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FARM BUSINESS NOTES

Prepared by the Divisions of Agricultural Economics and Agricultural Extension
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The War and the Minnesota Dairy Industry

E. FRED KOLLER

Under the impact of war "business as usual" is out as far as the Minnesota dairy industry is concerned. To meet the demand for greatly expanded production of dairy products to supply our armed forces, our allies, and increased domestic requirements, significant adjustments are being made on the dairy farms and in dairy plants throughout the state.

Dairy farmers of the state are preparing to do their part in bringing the national milk production to the suggested goal of 125 billion pounds in 1942, an increase of 8 per cent over 1941. The suggested goal for milk production on Minnesota farms in 1942 is 9.6 billion pounds, which is 9 per cent over the estimated production in 1941. It is expected that Minnesota dairy farmers will increase their milk cow numbers to 1,715,000 head in 1942, or 3 per cent over 1941. If the milk production goal is to be met it therefore will be necessary to increase production per cow by about 6 per cent by better feeding, care, and management.

In attempting to increase milk cow numbers 3 per cent and milk output per cow 6 per cent, Minnesota dairymen confront significant difficulties. Growing labor shortages will test the ingenuity of farmers to expand production with the supply and quality of labor which is available. Material shortages make it impossible for them to add all the new equipment they probably would if supplies were available. While feed supplies have been ample, increasing livestock numbers are making inroads on them and it is necessary for the dairyman to plan carefully for an adequate supply and for the right kinds of pastures. Another factor affecting dairy expansion is the relative return from dairying and other forms of livestock, particularly hogs.

Dairy farmers in Minnesota will also have to make changes in their operations because the types of dairy products for which the government is asking (evaporated milk, cheese, and dry skim milk) require the delivery of whole milk to dairy plants. The labor of separating milk and washing the separator will be avoided. On the other hand, because whole milk is considerably more bulky than cream, a larger investment will have to be made in milk cans, and cooling facilities very likely will have to be increased. Quality standards of milk delivered to cheese

University Farm Radio Programs

FRIENDLY ROAD—7:15 a.m.

MID-MORNING MARKETS—10:30 a.m.

UNIVERSITY FARM HOUR—12:30 p.m.

Station WLB—770 on the dial

factories and dry milk plants are more exacting than for cream delivered to a creamery. This will call for extra effort in handling milk and in improving the sanitary conditions of barns and dairy equipment.

Thus far in this war the dairy products most in demand by the government have been evaporated milk, cheese, and dry skim milk intended

for lend-lease shipment to Great Britain and our other allies. The quantities desired from March 15, 1941 to June 30, 1942 as well as the purchases to date are indicated below:

Product	Quantity desired March 1941 to June 1942	Purchases to April 11, 1942
Cheese	300,000,000 lbs.	283,986,306 lbs.
Evaporated milk	21,000,000 cases*	30,714,285 cases
Dry skim milk	240,000,000 lbs.	107,540,070 lbs.

* To be supplied by March 15, 1942.

The British have asked for these products to provide some of their protein needs. Butter has not been demanded since their fat requirements have been reasonably well-supplied from other sources; also refrigerated ocean shipping and cold storage space available for this purpose is limited. For these reasons the dairy product which Minnesota has more than ample capacity to produce has had no special demand for war purposes.

Processing and Marketing Adjustments

The demand for cheese, evaporated milk, and skim milk powder has increased their prices relatively more than that of butter. As the prices of these products improved, the plants equipped to make them expanded their output and in many instances reached into neighboring creamery areas for additional milk supplies.

To meet this competition many creameries have undertaken the installation of equipment to manufacture cheese or dry skim milk for human consumption. Others have added equipment to receive whole milk which in some cases is resold to cheese factories or condenseries while some separate the milk and sell the skim to drying or casein plants. As of January 1, 1942 there were 114 creameries,

about 14 per cent of the total in the state, receiving a large proportion of their supplies in whole milk. Twenty-five of these were drying their own skim milk, while 89 were selling skim milk mainly to drying plants.

