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EXTENSION

Decreasing Mastitis in the Milking Herd

Mastitis is a costly disease to dairy cattle producers due to reduced production, cost of treatment, rejected milk, and the potential culling of animals attributed to their poor udder health. As of 2017, the average mastitis cost was approximately \$326 per case for primiparous cows and \$427 per case for multiparous cows. Because it is painful, mastitis is also an animal welfare issue. Therefore, proper management practices are required for both peak performance and optimal health.

Proper management in the milking parlor is essential to decrease mastitis within the milking herd. Mastitis is sometimes referred to as an intramammary infection (IMI), and this form of infection can be spread easily throughout the milking parlor if caused by contagious bacteria. Husbandry practices such as following proper milking procedures will minimize bacteria on the teat ends or sphincter that could travel to the udder. To reduce costs associated with the diagnosis of mastitis, preventive methods are crucial to the longevity of the animals within the herd.

Milking Procedure

A consistent and effective milking procedure can decrease mastitis rates by reducing each cow's chance of infection. Mastitis can be caused by contagious pathogens (passed from cow to cow by humans or contaminated equipment in the milking parlor) and environmental pathogens (passed through the environment like dirty stalls or muddy pastures). To stop the spread of contagious pathogens, using gloves and post-dip is important. To stop the spread of environmental pathogens, pre-dip is necessary. Follow these five steps to decrease the spread of mastitis in the milking parlor.

Wear Gloves

Bacteria can easily hide in the cracks and crevices of milkers' hands. Gloves can be changed as they get dirty or can be disinfected using teat dip or any disinfecting solution. Glove thickness, length, and material are important considerations. Research has shown that using gloves during milking time is associated with higher odds of eliminating existing IMI.

Pre-dip

Teat disinfection is one of the most important preventive measures to control mastitis. Studies have shown that pre-dipping with iodine-based solutions reduced intramammary infection. Iodine-based pre-dip solutions (0.50 percent iodine concentration) eliminate contagious and environmental pathogens that live on teat ends. Although iodine is the gold standard of pre-dip, there are other effective options such as chlorhexidine. To receive the full benefit of the pre-dipping solution's killing power, it should cover the teat entirely and remain on the teat for 30 to 45 seconds.

Forestrip

This process entails hand-milking two to three strips of milk from each quarter after pre-dip application and dwell time. Forestripping provides an opportunity for a milker to examine milk and look for flakes or clots, which can indicate clinical mastitis. Forestripping also helps stimulate milk letdown through the release of the hormone oxytocin. In addition to minimizing mastitis risk, forestripping can reduce milking time by increasing the milk flow rate, resulting in less time spent in the parlor.

Dry

Before attaching the milking unit, dry the teats to remove dirt and pre-dip solution. A downward motion is recommended when drying off individual teats. To ensure cleanliness, pay special attention to the teat opening. Use one rag or cloth per individual cow to prevent cross-contamination between cows within the milking parlor. Clean rags in a bleach detergent between milkings.

Post-dip

When the milking process has been completed, the teat opening will remain open for an hour after milking. Use a post-dipping, iodine-based solution or other effective method immediately after removing the milking unit. This decreases the amount of time pathogens are allowed to enter the teat canal. This step is crucial to decrease bulk tank somatic cell count and help kill pathogens that might have transferred from the milking unit to the teat.

Summary

- **Gloves:** Hands are a vessel for the transfer of contagious mastitis. The smooth surface of gloves allows for easy disinfection between cows.
- **Pre-dip:** Reduces the bacterial load of environmental pathogens on the teats. Iodine-based pre-dip solutions are highly recommended.
- **Forestrip:** Provides a visual analysis of the milk before milking and stimulates milk letdown.
- **Drying:** Removes debris and pre-dip from the teats. It is crucial to use one rag per cow.
- **Post-dip:** Provides protection for the teat ends that remain open after milking. Post-dip has been shown to decrease bulk tank somatic cell count.

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By **Allison Griffin**, Graduate Student, Agriculture, **Clay Cavinder**, PhD, Professor, Animal and Dairy Sciences, **Marcus McGee**, PhD, Assistant Clinical Professor, Animal and Dairy Sciences, and **Amanda Stone**, PhD, former Assistant Professor, Animal and Dairy Sciences.

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