

# Calving Ease

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## Guidelines for Storing Colostrum

- **Start with clean colostrum**
- **Reduce growth of bacteria**
- **Monitor effectiveness of storage methods**

### Start with Clean Colostrum

The basic requirements for collecting clean colostrum are a clean cow and clean equipment. Getting a clean cow is not as simple as preparing a production animal for milking. Recall that our dry cows have not had their teat ends cleaned off for about 6 to 8 weeks.

My recommended teat preparation for collecting colostrum from a fresh cow includes these steps:

- After brushing off teats, prep thoroughly.
- After allowing 30 seconds for dip to work effectively, wipe teats with clean towel.
- Dip teats a second time.
- After allowing 30 seconds for dip to work effectively, wipe teats with clean towel being sure to scrub across the end of each teat to remove accumulated manure on teat ends around the teat opening.
- Think of the prep routine as “dip, wipe, dip, wipe, scrub.”

At some point express enough foremilk to get rid of bacteria in the teat canal – if you use a teat sealant at dryoff the process of getting rid of the sealant will be more than adequate.

Start with clean collection equipment. For an on-farm washing protocol for this equipment in English click [HERE](#). For this protocol in Spanish, click [HERE](#). When milking facilities make it practical, bacteria load can be reduced by using a sanitizing solution drawn through the milker claw into the collection pail. A short four-step protocol for this may be found [HERE](#).

### Reduce Growth of Bacteria

At cow body temperature colostrum is ready to do a great job of supporting bacteria growth. Good temperature, good pH, and a generous supply of nutrients all provide for rapid multiplication.

One condition we can change on-farm is the temperature. An example using coliform bacteria shows the benefits of lowering colostrum temperature:

- 20 minutes to double their numbers at cow body temperature
- 150 minutes to double their numbers at 60°F

If we can chill colostrum to 60° before we place it in either a freezer or refrigerator then the appliance has a reasonable chance of continuing to chill the colostrum before excessive bacterial growth. Remember that household refrigerators and freezers are designed primarily to keep food cold, not to chill foods rapidly. A guide for on-farm methods for chilling colostrum may be found [HERE](#).

In research completed at our vet clinic we were able to measure the time needed to lower selected volumes of colostrum from 90° to 40° using household refrigerators. A pail holding 5-gallons of colostrum required 23 hours to arrive at 40°. Even small volumes (1 gallon) remained warm enough to support rapid bacteria growth for several hours. Recall that especially coliform bacteria can double every half hour in 90° colostrum. Thus, pre-chilling colostrum can pay big benefits.

If on-farm routines suggest significant delays in chilling colostrum to be stored consider using potassium sorbate to suppress bacteria growth. When used properly this additive will extend the generation time for bacteria in colostrum 10 times its normal length. A guide for its use is [HERE](#). It is important to recall that this product does not reduce the initial bacteria inoculation level – dirty colostrum will remain dirty colostrum. Potassium sorbate is most effective when added as soon as practical after colostrum is collected and mixed well into the colostrum.

## **Monitor Effectiveness of Storage Methods**

For colostrum I recommend regular sampling and bacteria culturing. For a protocol for collecting colostrum samples click [HERE](#). The same protocol in Spanish is [HERE](#). Especially remember to fill sample bottles only ½ full and to freeze them ASAP. We want to sample the same colostrum going into and coming out of storage.

For example, if you fill a nursing bottle with colostrum ready to go into a refrigerator that is the time to collect the “before” sample. When you take the same bottle from the refrigerator to put into warm water to prepare to feed the calf that is the time to take the “after” sample. This will document the change during storage. A third “as-fed” sample will show how many bacteria are being fed.

Standards for bacteria numbers? For the sample coming out of the refrigerator the national Dairy Calf and Heifer Association recommends below 5,000cfu/ml coliform bacteria and below 50,000cfu/ml total plate count. Clearly, if your bacteria counts are at or above these levels going into storage some kind of remedial action is needed for collecting and handling colostrum. Whenever you have high bacteria counts this reference may be useful – “Colostrum: Bacteria Control - 8 Practical Steps to Reduce Bacteria Counts” click [HERE](#).

If you are reading this letter as hard copy the Internet links in the text are to [www.atticacows.com](http://www.atticacows.com), click on Resources, click on Calf Facts Resource Library.

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