

August 17, 2001

Income per Hundredweight of Milk Sold

By
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Introduction

Income per hundredweight of milk sold is calculated by dividing a dairy farm's total incomes by the hundredweight of milk sold. However, this value is seldom calculated because the answer appears to be very straightforward (income equal price) and in single product enterprises this is true. In joint product enterprises, like dairy, it is not.

A joint product enterprise is one in which two or more products are produced from one production practice. Calculation of cost of production becomes difficult when the costs associated with the production of each individual product cannot be separately measured with existing information.

Since all costs are used in the calculation for cost of production per 100 pounds of milk sold, all income to the dairy farm must be used when making comparisons to that cost. The reason this must be done is that dairies generate more saleable products than milk alone: bull calves; cull cows, females sold for dairy, government payments and so on. In addition, on most dairy farms the cost of producing crops sold for cash cannot be separated from the cost of producing crops fed to the dairy herd,

Results

Table 1 shows several income categories. The first is Milk Sales. The average milk income per hundredweight of milk sold on the 600 plus Wisconsin dairy farms studied is \$12.12. This is very close to the U.S. average milk price of \$12.33² for 2000. The Total Income per hundredweight of milk sold was \$15.48. Therefore, if we are calculating costs of production per hundredweight of milk sold and including costs for all farm expenses, we must compare the cost to \$15.48 of income. We should never compare the cost of production to the milk price when dividing the expenses by the hundredweight of milk sold.

The second item, Raised Non-Breeding Livestock Sales, is mainly the sale of calves and steers, if any. This income source contributes \$0.40 to the income receive per 100 pounds of milk sold. Sale of cull cows (Sale of Breeding Livestock) adds another \$0.72, however some of this income is offset by the deduction of the basis that remained on the purchased cows culled.

Crop Sales contribute \$0.54 to total income and in 2000 Agricultural Program Payments contributed \$1.16. This is largely due to the Market Loss Payment that dairy farmers received in 2000. Non-Cash Income contributed \$0.23 of the \$15.48 of total income per 100 pounds of milk sold.

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² National Agricultural Statistics Services (NASS)

Table 1 – Average Income per Farm and per Hundredweight of Milk Sold

Incomes	Per Farm	Per Hundredweight of Milk Sold
Cash Income - Basis Adjustments		
Milk Sales	\$267,610	\$12.12
Raised Non-Breeding Livestock Sales	\$8,780	\$0.40
Sale of Breeding Livestock	\$15,855	\$0.72
Basis in Breeding Livestock Sold	-\$4,262	-\$0.19
Crop Sales	\$11,820	\$0.54
Distributions Received from Cooperatives	\$1,899	\$0.09
Agricultural Program Payments	\$25,622	\$1.16
Custom Hire (Machine Work) Income	\$3,087	\$0.14
Other Income, Incl. Tax Credits, Refunds	<u>\$6,465</u>	<u>\$0.29</u>
Total Cash Income - Basis Adjustments	\$336,876	\$15.25
Non-Cash Income		
Change in Raised Crop Inventories	-\$1,313	-\$0.06
Change in Remaining Current Assets	\$36	\$0.00
Change in Raised <u>Breeding Livestock</u>	<u>\$6,333</u>	<u>\$0.29</u>
Total Non-Cash Income	\$5,056	\$0.23
Total Income	\$341,932	\$15.48

Table 2 shows the income categories with different farm sizes. It shows Total Income per 100 pounds of milk sold varies as you move from the smallest farm size category (50 cows or less) to the largest farm size category (more than 250 cows). The 75 to 100-cow herd size category had the highest income per 100 pounds of milk sold (\$16.24). The largest herd size category received over a dollar less (\$15.18).

The Milk Sales item shows a change of over one dollar per 100 pounds of milk sold. The farms with 150 cows or less received approximately \$11.60 per hundredweight of milk sold. The farms in the 151 to 250-herd size category received \$12.33 and the farms in the largest herd size category (more than 250 cows) received \$12.84 per 100 pounds of milk sold.

Raised Non-Breeding Livestock Sales contribution to Total Income per 100 pounds of milk sold remained relatively constant at approximately \$0.46 until herd size reaches 151 cows. It then falls to \$0.32 and \$0.33. The net income from the sale of cull cows (Sale of Breeding Livestock **minus** Basis in Breeding Livestock Sold) declines from \$0.93 for the smallest herd size category to \$0.31 per 100 pounds of milk sold for the largest herd size category.