Cheese Plants—In many areas of Minnesota the demand for milk diversion has been met by the installation of cheese-making equipment. It is estimated that there are about 92 cheese-producing plants in Minnesota today as compared with 66 a year ago. Outside of the favorable price relationship an important reason for the entry of so many firms into this type of dairy processing is that the building and equipment requirements are relatively simple.

With the expansion of cheese-making capacity which has taken place in the state in the past year and assuming that present price relationships are maintained, it is likely that about 45 million pounds of cheese will be produced in Minnesota in 1942. This compares with about 26 million pounds which the Department of Agriculture, Dairy and Food estimates were produced in 1941 and an output of 16.5 million pounds in 1940.

Dry Milk Plants—The major milk diversion activity in Minnesota has been in providing facilities to produce dry milk for human consumption. A survey of the dry milk situation in the state just completed by the Divisions of Agricultural Economics and Agricultural Extension shows that there are 104 plants drying milk in Minnesota. Forty of the plants are drying milk for human consumption and 62 for animal feed. Only two driers are idle at present. There were only 25 plants drying milk for human consumption a year ago which indicates how rapidly plants in the state are equipping themselves to produce dry milk for lend-lease purposes. Furthermore, the survey indicates that of the 62 plants now drying milk for animal feed 15 have taken positive steps to convert their driers to human food driers and expect to be in operation by May 1. Further increase in the state's milk-drying capacity will result from the construction of nine new or enlarged spray drying plants. Some of these projects are in the construction stage; others are still in negotiation with lend-lease authorities.

The annual rate of output of dry skim milk by the Minnesota plants now in production and the plants which may reasonably be expected to manufacture powder before the end of the year has been estimated to be as follows:

40 plants now producing dry skim for human consumption could produce at the rate of	50,400,000 lbs. a year
15 plants which have taken positive steps to convert animal feed driers to human food driers could produce at the rate of.....	9,882,000 lbs. a year
9 new or enlarged spray dry plants now contemplated could produce additional powder at the rate of.....	32,400,000 lbs. a year
Total output of the above plants could be at the rate of.....	92,682,000 lbs. a year

Due to the fact that the 15 plants in the process of converting animal feed driers and the 9 contemplated spray dry plants will not be ready for production until

later in the year, actual dry skim output for Minnesota will not be 92 million pounds this year but may reach the 60 to 65 million pound level. This may be compared with a dry skim milk output of 33.4 million pounds in 1941 and 25.5 million in 1940. The dry skim output might be increased considerably over the amounts estimated above by taking steps to operate more plants to full capacity, that is, 20 to 24 hours daily. Better pasture and better feeding programs directed at maintaining milk output in the late summer and fall months should increase the production of these plants.

While supplying the food necessary in the conduct of the war is now of paramount importance, those engaged in the industry should give thought to various long-run considerations in making adjustments. It is possible that after the war the prices of dairy products may decline considerably below present levels. In consequence dairy farmers should avoid investing heavily in new buildings, livestock, and other equipment unless the investment results in greater efficiency and lower cost of production. Debts incurred to finance expansion should be paid off while dairy product prices are high so they will not be a burden when a price reaction sets in.

Similar thought should be given when dairy plant changes or additions are planned to meet war conditions. Further large-scale expansion of milk diversion facilities does not appear warranted at this time. While all new projects should not be discouraged, only those should be carried through which can be maintained when dairy product prices return to more normal levels. Whatever plant changes are undertaken should be aimed at improving the efficiency of plant operations and improving the organization of the industry. The consolidation of small local creameries and the elimination of truck route duplications should be encouraged in order to save resources needed in the war and to reduce costs. In this way the Minnesota dairy industry will be in a much better position to meet the competition of other areas and to meet what may be difficult post-war economic conditions.

