NUTRITION NOTES
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IMPORTANCE OF SUPPLEMENTAL VITAMIN A IN BEEF CATTLE DIETS

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Discussions involving vitamin needs in cattle have always required unique attention in beef cattle. The rumen environment is understood to synthesize sufficient levels of vitamin K, and B vitamins. Consequently, vitamin requirements of beef cattle are focused heavily on A, D, and E. The current uncertainty of both production and pricing of the world supply of vitamins has created an even greater emphasis on consideration of optimal vitamin nutrition for beef cattle.

By now, the vitamin A crisis stemming from production disruptions via fire, maintenance, and environmental regulations worldwide is well known; whereas less discussion has been made as to the importance of supplemental vitamins, with emphasis on vitamin A.

Vitamin A is vitally involved in maintenance of cow health and performance. A deficiency of vitamin A may be evident through a myriad of symptomatic issues involving ocular problems like night blindness and watery eyes; mobility difficulties such as staggering gait, stiffness in the joints, or swelling of the legs; and reproductive complications from calving through breeding. Deficient levels of vitamin A in breeding herds may result in late-term abortions, retained placenta, and stillborn calves as the most observable symptoms (Fyksen, 2013). In addition, adequate vitamin A is required for successful fertility, so deficiencies may result in delayed and/or decreased breed-back success.

Vitamin A requirements have been studied little since the 1970s. The requirements of pregnant or lactating cows have been studied to an even lesser extent in recent years, forcing requirements to be set based on data from pre-1980 genetics and production standards (NASEM, 2016). It is estimated that liver storage of vitamin A in beef cows can last 60-120 days without deficiency symptoms. However, it is not advisable to rely on these variable and undetermined reserves as liver concentrations can vary within herds (NRC, 1996).

Studies have shown that even cows consuming “carotene-rich” green pastures or high-silage diets may decrease in liver vitamin A levels. If liver vitamin levels are impacted by vitamin A restriction, restoring these levels is problematic. It has been suggested that cattle may not begin appreciable deposition of vitamin A stores unless consumption reaches nearly five times the requirement, with even greater difficulties for improving the status of calves deficient in vitamin A (Branstetter et al., 1973).

Kent Nutrition Group is proud to support beef producers in meeting the nutritional demands of their high-producing animals. We understand that a significant portion of cow costs stem from nutrition. While the current crisis has placed vitamin supplementation in the “premium” category, we believe the benefits of maintaining proper vitamin levels is key to both maintenance and progression of a successful herd.