

Dry period plays role in mastitis

By Ynte Schukken

Proper dry cow management is essential to a dairy's mastitis control program

The dry period offers a valuable opportunity to improve udder health while cows aren't lactating. On the other hand, both the beginning and the end of the dry period represent times of increased risk of intramammary infection.

The rate of new intramammary infections is significantly higher in the dry period than during lactation. Specifically, during the first three weeks of the dry period, the new infection rate is higher than during the preceding lactation.

A second period of increased susceptibility for infection is in the weeks prior to calving. We now know that many infections obtained in the dry period show signs of clinical or subclinical mastitis in the first weeks after calving. We can, therefore, use the immediate post-partum data to evaluate the quality of dry period management.

Mastitis prevention

The objective of mastitis management during the dry period is to have as few infected quarters as possible at calving. To reach this objective, a dairy herd must meet two important conditions:

1. Eliminate the infections present at the time of drying off.
2. Minimize new intramammary infections during the dry period.

If you achieve these two goals, udders will be free

of infection at calving and can be expected to produce a maximum amount of low cell-count milk in the subsequent lactation.

Proper dry cow treatment will reduce existing infections at the time of dry-off. A good dry cow treatment protocol consists of:

- Appropriate choice of antibiotics.
- Appropriate application procedure.
- Excellent hygiene during and after treatment.

The exposure of udders to environmental pathogens found in manure and bedding is likely to continue throughout the dry period, resulting in intramammary infections.

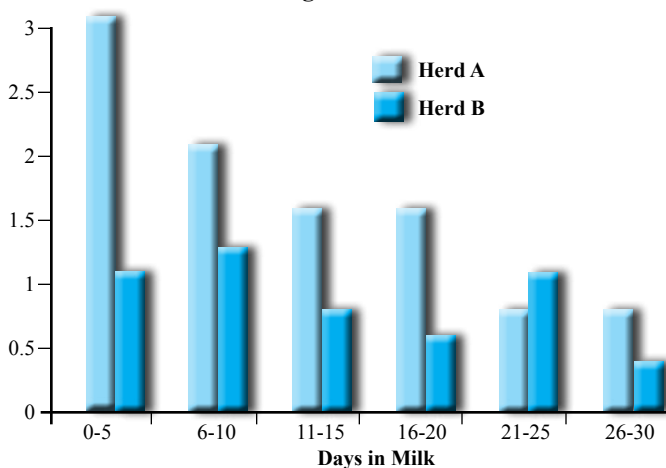
You can do these things to help minimize dry cows' susceptibility to these infections:

■ A well-balanced diet during the dry period, and particularly during transition, is important. Balancing energy content, vitamins and minerals is essential for excellent dry cow health.

■ Use of teat sealers at the time of dry-off appears to reduce the risk of new infections during the dry period.

■ Providing dry cows with a clean, dry environment minimizes their exposure to environmental bacteria and helps reduce the new infection rate. In hot, humid and muddy conditions, heavy contamination of dry cow areas can result in a significant risk of new environmental infections in the dry period.

Figure 1. Percent of cows with a Linear Score over 4.0 in their first DHIA test after calving



Percentage is calculated for each test day in a year. In Herd A the percentage of cows calving with a Linear Score greater than 4.0 at the first test after calving is averaging 26%. In Herd B it's approximately 11%.

Dry period and mastitis

To evaluate the impact of the dry period on mastitis, it's possible to assess both the cure rate of existing infections and the risk of new infections.

To evaluate the cure of existing infections, cows with high somatic cell counts (SCC) before dry-off are evaluated again at the first test day after calving. Good dry treatment procedures result in a reduction of high SCC to below 200,000 cells per ml in at least 60% of those cows that were high before dry-off.

New infections during the dry period can be evaluated using both cell count and clinical mastitis information. Dairies with excellent dry cow management will have fewer than 15% of cows with high SCC at the first test day after calving. Also, less than 5% of



Good dry treatment procedures result in a reduction of high SCC in at least 60% of those cows that had high scores before dry-off.

these pens is relatively poor.

