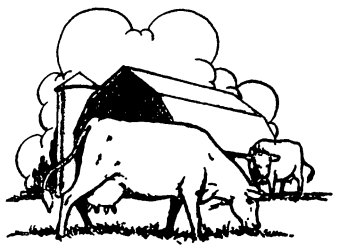

MINNESOTA
farm business NOTES

NO. 351 ST. PAUL CAMPUS, UNIVERSITY OF MINNESOTA NOVEMBER 30, 1953

Dairy Industry Situation Calls for Adjustments

E. Fred Koller

The dairy industry is in the midst of some highly significant market changes. An extraordinary increase in milk production, which began in November 1952 and lasted through the winter, overwhelmed the dairy markets and left the whole industry wondering what hit it.

After moving along at a relatively level annual rate of production of about 115 billion pounds for several years, milk output over the nation expanded rapidly in the winter of 1952-53, reaching an annual rate of 123 billion pounds for several months.

The rate of production has declined in recent months largely because of severe drouth in many areas. Even so, total estimated milk production for 1953 will be at least 118 billion pounds as compared with 115.1 billions in 1952.

The large increase in milk output last winter resulted in part from a larger output per cow, and this larger output was in turn brought on by a record high rate of concentrate feeding, high quality of roughage, and a mild winter.

Milk Cow Numbers Increase

Also a major factor in the change was an increase in milk cow numbers this year for the first time since 1944. The number of milk cows in the United States in June this year was 22,110,000 head, or 2.6 per cent more than a year earlier. Minnesota's milk cows totalled 1,356,000 in June—4 per cent over the 1952 total.

An important factor in the increase was the sharp drop in beef prices in the past year. This placed butterfat and milk prices, which were under government price supports, in a more favorable position relative to beef cattle prices. Furthermore, the lowered carcass values for dairy animals induced farmers to cull less closely.

The unusual increase in milk production in the winter of 1952-53 was reflected promptly in an increased output of manufactured dairy products—particularly butter, cheese, and nonfat dry milk solids. These are the products which the government is buying under the price support program. In the first few months of the year the production of butter and cheddar cheese ran about one-third above a year earlier. Production of nonfat dry milk was up by two-thirds.

This large output of manufactured dairy products depressed their prices to the government support levels and below. For the crop year ending March 31, 1954 the government support price on Grade A butter in New York is 66.5 cents a pound, cheddar cheese is 37 cents, and nonfat dry milk 16 cents. These support prices are set to bring milk and butterfat to 90 per cent of parity.

Government Buying Hits New High

To support dairy markets at these levels it has been necessary for the government to purchase these products at a record rate. Consequently government holdings are at an all-time high.

From January 1 to October 1 of this year government purchases of butter totalled 344 million pounds (about 30 per cent of output) and purchases of cheddar cheese 273 millions (about 34 per cent of output). Government buying of nonfat dry milk solids, a major product of this area, has reached 513 million pounds or 53 per cent of output.

As of October 1 unsold government supplies consisted of 278 million pounds of butter, 215 million pounds of cheese, and 417 million pounds of milk powder. Only a small percentage of the products purchased in the first nine months of the year have been disposed of. Distribution to the school lunch program and to welfare agencies has provided a limited outlet.

Suggestions that the products be sold at reduced prices or given away abroad have brought violent protests from various dairy-producing nations who object to having their markets disturbed by such action. Some of the government supplies may be resold to the commercial trade in the normally low production months this fall, but current indications are that these opportunities may be limited this year.

Carry-Over at Record High

In view of these surplus disposal difficulties it seems likely that we will go into 1954 with a record carry-over of dairy products. It is estimated that in terms of milk equivalent the carry-over of government and private storage stocks will be about 8 billion pounds—about 3 billion larger than at the beginning of 1953.

With such large supplies overhanging the market it may be expected that prices of the manufactured dairy products will not get above the support level this fall or winter.

While there have been important changes on the supply side of our dairy markets probably the most striking have been on the demand or consumer side. The most far-reaching of these developments has been the decline in demand for milk fat. The per capita consumption of milk fat in 1952 reached a record low of 27.3 pounds as compared with an average consumption of 31.2 pounds in the period 1935-39.

