Preventing Early Lactation Mastitis

There is nothing more frustrating than having a good (or bad for that matter) cow calve and get clinical mastitis during her period of peak production. Not only is it frustrating, it is also very costly, Jim Salfer, Extension Educator-Dairy, University of Minnesota Dairy Extension.

On a typical Minnesota dairy farm, total losses (decreased milk production, lower milk quality premiums, increased culling and death) from mastitis are about $200 per cow per year. Early lactation mastitis also affects reproduction. Research shows that cows with clinical mastitis before breeding remain open 44 days longer than cows without mastitis.

The dry period is a very high risk period for cows to get environmental mastitis infections. Estimations are that over 60 per cent of all new infections actually begin during the dry period (Figure 1). This is certainly the situation with these early lactation mastitis cases.

Dry Off Strategies

Preventing early lactation mastitis infections begins with the dry off procedures. Historically the recommendation to dry off cows has been to abruptly cease milking and dry treat. When this recommendation was developed, cows were not milking as much as our current cows, now common to be more than 70 pounds at dry off. Newer research suggests that we should consider rethinking this strategy, especially with high producing cows. One study demonstrated that there was a 77 per cent increase in the risk of a cow calving with mastitis for every 11 pounds of milk per day above 28 pounds that a cow was giving at dry off. Two other factors that may cause early lactation mastitis are that high producing cows are more likely to leak milk, and they are slower to form the keratin plug in the teat, which provides the physical barrier to prevent pathogenic organisms from entering the mammary gland.

If possible, there is a real advantage to lowering milk production before dry off. In freestall barns, consider making a small “dry off” pen or in tie stall barns, build a small box in front of the stall. Then, cows can be fed separately a low energy diet such as grass hay. Milk production will drop dramatically within a few days. You can also consider the strategy of intermittent milking (1x per
day) for a period of time before dry off. The ability to implement these strategies will vary depending on facilities, management and labor.

The standard recommendation that all cows receive an approved dry cow intramammary treatment at dry off continues. This helps to clear up any old infections and aids in the prevention of new infections during the early dry off period. A teat sealant should also be used. There are several external sealants (dips) and one internal sealant (OrbeSeal™) available. The major disadvantage of the dips is that they only stay on the teat for a few (4 to 6) days. OrbeSeal™ remains in the teat for the entire dry period. If used properly, these products have shown to reduce intramammary infections during the dry period 20 to 60 per cent.

**Minimizing Environmental Challenge**

Often dry cows and bred heifers are forgotten and neglected on farms. Dry cows require clean, dry, comfortable housing, especially during the first few weeks after drying off and the last couple of weeks before calving. Also, provide adequate bunk space and housing to minimize stress. In the summer, minimize heat stress by providing shade, fans and sprinklers.

**Maximizing Immunity**

All cows have decreased immune system function around calving time and are under increased stress because of calving—reasons cows are so susceptible to mastitis and other infections during this time. One way to minimize immune suppression is with good nutrition and feeding management. Work with your nutritionist to make sure cows have well-balanced diets containing high quality feeds. Also, provide adequate bunk and waterer space with high quality feed and clean water. Provide at least 28 inches of bunk space for pre-fresh cows and 36 inches of bunk space for fresh cows to encourage dry matter intake. Other factors that will minimize stress and encourage feed intake includes a comfortable, well-bedded environment with adequate resting space. Provide heat abatement and minimize grouping changes, especially the last three weeks before calving. Some herds are trying to create “all in - all out” close-up pens to minimize social disruptions around calving.

Work with your veterinarian to develop a vaccination program that maximizes immunity. Multiple doses of core antigen vaccines have been shown to decrease the incidence and severity of clinical coliform mastitis cases.

**Conclusion**

Most cases of early lactation mastitis begin during the dry period. By improving dry off strategies, minimizing the environmental challenges during the dry period, and strengthening the dry cow’s immune function, we can greatly decrease our early lactation clinical mastitis risk. This will result in greater profitability and less frustration.

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