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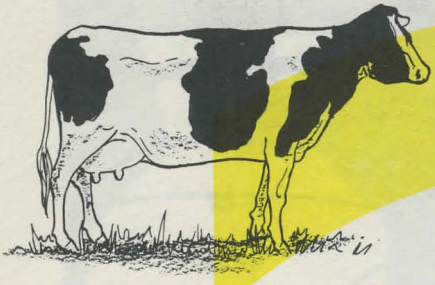

Shall I Sell Whole Milk?

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BY T.A. EVANS
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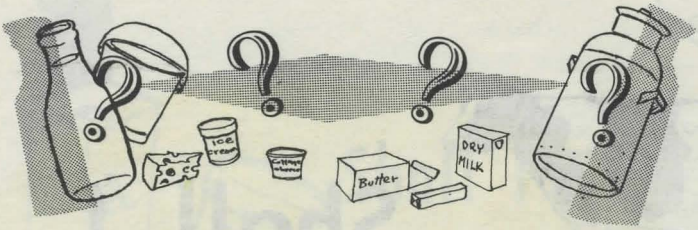


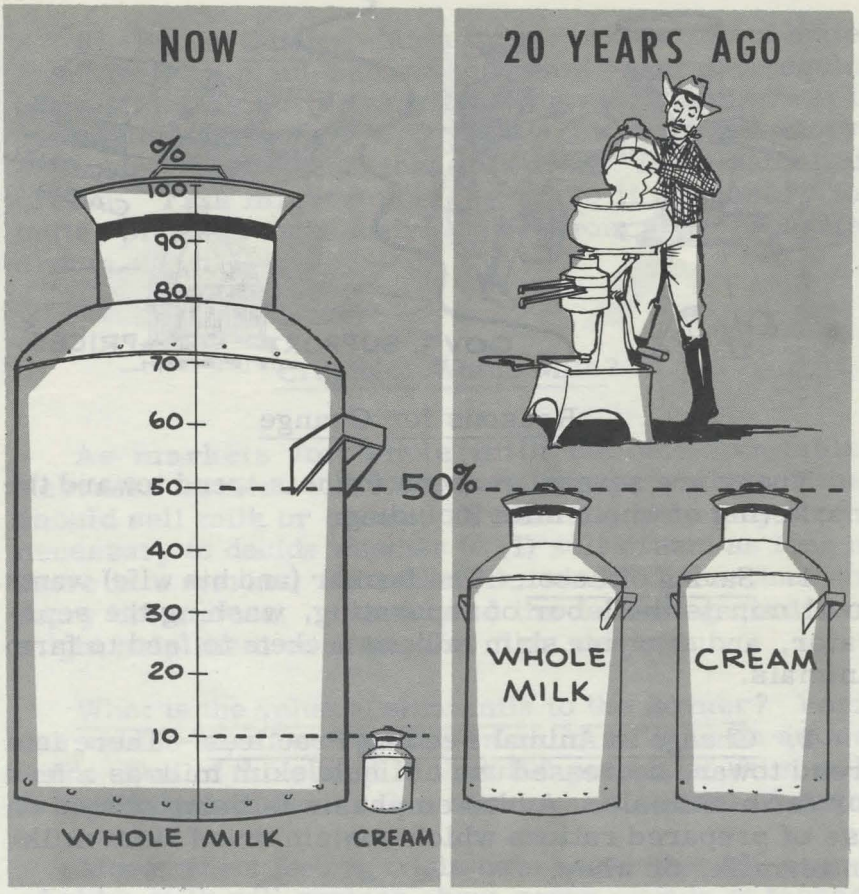
SUMMARY

1. Many Nebraska farmers who are now producing cream may soon be faced with three alternatives: (1) continuing to sell cream as long as there is a market available, (2) converting to the selling of whole milk, or (3) abandoning the dairy enterprise.

2. The trend toward sale of whole milk is due to (1) savings in labor, (2) changes in animal feeding practices, (3) imbalance between available skim milk and animals to which it can be fed, (4) need for additional cash income, (5) government support prices, and (6) need for improving butter quality.

3. A cream producer who is considering marketing whole milk should give consideration to (1) value of skim milk as an animal feed on his farm, (2) how much his cash income will be increased, (3) how much time and labor will actually be saved by selling whole milk, (4) how willing he is to conform to sanitary regulations in order to produce a good quality product, and (5) permanency of the market for his whole milk.

