

file Dairy Farm Costs

ESTIMATES OF THE COST OF PRODUCING MILK
IN NEW YORK

Among the factors to consider in the pricing of milk are (1) adjustment in prices between different farm products and between different milk markets, (2) consumer purchasing power and (3) milk production.

Under present war conditions, the paramount problem in the dairy industry is to maintain as nearly as possible the present level of milk production. Dairy cow numbers in New York decreased one per cent during 1942 despite the unusually large number of heifers added to the herds. The decrease resulted from selling more than the usual number of cows. Starting with November 1942, total milk production in the State has been running 2 to 4 per cent below the corresponding months of a year ago. The price of milk should be sufficient to enable dairymen to maintain their labor force, to obtain the necessary feed supplies and to meet their other costs of production.

The following analysis relates to the cost of producing milk as it affects milk production.

A. Based on Price Conditions in March 1943

In March 1943, the retail price of a typical dairy ration in New York was \$49.43 per ton and the farm price of hay \$12 per ton. The estimated cost of producing corn silage in 1942 was about \$6 per ton and pasture costs were estimated to be 5 cents per day.

On April 1, 1943, average farm wages without board in New York were reported to be \$91.50 per month. The value of farm privileges was estimated to be \$25 per month. These total wages of \$116.50 divided by 250 hours per month results in a wage rate of 47 cents per hour.

In the period 1914 to 1940, 23 studies of the actual costs of producing milk in New York were made. These studies showed 30 pounds of grain, 70 pounds of hay, 110 pounds of silage, 2.6 days of pasture, and 2.5 hours of man labor were required, on the average, to produce 100 pounds of milk.

Prepared by L. C. Cunningham

Department of Agricultural Economics
New York State College of Agriculture, Ithaca, New York

The foregoing prices were applied to these physical quantities of feed and labor to arrive at an estimated cost of producing milk. Based on price conditions in March 1943, the average cost of producing milk amounted to \$3.16 per hundredweight (table 1). This figure is for costs on a year-round basis and is for milk of 3.5-3.6 per cent fat test delivered to country plants near the center of the milkshed.

TABLE 1. ESTIMATED YEAR-ROUND COST OF PRODUCING MILK IN NEW YORK
Based on Price Conditions in March 1943

Items	Amounts		Prices		Cost per cwt. of milk
	per cwt. of milk				
Grain	30	lbs.	\$49.43 ton,	2.47¢ lb.	\$.74
Hay	70	lbs.	12.00 ton,	0.60¢ lb.	.42
Silage	110	lbs.	6.00 ton,	0.30¢ lb.	.33
Pasture	2.6	days		5¢ day	.13
Man labor	2.5	hrs.		47¢ hr.	1.18
Other costs less credits*					.36
Net cost					<u>\$3.16</u>

* Increases in the costs other than for feed and labor are assumed to be offset by increases in the value of the credits for calves and manure produced.

Investigations of the seasonal costs of milk production on about 500 farms in New York in 1930-31 and again in 1939-40 showed that the cost of producing milk in the barn-feeding period was 22 per cent higher and the cost in the pasture season 28 per cent lower than the year-round cost. On that basis, the estimated cost of milk production in the barn-feeding season would amount to about \$3.86 per 100 pounds ($1.22 \times \$3.16 = \3.86). In the winter months October to March 1943, the price received for 3.6-per cent milk averaged \$3.10 per hundredweight. In a normal pasture season with feed prices and wage rates at the levels just discussed, the estimated cost would be about \$2.28 per hundredweight ($0.72 \times \$3.16 = \2.28).

