

CALVING EASE

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Getting More Antibodies into Calves

Start with the dry cows

Cows that do not have enough antibodies circulating in their blood cannot make high quality colostrum. An adult cow vaccination program can help achieve that goal. However, vaccination alone cannot guarantee lots of antibodies in colostrum. Good nutrition throughout her entire lactation contributes significantly to a strong, well functioning immune system. And this system will produce antibodies for colostrum as the cow gets ready to calve.

Another necessary goal for getting antibodies into calves is for the cow to have enough high quality colostrum. [Remember, we are talking only about the first milking.] Dry periods of less than 8 weeks tend to limit colostrum quantity. Confinement-housed dry cows must have both adequate resting and eating space if the cow, at calving, is to have adequate colostrum quantity. Insufficient resting and eating space raise dry cow stress levels and depress dry matter intake. Pastured cows that have inadequate feed and/or lack of shade in hot weather experience elevated stress and depressed dry matter intake. Either housing system can result in cows giving only a gallon or even less of colostrum.

Collecting the colostrum

How much does waiting to milk a cow after calving affect antibody concentration in the colostrum? Researchers at the University of Missouri measured concentrations at 2, 6, 10 and 14 hours after calving. Using the colostrum collected at 2 hours post calving as the basis for comparison, they found:

Hours Post Calving	Decrease in Antibody Concentration
2	(None – this is the standard for comparison)
6	17 percent
10	27 percent
14	33 percent

Thus, it is easy to see that the sooner colostrum is collected after calving the higher the antibody concentration. Studies, including this one, have shown that there is little

relationship between the amount of colostrum collected and the length of time after calving. If the quantity is not going to increase there is little advantage to delaying the first milking.

The traditional method of group management for recently calved cows has the advantage of simplifying the movement of cows. That method, however, often results in long delays in first milking. And, too much low quality colostrum. Therefore, more and more farms are finding other ways of managing recently calved cows in order to keep their calving-to-first milking interval consistently under 2 hours.

Feeding colostrum promptly after birth

Achieving higher antibody absorption efficiency in the newborn calf means getting colostrum into the calf before bacteria get into the gut. Manure meals from the calving pen, pack or pasture before colostrum is fed work against antibody absorption.

Further, if a calf has to wait six hours after birth to receive her first colostrum feeding nearly 40 percent fewer antibodies may be absorbed. This assumes she didn't get a manure meal prior to her colostrum feeding. Think about it. Unless the calf receives super-quality colostrum at that six-hour first feeding she is almost certain to have too few antibodies to avoid an infection during the first two weeks of life.

While absorption rates continue to decline with time, the biggest profit opportunity is lost when calves have to wait more than two hours after birth for their colostrum feeding.

While milking the dam and feeding her colostrum to her daughter is good, many farms find this difficult to do. They find that by using stored colostrum calves are fed more promptly after birth. When doing this we want to remember:

- In order not to “cook” antibodies, warm colostrum in water no hotter than you can poke a hand into safely.
- Warm colostrum to calf body temperature – antibody absorption rates are higher at 102 degrees than at lower temperatures.
- When storing colostrum chill it right away to 60 degrees before placing it into a refrigerator or freezer – this slows coliform bacteria growth.
- When your refrigerated colostrum supply looks as though it will last more than two or three days, consider freezing some. Feeding fresh colostrum has the advantage of providing the calf with leucocytes as well as antibodies. Most of that advantage is lost after two days in the refrigerator. Frozen and properly thawed colostrum is a good source of antibodies and nutrition.

If you know of someone that doesn't currently receive **Calving Ease** but would like to, tell them to **WRITE** to **Calving Ease**, 11047 River Road, Pavilion, NY 14525, or **CALL** 585-591-2660 (Attica Vet Assoc. office) or **FAX** 585-591-2898, or **e-mail** sleadley@frontiernet.net. Back issues may be accessed on the Internet at www.atticacows.com, click on Resources menu and select Calf Management Newsletter.

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