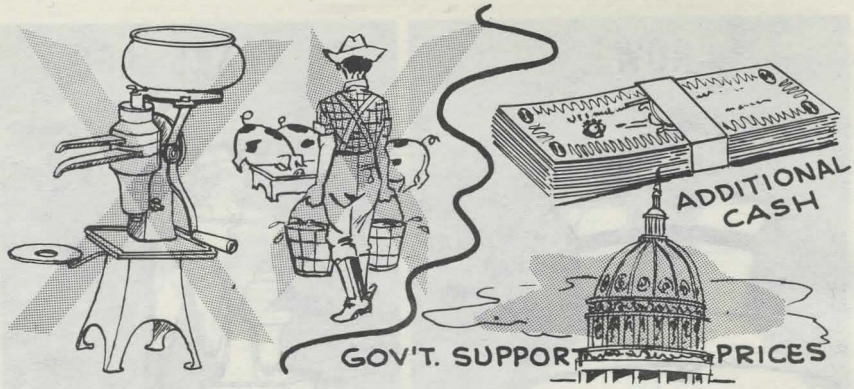
4. It may not be necessary for a producer to install a bulk tank in order to sell whole milk. Before any considerable amount of money is invested in can equipment, however, consideration should be given to the fact that eventually he may either wish to convert to bulk handling for his own convenience or be forced to do so in order to have a market.



For many years there has been a gradual trend toward the marketing of whole milk rather than farm-separated cream. In some of our most important dairy states there is practically no farm-separated cream marketed.

Over 90% of the milk and cream sent to market in the United States is sent as whole milk. This contrasts with the situation 20 years ago when about one-half was marketed as whole milk and the other half as farm-separated cream.

Judging by developments in neighboring states, it is anticipated that Nebraska farmers will see considerable conversion from the marketing of farm-separated cream to the marketing of whole milk.



Reasons for Change

There are several reasons for this trend toward the marketing of whole milk including:

1. Saving of Labor - The farmer (and his wife) wants to eliminate the labor of separating, washing the separator, and carrying skim milk in buckets to feed to farm animals.

2. Change in Animal Feeding Practices - There is a trend toward decreased use of liquid skim milk as a feed for farm animals. Added emphasis is being placed on use of prepared rations which contain dried skim milk, buttermilk, or whey.

3. Imbalance of Farm Unit - Many farmers either have too much skim milk and not enough animals to consume it or too many animals and not enough skim milk. As a result, many farmers are not able to feed their skim milk efficiently throughout the entire year. This means that the theoretical value that has been attributed to skim milk as an animal feed does not always apply.

4. Need for Additional Cash Income - Modern farming requires a considerable cash outlay for farm and home expenses. Selling the skim milk rather than feeding it to farm animals increases cash income.

5. Support Prices - Government support prices have made it more attractive to sell milk rather than cream by placing a floor under the price of non-fat dry milk.

6. Butter Quality - As a larger proportion of butter is made from plant-separated cream, sanitary regulations affecting butter may become more strict. It is easier to manufacture high quality butter from factory-separated sweet cream than it is from "farm-gathered" cream. This might some day make it necessary for butter plants to make their product from plant-separated cream.

Cream or Whole Milk?

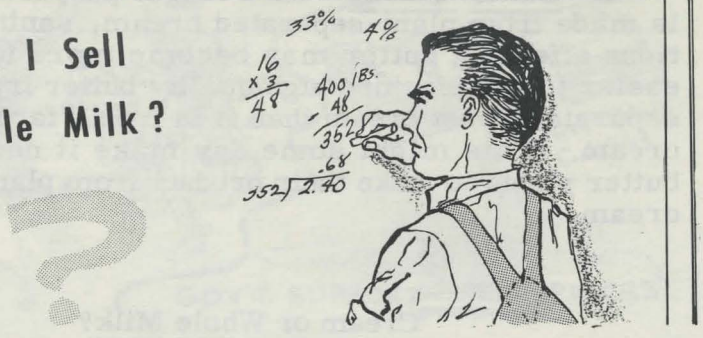
As markets for whole milk become available, Nebraska farmers will raise questions as to whether they should sell milk or cream. Eventually they may find it necessary to decide whether to (1) sell cream as long as there is a market, (2) sell milk, or (3) discontinue the dairy enterprise. Answers to the following questions might help them to make the right decision.