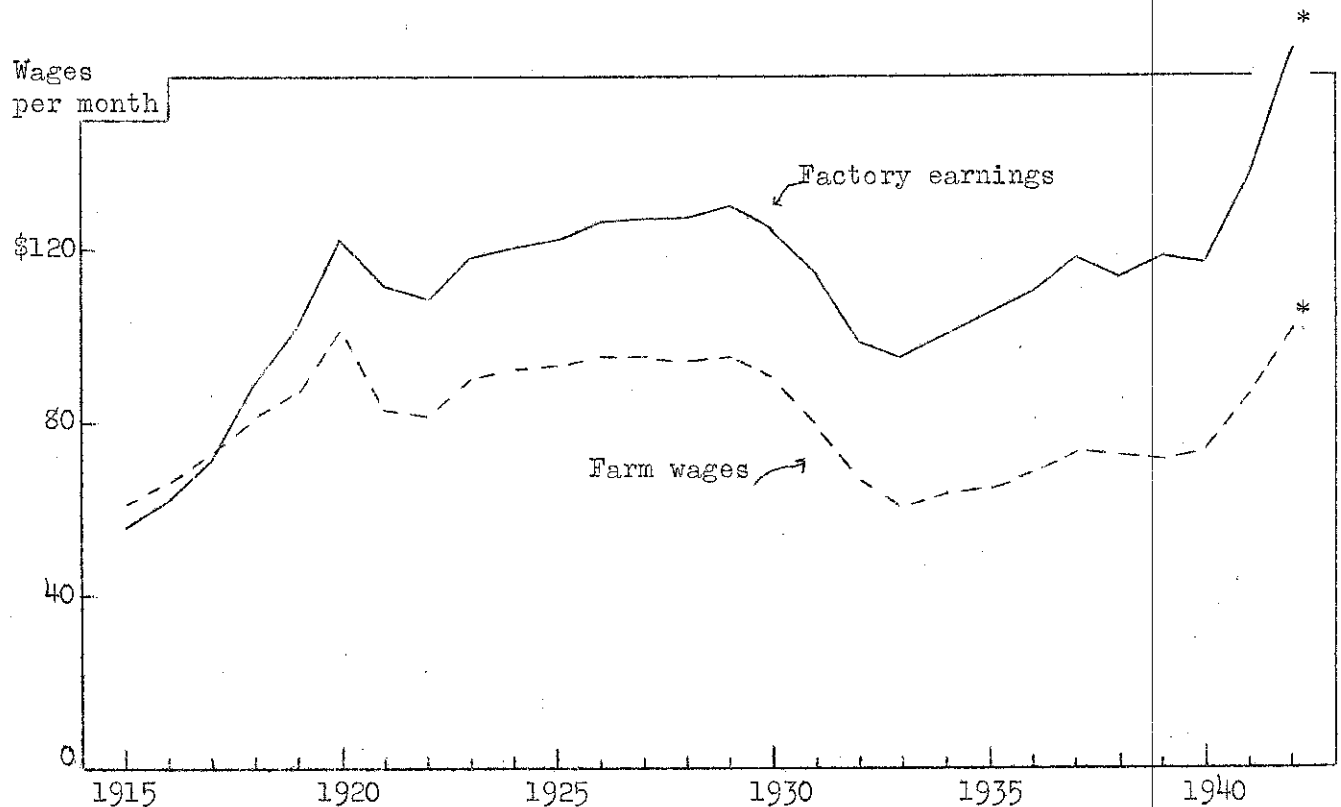
Actually, the seasonality of milk prices in the New York milkshed has been such that prices in the winter have seldom, if ever, been as high as costs in that season, so that the loss had to be made up in the pasture season. Fundamentally, dairying is a year-round job, so costs and prices for the year are the most significant.

Based on price conditions in the 12-months April 1942 to March 1943, the estimated year-round cost of producing milk amounted to \$2.93 per 100 pounds. The farm price of milk in this same period averaged \$2.80. Thus, costs and prices were maintained in reasonably good balance during the past year. In the face of probable further increases in costs, the problem is to maintain such an adjustment between costs and prices during the year ahead as will encourage milk production.

B. Based on Probable Price Conditions in the Winter of 1943-44

Competitive wages. Farm wages have been rising and are expected to continue to increase still further. On April 1, 1943, farm wages per month without board were 30 per cent higher than a year ago and 69 per cent higher than two years ago. However, they are still low in comparison with urban wages.

In the period 1921 to 1930, earnings of factory workers in New York averaged \$121 per month (figure 1). Farm wages including privileges amounted to \$91 per month (\$66 cash wages plus \$25 estimated value of farm privileges). Thus a month's farm wages were equal to 75 per cent of a month's factory earnings. This relationship existed fairly uniformly for about 10 years of high industrial activity and hence is a reasonably normal factory-farm wage differential under conditions of active employment in New York.



* March factory earnings and April 1 farm wages.

Source: Industrial Bulletin, State of New York Department of Labor and U.S.D.A. Farm Labor Reports.

FIGURE 1. EARNINGS OF FACTORY WORKERS AND FARM WAGES PER MONTH IN NEW YORK 1915-1942

In March 1943, average earnings of factory workers were \$191 per month. On April 1, 1943, farm wages including privileges were \$116.50 (\$91.50 plus \$25). To be in pre-depression adjustment with factory wages, farm wages including privileges would have to rise to something like \$140 per month (75 per cent of \$191 = \$143).

