CONTAMINATED COLOSTRUM

Colostrum containing high levels of bacteria is a common hazard to calf health

Conversation surrounding colostrum management has long focused on providing a sufficient quantity of good quality colostrum to newborn calves quickly. However, one of the critical components to colostrum management that is often forgotten is providing clean colostrum.

In a recent study conducted in the United States, 43 per cent of colostrum samples fed to calves were considered contaminated with high levels of bacteria. This represents a significant challenge to calf health. Bacteria in colostrum can interfere with absorption of necessary immunoglobulins responsible for protecting young calves from disease, and high levels of bacteria in colostrum can cause certain diseases and ailments, such as diarrhea and septicemia. Feeding clean colostrum is an important component of colostrum management to promote calf health.

There are several key steps to consider when examining methods to reduce levels of bacterial contamination in colostrum. The first step is preventing bacterial contamination occurring during collection and feeding. Making sure teats are well prepped is necessary to eliminate contamination that could occur from manure and other debris from the maternity pen. Having a clean collection bucket is important since this often results in the greatest amount of contamination. Ensuring the collection bucket is cleaned prior to use is important as is cleaning the colostrum feeding equipment itself. An Ontario study found high levels of bacteria on colostrum feeding equipment, such as nipples, bottles and esophageal tube feeders. Nearly 60 per cent of all feeding equipment tested was contaminated with harmful levels of bacteria.

The second point to consider is time to feed and storage. Producers should feed or store colostrum as soon as possible and no later than an hour following calving. Leaving colostrum at room temperature allows bacteria to begin to grow if not cooled or fed quickly. Refrigeration is important to slow bacterial growth, but colostrum should only be stored in the fridge for up to 48 hours since after this period, it begins to produce dangerous levels of bacteria. Freezing colostrum is another option, provided the colostrum is quickly frozen after collection and used within one year from the collection date. Colostrum should not be stored in freezers with a freeze/thaw cycle.

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To identify contamination levels in colostrum, samples can be sent to a lab to provide information regarding bacterial levels. It is also possible to evaluate which colostrum management steps result in the most contamination using an on-farm validation tool known as a luminometer that can provide immediate results. This tool requires saline, a container to collect fluid from the equipment being tested, a swab to test collected fluid, and a luminometer. An enzyme found in the swab causes a light-producing reaction, which is proportional to the level of bacterial contamination. The luminometer quantifies the light reaction, producing a result within 15 seconds. It was recently evaluated at the University of Guelph and has been shown to be well correlated with bacterial counts generated at a lab. For more information on how luminometers can help you assess the cleanliness of your calf barn, refer to the *Calf Care Corner* article in *Milk Producer*'s April 2017 issue.

Veal Farmers of Ontario wishes to thank Dr. Dave Renaud from the University of Guelph for his assistance with this article.

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