

Vitamin A

Dr. Kevin Hoogendoorn



In 2002, Dr. Jesse Goff and other researchers performed a study at the National Animal Disease Center in Ames, Iowa. They began the study with 18 pregnant Jersey dairy cows and surgically removed the udders of 10 of these cows. All 18 cows were allowed to calve normally. Daily blood samples were collected from each cow beginning 2 weeks before calving and continuing 2 weeks into lactation. The researchers analyzed the Vitamin A and Vitamin E levels in the blood.

In the graphs shown, the cows with udders are represented as blue boxes and the cows with no udder are represented as purple boxes. As it can be seen on the graphs, the Vitamin A and Vitamin E levels in the cows' blood began dropping approximately 7 days before calving. However, the cows with a milk producing udder experienced much lower levels of Vitamin A and Vitamin E in their blood than the cows with no udder. This drop in blood vitamin levels is due to the fact that colostrum contains very high levels of Vitamin A and Vitamin E. In order to give her calf the best chance of survival, the cow risks her own health by secreting as many vitamins in the colostrum as possible.

Milk also contains high levels of Vitamin A and Vitamin E. The graphs show that even after 15 days on the milk cow ration, the blood levels of Vitamin A and Vitamin E still had not returned to the levels that they were before calving.

J. Dairy Sci. 85:1427-1436