Feed increasingly scarce. The country is overstocked with livestock, particularly with hogs, in relation to normal feed grain production. The bumper feed crop production of 1942 is rapidly disappearing because of this greatly expanded livestock population and because of a significantly higher rate of feeding per animal. Because of the increasing scarcity of concentrate feeds, dairy ration prices are expected to continue to increase. In March 1943, the price of a typical dairy ration was 10 per cent higher than a year ago and 53 per cent higher than two years ago. The price of corn in Chicago was \$1.01 per bushel in March 1943, and the price of a typical dairy ration in New York was \$49.43 per ton. The ceiling price on corn made it relatively cheap. Based on the 1910-41 relationship, when corn in Chicago sold for \$1 per bushel the price of a dairy ration in New York was about \$45. Thus, in March, the price of a dairy ration was \$4 to \$5 per ton higher than that indicated by the normal relation to \$1 corn in Chicago. When corn has sold in Chicago for \$1.50 per bushel, the price of a dairy ration in New York has averaged about \$60 a ton. Under current regulations, \$1.50 corn might result in the price of a dairy ration varying all the way from \$60 to perhaps \$75.

Estimated costs of producing milk with varying farm wage rates and dairy ration prices are shown in table 2. No change in other costs is assumed.

TABLE 2. ESTIMATED YEAR-ROUND COST OF PRODUCING MILK IN NEW YORK
Based on Varying Farm Wage Rates and Prices of A Dairy Ration

		\$91.50*	\$95	\$105	\$115
Farm wages per month		\$91.50*	\$95	\$105	\$115
Value of privileges		25.00	25	25	25
		\$116.50	\$120	\$130	\$140
Retail price dairy ration in New York per ton		47¢	48¢	52¢	56¢
		Cost per cwt. of milk			
\$49.43**		\$3.16	\$3.18	\$3.28	\$3.38
52		3.20	3.22	3.32	3.42
55		3.24	3.26	3.36	3.46
58		3.29	3.31	3.41	3.51
61		3.34	3.36	3.46	3.56
64		3.38	3.40	3.50	3.60

* Actual wage rate April 1, 1943

** Actual price in March 1943.

For example, with April 1 wage rates of \$91.50 per month and \$55 a ton for dairy ration, the estimated year-round cost of producing milk would amount to approximately \$3.24 per hundredweight. With farm wages of \$105 per month and a \$55-price for a dairy ration, the estimated cost would amount to \$3.36. With farm wages of \$105 per month and with the price of a dairy ration in New York of \$64 per ton, or approximately in line with \$1.50 per bushel for corn in Chicago, but with other costs assumed to remain at their March 1943 level, the estimated year-round cost of producing milk would amount to \$3.50 per hundredweight. If the price of hay increased from \$12 a ton to \$15 a ton the cost would amount to approximately \$3.60 per hundredweight.

The Relation of the Class I Price of Milk to Changes in Costs

Since the administrative job is to determine class prices of milk, another approach to the problem is to relate changes in class prices to changes in costs, using the declared base period August 1921 to July 1929.^{1/} The following comparison is limited to Class I milk and costs.

The Class I price of milk and the index of costs in dairy farming have followed the same general course as shown in figure 2. In March 1943 on a 1921-29 base, the index of costs was 117 and the Class I price was \$3.50, or at an index of 120.