Divergent consumption trends account for the drop in per capita milk fat usage. The consumption of milk fat in the form of butter and cream is down, but there are some partially offsetting increases in the use of whole milk and cheese. The per capita consumption of butter in 1952 was 8.7 pounds or about half as much as before World War II. In the 1930's about 45

(Continued on page 3)

Cut Costs to Help Hold Dairy Profits Up

S. A. Engene

Prices for dairy products have gone down, and dairy farmers' profits have gone down with them. What can be done to hold profits up? One possibility—stimulating improved demand and cutting marketing costs—is discussed in the preceding article. Another possibility, that of cutting production costs, is discussed in the present article.

Since feed makes up about one-half of dairy production costs, this is the most important place to look for savings.

Wise Use of Feed Cuts Costs

Can feed costs be cut? There are several possibilities. The cost of producing feeds can be cut on most farms. Legumes and grasses give low-cost feed nutrients, as shown in table 1, as well as providing proteins and improving the yields of other crops. Early cutting will improve the protein content of the hay. The big advantage of alfalfa and other legumes is in their high production per acre. When harvested and stored as hay the cost per acre is as high or higher than for corn or oats. But when pastured, of course, the legumes provide lowest cost feeds.

Corn is a low-cost feed crop in the southern counties of Minnesota. Oats, on the other hand, is a high cost feed. Therefore oats acreage should be kept as low as is practical.

High yields also help to give low feed costs. For example, in 1952 the cost of a ton of alfalfa was $13 on a group of farms with yields of 3½ tons, and $22 on farms with 1½ tons. Good rotations, good seedbed preparation, good seed, timely work, and proper fertilization contribute to high yields. But none must be used to the point where the extra yield does not pay for the extra cost.

Table 1. Cost of Producing Feed Nutrients in Southern Minnesota

Crop	Average yield, 1943-52	TDN* per acre, 1943-52	Cost per acre, 1951-52	Cost per 100 lbs. of TDN
	bushels	pounds		
Corn	48.7	2,223	$35.00	$1.57
Oats	51.0	1,134	33.00	2.91
	tons			
Corn silage	8.5	2,856	43.00	1.51
Alfalfa hay	2.3	2,369	38.00	1.60

* Total digestible nutrients.

A second way to cut feed costs is to do a better job of feeding. Ample quantities of good-quality hay and pasture provide the base for the ration. These usually must be supplemented with corn, small grains, and other concentrates. Feed these according to the productive ability of the cows; do not waste good feed on poor cows. If you must buy any of these feeds, check the price against the feed value.

A third way to cut feed costs is to get high production per cow. This takes good cows, good feeding, and good management. The amounts and costs of feed used with high and low levels of production are shown in table 2. This information was obtained from records kept by 131 dairy farmers. The high-producing cows used more feed, but they gave more than enough milk to make up for it.

Table 2. Quantity and Cost of Feed for Dairy Cows in Southern Minnesota, 1952

	26 farms with high production	26 farms with low production
	per cow	
Pounds grain and concentrate	3,621	1,764
Pounds hay	5,097	4,987
Pounds silage	7,842	5,398
Feed cost	$ 170	$ 114
Pounds butterfat	376	207
Pounds milk	10,000	5,500

We can look at this in a different way. As an average for the past five years, the farmers with the high-producing cows (10,000 pounds milk) needed 4.0 acres of land per cow to produce the grain, hay, and pasture. The farmers with the low-producing cows (5,500 pounds milk) needed 2.9 acres. The first group of farmers produced 2,500 pounds milk to the acre; the second produced only 1,900 pounds. The farmers with high production produced almost one-third more milk per acre.

High milk production also cuts labor and building costs. Labor records kept by dairy farmers in Minnesota show about 100 hours per cow annually. This is the time spent on milking and all of the chore work. As a reasonable estimate it would take 110 hours for the high-producing cows and 95 hours for the low producers. Both kinds of cows would take about 65 square feet of floor space.

Now we can look at high and low production in another way. How much land, labor, and barn space would it take to produce 100 pounds of milk? Here are the figures:

	High production	Low production
Acres of land	.04	.05
Hours of labor	1.1	1.7
Square feet of floor space	.65	1.20

High levels of production cut all of these costs.

