THE BEST CALF BARNS maximize calf health and labor efficiency.

Design your calf barn with time in mind

Consider labor needs when planning for new or remodeled calf housing.

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DAIRY producers all over the world have started to focus on the calf raising period because our understanding of its effects on farm economy and lifetime milk production has expanded. A well-grown heifer can be inseminated earlier and, therefore, starts to produce income faster. Research has also shown that faster growing calves have higher milk production in their first lactation.

There is a lot of variation in how we take care of and feed calves. There is also a huge difference in how much time is spent on calf chores. In 2014, we measured labor hours in robot barns, on farms with 50 to 480 cows, averaging 135 cows. There was an article about this survey titled "Time is money in a robot barn" in the May 25, 2016, issue of *Hoard's Dairyman* on page 355.

Part of the survey was also to measure time spent on different tasks with calves. Most of the calves on the surveyed farms were housed indoors. On average, total time per calf per working shift was 3.4 minutes. This varied from 0.4 minute to 11.5 minutes per calf.

Most of the time spent with calves was feeding milk or milk replacer (preparing the milk, heating, moving, and feeding). On average, for the surveyed farms this was 1.9 minutes per calf per feeding, from 0.3 minute to 7.8 minutes. Also, cleaning the feeding equipment took a lot of time, on average 0.5 minute per calf per feeding.

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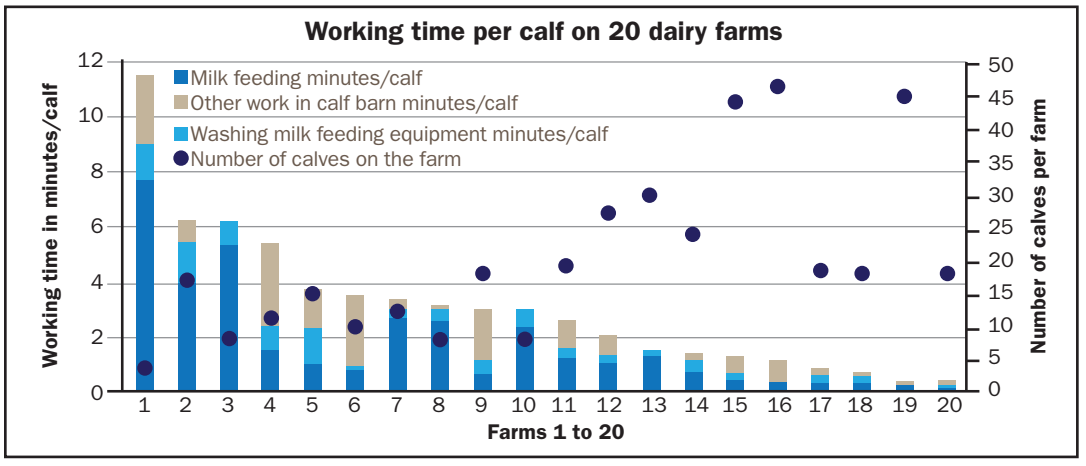
Every dairy is different

There are plenty of reasons for this variation in labor needs. Many surveyed farms had calves in old buildings, sometimes very far away from the cow barn. Waiting for the milk to be heated with an individual bucket feeder and delivering the milk individually in small portions by hand took a lot of time. This is especially true when the place the milk was prepared was far away from the calves.

On some farms, an employee had to stand next to the calf pen to make sure each calf got its share of the milk from a group bucket with nipples and that took a lot of time. Particularly in old barns, bedding and scraping manure alleys by hand was also very time consuming. As can be assumed, more calves increased labor efficiency, but on some of the smaller farms, labor efficiencies could be seen.

It is essential to think which work is productive and which is not productive. Waiting, walking, and doing too much by hand are actions to avoid. Each farm should look at idle moments when thinking about improving existing systems and facilities. In some situations, waiting can be used to observe animals, which is productive work.

Saving just 30 seconds per calf per feeding with 30 calves is 15 minutes per feeding time. If feeding calves 3x per day, that would save 45 minutes per day and 270 hours per year. At $15 per hour, those hours are worth approximately $4,000 a year. Time is money.



Delivering each meal

When designing a new calf barn, in order to get optimal labor efficiency, it is important to go through the whole calf feeding process from collecting the milk from the robot or milking parlor until it reaches the calf's mouth. Evaluate all phases in this process, eliminating nonproductive work and complicated interphases.

For example, do we need a buffer tank to cool down whole milk before feeding the calves (which means one more thing to wash, and so forth)? Or do we want to make the process more simple for employees and feed all our calves with whole milk instead of whole milk and replacer? Ask yourself questions to weed out unnecessary steps.

One of the most important things with calves is how you feed them. Will you have an automatic milk feeder or use conventional feeding with a bucket or bottle? There are lots of different products and solutions to both of these systems. It is not an easy choice, and both systems have their benefits and limitations.

For conventional feeding, milk taxis have been a big step forward. A milk taxi warms the milk and moves it with ease. Dosing can be preset, and a nozzle can fill each bottle or bucket. Washing is very quick. When using a good-quality milk taxi, a lot of labor saving and precise management advantages can be achieved.

Automatic feeders eliminate the need to deliver milk. On the other hand, automatic feeders need continuous washing and maintenance.

If calves are moved to a group pen with an automatic feeder, you need to teach them. Typically in automatic calf feeding barns, groups are big because the feeders are expensive. Big groups mean competition, and that means more stress, which especially impacts weaker and smaller calves. As an end result, weight gain can be poor and health issues can occur.

Avoid overcrowding and strive for smaller groups with four, six, or eight calves. After a two-week period in an individual pen, calves can be moved to a group pen.

Another option is an all in-all out pen with headlocks and buckets with nipples. With headlocks, you can be sure each calf drinks its own milk and doesn't steal from another calf. It is also a way to check that calves are okay. If a calf doesn't drink, you can keep it in the headlock and do any needed actions. With automatic feeders, you need to observe calves in a different way.

Weaning, on the other hand, can be programmed in an automatic feeder. In the milk taxi system, it requires good instructions for employees.

Short distances and straight lines

When our team designs calf barns, we always try to implement labor efficient ways of working. This means short distances, straight lines, and routines that can always be done with a machine, like a mini loader or skid steer if possible. In addition to that, there are many other details that have an affect on successful calf housing and management. For example, there needs to be lots of well-bedded areas, and fresh air must be provided with properly designed, positive pressure air tubes.

There is not one optimal system but many alternatives for calf housing to choose from, depending of the farm's goals and restrictions. Decisions being made in the design phase are much cheaper than changes later on and have a huge impact on production and profitability.

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