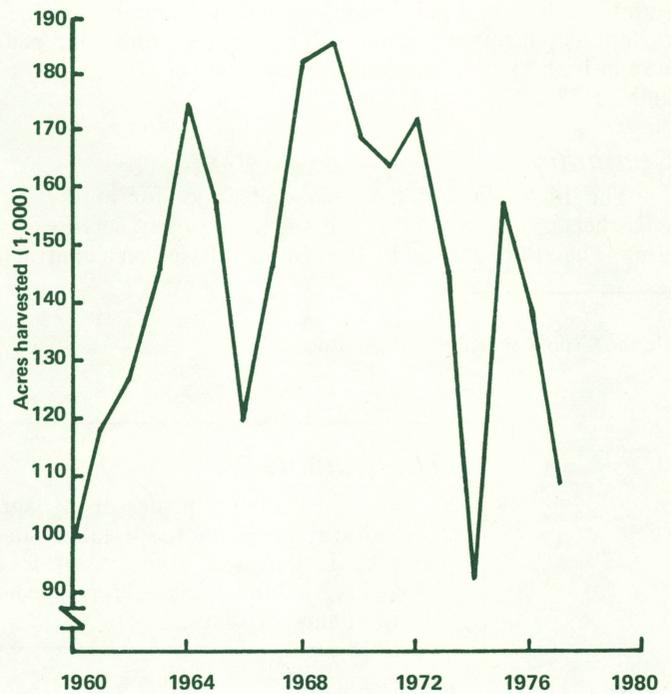


Fig. 2. Acres of sugarbeets harvested, Idaho 1960-1977.

Table 2. Sugarbeet prices per ton paid to growers for specified net sugar returns and average percent sugar in beets, based on 1977 contracts, Idaho Falls and Mini-Cassia-Twin Falls districts.

Average percent sugar in beets	Average net return per 100 pounds of sugar				
	\$9	\$15	\$20	\$25	\$30
17	\$16.60	\$27.35	\$36.30	\$45.25	\$54.20
16	15.30	25.20	33.45	41.70	49.95
15	14.00	23.05	30.60	38.15	45.70
14	12.70	20.95	27.75	34.60	41.45

Table 3. Gross receipts per acre of sugarbeets for varying yields and sugar content at net sugar prices of \$15 and \$20 per 100 pounds (based on 1977 Idaho contracts).

Average percent sugar	Gross receipts at \$15 per cwt for the following yields per acre						
	12 tons	14 tons	16 tons	18 tons	20 tons	22 tons	24 tons
14	\$251	\$293	\$335	\$377	\$419	\$460	\$503
15	277	323	369	415	461	508	553
16	303	353	404	454	504	555	605
17	328	383	438	492	547	602	656

Average percent sugar	Gross receipts at \$20 per cwt for the following yield per acre						
	12 tons	14 tons	16 tons	18 tons	20 tons	22 tons	24 tons
14	\$333	\$389	\$444	\$500	\$555	\$611	\$666
15	367	429	490	551	612	673	734
16	402	468	536	602	669	736	803
17	436	508	581	654	726	799	871

with hired help and other problems help to explain the wide variations. During the same period, average production per acre in Idaho has fluctuated between a low of 16.1 tons to a high of 22.1.³

Summary

The Idaho farmer has only one outlet for marketing sugarbeets. That outlet is the sugar company serving his area. The price received by the grower is based on a contract

³Idaho Crop Reporting Service, Boise.

negotiated between the processor and the grower's association.

The contract is a participating contract in which the district price of sugarbeets is determined primarily by the net sugar returns and the percent of sugar in the beets. The price received by each grower is adjusted up or down depending on whether his adjusted sugar content is above or below the district average.

The grower's gross receipts are based more on how much sugar he produces per acre than on tons of sugarbeets. Therefore, the astute grower will strive for high sugar content even though he may reduce his yield somewhat.

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