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Did You Take Your Vitamins?

Yes, this might be the conversation heard around the breakfast table before school with an engaged parent and their children, but that's not exactly where we're going today. Recently I had the opportunity to listen to a presentation by Dr. Gregg Hanzlicek from the Kansas State Veterinary Diagnostic lab speaking on Vitamin A and E deficiencies. He provided good reminders on these two vitamins that seem timely to pass along today.

There are differences in these two vitamins and the functions they have within the body, but there are also some similarities around which we can form some general guidance. Deficiency of Vitamin A & E are most often noted in spring calving cow herds when weak and/or stillborn calves are observed. This is especially true in older cows and those not on a good plane of nutrition, most notably where vitamin supplementation is not given much consideration or assumed to be provided.

When plants are green and growing, there is typically more than enough Vitamin A and E provided by the cow's diet. However, Vitamin E is not stored well within the body and Vitamin A can only be stored in the liver for 2 to 4 months. If the last bite of green forage a cow took was following a killing freeze in November, and these vitamins were not provided as a supplement, there is essentially no chance for cows calving before the grass greens up to have an adequate supply of Vitamin A or E.

It would seem logical to think that good quality hay would be a source of vitamins for the cowherd. The truth is that vitamins are not very stable and degrade in stored forages. For all practical purposes, most nutritionists will utilize a zero value for Vitamins A & E in hay. Since harvested forages aren't a good source, the next two best options are with dietary supplements and injectable products. Supplementation rates for Vitamin E range from 600 to 1000 IU per head per day, with Vitamin A running 30,000 - 40,000 IU per head per day, depending on cow size.

Injectables provide the most accurate dosing and timing but were in short supply at times this past year. If there are known or suspected deficiency issues, giving an A or E or combination injection, a few weeks from calving, can help boost supplies within the cow's body and create a more vitamin rich colostrum for the calf. Colostrum is the best and most direct way for newborn calves to get a good start with Vitamin A & E.

Vitamins can be added to feed and/or mineral to be ingested orally. While this can be a good option, it isn't always a sure bet to prevent vitamin deficiencies from happening. The main issues with an oral approach are 1) proper intake and 2) loss of vitamin loss through storage. Vitamin A for example can lose nearly 10 percent activity per month when mixed with minerals. Additionally, studies have shown that as high as 15 percent of cows will not consume mineral in either block or loose form.

Pay attention to shelf life and storage practices for any type of commercial vitamin supplementation. Vitamin E is fairly stable except for oxygen exposure, but Vitamin A and D are both very unstable and sensitive to temperature, humidity, light, oxygen and pH. While it may seem like a good deal to purchase mineral with vitamin supplementation in bulk, storing such mineral mixes for more than a few months will result in reduced levels of vitamin supplement, particularly Vitamin A.

The take home message is that Vitamin A & E are very important and need to be supplemented appropriately in winter rations. Green, growing forages provide an excellent source of both of these vitamins and supplementation on pastures is reduced or not needed at times in the year. Vitamins do not store well for great lengths of time, so read the label, look for "born on dates" or ask when mineral mixes/vitamin packs were created and don't store vitamins for more than 3 to 6 months. The University of Missouri Publication No. G2058 "Vitamins for Beef Cows" is an excellent reference on this topic.