

Udder Health/ Milk Quality Concerns

Milk Quality Report Cards: Bulk Tank Culture Reports

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In this column we begin describing a series of "Milk Quality Report Cards" available to most dairy producers. The first chapter in this series will deal with the Bulk Tank Culture Report. In this age of dairy expansion and cow movement, contagious mastitis pathogens such as *Staph. aureus*, *Strep. agalactiae*, and *Mycoplasma* spp. can appear without warning and cause devastating increases in somatic cell counts. The bulk tank culture program was initiated in 1992 to allow producers to screen their bulk tank milk for the presence of these contagious mastitis-causing bacteria.

The identification of environmental bacteria in bulk tank milk can help pinpoint other management deficiencies. Two distinct milk quality problems can arise when cows' teats and udders are not clean and dry when milking units are attached. Bulk tank bacteria counts (SPC and PI) will increase, reflecting the fact that manure organisms such as coliforms and environmental streptococci (*Strep. spp*) are contaminating the milk excessively; and clinical and subclinical mastitis rates will increase, resulting in increased somatic cell counts, sick cows, and withholding of milk. We have recently begun screening the bulk tank samples for coliforms and environmental streptococci, in addition to those bacteria responsible for contagious mastitis. When the number of these environmental contaminants increase beyond an acceptable background level, corral and/or stall management and milking procedures should be reviewed.

Other bacteria which may adversely affect milk quality will be reported as well:

Staphylococci other than *Staph. aureus* (coag.-negative staph or *Staph. spp*) are common skin contaminants that can cause mild clinical and subclinical mastitis. The presence of high numbers of *Staph. spp.* indicate that teat dipping is inadequate.

Pseudomonas spp. are water-borne bacteria that may cause clinical mastitis. Many herds with high PI counts, in the presence of low to moderate SPC counts, find that *Pseudomonas* is the cause.

Actinomyces pyogenes is a common cause of severe non-responsive mastitis in cows with teat injuries. Its presence in bulk milk indicates that pus from an infected quarter is being milked into the tank!

Bacillus spp. are soil and water-borne contaminants that can elevate PI counts.

When reviewing your Bulk Tank Culture Report, it is important to consider that with the exception of *Strep. agalactiae* and *Mycoplasma*, all of the above organisms may be present in low numbers in the cleanest of herds. It is more important to keep track of the relative number of organisms present. We will be including a chart and a graph of some of your past culture results to help you monitor trends in bacteria levels.

We believe that all well-managed herds should make use of the valuable information provided by routine bulk tank cultures. All producers can sign up for this voluntary program; for \$12.00 per month per tank, the Colorado State University Diagnostic Laboratory will culture milk from each tank on the farm. The milk cooperative will automatically deliver monthly tank samples from its participating herds. Other producers will need to deliver their samples directly to the Diagnostic Lab.