Carry Capacity of Pastures

C. HERMAN WELCH, JR.

A recent survey in Houston County furnishes some interesting information relative to the carrying capacities of various types of pasture. Estimates of the acreages of the different kinds of pasture needed per cow under different physical conditions and also of the length of the pasture season were obtained from the farmers.

Considerable variation between the different types of pastures as to the acreage deemed necessary to feed a cow was noted. Of the open pastures it was found that 1.6 acres of upland rotation, 2.3 acres of previously cropped upland, or 2.5 acres of open permanent upland that had never been plowed, were necessary to feed one cow. Of the sparsely wooded and densely wooded pastures 4.1 acres and 6.2 acres per cow, respectively, were required.

The estimated acreage of the various kinds of pasture needed per cow was greater on the steeper slopes than on the more level land. The acreage of open permanent pas-

ture estimated per cow increased from 1.4 acres on slopes of less than 10 per cent to 3.0 acres on slopes of 30 per cent and over. Previously cropped upland pasture showed a smaller increase, being 2.0 acres per cow on the more level land and 2.7 acres on the steeper slopes. No significant difference was noted in the estimated acreage of rotation pastures under varying slopes. The acreage of sparsely wooded pasture needed per cow increased from 2.1 acres on the level land to 4.8 acres on the steeper land, while that of densely wooded pasture increased from 4.0 acres on slopes of less than 10 per cent to 6.8 acres on slopes of 30 per cent and over.

According to farmer estimates rotation pasture provided a grazing season of five and one-half months; previously cropped upland pasture, five months; and open permanent pasture, four and one-half months. The sparsely wooded and densely wooded pastures have approximately the same length of grazing season as open permanent pasture.

The length of grazing season decreased as the slope increased. Open permanent pasture showed the greatest decrease in the length of grazing season, from 5.7 months on slopes of less than 10 per cent to 4.0 months on slopes of 30 per cent and over. Previously cropped permanent pasture furnished 5.6 months of grazing on the more level land and 4.5 months on the steeper slopes. No significant difference in months of grazing due to slope was noted for rotation or wooded pastures.

A more striking difference in carrying capacity of pastures appears when cow-months of grazing per acre were computed from farmers' estimates of acreage used to feed a cow and of months of pasture season. The open permanent pasture had an average carrying capacity of 1.9 cow-months per acre and decreased from 4.4 cow-months on the more level land to 1.3 cow-months on the steeper land. Previously cropped permanent pasture had a carrying capacity of 2.2 cow-months per acre and decreased from 2.8 cow-months on slopes of less than 10 per cent to 1.7 cow-months on slopes of 30 per cent and over. Rotation pasture had a carrying capacity of 3.7 cow-months per acre but showed no significant difference due to slope. The carrying capacity of sparsely wooded pasture was 1.1 cow-months per acre and varied from 2.0 cow-months on the more level land to 0.9 cow-months on the steeper land. Densely wooded pasture had the lowest carrying capacity, 0.8 cow-months per acre, and decreased from 1.3 cow-months on the slopes of less than 10 per cent to 0.7 cow-months on slopes of 30 per cent and over.

Changes in the Size Of Minnesota Farms

GEORGE A. POND

The average size of farm in Minnesota was 165.2 acres in 1940 as compared with 166.9 acres in 1930. Most of this change in size was the result of new farms added during the 10-year period. Since most of the new farms were small the average size of all farms is decreased. The area of land in farms was 1,693,595 acres larger in 1940 than in 1930 and the number of farms was increased by

