



AUTOMATIC MILK FEEDERS

Learn how to make them more inviting and positively impact the future production of your herd

Automatic milk feeders (AMF) are becoming a more popular choice among dairy producers for rearing calves. Some benefits of automatic milk feeding systems include:

- Calves have access to a constant warm supply of milk in smaller amounts (as they would from the cow);
- Precise control over feed intake of individual calves;
- Individual consumption can be monitored to identify sick calves early;
- The AMF can be programmed to wean calves gradually based on set criteria;
- Time spent mixing milk and cleaning bottles or pails can be spent observing and managing calves.

However, there are still challenges with using an AMF—one of those being calves need to learn to use and interact with the feeder. Calves that have a harder time learning to use the feeder could have decreased milk consumption, which could potentially lead to slow-growing or sick calves.

Many AMFs have a feeding stall to reduce competition at the teat(s). The stall prevents calves from pushing a drinking calf out of the way. When the calf in the stall is done drinking, it backs out of the stall, allowing the next calf to enter. The stalls come in many designs but are usually an open-sided gate style, or a solid-sided panel style.

A University of Guelph study, financed under the Dairy Research Cluster, compared how stall design affected calf interactions with automatic milk feeders. Tanya Wilson, a graduate student leading the project under the supervision of Dr. Derek Haley, compared two stalls commonly used with the feeders to see if calves adapted to one faster than the other. Researchers hypothesized calves would approach an open-sided gate stall design faster than one made of solid panel sides, because they could see older calves using the milk feeder through the gated sides.

A total of 147 calves born at the Elora Livestock Research and Innovation Centre - Dairy Facility were enrolled in the study at four days of age and introduced to group housing with an AMF. They were allowed to suck on the trainers' fingers and were led into the AMF stall, with each calf assigned to one stall design. Calves were scored as easy, moderate or difficult to train based on how willingly they entered the feeding stall and fed from the teat on their own.



➤ **TOP PHOTO** shows an automatic milk feeder (AMF) used for training calves. Solid panel sides are attached to the stall that was built with the automatic feeder. These panels can be removed, leaving the open-sided gate stall design. The photo on the right shows University of Guelph graduate student Tanya Wilson training a calf to use the AMF with the solid panel stall design.

Data from the feeder, as well as video footage, were collected for 72 hours after calves were introduced to determine how long they took to approach and drink from the feeder, and how often and how much milk they consumed.

Anyone who has tried to train calves to use an AMF knows some will take to it very quickly and some will be much harder to train. For these calves, stall design didn't make a difference in how well they adapted to the feeder. However, for calves that were average learners, meaning those that didn't take to it right away but didn't require a lot of training, stall design played a part in how well calves acclimated to the feeder once their training period was over.

Wilson found average-learning calves assigned to the gated stall design took twice as long to approach the feeder for the first time after training compared with calves using the solid stall. They also took longer to lick or bite at the nipple and drink voluntarily. Calves using the gated design took longer to successfully use the feeder, and also consumed an average of 3.18 litres less than calves on the solid style over the 72-hour observation period.

Preliminary evidence shows specific features of AMF stall design can impact how well some calves learn to use them. Producers should keep



in mind stall design and possibly other features of AMF technology might affect how calves transition to feeding in a group with an AMF.

Encouraging calves to drink as much milk as they are allowed during the first critical weeks of life is key to promoting growth in the pre-weaned period, as well as future milk production. This research demonstrates AMF stall design isn't a decision that should be made lightly, but a decision that could influence the future production of your herd. 🐄



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