What is the value of skim milk to the farmer? Various values have been placed on skim milk as an animal feed. One of the oldest is that 100 pounds of skim milk is equivalent in feed value to one-half bushel of corn.

More recent feeding trials have shown that 100 pounds of skim milk will replace about seven pounds of tankage and one-fifth bushel of corn for young pigs. By substituting the current market prices for these feeds the value of skim milk as an animal feed can be determined. It should be remembered, however, that this is only a theoretical value. Many farmers are not able to use their skim milk efficiently due to not always having a sufficient number of animals to which it can be fed. Losses due to spillage, etc., may also cut down on its value. In addition, some animal nutritionists are recommending the feeding of commercially prepared, nutritionally balanced feeds to hogs and poultry rather than the use of liquid skim milk.

How much additional cash income will be received from selling whole milk? If milk is being purchased on a butterfat basis, i.e. so much per pound of butterfat above cream price, the price received for the skim milk is figured as shown on the next page.

Shall I Sell Whole Milk?



Suppose a producer is marketing 400 pounds of 4% milk daily and receiving 15¢ per pound of butterfat above cream price.

1. Four hundred pounds of 4% milk would contain 16 pounds of butterfat (4% of 400 pounds is 16).

2. If this were sold as cream testing 33% butterfat, 48 pounds of cream would be marketed from this milk. (The cream would be about 1/3 butterfat, so 3 x 16 = 48).

3. Four hundred pounds of milk minus 48 pounds of cream leaves 352 pounds of skim milk (400 - 48 = 352).

4. The 16 pounds of actual butterfat at 15¢ more per pound would bring $2.40 (16 x .15 = 2.40).

5. Two dollars and forty cents divided by 352 pounds of skim milk equals 68¢ per 100 pounds of skim milk ($2.40 ÷ 352 = $.68 per 100).

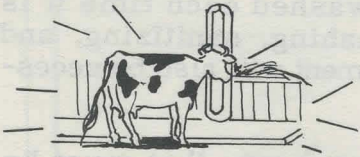
6. This return of $.68 per 100 pounds can be compared with the price being paid for various protein feeds to determine whether or not it is advantageous from the "dollars and cents" standpoint to sell the skim milk.

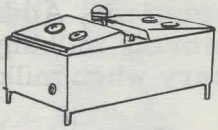
How much labor is saved by selling whole milk rather than cream? Each individual case will be different. Three principal operations are eliminated, (1) separating (2) taking apart, washing and reassembling the separator, and (3) carrying the skim milk to the animals to be fed. On the other hand, if a bulk tank is used to market whole milk it must be washed each time it is emptied. Additional care in washing, sanitizing, and storing milking utensils and equipment will also be necessary when milk is marketed.

There are other factors, however, that must be considered when comparing cash returns from selling cream and whole milk. For instance, when selling to a cooperative creamery the cream may be picked up at the farm twice a week at no apparent cost to the producer. A producer selling milk may be charged from 25¢ to 45¢ per 100 pounds to have the milk hauled. In the first case the producer is actually paying for having the cream hauled through receiving a lower price per pound of butterfat, since hauling costs must be charged off as an expense by the creamery. This will usually amount to from 2 to 4 cents which lowers the final price per pound of butterfat by that amount. A 35¢ per hundredweight charge for hauling 4% milk amounts to 8 3/4¢ per pound of butterfat.

The additional amount that a cooperative creamery which converts to buying whole milk can pay its patrons will depend on (1) size of operation, (2) percentage of volume converted to whole milk, (3) efficiency of operation, (4) ability to utilize the skim milk by drying or disposing of it to a nearby drying plant, and (5) ability to market fat through higher return products than butter, e.g., ice cream mix or sweet cream to an ice cream plant.

Most cooperative creameries in Nebraska are too small to support a spray drying plant. It might be more economical for several cooperative creameries to pool their resources and construct a large central drying plant. In this way they could receive the benefit of the economies that are associated with a larger operation.

