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## **Do I Need to Add Minerals to My Livestock Ration?**

Winter supplementation often focuses heavily on meeting protein and energy requirements and tends to leave mineral nutrition as an afterthought. Missing the mark in any nutrient category, including vitamins or minerals, can have negative effects. All nutrients interact, so deficiencies in one element can create inadequacies of other nutrients, even if those nutrients are supplied in the correct amount.

During winter months, locally grown forages are typically the basis of cattle diets. The mineral content in the forage is based on the mineral content of the soils they're grown on, which can be highly variable because of the soil formation process from one region to another. Mineral composition can even change from one pasture to the next. To complicate the matter further, mineral content and availability are not the same thing. The digestibility of the forage impacts the availability. High quality grasses that have high digestibility will have, not surprisingly, greater mineral availability.

Due the annual change in weather conditions, mineral supplement strategies should be reviewed annually. Evaluate the mineral availability in forage, protein supplements and water. Feed and water testing are needed to fine-tune a formulation. While this involves up-front effort and expense to sample and measure mineral content, it has the potential advantages of improved animal performance, reduced costs by avoiding over-feeding mineral, prevention of unfavorable interactions or toxicity. Compare the results of your mineral testing to the requirement of your livestock to formulate an effective plan. The plan should fill in any gaps of deficiencies to make sure all interactions can happen as needed.

Interactions among minerals can be antagonistic, binding with each other and reducing animal availability. Sometimes an excess of one element has to be fed to overcome this binding. This can be a two-edged sword because extra minerals can cause toxicity. It's critical that needless supplementation is avoided to keep down costs and toxicity concerns.

Referring to forage mineral content, typically calcium levels are adequate and phosphorous levels tend to be deficient, especially in mature forages. So, phosphorous supplementation is usually necessary. Some basic guidelines for winter mineral supplementation programs are:

- Always provide trace mineralized salt at a minimum.
- Supplement phosphorous when forage is dormant, unless distiller's grain is being used as a protein source.
- Supplement copper if symptoms are present, but be sure to monitor copper status to ensure deficiency is solved without reaching toxic levels.
- Because commercial mineral and salt products are formulated to meet generalized conditions, it is helpful to create a custom-blended formula to meet local deficiencies or toxicities of a specific ranch.

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