FARM BUSINESS NOTES

Prepared by the Divisions of Agricultural Economics and Agricultural Extension
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Wartime Changes in the Minnesota Dairy Industry

E. Fred Koller

The expanding wartime demand for fluid milk and for dairy products such as cheese and dried milk which utilize more of the milk solids has set in motion some highly significant changes in the Minnesota dairy industry. Since the outset of the war thousands of dairy farmers in this area have shifted from cream to whole milk deliveries to their dairy plants. Many of the dairy plants, in turn, have been reequipped to enable them to manufacture cheese or dried milk products. A larger number are receiving whole milk, separating it, and sending the skim milk to the many new central drying plants which have been opened in the last year or two.

University Farm Radio Programs

HOMEMAKERS' HOUR—10:45 a.m.

UNIVERSITY FARM HOUR—12:30 p.m.

THE FRIENDLY ROAD—1:00 p.m.

Station WLB—770 on the dial

Table 1 shows that of 9,090 million pounds of milk produced in the state in 1942 the equivalent of 8,121 million pounds was delivered to creameries, cheese factories, and other dairy processing plants. Of the 8,121 million pounds of milk delivered to dairy plants, 1,877 million pounds, or 23.1 percent, was sold as whole milk. This is nearly double the amount sold in this form in 1939.

Analysis of the form in which milk was delivered to dairy plants in various parts of the state shows that whole milk deliveries are most important in the area which lies within a 100-mile radius of the Twin Cities. In 1942 over two thirds of the deliveries in the following counties were in the form of whole milk:

Carlton	Washington
Pine	McLeod
Chisago	Carver
Isanti	Hennepin
Mille Lacs	Dakota
Sherburne	Rice
Anoka	Dodge

A year earlier whole milk deliveries exceeded two thirds of the total in only four of these counties.

Counties in which some of the most significant shifts to the whole milk basis were made during 1942 were Mille Lacs, Chisago, and Pine. On the basis of developments thus far in 1943, important shifts toward whole milk are likely to occur in McLeod, Wright, Meeker, Benton, and Morrison counties. In these areas an increasing volume of milk is flowing toward newly established milk drying plants.

By far the largest proportion of milk being shifted from cream to the whole milk basis is being utilized in dry milk plants. Milk delivered for use in these plants amounted to approximately 92,000,000 pounds in February, 1943, or an increase of 25 percent over February, 1942, and an increase of 106 percent over February, 1941. At present 108 creameries are receiving whole milk and shipping whole or skimmed milk to central drying plants as compared with 76 a year ago. In addition 40 drying plants are receiving some or all of their milk supplies directly from farmers as compared with 26 a year ago.

Table 1. Production and Disposition of Milk in Minnesota, 1938-42

Year	Milk sold to dairy plants			Used on farm and sold at retail	Total production
	As cream*	As whole milk	Total to dairy plants		
	(millions of pounds)				
1938	5,982	1,030	7,012	979	8,175
1939	6,052	973	7,025	1,135	8,160
1940	6,140	1,213	7,353	1,052	8,405
1941	6,353	1,450	7,803	883	8,824
1942†	6,244	1,877	8,121	846	9,090

Source: U. S. D. A. "Agricultural Statistics."
* Milk equivalent basis.
† Preliminary estimates.

Milk deliveries for use in the manufacture of cheese reached an all-time high in Minnesota in 1942. However, with the relatively unfavorable results obtained by many of these plants in the latter half of 1942 many discontinued the production of cheese. In consequence, the February, 1943, milk receipts of cheese plants amounting to approximately 25,000,000 pounds were 30 percent below the receipts of February, 1942.

Dry Milk Developments

Economic surveys of dry milk capacity and output in the state made by the Divisions of Agricultural Economics and Agricultural Extension in February, 1942, and May, 1943, indicate important developments in this industry in the past year. As shown in table 2 there has

Table 2. Dry Milk Plants in Minnesota, February, 1942 and May, 1943

	February, 1942	May, 1943
Number of human food driers	40	56
Number of animal feed driers	62	44
Total	102	100

been an increase of 16 plants equipped to dry milk for human consumption, and a decrease of 18 animal feed driers. Some of the increase in the human food plants is the result of new construction and some represents conversion of animal feed driers.

More significant than the change in the number of plants during the year is the change in their dehydrating capacity. The combined capacity of the 56 plants equipped to dry milk for human consumption as of May 1, 1943, was about 334,000 pounds of fluid milk, or 28,390 pounds of dried milk, per hour. The combined capacity of 40 human food plants in February, 1942, was about 216,000 pounds of fluid milk per hour. Thus in a little over a year the capacity of the Minnesota dry milk industry was increased by about 55 percent.