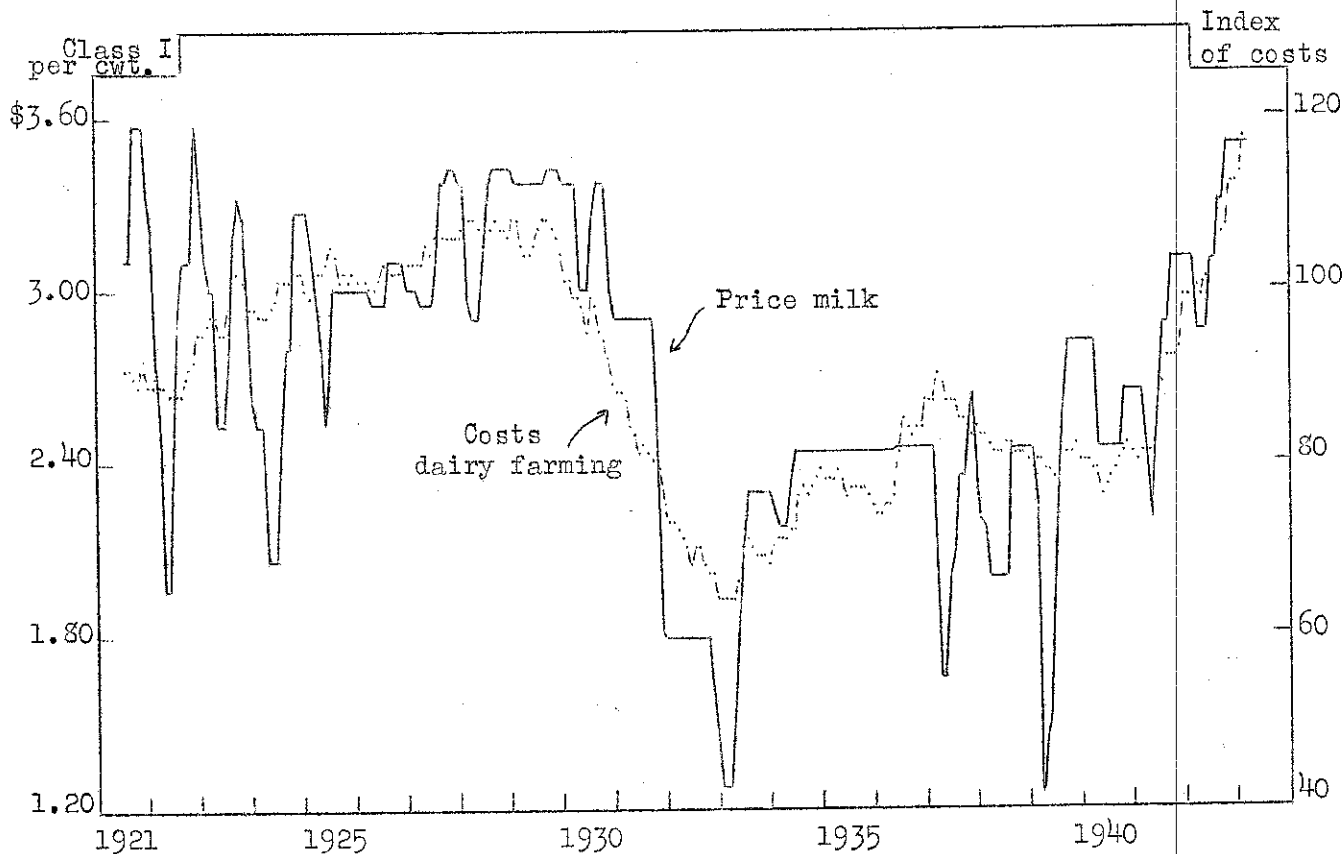


FIGURE 2. COSTS IN DAIRY FARMING AND THE CLASS I PRICE OF MILK IN NEW YORK
August 1921-July 1929 = 100

^{1/} See "Farm Economics", June 1942 for a more complete analysis of this problem.

Based on the relationship between the price of Class I milk and costs in the period from August 1921 to July 1929, table 3 was constructed for estimating the approximate Class I price for any given level of costs. A seasonal differential in the fluid milk price of 25 cents per hundredweight was used, as provided for in the present order for the New York Market.

TABLE 3. ESTIMATED PRICES OF CLASS I MILK IN THE 201-210-MILE ZONE
Based on the Index of Costs in Dairy Farming in New York

Index of costs August 1921-July 1929 = 100 Range	Class I price per 100 pounds	
	April through June	July through March
58-62	\$1.65	\$1.90
63-67	1.80	2.05
68-72	1.95	2.20
73-77	2.10	2.35
78-82	2.25	2.50
83-87	2.40	2.65
88-92	2.55	2.80
93-97	2.70	2.95
98-102	2.85	3.10
103-107	3.00	3.25
108-112	3.15	3.40
113-117	3.30	3.55
118-122	3.45	3.70
123-127	3.60	3.85
128-132	3.75	4.00
133-137	3.90	4.15
138-142	4.05	4.30
143-147	4.20	4.45
148-152	4.35	4.60

The March level of costs of 117 (August 1921 to July 1929 = 100) would call for a July-March Class I price of \$3.55 per hundredweight. The indexes of costs with varying farm wage rates and prices of a dairy ration are shown in table 4.

For example, with April 1 wage rates and \$55 a ton for a dairy ration, the index of costs would be 120 and the indicated July-March Class I price \$3.70. With farm wages of \$105 per month and a \$55 dairy ration price, the index of costs would be 125 and the indicated Class I price \$3.85. With farm wages of \$105 per month and with the price of a dairy ration in New York of \$64 per ton, or approximately in line with \$1.50 per bushel for corn in Chicago, but with other costs assumed to remain at their March 1943 level, the index of costs would be 131 and the comparable Class I price \$4.00.

TABLE 4.

INDEX OF COSTS IN DAIRY FARMING
IN NEW YORK

Based on Varying Farm Wages and Prices of a Dairy Ration

	Farm wages per month	\$91.50*	\$95	\$105	\$115
Price dairy ration per ton		Index of costs (August 1921-July 1929 = 100)			
\$49.43**		117	118	122	126
52		118	119	123	127
55		120	121	125	129
58		122	123	127	131
61		123	125	129	132
64		125	127	131	134

* Actual wage rate for April 1, 1943.

** Actual price in March 1943.