

Bacterial Culture of Colostrum and Waste Milk

03-12-09

High bacterial numbers in milk or colostrum can adversely affect the health and well being of dairy calves. Studies have shown that even modest numbers of bacteria (50,000 cfu/mL) can reduce the efficiency of colostrum absorption. In addition, high bacterial numbers in milk fed to dairy calves increases the risk of calf scours and pneumonia. Properly functioning pasteurizers are an important biosecurity measure that decreases the risk of transmitting *Mycoplasma bovis*, *Salmonella spp*, *Mycobacterium avium* subsp *paratuberculosis*, bovine leukosis virus, bovine viral diarrhea virus and other potential pathogens via the milk to calves.

Recent studies have reported that roughly 10-15% of the time; calves are drinking pasteurized milk with unacceptably high bacterial numbers. It is important to point out, that many times the pasteurizers are functioning normally (95 -99% reduction in bacterial numbers) but there is a problem with bacterial contamination of the milk either before or after pasteurization. Therefore monitoring of on-farm pasteurizers is critical in protecting dairy calf health and well being. For this reason, experts recommend that pasteurized milk samples be tested at least monthly.

In response to considerable interest and demand by its clients; the WVDL is now offering testing services (bacterial counts) for colostrum and pasteurized milk samples. Veterinarians should plan on submitting 5 frozen samples. For pasteurized milk samples, producers should collect a sample immediately before and after pasteurization and from the first, middle and last calf fed. The samples should be collected in sterile containers and frozen within a few minutes of collection. Samples should be submitted to **WVDL-Barron** with a sufficient number of cold packs to ensure the samples remain frozen during shipment to the laboratory. Warm samples will be rejected.

The cost of the test for Wisconsin residents is \$95.00 which includes a \$10.00 accession fee. The cost for out-of-state clients is \$137.50. The pricing structure was established to minimize the testing costs to our clients while maximizing the diagnostic information provided.

The diagnostic report will provide total bacterial, coliform and *E. coli* counts on samples submitted to the laboratory. Total bacterial and coliform counts provide general information on the cleanliness and sanitation of the equipment, procedures and personnel involved in feeding the calves as well as adequacy of pasteurization and refrigeration. The *E. coli* count provides a specific indicator of fecal contamination of the samples.

Bacterial Count Guidelines:

Type of Sample	Total Bacterial Count cfu/mL	Total Coliform Count cfu/mL	Total <i>E. coli</i> Count cfu/mL
Colostrum	< 100,000	< 10,000	< 1,000
Raw milk	< 1,000,000	NI	NI
Pasteurized milk	< 20,000	< 1,000	< 100

NI: No interpretation guidelines have been established.