Further additions to the state's milk drying capacity will be made in the next few months when new plants now in the construction stage and the conversion of several more animal feed driers are completed. These projects should add another 47,000 pounds of fluid milk to the hourly capacity of the industry. It is also probable that the capacity of several existing plants will be increased during the year by changes in equipment such as the addition of boiler capacity, preheaters, condensing equipment, and additional driers.

The total daily output of dry milk reported about May 1 by the 56 plants producing for human consumption was approximately 440,000 pounds (table 3). Of this, about 82 percent was dry skim for human consumption and 16 percent was dry buttermilk for human use.

Since the May 1 output is near the season's peak, it should not be inferred that the plants in table 3 will produce at an average daily rate of 440,000 pounds during 1943. The total dry milk output of all plants in the state including these plants and the animal feed driers may reach 125 to 135 million pounds in 1943. This compares with approximately 100 million pounds of dried milk produced by all plants in Minnesota in 1942 and 68 million pounds in 1941.

Table 3. Daily Dry Milk Output Reported by 56 Minnesota Dry Milk Plants Producing for Human Consumption about May 1, 1943

Product	Roller process	Spray process	Total	Percent of total output
		(lbs. per day)		
Dry skim milk (human food)	208,700	151,800	360,500*	82.0
Dry skim milk (animal feed)	1,200	400	1,600	0.4
Buttermilk (human food)	57,500	13,500	71,000	16.1
Buttermilk (animal feed)	6,600	0	6,600	1.5
	274,000	165,700	439,700	100.0

* A small quantity of dried whole milk is included in this total.

It is apparent that the Minnesota dairy industry has made significant adjustments in helping to meet the nation's wartime food requirements. The extensive shift to whole milk has been in accord with the war emergency food program designed to use more of the solids in milk for human food and to divert them from feed uses. It is very probable that for the duration of the war increasing demand will be made to extend the conservation of milk solids. As far as possible the whole milk for this purpose should be obtained from areas in the state in which relatively small quantities of milk are required for livestock feeding purposes. The dairy area extending in a northwesterly direction from the Twin Cities should be among the more desirable areas from which to draw such milk supplies. Drastic curtailment in the use of skim milk for livestock feeding in the better dairy areas of the state may become necessary in order to meet the wartime demand for milk products using all of the milk solids.

It is also probable that if the war continues, still further additions to the state's milk drying capacity may be necessary. Some increase in output can be obtained by more complete utilization of existing facilities and improvements in the equipment of plants now in operation. Transportation arrangements to move milk to plants operating below full capacity can be helpful in a number of cases. Some construction of new facilities in areas not at present on a whole milk basis may be necessary. In these cases the emergency character of much of our present demand for dry milk should be recognized. In consequence, particular attention should be given to planning the most efficient plants and these should be established only in areas in which large quantities of milk may be obtained within a short radius. Milk plants now enjoying high returns on their operations should plan to retire their debts as promptly as possible, depreciate plant investment at a rapid rate, and set aside ample reserves to meet future contingencies.

With such a large segment of our dairy industry now dependent on dry milk markets much thought should be given to the future of the industry. The Minnesota dairyman is vitally concerned in the prospects of maintaining a reasonably strong market for dried milk after the war and postwar rehabilitation demands have passed. On what condition can present bakery and other commercial outlets for dry milk solids be maintained or even expanded? Are sales to the housewife in the picture, and can they be made at a competitive advantage with other milk products? Can foreign sales be developed? In any case, considerable thought and effort must be given to further improvement in the quality of these products, improvement of plant operating efficiency, and to the development of efficient market distribution.

Subsidies or Higher Prices

O. B. Jesness

There is agreement on one point in the current discussion of the use of subsidies in place of higher prices and that is that the subject is controversial. Subsidies are advocated or opposed on various grounds.

Supporters of subsidies point out that they are an aid in the control of inflation. This is so because unlike higher prices they are not reflected directly in the cost of living and hence do not provide a basis for demanding increases of wages or prices because of rising living costs. Some of those opposed contend, however, that subsidies themselves are inflationary in that they increase money incomes and lead to more borrowing by the government. While there is merit to this point of view, it remains that an equivalent price rise also increases money incomes and in addition increases the cost of goods and services bought by the government. The advantage here appears to lie on the side of subsidies because they avoid the spiralling tendencies associated with a price rise.

Subsidies may be paid on the entire supply of a given product or may apply to only a portion of it. A subsidy may be restricted to only a certain part of the output produced at higher costs or to the production above a certain level. When used in this manner, it may be an effective way of providing an incentive for increased output of a product. A general price rise is less effective in stimulating production because it is spread over the entire market supply.

