

Calving Ease

Special Colostrum Issue

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Colostrum Quality: **A Key to Scours Prevention**

Do you remember the colostrum management rules? Clean – feed colostrum that is as low as possible in bacterial contaminants. Quickly – feed as soon as possible after birth. Quantity – feed enough. Quality – feed high quality colostrum.

What is quality and how is it measured?

Quality stands for the concentration of antibodies in colostrum. Most of these antibodies are in the category called immunoglobulin type G. This is often abbreviated as IgG. The higher the concentration of antibodies per quart of colostrum, the higher the quality.

We cannot see antibodies. Thus, it is not possible by looking at colostrum to accurately estimate its quality. An exception to this would be excessively watery and mastitic colostrum. One measurement method uses density or specific gravity. By floating a hydrometer that is specifically calibrated for cow colostrum a working estimate can be made of the antibody concentration in a batch of colostrum. The most commonly used instrument is a Colostrometer®. Much like Kleenex® has come to represent all facial tissues, the name Colostrometer® is frequently used to refer to any colostrum hydrometer. The reliability of these quality estimates is high enough to identify low quality colostrum but is not high enough to identify small quality differences.

Blotter-strip technology has been used by Midland Bio Products to design an on-farm direct measure of IgG antibodies. After blending a colostrum sample with a diluent, a small quantity is put on a blotter cassette. It has a negative-positive result set at 50 grams per liter (same level as the break between the green and yellow areas on the Colostrometer®).

Why is quality a factor in scours prevention?

Research has demonstrated that antibodies are absorbed by newborn calves more efficiently from high quality colostrum compared to that of low quality. That is, for every quart of high quality colostrum fed, more antibodies will end up in the calf's blood than from the same amount of low quality product. This difference in absorptive efficiency is great enough that it cannot be compensated for by feeding more low quality colostrum.

And, remember, the higher the concentration of antibodies in a calf's blood the lower likelihood of her having to be treated for scours before twenty-one days of age.

What can we do to feed higher quality colostrum?

- Observe prefresh dams closely enough the week before calving to know whether or not they are leaking milk. Dams that leak an observable quantity in the days before calving are very unlikely to have high quality colostrum. Feed stored colostrum from another dam or colostrum replacer.
- Organize labor and facilities to milk fresh cows as soon after calving as possible consistent with the health of the dam. A workable goal is to milk at least eighty percent of fresh dams less than four hours after calving. Sooner means higher antibody concentrations.
- For prefresh dams, consistently manage controlled exposure to pathogens most likely to cause problems for calves. Several vaccines are now on the market specifically designed to boost adult immunity to selected bacteria and viruses connected to calf diarrhea.

When administered as part of a whole herd vaccination program these vaccines can substantially boost colostrum antibody levels. As with all vaccination programs, discuss and review the use of these vaccines with your herd veterinarian.

- Sort colostrum as it is harvested and feed the highest quality to the calves you intend to raise for herd replacement. The best sorting strategy is to use one of the tools mentioned above. If you do not have them available, feed colostrum that was collected closest to when the dam calved (see above).

In general, second and later lactation dams may have high quality colostrum than heifers. However, in herds with a well-designed heifer vaccination program as much as two-thirds of heifer colostrum may be of acceptable quality.

- When excess high quality colostrum is available, chill it rapidly and freeze it for later use. When a dam calves with too little colostrum or unusable colostrum, this banked colostrum can be carefully thawed and fed with little loss of antibodies.
- Do what you can to limit stress levels among prefresh dams. While there is little research to show that high stress levels directly cause low quality colostrum, my field observations point to stress as a potential limiting factor. For example, stress may take the forms of too little resting space, not enough space to eat or drink, poor quality air and even too frequent additions of cows into the prefresh group population.

Thanks to Pfizer Animal Health for their support for this special Calving Ease issue on colostrum quality.

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http://www.scourguard.com/product_overview.asp?country=US&lang=EN&drug=S3&species=DA

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