

Importance of Colostrum During Calving

Veterinary scientists, while with the USDA experiment station at Clay Center, Nebraska monitored health events and growth performance in a population of range beef calves in order to identify associations of production factors with baby calf passive immune status.

Blood samples were collected at 24 hours after calving from 263 crossbred calves to determine the amount of passive maternal immunity that had been obtained from colostrum. Colostrum is the first milk produced by a cow upon giving birth. The baby calves were classified with “Inadequate” or “Adequate” Passive Immune status based on that blood sample at 24 hours of age. Growth performance and health events in the study population were monitored from birth to weaning, and after weaning throughout the feedlot phase.

The lowest levels of passive immunity were observed among calves that were sick or died prior to weaning. Calves with “inadequate” passive immunity had a 5.4 times greater risk of death prior to weaning, 6.4 times greater risk of being sick during the first 28 days of life, and 3.2 times greater risk of being sick any time prior to weaning when compared to calves with “adequate” passive transfer. Based on 24 hour proteins (most of which are antibodies or immunoglobulins) in the blood, the risk of being sick in the feedlot was also three times greater for “Inadequate” compared to “Adequate” calves. Passive immune status was also indirectly associated with growth rates through its effects on calf health. Sickness during the first 28 days of life was associated with a 35 pound lower expected weaning weight. Respiratory disease in the feedlot resulted in a .09 lb lower expected average daily gain.

Thus, passive immunity obtained from colostrum was an important factor determining the health of calves both pre- and post-weaning, and indirectly influenced calf growth rate during the same periods. Therefore, the cow calf producers can help themselves and the future owners of their calves, by properly growing replacement heifers, providing a good health program for cows and heifers, and providing natural or commercial colostrum replacers to calves that do not receive it in adequate quantities on their own. Remember that most of the transfer of antibodies from colostrum to the calf happens in the first 6 hours. The first day sets the stage for the rest of his life. (Source: Wittum and Perino. 1995. Amer. Jour. Of Vet. Research. 56:1149.)

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