

Calving Ease

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Bottle Feeding Colostrum

- **Bottle feeding promotes rapid and efficient absorption of antibodies from colostrum.**
- **Start with a clean nipple and bottle using clean, wholesome colostrum.**
- **Plan ahead when cold weather bottle feeding colostrum.**
- **Pick out the right nipples.**
- **Monitor swallowing, avoid choking.**

Bottle feeding promotes rapid and efficient absorption of antibodies from colostrum.

Feeding colostrum with a nursing bottle stimulates esophageal groove closure. This esophageal groove shunts the colostrum from the calf's mouth and esophagus past the rumen directly into the abomasum. Curds form and the antibodies contained in the whey promptly go into the small intestine where they are absorbed. When smaller volumes of colostrum are fed (that is, less than 3 or 4 quarts) this shunting of colostrum into the abomasum is important for rapid antibody absorption. Click [HERE](#) for a summary of research comparing feeding large and small volumes of colostrum by bottle and tube feeder.

Plan ahead when cold weather bottle feeding colostrum

Are you are feeding more than one bottle at a time? Keep in mind that the ideal feeding temperature is the same as a calf's body temperature. That's about 102 degrees. During cold weather how warm will the second bottle be after spending time feeding the previous one? Planning ahead is essential. A five-gallon pail will hold up to 4 nursing bottles just fine. Add enough 120-degree water to keep things warm. Presto! Even if we have 4 bottles to feed 2 calves, all of them will be warm. Of course, when the weather is extremely cold it makes sense to put a cover on the pail to retain the heat.

Picking out the right nipples

Is the hole in your calf bottle nipple too large? On one hand, the opening should be large enough that the calf does not have to struggle to get colostrum. But, on the other hand, the opening should not so large that when the bottle is tipped upside down the colostrum runs out of the bottle.

Why is a "too large" nipple opening bad for a calf? If the nipple opening is too large, colostrum enters the calf's mouth faster than the calf can swallow. This increases the chances for colostrum to go into the lungs. This can cause pneumonia. Calves sick with pneumonia require extra work for treatment and result in increased costs for medicines. Equally bad is the potential for permanent lung damage and later compromised milk production and eventual culling.

How do nipple holes get “too large?” A calf feeder gets frustrated with the slow feeding rate when a calf is nursing colostrum. The problem is diagnosed as the nipple hole being too small. Out comes a knife. However, if the flow of colostrum seems too slow before enlarging the nipple hole check the vent hole. The vent hole is needed to allow air into the bottle while colostrum is being sucked out. This releases the vacuum that is formed. However, the nipple molding process often leaves a membrane over the vent. This keeps air from getting into the bottle as colostrum is sucked out. If you see the sides of the bottle collapsing as the calf drinks, then the vent hole is not opened enough.

Opening the vent will keep the bottle from collapsing and allow more even and rapid colostrum flow. This is a better solution than cutting the nipple opening to enlarge the hole. Usually, cutting open the hole on a nipple is a poor management practice.

In my experience in colostrum feeding I have learned to expect huge differences among calves in nursing speeds. Some calves are able to swallow large volumes of colostrum rapidly. Others seem to choke on even small amounts. The expert skillful calf care person knows how to recognize these differences. He/she can adapt his/her feeding style to match the calf’s ability to safely drink from a bottle.

When going to feeding colostrum I always took two nipples with me. One had an “ordinary” opening that suited most of the newborn calves. The other had a smaller opening that would suit calves with troubles swallowing. Matching the nipple opening to the calf drinking ability is an essential skill for preventing illness caused by colostrum in the lungs.

Monitoring swallowing, avoid choking

How often do you get the calf started on the nipple and your mind drifts off to someplace else? It’s easy to do. But, especially with newborn calves, careful monitoring to avoid choking is essential.

On one hand we have “good” drinkers. They get right to business and have few or no difficulties drinking their colostrum. On the other hand, “sippers” don’t seem to be able to suck in and swallow more than a tablespoonful at a time. I am thinking, “Oh, man, is she ever going to finish?”

My experience suggests between five and ten percent of our newborn calves are like this. Unfortunately if our nipple allows an excessive amount into a “sippers” mouth she can’t swallow all of it. Often, some of the excess liquid trickles into her windpipe (trachea) at her next breath. She aspirates and we hear her choke. Not good. This increases the chances for her having respiratory illness in the near future.

This is why we should be monitoring swallowing. If she chokes I need to stop feeding. Is the nipple opening is too large? If so, replace it. One with a smaller opening may work better. A newborn calf will tell you right away if this new nipple is working better when she starts to nurse again. She either chokes or she doesn’t.

References: Godden, S. M, D.M. Haines, K. Konkol and J. Peterson, “Improving passive transfer of immunoglobulins in calves. II: Interaction between feeding method and volume of colostrum fed.” Journal of Dairy Science Vol. 93 No. 4 1758-1764. : Elizondo-Salazar, J. A. and A.J. Heinrichs, “Feeding colostrum with an esophageal feeder does not reduce IgG absorption in neonatal dairy heifer calves.” ADSA Poster presentation M34, Monday July 13, 2009.