

## Effect of Delayed Colostrum Collection From Dairy Cows

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It is well known that calves receive their immunity against calf-hood diseases in the colostrum from their dams. Most dairymen appreciate that upwards of a gallon of colostrum must be fed in the first 12 hours after birth to achieve optimum colostrum protection for the calf and that by 24 hours after birth very little additional absorption of the colostrum antibodies is possible. A recently published article suggests that delayed time from birth to collection of the colostrum may also be a significant factor affecting the amount of antibodies present in the colostrum<sup>1</sup>.

In this study, 13 cows were used to determine the effect of timing of first collection of colostrum on the amount of antibodies present in the colostrum. The calvings of all cows were closely observed and the newborn calves were not allowed to suckle their dams. Quarter samples were randomly collected from the quarters at 2, 6, 10 and 14 hours after calving. Each quarter was only sampled once until all four quarters had been sampled. The IgG levels of the colostrum quarter samples were determined by radial immunodiffusion.

The average amounts of colostral IgG were 113, 94, 82, and 76 grams per liter for the samples collected at 2, 6, 10 and 14 hours after calving. The samples collected at 6, 10, and 14 hours after calving had significantly lower IgG levels compared to those taken at 2 hours. The samples collected at 14 hours after calving were significantly less than those collected at 6 hours. As expected, colostrum from older cows has more IgG antibody than those from younger cows.

This study suggests that for collection of optimum amount of high quality colostrum, the first collection of colostrum should be at less than 6 hours after calving. They found that colostrum collected at 6, 10 and 14 hours after calving had 17%, 27% and 33% less antibodies compared to colostrum collected at 2 hours after calving. Delays in collection of the first colostrum may be common on large dairies that manage fresh cows in groups where cows are milked twice per day. The impact of these delays is clearly reduced amount of antibodies for the newborn calves.

Failure of passive transfer of colostral antibodies in dairy calves may be as high as 35% for heifer calves and in some cases no attempt is made to provide colostrum for bull calves. The result of failure of passive transfer may be reduced average daily gain, increased risk of neonatal death, increased risk of culling and decreased milk production in the first lactation.

On dairies where calves are experiencing diarrhea, pneumonia or septicemia, dairymen should review the timing of first colostrum collection as well as the timing and amount of colostrum being fed to their newborn calves and the sanitation of the colostrum feeding equipment. To optimize health of newborn calves, each of these factors is important and lack of compliance in any one area may compromise the total colostrum management program.

Moore M, Tyler JW, Chigerwe M et al. Effect of delayed colostrum collection on colostrum IgG concentrations in dairy cows. *JAVMA* 226(8):1375-1377, 2005.