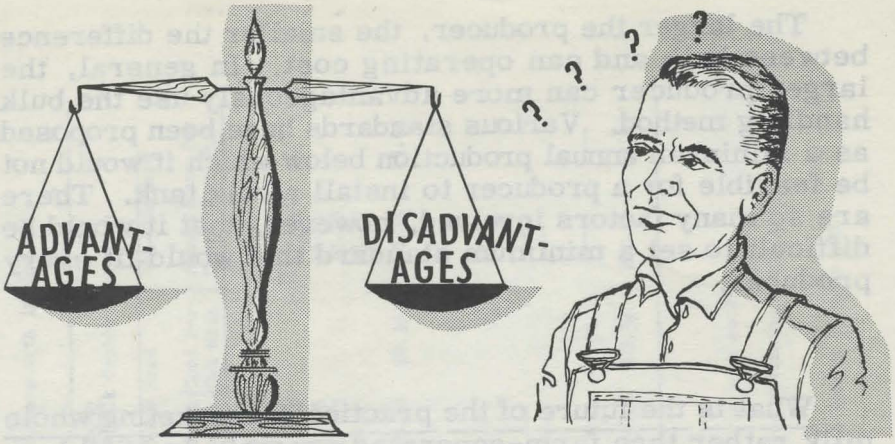




What about sanitary regulations? At the present time there are few sanitary regulations that apply to the production and sale of manufacturing milk in Nebraska. Buyers of this milk, however, will doubtless require that some provision for cooling be provided. Emphasis will undoubtedly be placed on mechanical cooling. As time goes on increased emphasis will be placed on quality, both from the standpoint of a low bacteria count and a good flavor. Creameries will find it necessary to employ fieldmen who will call on producers who are having trouble meeting quality requirements. Eventually, every producer selling whole milk will be required to provide a milk house or milk room, a standard for cleanliness of utensils and equipment will be established, and a bacteria standard will be set up.

This is not to imply that such requirements are undesirable. They are absolutely essential if the final products such as butter and non-fat dry milk are to be marketed. Every producer, however, who is considering conversion to whole milk should realize that he must be prepared to comply with sanitation standards. Since there is a certain amount of labor and cost involved in complying with these standards, this should be taken into consideration in any long range planning.

Shall I sell milk in cans or buy a bulk tank? The day may come when all milk will be marketed by means of bulk tanks. At the present time, however, a relatively small percentage of manufacturing grade milk is marketed in this way. It will probably be quite a few years before a producer of manufacturing grade milk is forced to choose between selling milk in bulk and going out of the dairy business.



There are both advantages and disadvantages to the producer in selling milk in bulk. Some of the advantages are:

1. Better quality.

2. Lower hauling costs.

3 A saving in labor, in combination with a pipeline.

The principal disadvantages are:

1. High initial investment.

2. Need for "all weather" roads and farm driveways.

3. Higher operating cost.

Higher operating costs may be offset in the case of producers who receive a premium for bulk milk. When a plant is converted entirely to receiving bulk milk there is some saving compared to receiving milk in cans.

For this reason, and for the better quality of milk from bulk tanks, some creameries pay a small premium for bulk milk. A South Dakota study (Table I) indicates that bulk handling costs are 14¢ per cwt. higher than can costs for a producer milking 10 cows and marketing 60,000 pounds of milk annually. If a 15¢ per cwt. premium is paid by the creamery for bulk milk, this would offset the increased cost for this size producer.

The larger the producer, the smaller the difference between bulk and can operating cost. In general, the larger producer can more advantageously use the bulk handling method. Various standards have been proposed as a minimum annual production below which it would not be feasible for a producer to install a bulk tank. There are so many factors involved, however, that it would be difficult to set a minimum standard that would fit every producer.

What is the future of the practice of marketing whole milk rather than farm-separated cream? In 1957 less than 10% of the milk produced in the United States was marketed as cream. In 1958 approximately 60% of the butter was manufactured from plant-skimmed cream. As more butter supply is manufactured from plant-skimmed cream, regulatory officials and butter buyers will become more critical of that butter which is made from "farm-gathered" cream. This will apply particularly to butter shipped in interstate commerce. Between 70 and 80% of the butter manufactured in Nebraska is sold to markets outside the state. This means that Nebraska creameries will buy an increasing amount of whole milk in order to have plant-separated cream from which to make butter that can compete with butter from other states.

It does not appear likely that in the near future the government will discontinue supporting the price of milk through purchase of butter, cheese, and non-fat dry milk. This means that non-fat dry milk, which is a major surplus item, will continue to bring an artificially high price.