Table 2 – Average Income per Hundredweight of Milk Sold by Herd Size

Herd Size (number of cows)	<= 50	51 to 75	75 to 100	100 to 150	150 to 250	> 250
	144	203	103	77	40	48
Number of farms	144	203	103	77	40	48
Average Number of cows on herd	42	63	88	121	189	452
Average Milk Sold per Cow	18,354	19,841	20,319	20,273	19,742	21,870
Total Crop Acres per Cow	4.5	4.2	4.4	3.6	2.6	2.1
Forage Acres per Cow	2.3	2.2	2.0	1.8	1.6	1.3
Incomes						
Cash Income - Basis Adjustments						
Milk Sales	11.66	11.56	11.57	11.66	12.33	12.84
Raised Non-Breeding Livestock Sales	0.49	0.45	0.43	0.46	0.32	0.33
Sale of Breeding Livestock	1.00	0.87	0.82	0.73	0.58	0.57
Basis in Breeding Livestock Sold	(0.07)	(0.08)	(0.09)	(0.10)	(0.16)	(0.26)
Crop Sales	0.81	0.72	1.09	0.56	0.33	0.21
Distributions Received from Cooperatives	0.09	0.11	0.09	0.08	0.09	0.07
Agricultural Program Payments	1.52	1.50	1.58	1.35	1.15	0.66
Custom Hire (Machine Work) Income	0.17	0.12	0.17	0.20	0.15	0.11
Other Income, Incl. Tax Credits, Refunds	0.30	0.35	0.24	0.22	0.21	0.22
Total Cash Income - Basis Adjustments	15.97	15.60	15.90	15.15	15.00	14.75
Non-Cash Income						
Change in Raised Crop Inventories	(0.12)	(0.12)	(0.00)	(0.19)	(0.06)	0.00
Change in Remaining Current Assets	0.02	0.01	0.01	(0.00)	(0.03)	(0.00)
Change in Raised Breeding Livestock	(0.07)	0.13	0.33	0.11	0.52	0.43
Total Non-Cash Income	(0.16)	0.03	0.34	(0.07)	0.43	0.44
Total Income per 100 pounds of milk sold	15.81	15.63	16.24	15.08	15.43	15.18

Income per 100 pounds of milk sold from Crop Sales varies from \$1.09 in the 75 to 100-cow herd size to only \$0.21 in the largest herd size category. Distributions Received from Cooperatives, Custom Hire, and Other Income do not have large changes as herd size increases. However, Agricultural Program Payments has a large range in income per 100 pounds of milk sold.

Farm managers receive agricultural program payments based on historical acres in various crops, the market price of certain crops at harvest and, in 2000, a Market Loss Payment to dairy farmers. Dairy farms with 100 cows or less received approximately \$1.50 per 100 pounds of milk sold. Dairy farms with more than 100 cows received progressively less and dairy farms with more than 250 cows received only \$0.66. This is due to fewer crop acres per cow on larger dairy farms and a cap on the Market Loss Payment of \$25,000 per dairy farm.

Total Non-Cash Income per 100 pounds of milk sold varied from a -\$0.16 in the smallest farm size category to \$0.44 in the largest herd size category.

Summary

The average income per 100 pounds of milk sold was \$15.48. Of this \$12.12 came from the sale of milk, with the remaining \$3.36 coming from a variety of sources. Those sources are calf sales, cull cow sales, crop sales, agricultural program payments and others. The 75 to 100-cow herd size category received the highest income (\$16.24) per 100 pounds of milk sold. The largest herd size category received over a dollar less (\$15.18).

This range in income per 100 pounds of milk sold makes it difficult to simply divide costs by the hundredweight of milk sold and calculate a cost of production that is comparable across farms. As an example, suppose the cost of production on the 75 to 100-cow herd size category was \$16.00 – that would translate into \$0.24 in profit per 100 pounds of milk sold. In addition, suppose the cost of production on the over 250-cow herd size category was only \$15.50 – that would translate into a negative 0.32 in profit per 100 pounds of milk sold.

In this case, if we only looked at cost of production we would incorrectly assume that the over 250-cow herd size category was making the most profit, because it had the lowest cost. Therefore, whenever we calculate cost of production by dividing the cost by the hundredweight of milk sold we *MUST* compare that cost to the income per 100 pounds of milk sold.

If this comparison is not made, all the dairy's production costs would fall on the milk price and all the proceeds from the sale of bull calves, cull cows or cash crops would be 100% profit. This unfairly burdens the milk production enterprise and gives a skewed view of that product's true costs. Calculating the cost of production using an income equivalent, such as the U.S. average milk price, generates a cost of production that is comparable regardless of the total income configuration.