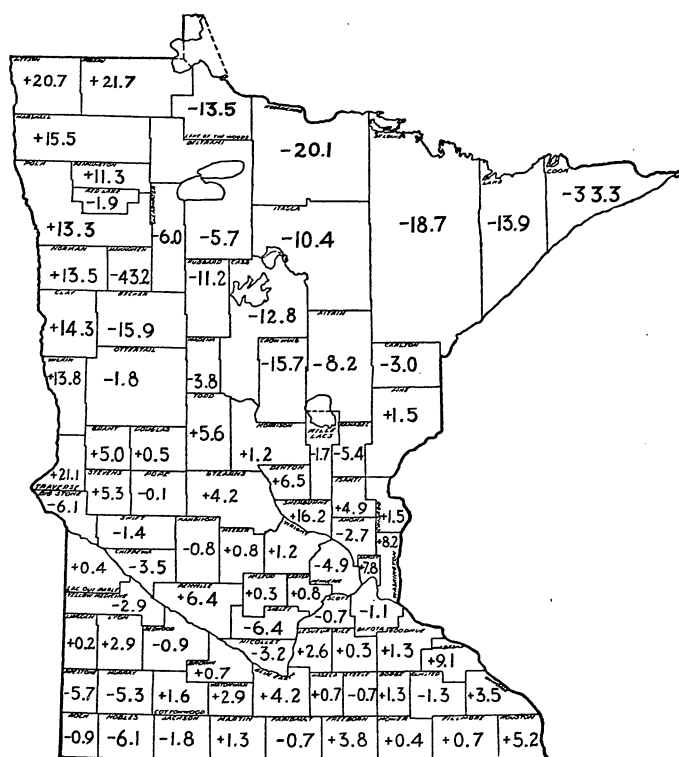


FIG. 1. CHANGES IN THE AVERAGE ACREAGE PER FARM IN MINNESOTA, 1930-1940

12,096. Much of this increase took place in northern Minnesota. Most of the new farms were developed by farmers who had left other areas because of the drouth or the depression, or by the unemployed from cities. In many cases these new farms were bare subsistence farms or merely places of rural residence where income from part time work off the farm or relief payments was supplemented by a small amount of farm-produced food and fuel.

The change in the average acreage per farm by counties is shown in figure 1. The large decreases in size occurred in the north central and northeastern counties where farms were already small and where most of the new farms were added. The largest increases in size occurred in the northwestern counties where farms were already larger than in the rest of the state. Larger machinery and power units give increasing advantages to the larger farms.

Changes in the number of farms from 1930 to 1940 by size groups are shown in table 1. For the state as a whole there has been an increase in each size group but most of the change has been in the small farms. Large farms have increased more than those in the median groups except in those counties showing large decreases in farm size.

Table 1. Percentage Change in Numbers of Farms in Minnesota by Size Groups, 1930-1940

Acres in farm	All farms	Avg. of 10 counties showing largest increases in size of farm	Avg. of 10 counties showing largest decreases in size of farm
Under 20	+42.9	+84.7	+219.6
20-49	+22.6	+42.2	+73.1
49-99	+7.3	+18.8	+38.0
100-174	+1.0	-1.7	+10.5
175-259	+0.1	-4.8	+6.3
260-499	+4.6	+6.1	+9.3
500 and more	+25.1	+41.4	+2.7

Minnesota Farm Prices For March, 1942

Prepared by W. C. WAITE and H. W. HALVORSON

The index number of Minnesota farm prices for the month of March, 1942, was 110. When the average of farm prices of the three Marches, 1924-25-26, is represented by 100, the indexes for March of each year from 1924 to date are as follows:

1924—84	1929—108	1934—54	1939—66*
1925—105	1930—97	1935—84	1940—67*
1926—111	1931—68	1936—81	1941—74*
1927—109	1932—47	1937—101	1942—110*
1928—101	1933—36	1938—77	

The price index of 110 for the past month is the net result of increases and decreases in the prices of farm products in March, 1942, over the average of March, 1924-25-26, weighted per their relative importance.

