

Wisconsin Department of Agriculture, Trade and Consumer Protection  
Wisconsin Dairy Goat Association

**Dairy Goat Cost of Production Study  
For  
14 Wisconsin Farms in 2004**



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*\*\*\* Information contained within this study is a sampling of roughly 10% of the total commercial dairy goat farms in Wisconsin in 2004, and therefore is not designed to be a statistically accurate measure of industry practices or costs.*

## **Acknowledgements**

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## **Introduction**

We conducted a study of Wisconsin dairy goat production and processing practices to establish financial measures, including average cost of production. The 14 different dairy goat farms were located in 10 different Wisconsin counties. Production and financial information used in the study represented the year ending December 31, 2004. Only farms in business for three or more years were selected for the study.

We hope this data will help producers in Wisconsin compare their own data to the sample farm averages and identify areas with opportunity to improve efficiencies. It will also provide an information baseline of production costs and revenue generation under the state's climate and growing conditions, and help identify what will make Wisconsin's dairy goat producers more competitive within the growing market.

## **Wisconsin Commercial Dairy Goat Industry**

At the beginning of our study, there were 144 registered commercial dairy goat producers in Wisconsin, shipping an estimated 22,519,352<sup>1</sup> pounds to goat milk processors in the state. This estimate does not reflect the amount of milk used for on-farm processing or sold to small artisan dairy processors.

While a majority of the commercial goat milk producers are clustered within the Southwest corner of the state, significant production can be found in the North and Northeast as well. For the year 2004, all goat milk producers in our study shipped to one of three processors in the region: Montchevre Betin Inc. of Belmont, WI; Mt. Sterling Cheese Co-op of Mt. Sterling, WI; and Kolb-Lena Breese Bleu Inc. of Lena, IL.

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<sup>1</sup> Based on an estimated average herd size of 104 milking does and a rolling herd average of 1,500 lbs. This does vary from the sample dairy goat farms in this report.

## Income and Expenses on Sample Dairy Goat Farms

*Table 1* provides the summary or average data generated from the income and expenses reported by the 14 farmers. Some categories contain an *italicized sub-listing* of expenses. These represent a breakdown of the total income and expense category.

Attempts were made to collect the most complete data possible for all sample farms. However, at times, farmers did not have accurate numbers available to them, and either estimated or were unable to provide detailed accounts of their expenses. This fact illustrates the need for keeping accurate and detailed records of income and expenses.

When figuring cost of production per goat or per hundredweight (CWT), total pounds produced was utilized, thus creating the possibility that the dollar per CWT listed here may differ slightly from the milk price per CWT received on the farmer's milk check. This allows for sellable milk fed to kids and milk consumed by the farm family to be accounted for and assigned a fair market value.

In addition to tracking milk sales, *Table 1* also indicates the average income per farm for livestock sales. These sales include sale of buck kids, culled dairy animals, and sale of mature dairy does; in all constituting 10.76% of the average goat dairy farm's income. Some farmers claimed raising and selling buck kids offsets the cost of raising the doelings, though further research would be needed to determine whether this practice is cost effective or not. Other income listed reflects government payments, insurance payments, or possible fair awards or prizes related to the goats.

Lack of consistency in management practices presents some difficulties when comparing operating costs of the different farms. In order to maintain consistency when comparing the data of several farms side-by-side, identical categories were used for each farm, though some expenses may not be relevant to all farms. This may result in expenses lower than the average farm could expect in certain categories (i.e. milk replacer), based on their management practices. Expenses were based on the actual cash costs to the farmer in 2004.

\* Figure 1. Explanation of Net Incomes

	<u>Economic</u>	<u>Per Mature Doe</u>	<u>Per CWT</u>
<i>Net Cash Farm Income (w/paid labor)</i>	\$12,209.15	\$45.90	\$4.96
<i>Net Farm Income</i>	-\$315.92	-\$1.19	-\$0.13

\*Footnote #1

Net Cash Farm Income (w/paid labor)

[Total Income – (Cash Operating Expenses + Paid Labor)]

Net Cash Farm Income (w/paid labor) is valuable in showing all cash expenses paid out by the farm, and the amount remaining to service debt and pay family living expenses. Interest payments are not included since these are considered part of the debt service at the farm.

