Automatic Calf Feeder Management

Disclaimer: The following material presents general guidelines; each farm should develop their own Standard Operating Procedures.

Automatic Calf Feeder Basics

Individual calf hutches have historically been the industry's preferred management system for pre-weaned calves. This management system is highly labor intensive and allocates much of the labor attention on feeding and cleaning up after each individual calf. Automatic calf feeding systems have been introduced to reduce physical labor while emphasizing labor on monitoring and managing calf health and performance on a more flexible schedule. Increasing the feeding rate and the number of portions fed per day may improve body weight gain, increase starter intake, improve feed efficiency, and increase survival of calves through their first lactation. Feeding calves in groups also allows calves to express some natural behaviors that cannot be expressed when they are housed individually.

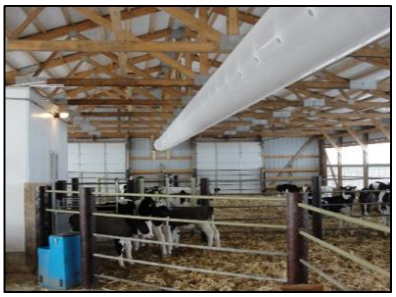
- Automatic calf feeders consist of a self-contained unit which heats the water, dispenses a programmed amount of milk replacer, mixes the milk replacer and water in a container from which the calf can suck it out through a nipple feeding station.
- One mixing station will handle up to three or four nipple feeders. Each nipple feeder will feed approximately 20-30 dairy calves depending on the age of the group. Current management practices suggest less than 20 calves per nipple feeder is ideal for proper management.
- Automatic calf feeder software can monitor milk intake of individual calves, number of visits, number of unrewarded visits, as well as the rate of milk consumption. Any changes in individual calf feeding behavior are alerted to the manager to diagnose illness or failure to adapt to the system.

Facilities

All facilities housing young calves requires a clean, dry, comfortable resting area.

- A minimum of 40-45 square feet per calf is required, inadequate space per calf is associated with more health issues.
- Adequate ventilation including curtains, fans, and positive pressure tubes is required for good air hygiene.
- Group-housing allows for early socialization which is important in social development as the calf matures into a cow, however some negative behavior can occur such as cross-suckling, competition around the feeder, and dominance behavior.
- It is still necessary to feed the calves by bottle in individual pens for 3-10 days.
- Calves will need to be trained to use the feeders; this includes gently leading them to the nipple when they are moved into the group housing. This usually takes a few feedings where employee goes into the pen and leads them to the nipple.

- Calves should always be grouped by age and size for optimal growth, no more than two weeks difference in age.



Nutrition

A well-managed colostrum program must be in place and include factors of quality, quantity, quickness, and cleanliness. Adequate nutrition during the feeding period is critical for optimal growth and health.

- In conventional fed calves (pails or individual bottles), calves are fed limited amounts of milk replacer 2-3 times a day. Increasing the feeding rate and the number of portions fed per day may improve growth rates and body condition of calves during the milk-feeding period.
- Adequate nutrition during the feeding period is critical for optimal growth and health.
- Milk allowances range from 1.5 to 3.7 lb of milk solids per calf per day. On a volume basis, this amounts to 5.5 to 12 L of liquid per day. Most farms offer 8 L per calf per day as peak amount, starting with 4 to 6 L per day. Calves will easily drink 10 L per day.
- Calves are fed 1.8-2.5 L per feeding over four to six feedings per day; about one to two hours between each feeding. Calves will spend about 30-50 minutes/day at the feeding station. Calves will not consume much, if any, for about six hours during the night.
- When milk replacer is used, powder is diluted with water to approximately 13 to 15% solids. It is important that the feeder is calibrated routinely and all parts kept clean so that powder flows properly and dilution is consistent.
- Calves will spend an average of 60 days in the auto feeder if assumed they come in at 5-10 days of age.
- Weaning (the process of taking calves off full milk to full feed and water) can occur automatically at a pre-set age by reducing the number of feedings per day and the amount of milk or milk replacer offered over a predetermined period of time, usually one week.
- The weaning process usually starts at about 49 days (7 weeks) and wean by 56 days (8 weeks) or when the calf is consuming 2-3 pounds of calf starter for 2 days.

Health

When calves are group housed, contagious disease may affect more calves, requiring close monitoring and daily followup of all animals.

- Check for animals entitled to feed
- Monitor drinking speed, a slower drinking speed may indicate calf is or becoming ill.

- Monitor number of visits, not enough visits may indicate calf is or becoming ill; too many visits may indicate milk allocation may need to be changed.
- Check for alarm animals.
- Reduce other stressors at the time of weaning (dehorning, vaccinating, group change)

Cleaning and Sanitation

Cleaning of the equipment and its various components is one of the most important keys to making an automatic feeder work successfully.

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- Closely monitor and clean the powder and additive outlets, calibrate powder and additive delivery, monitor and replenish cleaning solutions, examine water supply, inspect the delivery hose and nipples.
- Replace hoses and nipples regularly (biweekly and daily).
- Use the recommended cleaner to remove biofilms from the surfaces.
- Current circuit/mixer cleaning recommendations includes a combination of three times per day mixer/heat exchanger cleaning before major feeding times, along with once a day circuit cleaning after major feeding times to reduce bacterial counts in milk.
- Circuit cleaning involves hand cleaning of the nipple and machine cleaning of the lines and internal workings of the feeder which must be implemented by the operator. The mixer/heat exchange cleaning is automated and involves cleaning of the element used for heating milk if used and the mixer.

Summary

Automatic calf feeding systems may reduce physical labor and provide a more flexible employee schedule, however overall labor usually is not reduced; more time is spent monitoring calves, cleaning, and reviewing data. Well managed group housed calf rearing systems can provide advantages for both calves and producers. Skills needed by employee to manage the automatic calf feeding system include being a good observer, paying attention to detail, likes and can manage calves, can interpret and use information, make decisions, and set protocols for the calf program.

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