

Wanted: High-Producing, Healthy Fresh Cows with Excellent Reproduction

If ever a dairy producer were to post a “wanted” poster for the ideal dairy cow, she would produce large volumes of high-quality milk, remain healthy through the most trying time of her life—the transition period—and be able to be bred back in a timely manner. However, these three factors—production, reproduction and transition—often translate to conflicting performance in the fresh pen, which has direct and defined implications on future reproductive performance.

When it comes to the fresh cow, we are focused on two major areas to ensure reproductive performance is optimized: the transition period and uterine health. Research continues to demonstrate just how critical the transition period—the three weeks before through the three weeks after calving—and the status of the uterus are for future reproductive success.

Start From the Very Beginning

One of the most important things to remember is how cows perform throughout lactation is often the result of many events that took place months prior. For example, when a cow is diagnosed with a case of metritis 10 days after calving, the environment, ration and behavior within the three weeks before calving is related to the incidence of disease. Reproductive health today is often the result of what happened weeks or months ago.

With multiple changes taking place in the three weeks before calving, including declining dry matter intake (DMI), and environmental, social and feed-related alterations, it’s no surprise that the dairy cow enters lactation with the odds against her. Then, major physiological changes including calving and onset of milk production join together with the ongoing environmental stressors. This can ultimately lead to a perfect storm—high levels of stress, high levels of production and, ultimately, high incidence of disease.

To reduce incidence of transition-related diseases, researchers have identified risk factors that directly impact performance, including:¹

- Poor nutrition
- Compromised immunity
- Body condition—too low or too high
- Reduced feed intake up to two weeks prepartum
- High standing time
- Low social status

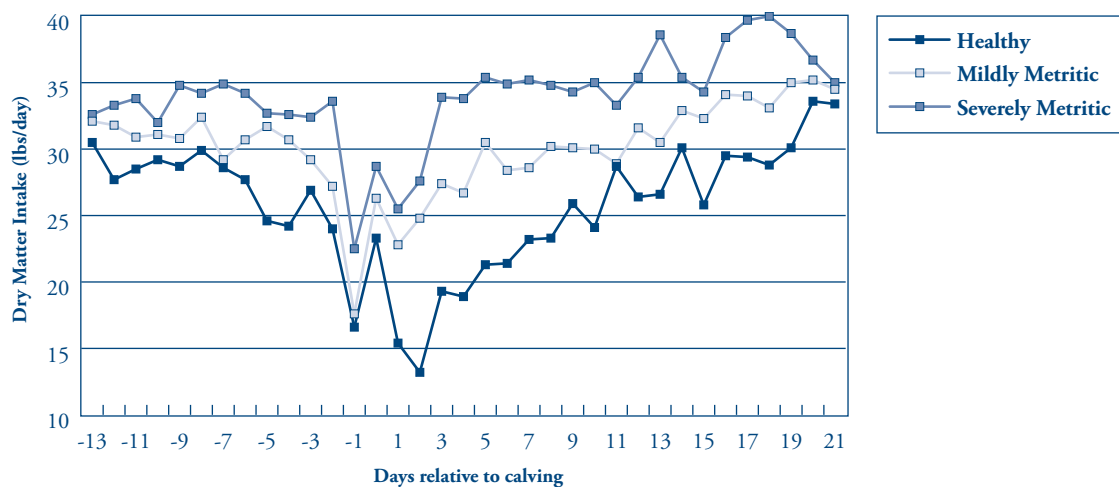
Spotlight: The Common Transition Infection

The most common postpartum diseases include milk fever, ketosis, mastitis and metritis. In the short term, these diseases cause cows to not feel well, reduce DMI, produce less milk and require treatment. The long-term impact is much greater, including large losses in production, declines in reproductive performance and, potentially, culling. Prevention rather than treatment is the best medicine.

Metritis is the disease that has the largest impact on future reproductive performance. The clinical form of the disease impacts as much as 20 percent of the herd and is known to increase average days open by 30 days. Subclinical endometritis, however, may have an even greater impact than clinical cases. While it too can increase days open by about 30 days, it may affect up to 50 percent of the herd without the dairyman even realizing it.

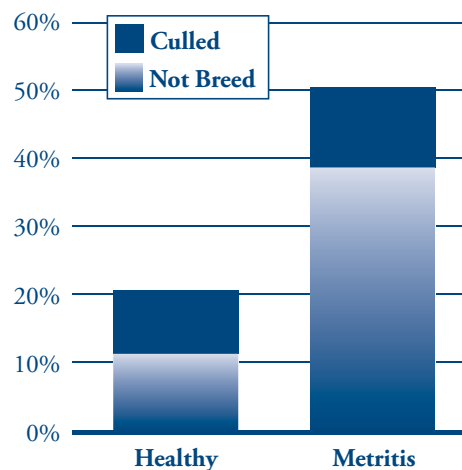
Negative energy balance is often a key reason for the onset of metritis. Prepartum, maintaining DMI directly impacts the incidence of metritis. As the graph below shows, cows that show a decline in DMI prior to calving are more likely to experience metritis than cows with a decline in DMI that is less severe.

Figure 1. Dry matter intake prepartum indicates metritis status postpartum²



And cases of metritis directly impact future reproductive performance. As new data shows, cows with metritis are less likely to get pregnant in future lactations and have a greater chance of being culled.

Figure 2. Healthy cows versus cows with metritis: percent open and/or culled¹



Making Adjustments to Reduce Disease, Improve the Transition Period

To offset the challenges transition cows face, the environment becomes even more critical. The ideal environment should minimize risk factors identified to influence disease and lameness. Some of these recommendations include:

- **Keep regrouping of animals to a minimum.** Minimize regrouping animals as calving approaches, as cows entering new social groups often eat less and are displaced from the bunk by other cows with higher social status.
- **Provide adequate bunk space.** Provide at least 30 inches or one headlock per cow. Overstocking increases competition for feed, which can reduce the time cows spend eating and increase the time spent standing.
- **Feed frequently.** Delivering fresh feed entices cows to eat more. The more often they eat, the more likely cows are to reach target DMI goals.
- **Keep bedding and stall areas clean.** Cows that spend the majority of their day standing during the transition period are at risk for lameness after calving! Encourage lying time by providing dry, clean surfaces and rebedding frequently.
- **Maintain soft and dry standing surfaces.** A soft, dry standing surface can provide better hoof health, reducing the incidence of lameness in fresh cows.
- **Monitor fresh cows.** Once cows join the milking herd, the next step is monitoring fresh cows for long-term success. This means monitoring DMI, stocking density, cow comfort and incidence of disease. By continuing to monitor these key areas in the fresh pen, you can more effectively diagnose disease early and create plans to reduce the factors that impact disease in the prefresh pen.

To help develop the low-risk, high-producing cow in the herd, the environment provided and the care delivered must meet each animal's requirements. Increasing the number of healthy cows joining the milking herd translates to cows with improved uterine health, ready to be bred back successfully.

1. Proudfoot K, A.G. von Keyserlingk M. Optimizing the transition cow environment: implications for behavior and health, in *Proceedings*, 2010 Dairy Cattle Reproduction Council; 87 – 92.
2. Huzzey et al. Parturition Behavior and Dry Matter Intake Identify Dairy Cows at Risk for Metritis. 2007, *J Dairy Sci* 2007;90:3220-3233.
3. Overton M. Managing and monitoring fresh cows for improved reproductive success, in *Proceedings*, 2010 Dairy Cattle Reproduction Council; 13 – 24.