

Proper Udder Prep Maximizes Milk Quality and Minimizes Mastitis

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Most management practices to prevent mastitis and improve milk quality revolve around the milking process itself. It is during milking time that the bacteria that cause mastitis as well as those that can elevate the bulk tank standard plate count can enter teat cup liners and be spread from cow to cow. The practices below will help to reduce the bacterial load on teat surfaces, minimize the development of new infections, and improve milk quality.

Wearing of gloves. The wearing of disposable latex or nitrile gloves is recommended to reduce the transfer of mastitis-causing bacteria from milkers' hands to cows' teats during the milking process. Bacteria that can cause mastitis naturally colonize the skin of human hands; likewise, bacteria originating from infected udders can contaminate our hands. Both can serve as sources of new infection and milk contaminants during the udder prep process as milkers forestrip teats. Additionally, bacteria are less likely to adhere to the smooth surface of gloves compared with the rough texture of milkers' hands, thus fewer pathogens are transferred to cows' teats. If gloves become heavily soiled with mud and manure, they should be replaced or washed in sanitizing solution.



Forestripping. This practice involves the manual removal of several streams of milk from each quarter prior to machine attachment as part of the premilking udder prep routine. The purposes are to 1) flush the teat canal of bacteria and other organic contaminants that could elevate bulk tank bacteria counts and cause machine-induced infections; 2) allow the milker to observe milk for any abnormalities, such as clots or flakes associated with clinical mastitis, so that affected cows can be separated and treated; and 3) promote milk let-down.

Predipping. The practice of immersing teats in a germicidal solution prior to milking kills a large number of bacteria on the teat skin and reduces the chances of them entering the teat canal and causing mastitis. The germicide is applied by dipping, spraying, towels, or as foam, and must remain on the teat skin for 30 seconds to allow sufficient time for microbiocidal activity to take place. Predipping is 40 to 50% effective in preventing new infections by the environmental streps and coliforms, and is even effective against the contagious pathogen *Staph. aureus*.



Drying teats prior to milking. After sanitization, teats must be dried to remove: 1) germicidal residues, 2) bacteria, and 3) organic material. Recommendations for drying include single-service paper towels or individual, re-washable cloth towels. After teats are dried, the machine is applied, usually

within 1 minute of forestripping to take maximum advantage of the milk letdown response.

Automatic take-offs. These devices detect a low flow of milk from the teat end and cause the milking cluster to detach from the udder. This action prevents over-milking and helps to maintain proper teat end condition. Healthy teat canals and teat orifices are less prone to bacterial colonization and subsequent development of new infections.

6. Backflushing the milking unit. This action includes a blast of sanitizer through the cluster and teat cups to disinfect the lining, followed by a blast of water to rinse out the sanitizer, and lastly, a blast of air to dry the system. Backflushing is effective in removing contaminants from teat cup liners before placement on teats of uninfected cows and helps to reduce spread of the contagious mastitis-causing bacteria such as *Staph. aureus*.

7. Postdipping. The practice of immersing teats in a germicidal solution immediately after milking kills a large number of contagious bacteria on the teat skin that originate from contaminated teat cup liners and reduces the chances of them entering the dilated teat canal and causing mastitis. The germicide is applied by dipping, spraying, inline sprayers, or as foam. Postdipping is 50 to 95% effective in preventing new infections with the contagious pathogens such as *Staph. aureus* and *Strep. agalactiae*. To maximize effectiveness, the entire teat surface that comes in contact with the teat cup liner should be covered.

