Mineral Supplementation of Beef Cows in the Western United States

David W. Bohnert
Eastern Oregon Agriculture Research Center, Oregon State University
Dave Ganskopp
ARS-USDA, Burns, OR

Mineral Requirements

The mineral requirements of dry and lactating beef cows are presented in Table 1. Caution should be exercised when estimating a cow’s mineral requirements because of the many interactions associated with certain minerals. Copper is one of the most commonly affected nutrients by interactions with other minerals. For example, Herd (1997) suggests increasing the recommended level of copper above that listed as the requirement anytime dietary molybdenum exceeds 2 ppm (parts per million), sulfur exceeds 0.3 percent, iron exceeds 250 to 300 ppm, or some combination exists in the feed and water supply.

In addition, low dietary calcium and/or high dietary potassium has been involved with grass tetany (hypomagnesia) as indicated by the so-called “tetany ratio” (diet potassium concentration divided by the sum of the diet calcium and magnesium concentration). If this ratio is greater than 2.2, the diet is classified as tetany-prone. Thus, a low content of calcium and/or magnesium (or high potassium) could create a ratio greater than 2.2.

Herd (1997) provides two points that cattle producers should consider when determining the level of supplemental mineral desired: (1) “moderately higher levels of mineral intake, for up to 6 weeks, may be needed and safe for cattle with severe deficiencies, but should not be continued once their mineral status has returned to normal” (obtain the assistance of a nutritionist and veterinarian before providing minerals in excess of requirements), and (2) “relationships in cows have been well established between stage of production and requirements for major minerals, protein, and energy; this is not true for trace minerals.”