Price increases and subsidies do not distribute the burden in the same manner. The former tend to be paid by the consumer while the latter are paid from the treasury and lead to higher taxes either currently or eventually. A popular assumption is that the allocation of the cost through the action of the market is fairer than if paid from the treasury. This is not necessarily true. A runaway price inflation may place an undue part of the burden on the low income group. A tax system based on ability to pay, such as the income tax, will tend to distribute the cost of subsidy on that basis.

In the matter of total cost, subsidies have some advantages. This is especially true where they are used on only a portion of the supply instead of being spread over the entire market supply as is customary with prices. It is also true to the extent subsidies avoid an inflationary price spiral. The latter becomes an important consideration for the taxpayer at a time such as the present when the government is the principal buyer in the market. A rapid rise in prices, living costs, and wages while war is on will add greatly to costs of fighting the war and will require higher taxes for a long time ahead.

Opponents of subsidies may maintain that once subsidies are paid it becomes difficult to find an opportune time for discontinuing them. Past history gives considerable support to this contention. But it must not be forgotten that the price structure is far from free of influences of a similar nature. There is natural resistance to any lowering of prices or wage rates once they have attained a high level. Efforts are made to have the government provide supports for the maintenance or restoration of such prices. The attention focused on parity prices is a case in point.

Subsidies are sometimes opposed in principle because they suggest getting something for nothing. Price somehow conveys the impression that the income flowing from it is "earned" and hence is more "respectable." There are cases where producers of products with markets supported by government loan or other programs express opposition to subsidies on these grounds, apparently not appreciating that they are in effect subsidized in this manner. Some opponents of subsidy payments in turn are firm supporters of tariff protection, apparently not realizing that an effective tariff involves subsidy.

While subsidies appropriately used may aid in holding inflation in check, major reliance cannot be placed upon them. The same may be said of price control and rationing. Effective inflation control requires provisions for removing excessive spending power by higher taxes and the purchase of war bonds out of current incomes.

Six Acres to Feed 100 Hens

S. A. Engene

The large numbers of poultry on farms require large quantities of feed. Plans must be laid now to provide ample feeds for the coming winter in order to secure the most economical production. Farm records show that farmers in the southern Minnesota farm management services used 10,200 pounds of farm-grown grains, 2,500 pounds of commercial feeds, and 2,300 pounds of skim milk annually for every 100 hens during the last two years. This includes the feed for raising replacements. The average annual production was 135 eggs and $.90 worth of poultry per hen.

The quantity of each farm-grown grain needed for a year and the number of acres of land needed to produce that grain are shown in table 1. The acreage required is based upon the yields over the last 15 years on the same farms for which the feed requirements were calculated. A total of 6.3 acres of land is needed to produce the feed. This is in addition to the commercial feed purchased and the skim milk.

Table 1. Farm-Grown Grains Used Annually for 100 Hens

Kind	Pounds needed	Yield per acre		Acres of land needed
		Bushels	Pounds	
Corn	4,000	52	2,912	1.4
Barley	1,000	30	1,440	.7
Oats	2,600	43	1,376	1.9
Wheat	2,600	19	1,140	2.3
Total	10,200			6.3

These records were obtained from farmers obtaining better than average yields. On farms with lower yields, even larger acreages will be required. On the basis of average yields for all farmers in southern Minnesota (corn, 40 bushels; barley, 27 bushels; oats, 36 bushels; wheat, 16 bushels) 7.6 acres would be needed.

The number of livestock, especially hogs, has been materially increased on most Minnesota farms. The feed requirements of these livestock exceed present feed production and have materially reduced feed reserves. Farmers must soon estimate the quantities of feed available and required for the coming year in order that they may be sure that needs will not exceed supplies. Feed shortages may require forced sales of livestock or uneconomical feeding. The feed requirements for poultry must be included as an important part of those calculations.

Minnesota Farm Prices For May, 1943

Prepared by H. G. Hirsch

The index number of farm prices for May, 1943, is 177. This index expresses the average of the increases in farm prices in May, 1943, over the average of May, 1935-39, weighted according to their relative importance.

