

Mycoplasma Mastitis: Prevention and Monitoring

Heather L. Hirst, DVM, ILM, Dairy Specialist

Purchase of cattle that carry mycoplasma is probably the most important manner of introducing this organism to a previously uninfected herd. To prevent introduction to your herd, new cattle should be tested prior to purchase and before entering the milking string. Herds that are “clean” or have no cattle with identifiable mycoplasma infection should be monitored monthly. In either situation milking technique should be routinely reviewed in order to encourage technique that minimizes the spread of contagious mastitis of any kind.

Monitoring Herds Using Milk Cultures

Milk Sample Culture Methods

Results of milk culture for mycoplasma are reported after 3 and 7 days of being plated in the laboratory. At CSU a portion of the milk sample is placed in a pre-incubation broth for 24 hours, then plated onto a special medium and incubated in a special low oxygen (microaerophilic) environment. Because the organism is very slow growing, the cultures are not examined until 3 days of incubation. The result of this reading (3 day incubation) for a culture is faxed to the dairy. The plates are then returned to the incubator for 4 more days and a final reading is done after 7 days. If there is no growth of mycoplasma, the plates are discarded. If there is growth, the mycoplasma is “typed” or speciated. In either case the 7 day results are also faxed to the dairies. Usually cows with clinical mastitis caused by mycoplasma will be obvious at the 3 day reading, or even after only 48 hours of growth. Milk cultures from the cows with subclinical mastitis, cows with chronic infections and from the bulk tank are usually not positive until the 7 day reading.

Understanding the Culture Results

If the mycoplasma type is *M. bovis*, *M. californicum*, or *M. bovis genitalium*, string samples are usually collected as well as individual cows within positive strings sampled (composite samples, all four quarters in one tube). Consult your herd veterinarian regarding details of sampling, or call Bill Wailes (970/491-5390) or Page Dinsmore (970/491-0375) at CSU. It should be noted that sampling strings or whole herds for mycoplasma is best performed under the supervision of experienced personnel.

Mycoplasma in bulk tank milk that is identified as a “non-mastitis type” may be a contaminant resulting from poor milking hygiene. Also, *Acholeplasma laidlawii* is indistinguishable from mycoplasma without typing. If the typing result shows a “non-mastitis type” mycoplasma or *Acholeplasma*, the bulk tank milk, hospital milk, and fresh cow milk should be resampled and re-typed as soon as possible. Continued monitoring of these groups on a monthly basis is recommended.

Monitoring Protocols for Mycoplasma

Each droplet of milk contains large numbers of organisms that can remain viable in the environment for several weeks. Every new cow should be tested prior to entering the milking string to make sure she does not have a clinical or subclinical mycoplasma infection.

Herds Without a History of Mycoplasma:

1. Collect monthly bulk milk samples when every cow is represented in the tank at least once. Partial pick-ups will lead to misrepresentation of herd status.
2. Sample hospital milk monthly if cows or heifers are routinely purchased.
3. Sample all replacement animals individually at freshening or prior to entering lactating strings and test milk for *Staph. aureus*, *Strep. ag* and *Mycoplasma sp.*

Herds With Known History of Mycoplasma:

1. In addition to the above recommendations, sample all fresh cows individually, or a string sample can be collected from the most recently fresh cows.
2. Sample cows with clinical mastitis for *Mycoplasma sp.*, *Staph. aureus*, and *Strep ag.*
3. If the herd has a mycoplasma pen, the bulk tank sample must be collected before these cows are milked into the tank. Only the "clean herd" should be monitored for the presence of contagious pathogens.
4. If a bulk tank culture is positive for mycoplasma, identification of the "type" is important.

Prevention of Transmission Within the Dairy

1. Train milkers in proper milking technique to prevent spread of contagious mastitis. The exact protocol for milking will vary in each dairy but the fundamentals of good technique at each step (towelling, forestripping, and postmilking teat dipping) are maintained.
2. If subclinical mycoplasma cows exist within a herd, teats are covered with a high quality, 1.0% iodine post milking teat dip to prevent new infections.
3. Train milkers of the hospital string to take special precautions to prevent cows with active mycoplasma infections from infecting other cows in the hospital string:

***Use alcohol swabs to thoroughly scrub teat ends prior to infusion of any approved intramammary product.

***Keep mastitis tubes in the box with the cap on until they are immediately ready to be infused into a clean teat end.

***Never carry mastitis tubes in pockets of coveralls or aprons that may be contaminated with mycoplasma milk.

***Wear gloves and wash hands between cows in the hospital if the procedure involves stripping quarters to check milk or to milk out cows.

***In infectious mastitis outbreak situations:

*Do not strip out cows.

*Disinfect gloves and units between cows until lab results are known and mycoplasma cows can be identified.

*Hose machines used to milk hospital cows with water inside and out, then disinfect by cluster dunking in a low pH iodine disinfectant like Dyne (West Agro) after milking mycoplasma carrying cows.