For the past 30 years there has been a fairly steady trend toward the marketing of whole milk rather than cream. This trend will undoubtedly continue. Should it continue at the same rate as during the past eight years entire milk production would be marketed as whole milk by 1965. While various factors may slow this trend, it seems extremely unlikely that there will be any permanent reversal in the trend toward marketing whole milk.

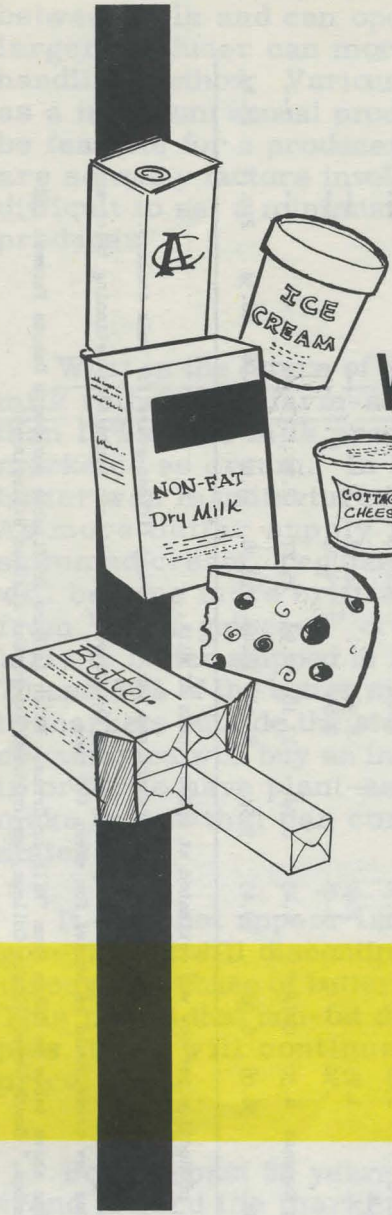
Table 1. Estimated Farm Handling Costs for Cream, Can Milk and Bulk Milk for Farmers with 10-Cow and 15-Cow Herds in South Dakota*

	Cream Handling Costs				Milk Handling Costs							
	Separator Operation				Can Cooler Operation				Bulk Cooler Operation			
	10-Cow Herd		15-Cow Herd		10-Cow Herd		15-Cow Herd		10-Cow Herd		15-Cow Herd	
Expenses	Annual Costs	Cost Per Cwt Milk	Annual Costs	Cost Per Cwt Milk	Annual Costs	Cost Per Cwt Milk	Annual Costs	Cost Per Cwt Milk	Annual Costs	Cost Per Cwt Milk	Annual Costs	Cost Per Cwt Milk
Separation/Cooling Expenses												
Depreciation 1/	$15.00		$20.00		$25.00		$27.50		$83.33		$101.10	
Repair & Maint.	7.50		10.00		4.38		8.19		10.92		13.34	
Interest	3.75		5.00		6.25		6.88		31.25		35.40	
Taxes	1.88		2.50		3.13		3.44		15.63		17.70	
Electricity	3.65		5.50		30.00		45.00		28.83		43.20	
Total	31.78	5.3¢	43.00	4.8¢	68.76	11.5¢	91.01	10.1¢	169.96	28.3¢	210.74	23.4¢
Can Expense 2/												
Depreciation	1.85		2.78		7.40		11.10		---		---	
Retinning & Covers	1.75		2.62		6.98		10.47		---		---	
Interest	.70		1.05		2.80		4.20		---		---	
Total Can Expense	4.30	0.7¢	6.45	0.7¢	17.18	2.9¢	25.77	2.9¢	---	---	---	---
GRAND TOTAL	36.08	6.0¢	49.45	5.5¢	85.94	14.4¢	116.78	13.0¢	169.96	28.3¢	210.74	23.4¢

* Annual production per cow was estimated at 6,000 pounds of milk.

1/ Depreciation was based on ten years for separators and can coolers and fifteen years for bulk coolers.

2/ Depreciation on cans was based on ten years. It was estimated that each can would need retinning twice and that one new cover would be needed for every two cans.

The above table is taken from "Milk or Cream - Which is More Profitable for South Dakota Farmers and Creameries," South Dakota State College, Agricultural Experiment Station Bulletin 460.

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