\*Footnote #2

Net Farm Income

[Total Income – (Cash Operating Expenses + Paid Labor + Depreciation)]

Net Farm Income shows the return to owner/unpaid labor and the farm's equity. This number is also important when determining dollars available to service debt and pay family living expenses, but by including depreciation, return to assets and return to equity can be figured. Farms which show a positive return on assets are more likely to be viable long-term.

Table 1 shows the average income and production cost measures for the sample goat farms in 2004. Data are shown for whole farm, per goat, and per hundredweight (CWT) equivalent. The averages show an economic loss averaging -\$315.92 per goat dairy farm.

TABLE 1

INCOME	Economic	*Per Goat	**Per CWT
<b>Milk Sales</b>	<b>\$67,663.29</b>	<b>\$254.44</b>	<b>\$27.48</b>
<b>Livestock Sales</b>	<b>\$8,438.79</b>	<b>\$31.73</b>	<b>\$3.43</b>
<b>Other</b>	<b>\$2,298.07</b>	<b>\$8.64</b>	<b>\$0.93</b>
<b>TOTAL INCOME</b>	<b>\$78,400.14</b>	<b>\$294.82</b>	<b>\$31.84</b>
CASH OPERATING EXPENSES			
<b>Feed Total</b>	<b>\$34,100.21</b>	<b>\$128.23</b>	<b>\$13.85</b>
<i>Grain</i>	<i>\$14,775</i>	<i>\$55.56</i>	<i>\$6.00</i>
<i>Roughage</i>	<i>\$16,136</i>	<i>\$60.68</i>	<i>\$6.55</i>
<i>Supplements/Additives</i>	<i>\$1,848</i>	<i>\$6.95</i>	<i>\$0.75</i>
<i>Milk Replacer</i>	<i>\$1,474</i>	<i>\$5.54</i>	<i>\$0.60</i>
<b>Machinery Total</b>	<b>\$5,414.71</b>	<b>\$20.36</b>	<b>\$2.20</b>
<i>Fuel, Oil, Gasoline</i>	<i>\$1,188</i>	<i>\$4.47</i>	<i>\$0.48</i>
<i>Repairs</i>	<i>\$2,150</i>	<i>\$8.08</i>	<i>\$0.87</i>
<i>Other</i>	<i>\$2,077</i>	<i>\$7.81</i>	<i>\$0.84</i>
<b>Paid Labor</b>	<b>\$5,220.14</b>	<b>\$19.63</b>	<b>\$2.12</b>
<b>Employee Benefits</b>	<b>\$987.79</b>	<b>\$3.71</b>	<b>\$0.40</b>
<b>Bedding</b>	<b>\$512.00</b>	<b>\$1.93</b>	<b>\$0.21</b>
<b>Milking Supplies</b>	<b>\$3,364.64</b>	<b>\$12.65</b>	<b>\$1.37</b>
<b>Veterinary</b>	<b>\$1,547.07</b>	<b>\$5.82</b>	<b>\$0.63</b>
<b>Milk Hauling</b>	<b>\$1,611.86</b>	<b>\$6.06</b>	<b>\$0.65</b>
<b>Milk Testing</b>	<b>\$1,051.57</b>	<b>\$3.95</b>	<b>\$0.43</b>
<b>Other Livestock Expenses</b>	<b>\$651.00</b>	<b>\$2.45</b>	<b>\$0.26</b>
<b>Crop Production</b>	<b>\$1,512.71</b>	<b>\$5.69</b>	<b>\$0.61</b>
<b>Real Estate Repairs/Rent</b>	<b>\$2,472.93</b>	<b>\$9.30</b>	<b>\$1.00</b>
<b>Farm Insurance</b>	<b>\$1,713.43</b>	<b>\$6.44</b>	<b>\$0.70</b>
<b>Utilities</b>	<b>\$3,420.00</b>	<b>\$12.86</b>	<b>\$1.39</b>
<b>Property Taxes</b>	<b>\$2,108.79</b>	<b>\$7.93</b>	<b>\$0.86</b>
<b>Other Farm Expenses</b>	<b>\$502.14</b>	<b>\$1.89</b>	<b>\$0.20</b>
<b>TOTAL CASH OPERATING EXPENSES</b>	<b>66,190.99</b>	<b>\$248.84</b>	<b>\$26.88</b>
<b><u>Net Cash Farm Income (w/paid labor)</u></b>	<b><u>\$12,209.15</u></b>	<b><u>\$45.90</u></b>	<b><u>\$4.96</u></b>
Depreciation	\$12,525.07	\$47.09	\$5.09
<b><u>Net Farm Income</u></b>	<b><u>-\$315.92</u></b>	<b><u>-\$1.19</u></b>	<b><u>-\$0.13</u></b>

