

CALVING EASE

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Managing for High Antibody Colostrum

We know that feeding colostrum to a calf is a best management practice. The sooner the colostrum is fed after birth, the higher the percentage of colostral antibodies that pass through the gut wall into a calf's blood. These antibodies in her blood provide immediate protection against harmful pathogens.

Unfortunately, when the antibody concentration in the colostrum is too low, two undesirable conditions are created. First, we cannot feed enough volume to provide adequate calf immunity. It is not feasible to feed eight or ten quarts during the first six hours of life. Second, the percentage of antibodies absorbed from poor quality colostrum is quite low. These two factors combine, resulting in inadequate immunity.

Are you harvesting poor quality colostrum?

Forget the idea that you can look at colostrum and predict accurately its antibody concentration. Sure, if it is extremely abnormal, it could be low. But, for nearly all colostrum, you cannot tell by looking at it.

There are laboratory tests to measure antibody concentrations. However, they require laboratory equipment and personnel. And, they are slow.

Midland Bioproducts (<http://www.midlandbio.com>) markets an on farm test product. This test measures the IgG antibodies directly. The results are very accurate. A small amount of colostrum is mixed with a special fluid in the test kit. A few drops of the mixture are added to a test strip. In twenty minutes, the test tells you whether or not the colostrum has an antibody level above or below an industry standard. The threshold for pass/fail is 50 grams per liter. This is the industry dividing line between acceptable and unacceptable antibody concentration in colostrum. The cost varies between \$3.50 and \$4.00 per test.

The Colostrometer® is another way to estimate antibody concentration in colostrum. It is marketed through dairy supply stores, dairy route trucks, vet clinics and is in the current Nasco catalog at \$44 plus shipping and handling fee. The instrument is floated in colostrum. Because the Colostrometer measures antibody concentration indirectly using specific gravity, the values shown are very rough estimates. The results are read on the stem or upper end of the Colostrometer. For a good background article, go to

<http://www.calfnotes.com> and in the left hand menu, choose “Calfnotes in order.” You want Calfnote #22, “Using the Colostrometer to Measure Colostrum Quality.” This instrument allows quick, on farm sorting of colostrum by antibody concentration.

How can we manage to improve the quality of colostrum?

Managing for high quality colostrum can take several different routes. One of the best management practices is to milk fresh cows soon after calving. We know that the longer we delay the first milking, the greater amount of milk the cow will produce. Before the dam is ever milked, this milk dilutes the antibody concentration in the colostrum. It is estimated, by this dilution, that a six-hour delay after calving for the first milking may reduce antibody concentration to the same level as found in typical second milkings. That is a big reduction in just six hours. Delays longer than six hours mean even lower concentrations.

Another best management practice is to plan and implement a whole herd vaccination program. When properly planned with the herd veterinarian, a vaccination program provides exposure to pathogens most likely to cause health problems on the farm. We want to build immunity to these pathogens in the milking herd. As a bonus, beyond milking herd health, the higher the antibody levels circulating in the cows blood, the higher the possible antibody levels in the colostrum.

Another good management area is stress reduction. The higher the stress levels for dry cows in late gestation, the greater the suppression of their immune system. That means antibody levels in the colostrum she produces are less than optimal. A major cause of stress is overcrowding in close up dry cow housing. As evidence of this stress, one study reported a 1.6 pound decrease in milk production during at least the first eighty days in milk for every ten percent increase over eighty percent stocking for dry cows housed in free stall facilities. If overcrowding stress is high enough to cause long-term milk production decreases, then think what impact it may have on dry cows making colostrum.

Milk cows as soon as possible after calving. Plan and follow a whole herd vaccination program. Avoid overcrowding close up dry cows. These practices lead to better quality colostrum.

Reference: Nordland and Cook

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 to **CALL** either 585-591-2660 (Attica Vet Assoc. office) or 585-343-8128 (Offhaus Farms Office) or **FAX** (585-591-2898) or **e-mail** sleadley@frontiernet.net or pams91@2ki.net . A limited number of back issues may be accessed on the Internet at either www.atticacows.com or www.calfnotes.com and clicking on the link, Calving Ease.

Our thanks to Fort Dodge for sponsoring this issue of Calving Ease.