HOARD'S DAIRYMAN

Calves on autofeeders cost a little more

A survey of Midwestern farms compared rearing costs of individually fed calves to those in group housing with automated feeding systems.

by Ryan Sterry

IT IS well documented that calf and heifer rearing costs are one of the largest expense categories on the dairy farm. Producers face a great balancing act in controlling these costs while also optimizing the potential production and profitability of the herd's next generation.

Since 1999, University of Wisconsin (UW)-Extension agriculture agents and specialists have periodically collected farm level data to benchmark calf and heifer raising costs. A new twist for the 2017 data collection was to evaluate the costs and labor efficiencies associated with raising calves on Wisconsin and Minnesota dairy farms using an individual feeding system (bottle or bucket) compared to those using an automated milk feeding system.

Data from 24 Wisconsin and two Minnesota dairies was entered into an ICPA (Intuitive Cost of Production Analysis) model developed by former UW-Extension Dairy Scientist Pat Hoffman. The model estimates replacement rearing costs and labor efficiencies. To avoid variation in calf raising cost calculations solely due to the price of some common inputs, some prices were preassigned. Those values are listed in the table below.

For this study, a calf was defined as an animal from birth until it was moved into group housing or out of the automated group feeding pen. Fifteen farms in the study utilized an automated feeding system while 11 used individual feeding systems.

Automated or individual?

In the study, the overall cost to raise a calf in an automated feeder system was slightly higher than in individual feeder systems, at $431.19 per calf versus $419.62 per calf. This included variable and fixed costs plus an assigned value to unpaid labor and management. It did not include the value of the calf.

Days on feed (birth to moving) were a little lower for the autofed calves, coming in at 67.85 days compared to 70.32 days for farms using individual feeding. On a per-day basis, the cost for individually-fed calves was $5.84 per day. It was $6.35 for farms using automated feeders (Figure 1).

It is worth noting that the overall cost per calf isn't as different as one might expect it to be between the two systems. UW-Extension Dairy Specialist Matt Akins explained that there was a much wider range in cost per day on autofeeder systems ($4.12 up to $10) compared to individual fed farms ($4.73 to $6.92). That, along with the large variation in number of days on feed, is why the cost per day and cost per calf don't line up exactly. In the end, the calves fed on autofeeders came with a slightly higher price tag.

As could be expected, labor and fixed costs differed between the systems. Paid labor and management were $116.52 for each calf fed individually and $74.13 for calves on an automated feeder. When the opportunity cost of unpaid labor and management was included, that difference grew to $172.45 per calf for individual feeding systems and $103.74 per calf for autofeeder farms.

As anticipated, fixed costs for housing and equipment were greater for farms with autofeeders, at $77.69 per calf. Individually housed calves had fixed costs of $40.89.

Feed costs also varied between systems. The average feed cost per calf for autofeeder farms was $202, compared to $173.53 for individually-fed calves. This difference in cost can be attributed to higher milk consumption by autofed calves.

There was a mix of farms feeding milk replacer and whole milk across both systems. Calves on autofeeders consumed more milk or powder in this dataset, with the average being 134 pounds of milk replacer or 921 pounds whole milk. Individually-fed calves consumed an average of 80 pounds of milk replacer or 855 pounds of whole milk. This elevated milk consumption, while more costly, has been shown to improve first lactation production and is often a reason why farms choose to install automated calf feeders.

Feed is the greatest expense

Feed was the largest cost category for either system. For farms feeding calves individually, feed (liquid, starter, and forage) comprised 39 percent of expenses. For automated farms, feed was 47 percent of expenses. In the 2013 study, feed represented 45 percent of the total expense to raise a preweaned calf.

Labor was the second greatest cost across systems, but again that varied within systems. Paid labor and management for individual feeding systems represented 28 percent of costs. It was 17 percent of costs for automated systems. When a monetary value was assigned to the opportunity cost of unpaid labor and management, labor represented 41 percent of the costs for individually-fed calves and 24 percent of costs for autofeeders.