\* 266 mature animals on average sample goat farm

\*\* 2462.06 CWT lbs of milk produced per sample herd

**Explanation of Balance Sheet (Table 2)**

Table 2 provides a summary of the average assets and liabilities for the 14 farms in this sample. This information allows farmers to see positive (or negative) equity in their farm for one specific point in time. Statements for each farm were prepared using a cash basis due to the fact that several farmers were unable to provide data to adequately indicate assets and liabilities on an accrual basis, or show a change in assets and liabilities over a given period of time.

TABLE 2

<b>ASSETS</b>	
Current	\$18,839
Intermediate	\$137,063
Long-Term	\$189,367
<b>TOTAL ASSETS</b>	<b>\$345,269</b>
<b>LIABILITIES</b>	
Current	\$3,451
Intermediate	\$19,850
Long-Term	\$137,572
<b>TOTAL LIABILITIES</b>	<b>\$160,873</b>
<b>EQUITY</b>	<b>\$184,396</b>
<b>DEBT/ASSET RATIO</b>	46.59%

Table 3 shows a hypothetical price range for wholesale milk to obtain levels of profitability based on sample Net Incomes for the 14 farms in 2004. This information does not take into account possible efficiencies at the dairy farms, or other sources of income from the farm.

TABLE 3

	Market Prices: \$ per CWT				
Fluid Milk – 2,462.06 CWT Mature animals - 266	\$25.00	\$27.48	\$30.00	\$35.00	\$40.00
<b>Total Income</b>	<b>72,288.36</b>	<b>78,400.14</b>	<b>84,598.66</b>	<b>96,908.96</b>	<b>109,219.26</b>
Total Cash Operating Exp.	66,190.99	66,190.99	66,190.99	66,190.99	66,190.99
<b>Net Cash Farm Income</b>	<b>6,097.37</b>	<b>12,209.15</b>	<b>18,407.67</b>	<b>30,717.97</b>	<b>43,028.27</b>
<b>Net Farm Income</b>	<b>-6,427.70</b>	<b>-315.92</b>	<b>5,882.60</b>	<b>18,192.90</b>	<b>30,503.20</b>
<b>Net Farm Income per Mature Animal</b>	<b>-24.16</b>	<b>-1.19</b>	<b>22.12</b>	<b>68.39</b>	<b>114.67</b>
<b>Net Farm Income per CWT</b>	<b>-2.61</b>	<b>-0.13</b>	<b>2.39</b>	<b>7.39</b>	<b>12.39</b>

## General Information and Management Practices

The number of milking does per sample farm average ranged from 70 to 376 animals for the year 2004, with a majority of herds being a mix of the Saanen, Alpine, LaMancha, Toggenberg, and Nubian breeds. A few herds also had Oberhaslis. Most farms were sole proprietorships, and none were certified for organic production at the time the sample study.

*Table 4* and *Table 5* at the end of this report provides more in depth information collected from the sample farms. This may provide valuable insight in comparison to your own operation.

### Milking

In 2004, an average of 246,206.16 lbs of milk was produced per herd, while 241,392.86 lbs were sold for an average of \$27.48 per hundredweight (CWT). The average number of goats milking at any given time was 158, each producing an average of 1,558.27 lbs per year. The average goat farm had a total of 266 mature animals on site.

The average milking parlor had 16 stalls, and the majority of these set-ups were raised platforms where goats walked up either a ramp or stairs, and descended on a ramp. Lactating does were milked twice a day, however at least three farms milked three times a day for the first six to eight weeks of lactation. Roughly half of the farms also did other work with the goats while in the parlor, including feeding of concentrates and trimming of hooves. While some farmers state this practice saves time, others mentioned that they feel such multi-tasking causes the milking to take longer, which can decrease throughput of animals per person, and cost more time in the long run. It is impossible to assess these claims based on the data collected for this study.

Prior to milking, an iodine dip is used to wash teats in order to keep bacteria counts low. Some farmers also employ a post-milking iodine dip to further reduce the risk of infections. Many farmers received premiums (and likewise deductions) for high solids, proteins, and low bacteria levels. For this reason, and based on premiums and deductions at their plant, many herds have a mixture of goat breeds to maximize production while still maintaining high solids and proteins. Dairy goat milk must test with a somatic cell count of less than 1,000,000, otherwise the farmer can be subjected to deductions from their plant, as well as sanctions from the state.