Average Farm Prices Used in Computing the Minnesota Farm Price Index, May, 1943, with Comparisons*

	May 15, 1943	Apr. 15, 1943	May 15, 1942		May 15, 1943	Apr. 15, 1943	May 15, 1942
Wheat	$ 1.23	$ 1.23	$ 1.01	Hogs	$14.00	$14.30	$13.30
Corn	.91	.87	.70	Cattle	12.60	13.00	10.50
Oats	.55	.56	.45	Calves	13.90	13.40	12.60
Barley	.74	.75	.70	Lambs—Sheep	13.27	13.50	10.89
Rye	.69	.67	.57	Chickens	.19	.19	.15
Flax	3.01	3.04	2.40	Eggs	.33	.33	.26
Potatoes	1.55	1.45	1.00	Butterfat	.53	.54	.41
Hay	7.50	7.90	5.50	Milk	2.55	2.55	1.95
				Wool†	.40	.40	.41

* These are the average prices for Minnesota as reported by the United States Department of Agriculture.
† Not included in the price index number.

The relative price changes over the previous month range from a 5 percent decrease of the price of hay to a 7 percent increase of the price of potatoes. The latter has continued to rise for six months and is now more than two and one half times as large as in the base period. The price of corn has also increased steadily since last fall resulting in a continued decline of the various feed ratios. Although the feed ratios have narrowed, they all have remained well above their base level. The prices of most other commodities declined slightly or remained unchanged. The net result of the various decreases and increases was an average decrease of 0.9 percent over April, 1943 prices. This is the first time since November, 1942, that Minnesota farm prices showed a net decrease from one month to the next. Compared with May, 1942, prices rose by 23 percent.

Indexes and Ratios for Minnesota Agriculture*

	May 15, 1943	May 15, 1942	May 15, 1941	Average May 1935-39
U.S. Farm price index	179.5	144.0	107.5	100
Minnesota farm price index	177.5	144.4	111.3	100
Minn. crop price index	149.6	115.1	90.2	100
Minn. livestock price index	178.5	158.8	110.6	100
Minn. livestock product price index	185.4	143.0	118.7	100
U.S. purchasing power of farm products	135.8	119.0	108.0	100
Minn. purchasing power of farm products	134.3	119.3	111.9	100
Minn. farmers' share of consumers' food dollar	62.3†	55.7	47.5	46.3
U.S. hog-corn ratio	13.4	17.5	12.4	10.7
Minnesota hog-corn ratio	15.4	19.0	15.7	14.6
Minnesota beef-corn ratio	13.8	15.0	14.9	12.7
Minnesota egg-grain ratio	18.0	17.8	17.0	14.6
Minnesota butterfat-farm-grain ratio	32.1	29.7	39.4	29.7

* Explanation of the computation of these data may be had upon request.
† Figure for March, 1943.

Month-to-Month Changes in Minnesota Farm Prices

The Minnesota farm price index which is given currently in the adjacent column does not permit a comparison of the farm price level of two succeeding months. Such a comparison is useful particularly during a period of rapidly increasing prices.

Table 1 shows the average percentage changes from month to month of the prices of the principal farm products in Minnesota for the period December, 1941, to May, 1943. With the exception of September and November, 1942, and May, 1943, the level of all farm prices has been above the level of the preceding month.

During this period the average monthly rate of increase of all farm prices was 2.0 percent. The average rates of increase of the prices of various classes of farm products were as follows: Crops, 3.4 percent; livestock, 2.1 percent; and livestock products, 1.5 percent. Although the index of crop prices relative to the average of 1935-39 is lower than the indexes of the prices of livestock and livestock products, the prices of crops have shown a greater relative increase since December, 1941, than have the prices of the other two classes of products.

Table 1. Relative Changes of Minnesota Farm Prices from Month to Month, December, 1941, to May, 1943

	All farm prices	Crop prices	Livestock prices	Livestock product prices		All farm prices	Crop prices	Livestock prices	Livestock product prices
	Percent					Percent			
1941					1942				
Dec.	+4.4	+10.2	+6.1	−0.9	Sept.	−0.6	−0.9	−4.4	+4.2
1942					Oct.	+3.0	−0.3	+3.7	+5.0
Jan.	+2.9	+9.4	+2.6	+1.0	Nov.	−1.4	−0.4	−3.2	+1.4
Feb.	+3.5	+2.5	+7.3	−2.3	Dec.	+1.8	+7.8	−0.7	+3.7
Mar.	+2.0	+2.8	+4.6	−2.1	1943				
Apr.	+5.0	+3.1	+7.0	+3.1	Jan.	+4.5	+9.6	+4.5	+2.8
May	+0.3	+1.7	−1.7	+2.0	Feb.	+2.8	+7.2	+4.1	−0.5
June	+0.5	−3.0	+2.4	−0.4	Mar.	+3.9	+12.4	+2.2	+2.4
July	+1.0	−0.1	+1.2	+1.2	Apr.	+0.7	+4.6	−0.5	+0.6
Aug.	+2.8	−5.0	+5.0	+7.1	May	−0.9	+2.0	−2.1	−0.7

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