Next to feed, labor is the biggest item of cost. It makes up one-quarter to one-third of the costs.

Farm work simplification studies have shown that better work planning could save possibly 10 to 20 per cent of chore time on the average farm. This could be done with little cash cost. Good labor-saving equipment can save more labor, but it also would cost more.

Saving labor is a real cost saver for the dairyman who hires his labor. On most dairy farms, however, the farmer and his family do all of the work. This farmer will not gain much by saving labor unless he has some other worthwhile use for time he saves. Some farmers can use this time to do a better job with the cows. Some can increase the number of cows. Others can use the time on other jobs.

Shelter Plans Should Be Studied

Shelter costs are small compared with those for feed and labor. The farmer who already has a barn can do little to cut his shelter costs. But the man who must build or remodel must study barn design and choice of material. The annual cost of a barn is about 8 per cent of the original cost. Most dairy barns being built today cost $500 or more per cow and that means an annual cost of $40 or more per cow. That much must come out of the milk check if the farmer is to break even on the barn. This farmer must study his plans carefully.

Equipment, veterinary, and other costs can also be reduced. Since these

(Continued on next page)

MINNESOTA
farm business
NOTES

Prepared by the Department of Agricultural Economics and Agricultural Extension Service.

Published by the University of Minnesota Agricultural Extension Service, Institute of Agriculture, St. Paul 1, Minnesota.

DAIRY INDUSTRY SITUATION—Continued from page 1

per cent of the nation's output of milk fat was made into butter. In 1952 only about 25 per cent was used in this way.

Cheaper Fat Use Grows

In recent years consumers and food processors have tried more than ever to substitute the cheaper fats for milk fat in the different food uses. In cooking, vegetable shortening has replaced a substantial quantity of butter. As a spread, butter has been replaced in varying degrees by margarine, peanut butter, mayonnaise, and other spreads.

Also, consumers evidently are using less butter and margarine as table spreads. The drop in bread consumption is a factor here.

Competition from margarine has increased in the war and postwar years—per capita consumption of margarine more than doubled from an annual average of 2.9 pounds in 1935-39 to 7.8 pounds in 1952.

The widespread removal of restrictions on colored margarine since the war has been a factor in this change. Another consideration has been that the retail price of butter in recent years has been from 2½ to 3 times that of margarine, while in the prewar years the usual ratio was about 2 to 1.

Other dairy substitutes are gaining a foothold in various markets. A product imitating ice cream in which vegetable oil is substituted for butterfat is being sold in increasing volume in a number of states. Prices of this product are below those of regular ice cream. A substitute for evaporated (canned) milk is sold in several areas. Here, too, milk fat is replaced by vegetable fats.

Another development which cuts into the demand for milk fat in varying degrees is the sale of a number of dairy products which contain no fat or in amounts below standard levels. These low-fat products have gained popularity as people shift to low-fat diets.

For instance, there has been a large increase recently in the sales of sherbets and ice milks. The 1952 output of these products was about 79 million gallons, as compared with only 18 million in 1946. Some of this increase very likely replaces ice cream.

Sales of Milk Powder Boom

Increased use of fluid and dried skim milk similarly displaces some whole milk and thus adds to the market problems of milk fat. The national sales of skim milk powder in small packages for home use have risen from 2 million pounds in 1948 to 82 millions in 1952.

While the market problems facing butterfat have been mounting, the dairy industry has been encouraged by the expanded use of the nonfat part of milk. The per capita intake of nonfat milk solids now approaches 50 pounds annually, compared with slightly under 40 pounds two decades ago. The main products accounting for this increase are fluid milk, cheese, ice cream, cottage cheese, and skim milk products.

However, from the income viewpoint gains made on the nonfat solids side of milk have not compensated for the losses on the milk fat side.

What solutions are there for the current crisis in the dairy industry? In the space available here we cannot evaluate the many proposals which have been made. However, it appears clear cut that price adjustments are needed in order to clear the market.