Average Farm Prices Used in Computing the Minnesota Farm Price Index, March 15, 1942, with Comparisons*

	Mar. 15 1942	Feb. 15 1942	Mar. 15 1941		Mar. 15 1942	Feb. 15 1942	Mar. 15 1941
Wheat	\$1.05	\$1.04	\$.73	Cattle	\$10.10	\$9.70	\$7.70
Corn .....	.66	.65	.45	Calves	11.90	11.70	9.70
Oats .....	.45	.46	.28	Lambs-Sheep	10.18	10.17	8.84
Barley .....	.68	.68	.38	Chickens .....	.14	.14	.11
Rye .....	.63	.65	.39	Eggs .....	.25	.25	.14
Flax	2.38	2.09	1.54	Butterfat .....	.38	.39	.32
Potatoes .....	.90	.85	.41	Hay	6.20	6.00	6.16
Hogs	12.50	11.80	7.10	Milk	2.05	2.10	1.55
				Wool† .....	.37	.37	.31

* These are the average prices for Minnesota as reported by the United States Department of Agriculture.

† Not included in the price index number.

Effective March 23, maximum wholesale prices on dressed hogs and on the various types of standard pork cuts were imposed at the highest wholesale prices prevailing during the 5 days, March 3-March 7 for a 60 day period after which time a permanent ceiling may be imposed. Ceiling prices have not as yet been imposed on live hogs or on the retail prices of hog products.

A measure of opposite effect came in the form of Secretary Wickard's announcement of March 30 that the D.P. M.A. would support butter prices at a minimum of 36 cents per pound for 92 score butter, carlot basis Chicago, with comparable prices for other grades.

Indexes and Ratios of Minnesota Agriculture*

	Mar. 1942	Feb. 1942	Mar. 1941	Average Mar. 1924-26
U.S. farm price index.....	103.5	102.1	73.0	100.0
Minnesota farm price index.....	110.1	110.3	74.0	100.0
U.S. purchasing power of farm products	109.1	108.4	92.6	100.0
Minn. purchasing power of farm products	116.0	117.1	93.9	100.0
Minn. farmers share of consumers food dollar		55.0	44.1	53.4
U.S. hog-corn ratio	15.7	15.2	12.4	12.2
Minnesota hog-corn ratio	18.9	18.2	15.8	15.6
Minnesota beef-corn ratio	15.3	14.9	17.1	9.1
Minnesota egg-grain ratio	16.9	17.2	14.4	12.9
Minnesota butterfat-farm-grain ratio	28.1	28.6	38.3	39.8

* Explanation of the computation of these data may be had upon request.

Meeting Agricultural Goals

Present information tends to indicate that several of the 1942 revised production goals established for United States agriculture will not be met. The U.S.D.A. suggested an increase of 8 per cent in total milk production for 1942, while the rate of production in February, 1942 was only 4.4 per cent above the corresponding month of 1941. Increased milk production during and after the flush season, however, may readily offset the present deficiency. Other deficiencies are likely to occur in the case of soybeans, flaxseed, and corn. The survey of farmers' planting intentions conducted about March 1 by the U.S.D.A. indicates that for the United States acreage increases of about 41, 20, and 5 per cent more than the preceding year will occur for soybeans, flaxseed, and corn while the goals for these crops are 54, 34, and 8 per cent above the acreage planted in 1941. Some of this increased acreage will result from a decrease in the acreage planted to wheat. The 12 per cent suggested reduction in wheat acreage will probably be only partly met, however, with planting intentions indicating about a 9 per cent reduction.

Perhaps as a partial offset to these deficiencies, spring farrowings of sows are expected to be 28 per cent above those of the preceding spring. Pigs saved in the fall of 1941 were 18 per cent larger than in the fall of 1940 while the hog marketing goal for 1942 is 17 per cent above 1941. In addition egg production in February, 1942 was 18 per cent above that of February, 1941 while the goal for 1942 was a 13 per cent increase in production over 1941.

In Minnesota the goals for hogs, corn, and flaxseed will be approximately met while intended plantings of soybeans fall far short of the goal. Production of eggs, if continued at the present margin over 1941 production, will substantially exceed Minnesota's goal.

With cattle on feed in Minnesota somewhat lower than last year and corn supplies 29 per cent greater than the corn fed as grain in 1941, the increase in hogs resulting from the 20 per cent increase in pigs saved in the fall of 1941 and the prospective 20 per cent increase in sows farrowing this spring can probably be adequately fed.

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