

CALVING EASE

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Improving our Handling of Colostrum

Summary: The procedures you use to harvest and handle colostrum may determine your rate of treatable scours in young calves. Bacterial contamination of colostrum is common on U.S. and Canadian dairy farms. Controlling this contamination may significantly reduce scours issues among your calves.

Why be concerned about bacteria in colostrum

Field research has shown that even moderate levels of bacterial contamination of colostrum are associated with significant diarrhea problems. This is especially common among calves less than two weeks of age. McGuirk and others demonstrated that farms wanting to avoid scours associated with bacteria in colostrum need to keep levels below these goals (cfu/ml = colony forming units per milliliter):

Total bacteria	less than 100,000 cfu/ml
Fecal coliforms	less than 10,000
Other gram negatives	less than 50,000
Strep species	less than 50,000
Staph species	less than 50,000
Other	less than 5,000

In my dairy consulting work I have found that levels about one-half this high seem to predict scours problems. Regardless of the exact contamination levels, contamination leads to expensive treatment costs and compromised growth in young calves.

How common is bacterial contamination?

Surveys were completed in Pennsylvania and Quebec. In both cases they collected “as-fed” samples of colostrum. When cultured these two-thirds of the samples contained bacteria above the goals listed above. Or, stated the opposite way, only one-third of the colostrum samples had bacteria counts low enough to expect healthy young calves. In Dr. McGuirk’s work in Wisconsin she found that four out of five farms had at least one badly contaminated colostrum sample. I see about this same rate on farms with scours problems.

How to improve collection

- Start with clean teats. Use the “dip-wipe-dip-scrub” prep routine.
- Collect colostrum into a clean bucket. At the very least the inside of a catch bucket should both look clean and be free of biofilm buildup when checked with your fingers. See www.atticacows.com in Calf Facts for a four-step cleaning protocol.
- Keep the catch bucket covered tightly, both before and after collecting colostrum, any time it is in the milking parlor. Even the smallest amount of cow poop contains huge numbers of coliform bacteria.

How to improve handling

- Feed the fresh colostrum within one-half hour after it is harvested. This prompt feeding gets the colostrum into the calf before bacteria start to multiply. Remember to feed with a clean bottle or tube feeder. All of our efforts to collect clean colostrum can amount to nothing if we inoculate it with our bottle or feeder.
- For colostrum that is to be held for later feeding, chill to at least 60° F (16C) within one-half hour. This prompt chilling extends the time for bacteria to double more than seven times (20 minutes at cow body temperature vs. 150 minutes at 60°). An ice-water bath will work well. Or, clean plastic bottles containing ice when dropped into colostrum will work equally well when added at the rate of one quart of ice to one gallon of colostrum. Click [HERE](#) for a guide with pictures how to do this. [or enter this URL <http://www.atticacows.com/library/newsletters/colostrumChilling.pdf>]
- When refrigerating the chilled colostrum be sure to store it in clean, sanitized containers. Nursing bottles work fine. Rinse them with a hot strong bleach solution just before filling them. And, put a thermometer in your refrigerator to be sure that the temperature is no higher than 40°F (4C).
- When freezing the chilled colostrum I suggest using the freezer-weight self-sealing plastic bags. I fill the gallon-size bags with just one quart of colostrum. Then, when these are frozen laid flat in the freezer they are thin and thaw quickly.

References: McGuirk, Sheila M., “Herd-based testing for young stock” in The AABP Proceedings, Vol 38, pages 146-148 September 2005. Poulsen, KP, Hartmann, FA, McGuirk, SM “Bacteria in colostrum: impact on calf health” Abstract #52 Proc 20th AnnACVIM; 773, 2002.

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