In summary, appropriate dry cow management is extremely important for the maintenance of optimal udder health. A dairy's dry cow management program should include the following components:

- Antibiotic therapy at the end of lactation. This is the most effective method to eliminate existing infections.

- Dry cow therapy and teat sealer. It significantly reduces the rate of new infections during the dry period.

- A clean, dry environment.

- A properly balanced ration. It helps to prevent new infections during the dry period.

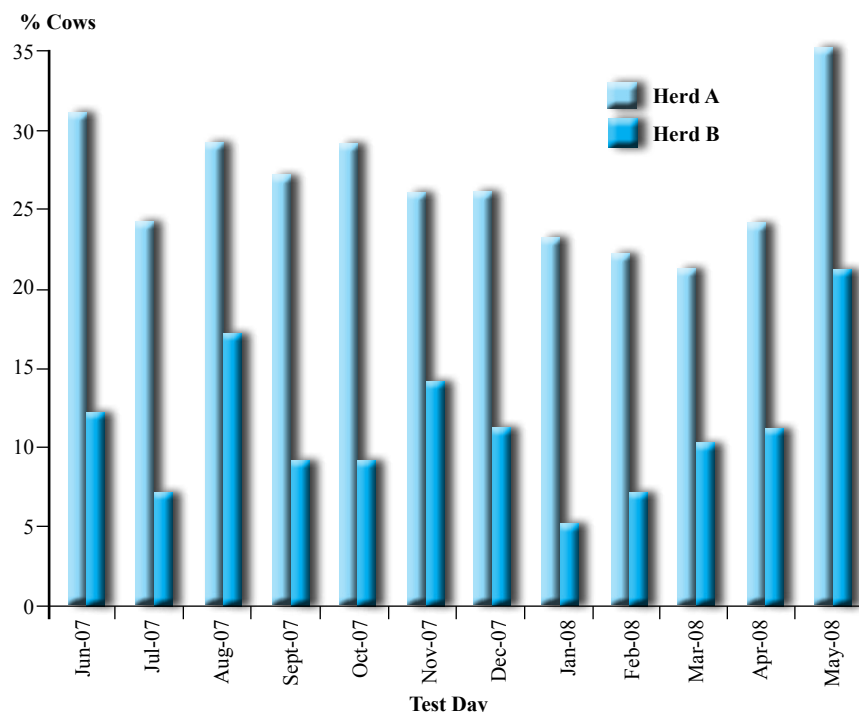
cows will show a case of clinical mastitis in the first 30 days after calving.

An example of these dry period evaluations are shown in Figure 1, Linear score after calving, and Figure 2, Clinical mastitis after calving. In both examples, Herd A has much better dry cow management. It has a dedicated dry cow facility where the owners pay a lot of attention to detail. Blanket dry cow treatment and teat seal is used; dry cow rations are balanced for energy, minerals and vitamins; and hygiene in the dry cow pen is outstanding.

Herd B has a number of pens allocated to dry cows, and hygiene practices in

Dairies with excellent dry cow management will have fewer than 15% of cows with high SCC at the first test day after calving. Also, less than 5% of cows will show a case of clinical mastitis in the first 30 days after calving.

Figure 2. Percent of cows with first case of clinical mastitis in first 30 days of lactation



In Herd A approximately 9% of its 1,583 cows had clinical mastitis. That's 144 cases. Herd B, with 586 cows, had 24 cases of clinical mastitis, or approximately 4% of the herd.

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QMPS is a program within the Animal Health Diagnostic Center, a partnership between the New York State Department of Agriculture and Markets and the College of Veterinary Medicine at Cornell.

The QMPS staff of veterinarians, technicians and researchers works with New York dairies to improve milk quality by addressing high somatic cell counts, milking equipment and procedures, and milker training in English and Spanish. QMPS also conducts research and teaching programs.

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Dairy One is an information technology cooperative, providing DHI records services and herd management software to dairies throughout the Northeast and Mid-Atlantic region. A comprehensive laboratory network provides milk quality testing as well as forage, soil, manure and water testing.

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The next QM² newsletter will appear in the November issue of *Northeast DairyBusiness*.