

Calving Ease

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Feeding Transition Milk and Colostrum

What are the advantages and disadvantages of feeding transition milk along with colostrum that is not used for first feedings to young calves?

Advantages

Over sixty years ago Sutton and Kaeser demonstrated that extended colostrum feeding had a positive effect on calves. They observed:

“None of the calves receiving colostrum for 7 days showed any sign of digestive disturbance during the period of colostrum feeding. Weight records indicate more rapid gains in calves receiving additional colostrum.” (p25)

Note that in this work after the third day calves received a blend of colostrum and milk. The comparison was between calves receiving whole milk and those fed this blend.

In the past decade work reviewed by Hammon showed significant advantages to extended feeding of colostrum. In this case “colostrum” was defined as milk collected in the first 72 hours post-calving. These advantages compared to milk replacer feeding included:

- Increased intestinal villus height
- Increased intestinal crypt cell development
- Increased digestive enzyme activity in the small intestine

These advantages lead to improved nutrient digestion and absorption.

Further, Hammon’s review noted that the “colostrum” calves vs. those fed milk replacer started to produce their own energy (endogenous glucose) sooner and in greater quantity.

What about “on-farm” experience with extended feeding of a mix of colostrum and transition milk to young calves? My own experience is the same as those experiences shared with me by other calfcare persons. When comparing “transition-milk” calves with those fed milk replacer we saw these benefits:

- We could get calves to drink a larger volume per day more quickly
- Fewer cases of scours requiring treatment in the first three weeks of life
- When calves did scour, the diarrhea was less severe and lasted fewer days

Every time I ran short of this milk and had to cut calves off at three days or less I was reminded of the benefits. These “short-time” calves always seemed to be on my scours treatment list.

How does it work?

Usually all the milk from fresh cows is collected separately for the first 48 hours. The very first milking is fed as “first-feeding” colostrum to newborn calves. The remaining milk is blended with any first-milking that is either too low in antibodies to feed at first feeding or is excess. Some farms put all of their heifer colostrum into this pool as well.

The blended transition milk is fed to the youngest calves starting at day 2. Depending on the supply it can be fed for as long as 7 days. That is when I changed calves over to milk replacer. When the supply ran short of a full 7 days I fed it out as far as it would go. When a calf had to be switched to milk replacer I did not resume transition milk feeding for her. Some calfcare persons feed a fixed amount each feeding (for example, two quarts). Since I had only about 10 to 15 calves in this age range I could watch to see how much they would clean up. Once they cleaned up 2 quarts per feeding I slowly increased the amount fed feeding-by-feeding to get close to their appetite. Calves were not enthusiastic about drinking milk replacer for a feeding or two when they are switched. But, they came along okay by the second or third day.

Disadvantages

Depending on the farm there may be a number of practical barriers to collecting, storing and feeding transition milk. These include: (1) the common practice of milking all cows with non-saleable milk into a parlor milk line thus avoiding bucket milking of any but very first milking cows; (2) lack of means of chilling this milk rapidly so that it can be stored without undesirable bacterial contamination; and (3) lack of means to warm the milk to calf body temperature for feeding.

In addition to working out ways to solve these challenges this feeding program will not work if the transition milk is contaminated with bacteria. This means extra attention to (1) clean teats in the parlor to prevent initial inoculation; and (2) careful and consistent cleaning of collection, storage and feeding equipment. Further, each farm has to balance the extra labor cost of collecting and handling this milk with the expected reduction in labor and expense in dealing with sick, scouring calves during the first three weeks of life.

References: T. S. Sutton and H.E. Kaeser, “Some Physiological Effects of Extending the Colostrum Feeding Period of Dairy Calves.” Journal of Dairy Science 1946 29:13-26. H. Hammon, “Role of Colostrum on Local and Systemic Development in Neonatal Calves.” ADSA Discover Conference, November 17, 2008 Roanoke, VA.

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