Of the 14 farms, six utilized DHIA testing to help them monitor production levels, butterfat, protein, and somatic cell counts in order to make more informed decisions about which milk went into the tank, and which animals to cull. It is not apparent from this study that employing DHIA testing causes any increase in profitability, however, DHIA testing in Wisconsin is designed more to assess cow production, which may not always provide adequate results for the dairy goat farmer.

## **Breeding and Kidding**

There are three primary methods employed for the breeding of goats: pen-breeding, individual mating, and artificial insemination (AI). The majority of the goat farmers in this study used either individual mating techniques and/or pen breeding for their does. If both methods were utilized, pen breeding was often the preferred choice for yearlings while individual mating was used for mature milking does to maximize their production. Two farms used AI for their commercial milking herds. On average, most goats are bred for the first time between 7 and 12 months of age, and those that do not breed after that timeframe are usually culled from the herd.

Goats are seasonal breeders, milking through spring, summer, and early fall. For this reason, many plants pay a premium for “winter milk” (usually between December and March). The average price received for this milk was \$32.08 per CWT. Five farms milked their goats only seasonally, and had only minimal winter milk sales. The remaining nine farms practice some level of non-seasonal breeding.

For the 14 farms in our study, an average of 2.182 kids were born to each milking doe, with about 90% survivability. The average farm of 266 mature dairy animals raised 98 doelings and their culling rate approximated 36%. A little more than half of the farms sold their buck kids and a few doe kids within 3 days of birth. Most of the remaining farms raised buck kids to 3 to 6 months of age, or about 45 pounds, before selling them for meat processing. Farmers selling meat animals to halal markets do not de-horn their meat animals. Most other farmers do de-horn animals in the milking herd as a safety precaution.

## **Feeding**

Sample farmers estimate that the average kid will consume 133 pounds of milk or milk replacer from birth until fully weaned. Six farms fed only fresh milk to kids; five farms fed only calf and/or goat milk replacer to kids; and three farms fed a combination of fresh milk and replacers to kids. *Figure 2* displays an estimated cost of feeding fresh milk (based on \$/CWT) versus goat milk replacer to kids. Average costs were estimated at \$63.50 for 50 lbs of dry replacer; where 8 oz dry replacer is mixed with 54 oz of water (1:6.75). No data was available to factor in growth weight to weaning, as well as survivability when considering feeding milk, replacers, or both.

# kids raised	Lbs per kid	\$/pound - milk	Total Cost
98	133	\$0.2748	\$3,581.74
# kids raised	Lbs per kid	\$/pound - replacer	Total Cost
98	133	\$0.1639	\$2,136.27

Regarding feeding practices, the only reliable data showed the average feed ratio for mature dairy animals at the 14 farms was 62.13% roughage to 37.87% grains and concentrates.



## **Labor**

Labor is one of the largest expenses for a dairy goat operation. For most farms in our study, paid labor would be classified as sporadic – they do not have regularly scheduled help for everyday tasks at the farm. These farms employ non-family labor in event of vacation, family emergency, or kidding season. In general, the average farmer in this study spent 12.14 hours per day on their farm in relation to goats, including hours for milking, feeding, and other chores such as hoof trimming and vaccinations. This number may be reduced for seasonal herds that do not milk in the winter months. Approximately 16.65 hours were spent per year, per mature dairy goat (milking and dry). This figure totals all hours for the farm, including hours spent with youngstock. Farmers who raise young goats for meat sales may have slightly higher hours per animal. Farms that grow feed may also have higher hours per day and per animal than farms that purchase feed.

Table 4 shows some of the averages pertaining to various management practices of the sample dairy goat farms. This representation of this information is limited by the small sample of data of practices and management of a dairy goat farm. (Mean average may show subtle differences when compared to the sample income and expenses which are weighted averages.)

