



Ridin' Herd

► by **Rick Rasby**, beef specialist, University of Nebraska

Summer mineral supplementation strategies

This time of year, one of the questions producers ask centers around the mineral program for the beef herd. They understand the importance of the mineral program and the implications on herd performance if it is not adequate.

Introduction

Minerals are important in diets of beef cows because many chemical reactions in their bodies require them to be present. Producers often ask questions like, “What mineral(s) should be focused on?” and “What is the cost?” These are good questions, but they’re not easily answered because minerals needed can differ from ranch to ranch.

The cost of mineral supplements can vary. A mineral program that fills the gaps in minerals needed compared to minerals supplied by the base diet, which is mostly forage/grass, is only one component of a complete nutrition program that lends itself to production and reproduction performance that are optimal for a ranch. Understanding some basic principles will help meet the challenge of selecting a mineral supplementation program that best fits your ranch or production system. One thing for certain is that no one program fits all the different beef cow-calf production systems.

Challenges with minerals in a nutrient plan

The challenge with mineral research is that minerals interact with one another, and some minerals can be stored by the animal for use when what they are eating does not meet their need for that particular mineral. At times, when feeds that the cow consumes are higher in minerals than what she needs, she has this ability to store some of them and then mobilize them when the forages or feeds are not adequate to meet her needs.

For example, calcium (Ca) and phosphorus (P) are stored in bone. In feeding situations where the requirement

is not met, a cascade of hormone events can occur in the cow, and Ca or P can be mobilized from bone and used by the cow. This doesn’t happen often, but the mechanism is there as a safeguard for the animal because of the importance of Ca and P.

In addition, the liver is a storage vat for some of the microminerals — copper (Cu), for example — and this source can be mobilized when blood copper is low. Not all minerals can be stored when consumed in excess.

There are some important minerals that interact with one another, and these interactions make research difficult to conduct and interpret. As an example, high molybdenum (Mo) has a negative impact on Cu absorption. Also, high potassium (K) can have a negative impact on magnesium (Mg) uptake and, in this situation, if cattle

are grazing a pasture where grass tetany is a concern, cattle may experience grass tetany even though Mg supplementation or intake may be adequate.

Although understanding minerals and their interactions can be complicated, it doesn’t mean producers should throw up their hands and forget about this part of the nutrition program. A mineral supplementation strategy must be designed to fit the needs of the cow herd and at the same time be economical.

Selecting a mineral program

Choosing a mineral program doesn’t have to be complicated. Proteins that are consumed by the cow help in the transfer and metabolism of minerals and are critical in absorption of minerals by intestinal tissue. This by no means indicates to overfeed protein, but it illustrates that an effective

mineral program must be in unison with a total nutritional program for the beef cow herd.

Second, it is important to have a reference that shows the cow’s requirement and how mineral needs change as the cow transitions from one phase of production to the next, from gestation to lactation, for example. For most minerals, such as calcium, phosphorus and sodium, requirements are provided that include a range and a “maximum tolerable level,” which means if the mineral is consumed above this level, toxicity can occur.

Third, an effective mineral supplementation program must include an estimate of minerals provided in the base diet (forages, feeds, etc.) that the cow is consuming. Mineral content in forages can vary from location to location. State universities and county extension educators have collected forage samples in many locations across their states or counties and have started a library of mineral content of many of the forages that populate their state/area. Contact your local university or extension educator to see if a library exists as these values are better than “book values.” Also, there are minerals in the water that the cow drinks, and these minerals need to be accounted for as part of what she is consuming.

A mineral supplementation program should be simple, economical and should meet the needs of the cow herd as they change from one phase of production to another, and as they change diets (grazed pastures to harvested forages). Calcium and phosphorus are probably the two minerals that most cow-calf producers should focus on, especially when feeding harvested forages and before and during the breeding season. Do not overfeed phosphorus, because it is usually the most expensive component of a mineral supplement.

In some areas, producers will need to include some other minerals to the mix and may also need to include some trace minerals to the supplement.

Always have salt available for the cow herd. Read the tag for the levels that should be consumed by the cow on a daily basis.

For cattle grazing cool-season pastures

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early in the growing season, grass tetany could be a problem. Supplement magnesium oxide to manage grass tetany. Begin this supplementation at least 30-45 days before grazing these pastures and should continue until growing conditions of the cool-season grass become stabilized, which is usually 10-14 days into the grazing season.

Most feed stores offer a "grass tetany" mineral. Read the label to see how much cattle are supposed to consume daily. Most

grass-tetany mineral programs will require cattle to consume 6 to 9 ounces (oz.) per head per day. Again, oversupplementation of potassium can trigger grass tetany. Because grass tetany can occur when calcium is low, the tetany mineral needs to contain calcium.

Final thoughts

Mineral supplementation programs don't have to be complicated, but it is hard to make a blanket recommendation because conditions vary from ranch to ranch. Work

with your extension educator, beef specialist, nutritionist or feed-store personnel to develop the program that is economical and that fits your needs. The nutrition program is related to productivity of the cow herd.



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