

Are your cows getting enough minerals?

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Florida cattle industry ships approximately 700, 000 head of calves annually to feedlots in the Midwest. Some of these calves do not perform well. This is attributed, in part, to lack of minerals as confirmed by blood assays and liver biopsies. Forages in Florida are generally poor at supplying some of the required minerals especially copper and zinc for cattle. Phosphorus and potassium may become lacking during the beef cow's lactation period. The feeding of minerals is like an insurance policy. It acts as a safety net when there is not enough mineral in the forages. It should be noted that even if all the minerals are supplied and correctly fed to the animals to ensure adequate intake, the animals may not perform to their full genetic potential if the diets are lacking in energy, protein and vitamins. Adequate minerals in the diet help the animals to maintain their immunity to diseases, and cope with stressful situations like hauling calves over long distances to feedlots in the Midwest.

Calves need minerals too!!

Calf health begins with the cow, and so it is essential to feed the cow properly. Special attention should be paid to the pregnant cow during the last trimester of pregnancy when the fetus is rapidly developing. Adequate mineral nutrition during pregnancy has a positive impact by imparting protection to the calf through colostrum. There is a body of scientific evidence to suggest that maternal deficiencies of trace minerals and vitamin E can compromise the immune system of calves. These deficiencies may lead to calves become susceptible to scours, pneumonia, navel and joint ill. Make sure the new born calf gets the right start by getting an adequate dose of colostrum immediately or within 4 to 12 hours after birth.

In general calves are born with reasonable levels of trace minerals. The exception is selenium because the cow does not concentrate this mineral in unborn calf. After 2 to 3 months of birth, calves become marginal in some trace minerals. This is demonstrated in Figure 1.

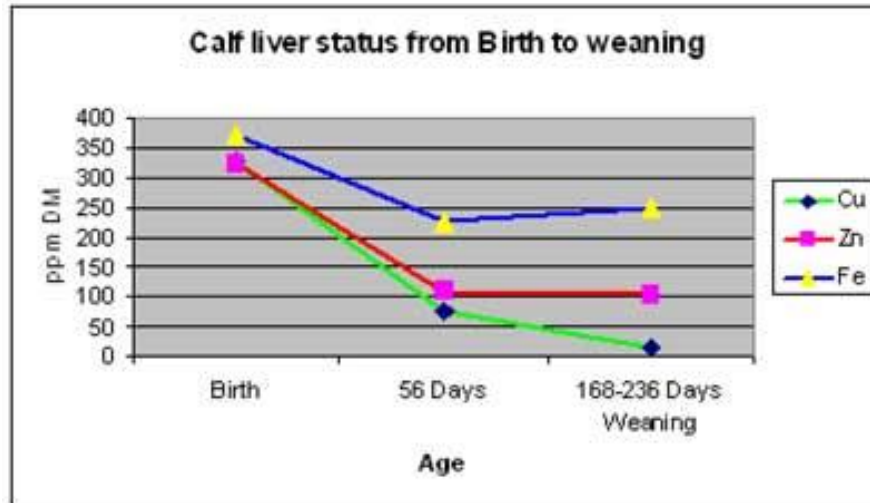


Figure 1. Calf liver status from birth to weaning (Courtesy of Branum, 1999).

The National Research Council recommendations for copper, zinc and manganese for growth in calves are higher than the levels found in cow's milk. Creep feeding becomes necessary to complement the calf's mineral requirements. A study at University of Florida reported that creep feeding supplements increased calf weaning weight and enhanced trace mineral status of weaned calves when supplements were fortified with trace minerals. In addition, it increased dry matter intake during the first week of the feedlot receiving period. Creep feeding is important in delivering minerals and vitamins to calves. If creep feed is offered, monitor their intake because over consumption of creep feed may lead to digestive upset. It should be noted that non-creep calves tend to catch up with their creep-fed mates after weaning. Therefore greater returns can be obtained if the calves are sold as weaners.

What kind of mineral I should be feeding my beef animals?

There are several sources of minerals that are available on the market. Free choice loose mineral mix is the most popular that targets intake of 2 to 4 ounces per animal per day. On average, free choice mineral supplement is the most practical choice for producers. Mineral blocks are used as well. They are resistant to rain and dew. The disadvantage is that cattle tend to eat less of it when compared to the intake of free choice minerals. Salt (sodium chloride) and loose mineral mix are sometimes offered separately at the same time to the same beef animals. Cattle tend to prefer salt over loose minerals. They are likely to consume the salt rather than minerals. This can lead to mineral deficiencies because loose mineral mixes, and not salt have all the minerals the animal needs.

