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Mineral Intake in Grazing Cattle

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The lack of essential minerals in Florida forages has been understood and research to overcome these deficits has been conducted. Two of the most lacking minerals in Florida's forages include copper and zinc. As well, phosphorus and potassium may also be lacking during a beef cow's lactation period. A summary of cow mineral requirements and specific functions of individual minerals is available at the UF-IFAS EDIS website (AN086), Essential Trace Minerals for Grazing Cattle in Florida, www.edis.ifas.ulf.edu. .

Free-choice, loose mineral supplementation is by far the most common mineral supplementation strategy in grazing beef herds. In nearly all cases, it is an effective, cost-efficient means of delivering adequate vitamin and mineral supplementation to the cowherd. Although formulations vary greatly, the common base mix should contain approximately 20 to 25% salt, along with 8 to 12% phosphorus. This variation in phosphorus content typically provides the most significant influence on overall cost of the product. Intake is often targeted at two to four ounces per head daily. Achieving this target intake by all animals does not occur. Several animals within a herd will consume very little to no mineral at all. However, on the average, mineral consumption usually meets the desired intake levels. It is this averaging effect, over time, which allows free-choice mineral supplements to be the most practical choice for most cattle producers.

In Florida, seasonal variation in mineral intake is evident. During the wetter summer months, cattle readily consume salt-based mineral supplements. In contrast, during the dryer winter months free-choice intake may be greatly reduced. We recently completed a three-year study at the Range Cattle Research and Education Center that investigated the annual variation in free-choice, salt-based mineral intake. In our study, the seasonal

changes in mineral consumption were clearly noticeable (Figure 1). Cows were offered a weekly amount of mineral that was equal to their targeted intake of two ounces per head daily (14 ounces per cow weekly). The amount of mineral not consumed was weighed and removed each week. Our results show that during the summer months, cows readily consume their two ounce per day allowance; however, during the winter months cows often consumed less than ½ of their two ounce allowance. These differences in mineral intake are likely due to several factors, but the most important contributors are probably the moisture content of the pasture forage and the presence of winter supplement.

This new information is important to consider when evaluating a mineral supplementation program. For instance, during the summer months cows may consume mineral at a rate that exceeds their targeted intake. In our study, we only offered mineral at the two ounce per day level, but clearly they would have eaten more during the summer. Often this weekly allowance was completely consumed within four to five days. There is nothing wrong with allowing the mineral feeder to remain empty for a couple days. Providing mineral to cows every week or two weeks at a rate that is sufficient to provide their targeted intake is an excellent method of controlling overeating. As cows consume more mineral than required, their body expends energy to excrete extra mineral into the urine. Over-consumption of mineral is usually not considered a health problem; however, there is some evidence of reduced reproductive performance in heifers and young cows that consume too much mineral. The most pronounced impact of mineral overeating is economic, as the producer is receiving no additional benefit from the added costs realized by the additional mineral purchased.

In the winter when consumption is often reduced, try blending your mineral with your winter supplement. If you do not utilize winter supplements, or blending is unfeasible, try mixing your salt-based loose mineral mix with cottonseed meal or soy hulls at a one to one ratio. Remember to double your offer and monitor intake. An increase or decrease in this ratio may be used to control intake to your desired level. If you are purchasing a commercial feed supplement, ask your sales professional about the mineral content of the feed. In many situations, commercial winter supplements are fortified with a sufficient amount of mineral to meet a cow's requirements. When feeding these products the producer may be able to discontinue offering free-choice mineral or only offer stock salt. This may result in a substantial savings in a herd's annual mineral supplementation program.