Other expenses factored into the total costs were housing and equipment and other variable costs. Dollar values for each expense category are shown in Figure 2.

Pasteurized milk cut costs

We also took a closer look at liquid feeding costs. When feeding higher milk amounts, the use of pasteurized whole milk helped to reduce expenses, with an average cost of at $1.34 per pound for milk replacer powder and 72 cents per pound of whole milk solids. The pasteurizer cost ranged from $1 to $15 per calf.

Using an average of $7.50 per calf, the additional cost per pound of solids equals 5 cents per pound of whole milk solids. The total cost is 77 cents per pound of pasteurized whole milk solids, or per gallon of pasteurized whole milk (12.5 percent solids). Seven of the 12 operations using whole milk also fed a balancer. An average of 22 pounds of balancer powder was fed in addition to whole milk.

It is worth noting that wide variation existed among farms. Due to space, only averages are presented here. A deeper analysis would also consider the range in values across farms. The full ICPA report, along with an archive of past reports, can be found online at https://fyi.uwex.edu/heifermgmt/.

This information can be used to generate benchmarks for calf raising costs that are hard to come by. To truly understand your own cost of production, though, you should calculate your farm's actual input costs.

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Figure 1: Cost per calf per day

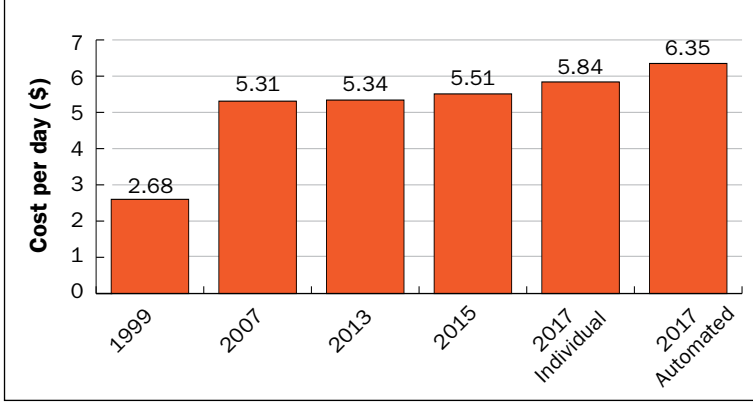
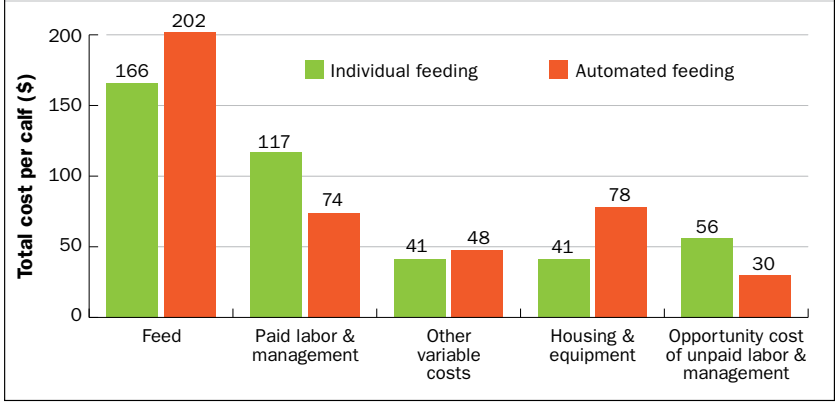


Figure 2: Total cost per calf



Key Assumptions

Item	Assumption
Calf value	$200
Labor (paid and unpaid)	$13 per hour
Management (paid and unpaid)	$22 per hour
Interest rate	4.5%

Housing:	Assumption
Homemade calf hutch	$200
Purchased calf hutch	$400
Greenhouse barn	$10 per foot
Post frame calf barn	$15.50 per foot

Feed:	Assumption
Unsalable waste milk	$8 per cwt.
Salable milk	$17 per cwt.