One can feed the most expensive minerals, but if the animal does not eat it, it is useless. Research at the University of Florida showed there were seasonal variations on mineral intake as shown in the chart below.

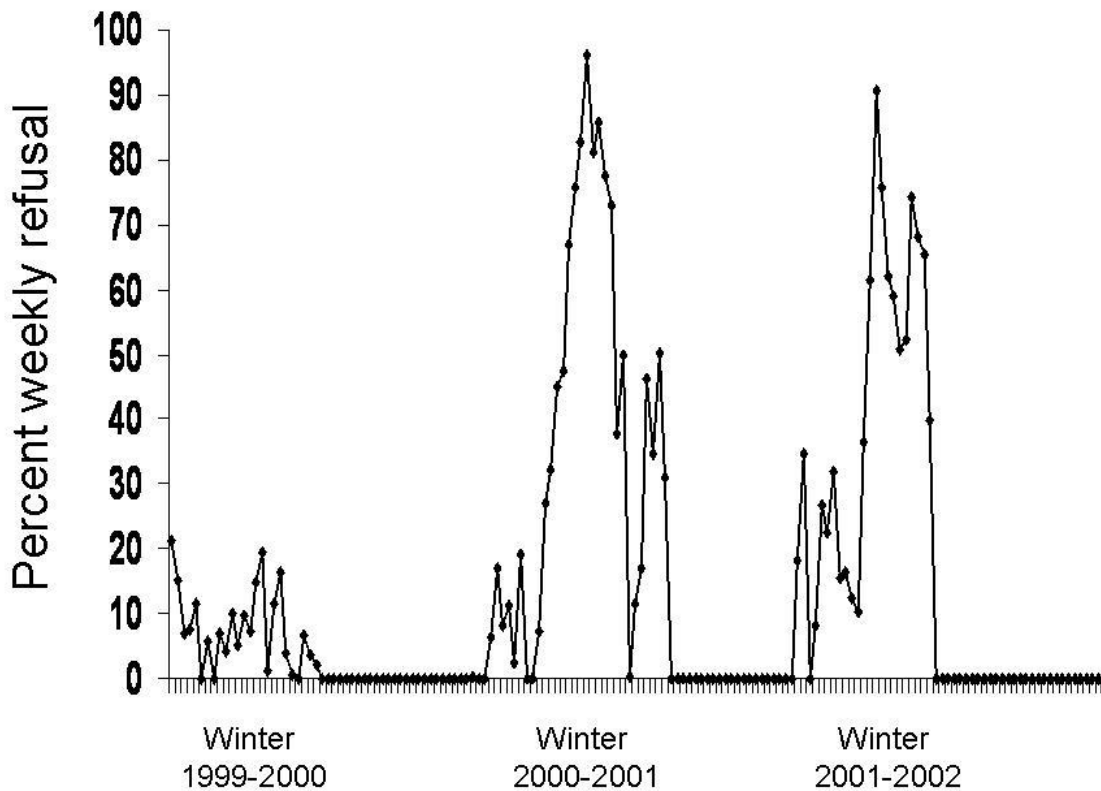


Figure 2. Effect of season on free choice mineral intake in grazing Bradford cows. (Courtesy of Dr. J. D, Arthington. Range Cattle Research and Education Center, UF/IFAS)

During the wetter summer months minerals containing salt were readily consumed. During the winter months the intake of the same minerals were reduced by less than fifty percent. It is important to be vigilant and observe when the animals are over consuming or under consuming minerals. In order to avoid over consumption, offer minerals every 10-14 days at a level that slightly exceed the target intake. Having the feeder empty for a few days is acceptable before offering more minerals. When there is reduction of minerals during the winter months, consider feeding the minerals with soybean hulls or cottonseed meal at a ratio of 1:1. If the target intake is 2 ounces per animal per day, then the intake of the blend expected from cattle would be 4 ounces per day per animal.

Key Points

- Good maternal nutrition is important to produce a healthy calf.
- Consider creep feeding calves.
- Ensure that the calf is fed colostrum 4-12 hours after birth.
- The feeding of salt (sodium chloride) is not necessary for beef cattle when loose minerals are offered.
- Pay attention to mineral intake during the year. Minerals intake during the winter month may decline. Add cotton seed meal or soybean hulls to increase intake.