AS1126 (Revised)

Mastitis Control Programs

Proper Milking Techniques

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Mastitis is an inflammation of the mammary gland. It usually is caused by bacteria that have penetrated the udder. These bacteria enter the udder through the teat end. They do not go from quarter to quarter without going out of the opening of one teat and into the opening of another.

Proper management of cows during and between each milking is required for maximum milk production and mastitis prevention. The economic loss from mastitis makes it the dairy industry's most problematic disease. The technologies to control and eradicate mastitis have been available for many years, yet bacteria still take thousands of cows out of production every year.

The goal of every mastitis-control program is to prevent bacteria from entering a normal and healthy mammary gland. This means that each step involved in proper milking procedures must occur at each milking every day for each cow in the herd. No exceptions or shortcuts are available for preventing mastitis.

Key Points

- Proper milking procedure is important.
- Milking wet udders will increase mastitis.
- Teats, but not the udder, should be washed.
- Teats should be clean and dry before the milking machine is attached
- Teats should be dipped after milking.

National Mastitis Council Recommended Milking Procedures

Provide a clean, stress-free environment for cows.

A clean environment is essential to preventing environmentally caused mastitis. For maximum production, cows should have minimum stress. Stress reduces the milk letdown process. ***Handle cows calmly.***

Check foremilk and udder for mastitis.

Examine the udder for swelling, heat or pain, and, using a strip cup or plate, examine the foremilk from each quarter prior to every milking.

Wash teats with an udder wash sanitizing solution.

Washing each teat aids milk letdown and removes mud, dirt, manure and other foreign objects on the skin.

Dry teats completely with individual paper towels.

Milking machines are designed to stay securely attached to a dry teat. Drying the teat also prevents possible contamination of the milk and teat by bacteria in the water running off the cow's udder and teats. This water, if present, acts as a freeway for bacteria to enter the milking system. ***Remember, the goal of every mastitis-control program is to prevent the introduction of bacteria into a normal and healthy mammary gland.***

Attach the milking unit within one minute after the start of stimulation.

The milk letdown process that follows the release of oxytocin after udder stimulation is highest for three to five minutes. Thus, using this physiologic event to its maximum for the most efficient removal of the milk is important.

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Adjust units as necessary for proper alignment.

Machine position and support should be adjusted as necessary during milking. Squawking of liners and liner slip have been associated with cross-quarter contamination.

Shut off vacuum before removing unit.

Stop the teat-end vacuum before removing the claw. This will help minimize cross-quarter contamination and adverse actions on the teat end. Teat-end lesions allow the invasion of bacteria from the environment into the mammary gland.

Dip teats with an effective product immediately after unit removal.

Post-milking teat dipping is regarded as the single most effective mastitis control practice in lactating dairy cows.

Teat Dip Products

Producers should use only teat-dip products that are listed with the Food and Drug Administration (FDA) and are of proven effectiveness. Examples of products effective under field conditions include:

- Chlorhexidine (0.5 percent)
- Iodophor (0.5 to 1 percent available iodine)
- Hypochlorite (4 percent)
- Chlorous acid-chlorine dioxide
- Linear dodecyl benzene sulfonic acid (1.94 percent)

If the teat dip complies with FDA rules, the label will state clearly the name and percentage of concentration of each active ingredient, directions for use, name and address of manufacturer or distributor, production lot number and an expiration date.

For more information, see these other NDSU Extension Service publications in the Mastitis Control Programs series:

- "Troubleshooting a Mastitis-problem Herd," AS1128
- "Bovine Mastitis and Milking Management," AS1129
- "Milk Quality Evaluation Tools for Dairy Farmers," AS1131

Milk Cows In Order

Bacteria can spread from one cow to another during milking by milking a contaminated cow before an uncontaminated cow. Milk heifers and fresh (early lactation) cows first, then older healthy cows next, followed by cows with high somatic cell counts and/or clinical signs of mastitis. You may think you cannot afford the time and expense to milk cows in order, but the truth is that if your cows have mastitis, you can't afford not to milk them in order

Treating Clinical Mastitis

Consult your veterinarian before using therapeutic products on your cows. Before infusing anything into a cow's udder, be absolutely positive that the product is intended for use on a lactating cow and that it is intended for use via the method you plan to use. **YOU are ultimately responsible** for any residue that may be detected in the milk. If you plan to infuse an antibiotic into the udder of a cow, be sure the product is approved for use as an intramammary treatment in lactating dairy cows. If it is not approved for use in that method, **DON'T USE IT!**

Read the package insert and follow all directions. Avoid possible contamination by infusing only pharmaceutically prepared single-service doses. Use the entire dose and do not save any for future use.

Sharing infusions among cows has been shown to actually cause the spread of mastitis. If a cow does not respond to treatment, additional alternatives exist. Consult your veterinarian to determine which alternative is best for each cow.

Treat each quarter of each cow at the end of each lactation with dry-cow treatment. This is the most effective management tool available for eradicating contagious mastitis from your herd. Pay attention to withdrawal periods for all medications used.

Conclusion

The goal of every mastitis-control program is to prevent the introduction of bacteria into a normal and healthy mammary gland.

Mastitis prevention must be practiced on every cow at every milking every day. Udder care is essential for the profitable milk producer. Udder care is practiced by reducing the spread of bacteria from cow to cow and eliminating reservoirs for bacteria in and around the barnyard. It only takes a few seconds per cow per milking. Repeating the process will make mastitis prevention a management habit.

Contact your veterinarian or county Extension office for additional resources on mastitis prevention and treatment.

For more information on this and other topics, see www.ag.ndsu.edu

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