

Management of Fresh Dairy Cows Critical for a Dairy's Profitability



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Feeding and management programs for dairy cows the first 2 to 4 weeks after calving have a direct and long-term impact on their health, milk production, and reproductive performance, and thus a dairy farm's potential profitability. When managing these recently fresh dairy cows, two key underlining concepts impact the design and implementation of their feeding and management programs.

- First and foremost, these cows need to be managed and fed diets that maximize dry matter intake as quickly as possible to minimize the amount of time and the degree of negative energy balance that occurs during early lactation. By maximizing dry matter intake during this time frame, less body fat stores are mobilized, resulting in lower blood concentrations of non-esterified fatty acids (NEFA) and ketones (e.g., beta-hydroxybutyrate; BHBA) and a liver that is more capable of making glucose to support milk production.
- Second, early disease diagnosis and intervention help minimize the detrimental effects on dry matter intake and may lower the risk of culling a cow from the dairy herd.

As we continue to learn more about this critical time period, we can refine management and feeding practices for these dairy cows to improve profit. Outlined are areas that impact milk production, health, and reproductive performance of fresh dairy cows.

Pre-Calving Feeding and Management Practices Impact Performance of Fresh Cows

Feeding and management practices for dry cows and late lactation dairy cows directly impact the health, milk production, and reproductive performance after calving. Key

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feeding and management practices pre-calving that impact dry matter intake and health of fresh cows include:

- Providing adequate but not excessive amounts of energy. Overconditioned dry cows eat less before calving, which can increase the likelihood of early lactation metabolic disorders, such as fatty liver and ketosis. These metabolic disorders alter metabolism of the cow such that milk production, health, and thus reproductive performance are compromised.
- Minimizing stress on close-up dry cows (cows within 3 weeks of expected calving date) by
 - providing 36 inches/cow of feedbunk space;
 - providing at least one freestall per cow or 100 square feet of resting space;
 - using shade, fans, and sprinklers to reduce heat stress;
 - housing first-calf heifers separately from mature cows, when possible, and
 - minimizing movement of cows/heifers between groups.

For more information on feeding and managing this group of cows, see article titled ["Management Practices before Calving Help Prevent Fresh Dairy Cows from Becoming Losers."](#)

House Fresh Cows Separately from the Remainder of the Milking Herd

When possible, housing dairy cows for the first 2 to 4 weeks after calving in a separate group allows one to target management time, labor, facilities, feed resources, and other financial resources for this group of cows. Changes in diet and housing create additional stress besides the stress associated with calving. With additional stress, blood concentrations of cortisol and other stress hormones increase and dry matter intake may decrease. Thus, consistent and specialized management for fresh dairy cows is critical to reduce stress and includes the following:

- Fresh cows should be housed in facilities that provide at least 30 inches of bunk space, adequate fans and sprinklers to reduce heat stress, and adequate resting space with at least one freestall or 100 square feet of resting space per cow. Concrete alleys should be grooved to prevent cows from slipping. Time spent in the holding pen should be kept to a minimum, but no longer than 2 to 2.5 hours daily. If possible, fresh first-calf heifers should be housed separately from mature cows. If adequate facilities are not available for a separate fresh group of cows, these cows are best put directly into the milking herd.

- Research has shown that fresh cows milked twice as often (4 times versus 2 times daily or 6 times versus 3 times) for the first 21 days of lactation give more milk during this time period and throughout the entire lactation. This improvement in milk production continues throughout lactation, even after the additional milkings are suspended at 21 to 42 days in milk. Therefore, increasing milking frequency of fresh cows to 3 to 6 times per day may prove profitable for a dairy herd, but remember time in the holding pen must be less than about 2.5 hours per day.
- The immune system of fresh cows is naturally depressed. Thus, fresh cows should NOT be housed with diseased cows, especially those with mastitis or other contagious diseases. Freestalls should be kept clean and well-bedded. Composted bedded pack barns should be maintained for proper composting temperatures and to prevent excessive moisture in the bedding. Because of the depressed immune system, post-calving vaccines should be delayed until at least 10 days post-calving or at the direction of your veterinarian.

Tailor Feeding Programs to the Needs of the Fresh Cow

Diets for fresh cows should be tailored to meet their nutritional needs. If possible, separate fresh cow rations should be fed that meet the following objectives:

- Diets should contain high-quality forages formulated to supply moderate amounts of fiber (typically 21% to 23% forage NDF) to maintain rumen fill and decrease the risk of a displaced abomasum. Diets should contain adequate amounts of effective fiber, and the particle size of these diets should be such that they stimulate cud chewing and rumen fill and decrease the ability of these cows to sort out long forage particles.
- Diets should contain slower-digesting starch sources, such as dry shell corn, instead of wheat, barley, or high-moisture corn stored for more than 6 months. The slower-digesting starch sources will minimize the risk for decreases in rumen pH and overloading the liver with glucose precursors, thereby reducing the risk for decreases in dry matter intake.
- Feeding supplemental fat to fresh cows should be kept at low inclusion rates (maximum of 1% to 2% of dietary DM) because of the risk for decreasing dry matter intake. If supplemental fat is fed, it should be ruminally inert but have a high digestibility. Some supplemental fats provide specific fatty acids of interest to alter tissue metabolism and may be helpful at this time. For example, some studies have observed positive responses of feeding unsaturated fatty acids (e.g., linoleic acid-C18:2) to pre-fresh cows to improve uterine involution.
- Some feed additives, i.e., ruminally protected choline and monensin, would be expected to be the most effective and cost efficient during this time frame. Thus,

the use of various feed additives could be targeted for use in the fresh group fed a separately formulated diet.

- Feeding management: Fresh cows should have fresh feed available 22 hours daily. The amount of feed refusal left should be greater than those for other lactating cow groups. This group should be fed with at least a 5% refusal amount at the next feeding with uneaten feed removed daily. Fresh feed should be available on return from the milking parlor. Feed should be pushed up often so that cows always have feed readily accessible.

Early Detection of Disease

Keen daily observation and taking a cow's body temperature for the first 10 days post-calving can help in the early diagnosis of diseases. Cows with metritis will have elevated body temperatures and should be treated according to procedures developed after consulting with your local veterinarian. Cows should be observed or technology closely monitored to make sure they are eating and ruminating (chewing their cuds). If problems are detected, they should be restrained to allow for a more complete visual appraisal of their health. When observing cows restrained with lock-ups, make sure the cows are restrained less than 30 minutes daily. Cow-side tests allow one to measure the concentration of ketones (BHBA) in the blood (Precision Xtra Glucometer), milk (Keto test), or urine (Keto stix) and determine whether cows are clinically or subclinically ketotic. For blood samples taken within 1 week of calving, fresh cows with samples testing greater than 0.8 to 1.0 mmol BHBA/L are considered subclinically ketotic and clinically ketotic when concentrations are greater than 1.2 to 1.4 mmol BHBA/L (1 mmol BHBA = 10.3 mg/dL BHBA).

Precision technologies have been developed whereby body temperature, lying times, feeding times at the bunk, and rumination times are monitored, electronically recorded, and activity reports generated to identify cows that fall outside the normal ranges expected. These technologies identify cows needing further observation. These technologies help good cow managers become even better cow managers and further can help detect health issues earlier. These technologies do not replace the need for managers to observe cows on a daily basis but will help target those cows that definitely need attention.