MARCH 2024: ON FEED

Dakotaland Feeds, LLC

A NEWSLETTER OF DAKOTALAND FEEDS

A Solid Base of Mineral Nutrition

In a Nutshell:

- **An 8% phosphorus mineral fits most situations**
- **Calcium is important for bone and muscle growth**
- **High Mag season will be here before you know it**
- **Zinc is critical for reproduction and immune function**
- **Copper is very susceptible to antagonism**
- **Selenium can be problematic**
- **Vitamin A and E are important for colostrum**
- **Mineral nutrition has too much of an impact to ignore it**

Solid mineral nutrition is an important cornerstone of your cattle operation, regardless of whether you run a cow-calf operation, yearlings, or feedlot. Mineral nutrition plays a big role in the health and fertility of your herd. Phosphorus is the biggest player when it comes to the macrominerals. In the cowherd, we need to make sure that we are getting more than 0.17% phosphorus into the diet of the cow. If you are feeding in the drylot prior to calving, higher energy feeds like distillers, silage, grains, or alfalfa have higher phosphorus content than grass hays, so we may not need additional phosphorus when feeding with a mixer wagon. However, over the summer months as forage matures and pastures decline in quality, phosphorus drops below that critical level for our cows. Generally, an 8% phosphorus mineral consumed at 3-4 oz per day will be adequate in meeting the phosphorus requirement in pasture situations. A mineral tub at 4% phosphorus and consumed at 6-8 oz per day will also supply necessary phosphorus.

Calcium is an important mineral in terms of bone and muscle development and movement. With cattle, we want to try to maintain a calcium:phosphorus ratio of around 1.5:1.Slightly lower will generally be acceptable for larger, more mature cattle, but if less than a ratio of about 1.2:1 runs the risk of developing urinary calculi or water belly. Steers are more susceptible to this problem than bulls or heifers because of the size of the ureter plugging with phosphate stones. In finishing diets or high co-product diets, adding supplemental calcium keeps that ratio in check.

High Mag season is right around the corner. Preventing a single case of grass tetany will save a lot of dollars. The high magnesium minerals help counteract the antagonism from high protein and high potassium on magnesium absorption. Most summer minerals are about 2.0% magnesium, while the high mag products are going to be 10% to help prevent grass tetany. Some pastures are more tetany prone than others and older cattle in peak lactation are at increased risk vs. first-calf heifers that are not in peak lactation, so some situations require more consideration for high mag mineral than others.

Zinc is a very important nutrient, and we can't count on the forage supplying that need. Zinc is critical for reproduction and immune function—two very big factors influencing your bottom line. We need to supply cattle with at least 30 ppm of zinc in their total diet, but that requirement can be higher for stressed cattle and for developing bulls. We need to increase that to 50 ppm in these situations in order to meet the nutrient demand those cattle have. Every time there is growth of any kind, zinc is involved in that process, which is why it is such a critical trace mineral. And more available sources, like the zinc amino acid complex, supplies that need better than zinc sulfate. Zinc will help us get the cows cycling and ready for re-breeding as well as improve fertility in the bulls, particularly when using Availa-4.

Copper is another trace mineral that is important for almost all aspects of production in a beef operation. We need to supply at least 10 ppm in the ration for cattle, but this requirement can also increase depending on the antagonists we have in the feed and water. Copper is easily bound by antagonists like sulfur, molybdenum, or iron, and using a higher quality source of mineral like the copper amino acid complex from Availa-4 prevents that interaction, ensuring that the animal has the best chance to use the mineral. Copper and zinc are both important for foot health, which in a feedlot or pasture, is important for performance. Having a quality trace mineral program in place is the key to keeping the feet of cattle healthy, no matter what production system you have.

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Selenium can be a difficult trace mineral. For the most part in North and South Dakota, we have more than adequate natural selenium that we know is available to the animals because we sometimes see toxicities even without supplementation. But most producers can either have it in the supplements or not have it and be just fine either way. The areas along and west of the Missouri River tend to the be the highest in selenium and in that area we need to remove it from the supplements or risk pushing the cattle over the edge of toxicity. The general rule is to provide no more than 3 mg/hd/d, and most supplements are designed to deliver that amount. Selenium is an important antioxidant and necessary for normal development, but toxicity leads to foot problems, loss of the tail switch, and poor reproductive rates.

Vitamin A and E are more important this time of year than at other times. It has been a long time since cattle saw green grass, and that is the best natural source of Vitamin A and E. With cows getting ready to calve, they need to have Vitamin A and E available because calves only get those nutrients through the colostrum, as it does not cross the placenta. Calves with poor Vitamin A status are more prone to scours issues, so getting good Vitamin A into the cows pays dividends in terms of colostrum quality.

Mineral nutrition has been shown to impact digestibility of feedstuffs, conception rates, morbidity and mortality in the feedyard, calf health at birth, semen quality in bulls, response to vaccination, and even has some impact on meat quality. When it comes to the impact of mineral on your bottom line, it can really add up. Build your program on a solid base of a quality mineral.

Roxanne Knock, PhD

****MINERAL PROMOTION ENDS MARCH 31, 2024****

What do you need to be thinking about this time of year?

- Get prepared for calving—get chains, OB sleeves, lube, and calf puller in place and colostrum replacement on hand
- Get colostrum replacer, electrolytes and Calf Insure® on hand for stressed or scouring calves
- Get Stress Tubs for the first and second calf heifers
- Feed Rumensin to the cows to improve feed efficiency and to limit environmental coccidia prior to calving
- Scrape pens when possible to help avoid foot problems
- Set up an implanting protocol for calves to finish
- Remember to get MGA if you are planning to use a synchronization protocol for your heifers to calve early

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