Current support prices are aggravating the problem by (1) attracting an even larger production of milk, and (2) discouraging the consumption of dairy products. Reduced support prices would help solve these problems but would cut incomes at least temporarily.

To soften the effect of a reduction of prices on dairy incomes it would be desirable to use government income payments for a limited period. The income payment plan would compensate dairy farmers for the difference between the prices for their products as determined in the market and the desired parity support level. These payments should be continued only until more permanent adjustments are made.

Ranking high among needed dairy market adjustments is the moderation of restrictions such as health ordinances which prevent or limit the entry of outside milk and cream to many eastern and southern markets. Often the milk excluded in this way is forced back into the manufactured products and is thus added to surpluses. Restriction of the supply of milk in these markets to the relatively high-cost nearby sources increases prices to consumers and discourages consumption.

Market Restrictions Hurt

The high Class I milk prices provided for in some federal milk market orders tend to stimulate milk production beyond the fluid market needs and also cut into consumption. The additional supplies are diverted into the manufactured dairy products.

Even greater efforts should be made to expand the market for dairy products. Improved merchandising, better store displays, better packaging, improved pricing methods, more automatic milk vending devices, and other new sales techniques will help.

A basic approach in solving the market problems of the industry is the adoption of improved methods all along the line—on the farm, at the dairy plant, and in the various market channels. If costs can be reduced at all levels producers will be able to get along with somewhat lower prices. At the same time dairy foods would become more competitive with other foods and win more of the market.

Very important in the long-run solution of the dairy problem will be our rapidly growing population. Some 7,000 new consumers a day will go far toward broadening dairy markets.

CUT DAIRY COSTS—Continued from page 2

are small they can not have much effect on the total costs.

Many farmers have considered enlarging their herds in order to do a more efficient job. A study in Michigan showed this relation of chore time per cow to size of herd:

10 cows—134 hours
15 cows—118 hours
20 cows—117 hours
30 cows—108 hours

Bigger herds will use labor, equipment, and possibly buildings, more efficiently. It is likely that the farmer with the moderately large herd will have an advantage over the man with the small herd. However, it may not be profitable for the small operator to increase his herd. To do so, he may have to get extra feed and invest more capital. He may have to reduce or eliminate other enterprises as chickens, hogs, or cash crops—thus losing this income.

Some dairymen will want to consider the possibility of dropping dairying. Beef cattle, hogs, poultry, cash crops, or other enterprises may give them better profits. This will give these farmers a better living and help to reduce dairy supplies at the same time.

To summarize, dairy farmers can cut their costs; a few can make spectacular savings. Such savings can help them to meet the cost-price squeeze and can contribute enough in holding profits up to be worth the effort.

Minnesota Farm Prices, September-October 1953

Prepared by Jerry M. Law

Average Farm Prices for Minnesota, September and October 1953, with Comparisons*

	Sept. 1953	Sept. 1952	Oct. 1953	Oct. 1952
Wheat	$ 2.09	$ 2.12	$ 2.11	$ 2.13
Corn	1.36	1.55	1.21	1.37
Oats	.64	.76	.65	.74
Barley	1.04	1.32	1.07	1.30
Rye	.93	1.65	.97	1.67
Flax	3.53	3.87	3.56	3.79
Potatoes	.90	1.95	.75	2.15
Hay	14.40	15.50	14.20	16.10
Hogs	23.40	18.90	20.70	18.30
Cattle	16.30	23.00	15.00	22.50
Calves	18.00	28.00	16.00	25.50
Lambs-sheep	17.56	23.55	16.17	21.78
Chickens	.184	.175	.163	.164
Eggs	.465	.430	.495	.460
Butterfat	.71	.80	.72	.80
Milk	3.55	4.15	3.70	4.15
Wool†	.48	.47	.48	.47

* Average prices as reported by the USDA.

† Not included in the index numbers given below for Minnesota.

The index of Minnesota farm prices represents the average of the increases and decreases in farm product prices in the given month of 1953 over the average of the five corresponding months of the period 1935-39.

Weights for the Minnesota indexes are the average sales of the five corresponding months of 1935-39. Weights for the United States indexes are the average sales of 60 months in 1935-39.

