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Milking Management and Mastitis

Willard Dillon, Extension Dairyman

Good management of milking results when the important jobs are performed correctly. It is closely tied in with the overall management of the dairy farm. Let us consider the more important overall factors and their relationship to mastitis and milk quality.

Udder: Cows with exceptionally large and pendulous udders are more subject to injury and mastitis. Cull those cows that cannot be machine milked.

Teat: Size and shape have little relationship to susceptibility. Evidence indicates that the rate of milking is closely related to the ease with which the teat valve opens. These "easy milkers" offer less resistance to the entrance of microorganisms and are more subject to mastitis.

Age: Age is not a dependable gauge of mastitis infection; however, there appears to be a greater incidence of mastitis in older cows.

Milk Production: High levels of milk production do not result in high levels of mastitis.

Stage of Lactation: Has little direct effect although clinical mastitis is often observed at freshening time as a result of carryover from the previous lactation and dry period.

Hormones: No specific hormones have been demonstrated to affect mastitis incidence.

Heredity: Inherited differences in susceptibility to mastitis and in rate of milk flow appear to be small. Cows intermediate in rate of milk flow and udder size appear more desirable than extremes in either direction. At present, it does not appear that selective breeding for resistance to mastitis is practical.

Calves: Raise calves in separate pens until they are weaned to prevent suckling and possible teat and udder damage.

Seasonal: No seasonal effect on mastitis incidence has been consistently noted.

Feeding: Feeding high levels of grain, protein or any specific component of the concentrate mixture have not been demonstrated to increase mastitis. There is no direct evidence that adding vitamins, minerals or antibiotics to a normal ration will control mastitis.

Housing: Adequate housing and proper bedding reduce the incidence of mastitis. Proper ventilation and minimum drafts help reduce mastitis. Stanchion barns with large stalls reduce udder and teat injuries. Well-managed loose housing further reduces udder and teat injuries. Free-stall housing saves considerable bedding, results in cleaner cows, can be adapted to many existing barns, and may help reduce mastitis.

Size of Herd: Large herds may have slightly more mastitis than small herds; however, much more variation in incidence of mastitis exists within each herd, regardless of size.

Accidents: Minimize physical injury by good housekeeping around the farm and the proper design of stalls, steps, ramps, barn lots and feed bunks.

Milking Order: In a stanchion barn, milk from non-infected to infected cows to minimize the spread of microorganisms. When milking in a parlor, effective control of the milking order is difficult; therefore, extra care should be taken to rinse and sanitize the teat cups after milking a possibly infected quarter.
Washing Hands: Thorough hand washing before milking will help prevent the introduction of microorganisms into the milking herd.

Dipping Teat Cups: Rinsing the teat cups in a bucket of water several times or washing with a hose will reduce the number of organisms present on the inflation surfaces. Worn or cracked inflations reduce the effectiveness of this washing procedure.

Washing the Udder and Teats: Stimulation for at least 30 seconds is necessary for proper milking and this washing can help reduce the number of organisms on the skin and teat cup liners. Iodine compounds are very effective and are less irritating to the hands and udder tissue.

Dipping Teats: Use of a disinfectant after milking may help reduce new cases of mastitis.

Dry Cows: Check dry cows daily during the first 3 to 5 days to see if they are regressing normally. Painting the cow’s teats with iodine when she is dried up and again in 24 hours will help reduce infections and remind you not to milk her.

Veterinary Help: Develop an overall treatment program with your veterinarian. Most of the indiscriminate use of medicants by dairy farmers has been of little or no help in reducing mastitis.

Vaccination: Mastitis reduction by vaccination is in an experimental stage. It urgently needs further controlled studies to define its scope and merit.

Antibiotics in Non-treatment Quarters: Some movement of antibiotics from treated to untreated quarters occurs during the first 24 hours after treatment. The antibiotic is picked up by the blood in the treated quarter and carried by the blood to the other quarters. Keep all milk from treated cows out of the market milk supply for 72 hours after treatment or as directed on the label.


Remember, the three major factors in mastitis are the cow, microorganisms and environment. Emphasis on these factors will reduce mastitis and improve milk quality.

Omission of any one of these steps makes the others less effective. Rinsing equipment in cold water immediately after milking easily washes off most of the milk. Wash with detergents and mechanical energy (moving water or brushing) to remove the remaining milk film. Rinse again to wash away any remaining organic matter and sanitize to reduce the remaining bacterial population with a 200 ppm available chlorine solution.

Care of Rubber Parts: Dry storage after proper cleaning is satisfactory. The life of natural rubber and some synthetic rubber will be extended about 50 percent by alternate weekly soaking in a lye solution kept in a crock or plastic bucket. This results from more effective removal of the fat absorbed by the inflation and other rubber parts. (Keep lye out of children’s reach.) Make the solution by mixing 1/2 pound of lye in 5 gallons of water. Rinse and wash in concentrated organic acid washing solution before placing inflation back into service. Discard inflations that are stretched out of shape or have been used for approximately 3000 individual milkings.

Cleaning Vacuum Lines: Dirty vacuum lines result from condensation of moisture, a leaking inflation, an upset pail or an overfilled pail. Clean the vacuum line at regular intervals as follows:

1. Prepare a lye solution by mixing 1/2 pound in 5 gallons of water.
2. Determine the volume of the trap or 1/2 the volume of the vacuum reserve tank. Do not draw more than this amount into your vacuum line or the excess might be drawn into and damage the vacuum pump.
3. Place the volume determined under step 2 in a pail and draw about one quart of it through each stall cock, working away from the trap.
4. Empty the trap or reserve tank and then repeat with hot water, organic acid solution and then hot water.
5. Leave the stall cocks open and run the pump for a little while to dry out the line.