

Vitamin A in Dairy Cows

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Dairy cows are often deficient in Vitamin A before and after calving.



This occurs because cows supply a high level of vitamin A to their calf in colostrum. (Goff, et al, J. Dairy Sci. 85:1427-1436). Because vitamin A is highly related to immunity and disease prevention, the reduction in the cow's blood levels of vitamin A greatly increases her risk of disease after calving.

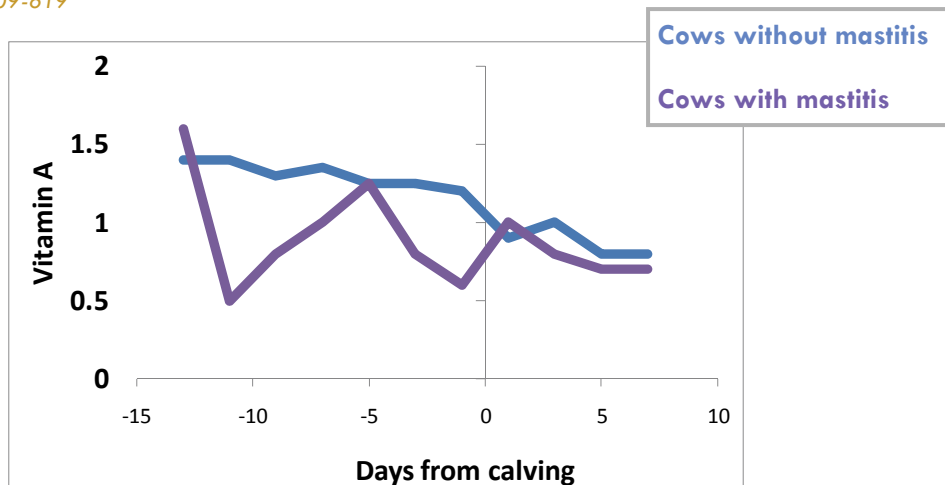
In 2004 several researchers at the University of Guelph in Ontario, Canada quantified the risk of clinical mastitis as it relates to the level of vitamin A in the blood. (J. Dairy Sci. 87: 609-619). They collected blood samples from 1,057 cows from

one week pre-calving until one week post-calving. All of the blood samples taken between six days before calving and the day of calving were then examined in relation to the cows that had a clinical case of mastitis in their first 30 days of lactation.

The vast majority of mastitis cases occurred soon after calving. The median time after calving to mastitis diagnosis was two days. The cows that had a blood vitamin A concentration that was 100 ng/mL greater than others had a 60% reduction in the risk of mastitis.

Simply stated, the cows that had high blood levels of vitamin A had a much lower chance of developing mastitis than cows with low blood vitamin levels. In the graph below it can be seen that the cows that developed a case of mastitis within 30 days of calving had, on average, a much lower level of vitamin A in their blood.

J. Dairy Sci. 87:609-619



Dr. Kevin Hoogendoorn, General Manager of Van Beek Nutrition, also works as a Dairy Consultant with the company, working with clients in Iowa, Illinois, Ohio, Missouri and South Dakota. Kevin did his undergraduate work at Dordt College in Sioux Center, Iowa and received his Doctorate of Veterinary Medicine from Iowa State University. He began working with Van Beek Nutrition as a dairy consultant in 1998.