October prices for Minnesota farm products averaged lower than those for September. Most significant declines were for potatoes, hogs, calves, corn, and chickens. Higher prices were received for eggs and milk. Except for hogs and eggs, prices were below October of last year.

The Outlook Corner - Dairy Cow Numbers

Number of Milk Cows on June 1

Year	North Atlantic	South Atlantic, East South Central	East North Central	West North Central*	Others west of Mississippi	United States
			thousands			
1940-44	3,134	3,917	6,145	6,459	5,145	24,800
1950	3,017	3,967	5,588	5,144	4,232	21,948
1951	2,985	3,986	5,472	5,040	4,148	21,631
1952	3,030	4,027	5,457	4,942	4,097	21,553
1953	3,112	4,172	5,601	5,057	4,168	22,110
Per cent 1953 is of 1940-44	99	107	91	78	81	89

* Includes Minnesota.

Dairy cow numbers have started to increase again (see table), but so far the increase is small. We still have 11 per cent fewer cows than we had in 1940-44. The low point came in 1952.

Cow numbers are down, but higher production offsets this. In 1952 total milk production was only a shade below 1940-44, and in 1953 it will be higher. High production per cow is likely to continue.

What happens in the future is important to dairymen. The answer is hard to find, but here are some of the important factors that affect it.

The price of milk will affect the farmers' interest in cows. Another article in this issue discusses market prospects for milk. Apparently present prices are attractive to some, as shown by the increase in number of cows.

The present milk price structure, together with some other factors, is causing a shift in cow numbers toward the east. There has been a steady increase in dairy cows in the South Atlantic states and in the South Central states lying east of the Mississippi. A shortage of milk has kept prices high in these areas. Electric refrigeration, growing interest in grasslands, low profits from cotton and other crops, and other factors have stimulated this interest in dairying.

The number of dairy cows has gone down only slightly in the North Atlantic and the East North Central states. These states have a large proportion of our cities. In many of these cities market regulations of various types have restricted in-shipments of milk and have kept prices high. These high prices have made dairying profitable for the farmers near the market, even though many of them are in high cost areas.

The number of cows is down by 20 per cent as an average for the area west of the Mississippi. These are the states that have produced butter. Restrictive health ordinances in eastern markets and increasing transportation rates have prevented farmers from obtaining the higher prices for fluid milk in these markets. The future of this area depends on ability to produce and market efficiently and to expand market outlets.

UNIVERSITY OF MINNESOTA, INSTITUTE OF AGRICULTURE, ST. PAUL 1, MINN.

Cooperative Extension Work in Agriculture and Home Economics, University of Minnesota, Agricultural Extension Service and United States Department of Agriculture Cooperating, Paul E. Miller, Director. Published in furtherance of Agricultural Extension Acts of May 8 and June 30, 1914.

Indexes and Ratios for Minnesota Agriculture

	Sept. 1953	Average, Sept. 1935-39	Oct. 1953	Average, Oct. 1935-39
U. S. farm price index	238.8	100	235.4	100
Minnesota farm price index	226.2	100	221.1	100
Minnesota crop price index	216.6	100	215.7	100
Minnesota livestock price index	238.8	100	229.4	100
Minnesota livestock products price index	222.8	100	212.0	100
Purchasing power of farm products				
United States	107.6	100	106.4	100
Minnesota	101.9	100	99.9	100
Minnesota farmers' share of consumers' food dollar	58.3*	48.6	57.5†	47.6
United States hog-corn ratio	15.9	12.6	15.9	14.1
Minn. hog-corn ratio	17.2	14.9	17.1	17.8
Minn. beef-corn ratio	12.0	11.9	12.4	14.7
Minn. egg-grain ratio	16.8	17.3	18.5	20.9
Minn. butterfat-farm-grain ratio	33.0	32.4	34.1	36.4

* Figure for July. † Figure for August.

UNIVERSITY OF MINNESOTA
Institute of Agriculture
Agricultural Extension
St. Paul 1, Minn.
PAUL E. MILLER, Director
Minn. 7—10-53—3000
Permit No. 1201

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

FREE—Cooperative Agricultural Extension Work, Acts of May 8 and June 30, 1914.