TABLE 4

<b>General Information</b>	<b>Unit</b>	<b>Mean Average</b>	<b>High</b>	<b>Low</b>
<b>Length of time Milking Goats<sup>2</sup></b>	year	8.93	40	3
<b>Does, Milking and Dry</b>	ea	266	600	90
<b>Does, Milking</b>	ea	158	376	70
<b>Young stock on site</b>	ea	98	250	24
<b>Unbred does over 1 year old<sup>3</sup></b>	ea	6	130	0
<b>Kids – Females Born (estimate)</b>	%	50%	N/A	N/A
<b>Kids – Number Born<sup>4</sup></b>	ea	2.182	3.71	1.06
<b>Kids – Mortality Rate<sup>7</sup></b>	%	10.23%	18.3%	1.1%
<b>Days in Milk</b>	days	306.6	310	280
<b>Milk Produced</b>	lbs	246,206.16	694,132	108,981
<b>Milk Sold</b>	lbs	241,392.86	691,132	99,881
<b>Price per CWT<sup>5</sup></b>	\$	\$28.12	\$30.91	\$25.26
<b>Winter Price per CWT</b>	\$	\$32.08	\$35.25	\$29.50
<b>Production per Doe</b>	lbs	5.27	8.24	3.01
<b>Production per Doe–DHIA<sup>6</sup></b>	lbs	6.96	10.2	5.42
<b>Number of Milking Stalls</b>	#	16	24	8
<b>Feed – roughage fed</b>	%	62.13%	76.19%	50%
<b>Hours spent Feeding</b>	hour	2.75	6	1
<b>Hours spent Milking</b>	hour	6.64	10	5
<b>Hours spent on Other</b>	hour	2.75	6	0.5
<b>Acres – Total</b>	acre	72.9	248	6
<b>Acres – Tillable for Goats</b>	acre	69.48	130	19
<b>Acres - Pasture<sup>7</sup></b>	acre	3.79	8	0.13

<sup>2</sup> Including time milking on family farms, work for hire, or work on own farm.

<sup>3</sup> Only 6 farms had such animals. The remaining farms culled these does.

<sup>4</sup> Based on records from 5 farms. Mortality rates difficult to determine as many farmers did not track death, or give numbers separate from still birth or late term abortions.

<sup>5</sup> Calculated using total \$/total pounds as reported in producer milk checks. Discrepancies in data collected were noted for 3 farms in our study. This may be due to penalties/premiums or solid counts not otherwise documented.

<sup>6</sup> Discrepancy may be noted when compared to average based on pounds produced/average milking does/days in milk. This may be due to farmers' estimate of overall average milking herd size, or days in milk.

<sup>7</sup> Based on 9 farms who indicated they provided some sort of pasture for nutritional grazing or browsing.

Table 5 shows information applicable to a few farms in the study. For some categories, the total farms utilizing a specific practice may be higher than 14. In this case, there were farms who used two or more practices in the management of their herd (i.e. Breeding, some farms used all three methods.)

TABLE 5

<b>Farms participating in...</b>	<b>Total</b>
Use of dairy herd or feed management software	6
On-farm processing of goats' milk (avg. 1,225 lbs/year per goat)	3
Home consumption of goats' milk (avg. 1,450 lbs/total per year)	4
<b>MILKING</b>	
Milked only seasonally	5
Milked non-seasonally <sup>8</sup>	9
Milked two times a day	11
Milked three times a day for first 6-8 weeks, then two times a day	3
Certified Grade B goat milk	11
Certified Grade A goat milk	3
<b>BREEDING</b>	
Breeding – Individual Mating	7
Breeding – Pen Bred	12
Breeding – Artificial Insemination (minimal)	2
<b>FEED: Kids</b>	
Fed only sellable milk to kids (avg. 8,930 lbs/year)	6
Fed milk replacers to kids (calf and/or goat)	5
Fed both sellable milk (avg. 2,673 lbs/year) and replacers to kids	3
<b>FEED: Purchase, Raise, Graze</b>	
Feed – Purchased	10
Feed – Grown	8
Feed – Grazing	2
<b>HOUSING</b>	
Housing – Converted Dairy Barn	13
Housing – Pole Shed	7
Housing – Curtain Side Wall Building	2
Housing – Greenhouse (young stock)	2
<b>LIVESTOCK SALES</b>	
Sold Dairy Replacement Animals	11
Sold Kids for Meat after 1 month or more	6
Sold Kids for Meat within 3 days of birth	8
<b>MILK SALES</b>	
Shipped to Kolb-Lena	7
Shipped to Mt. Sterling	1
Shipped to Mont Chevre	6

<sup>8</sup> Did not report whether herds were split into seasonal and non-seasonal, or if the majority were non-seasonal.

