



Grass Tetany And The Adequacy Of Salt In Vigortone Range Minerals

Salt (approximately 40% sodium) is such a simple ingredient we seldom think of it as being of significant nutritional value. But recent reports from the University of Kentucky and the Salt Institute build a strong case for monitoring both sodium (Na) and potassium (K) intake during periods of grass tetany challenge. Inadequate Na and excessive K in forages increase the likelihood of grass tetany by decreasing preintestinal magnesium absorption.

Sodium and potassium are chemically very similar and will readily substitute for each other. Absorption of the two is highly competitive, to the extent that cattle may not be able to detect a critical Na deficiency, as their craving for salt seems to lessen when grazing high K forages. The desire for Na apparently can be fulfilled by the closely related cation K, resulting in a very high ratio of K to Na in the rumen. In these cases, ruminal Na levels can be as low as 10% of that required for optimal Mg absorption.

Most forages do not contain enough Na to meet essential requirements for proper electrolyte and mineral balances, so it must be supplemented. Keep the following points in mind.

- ❑ Stocker cattle, the pregnant cow, and the lactating cow have a requirement for Na that can be met with approximately 14, 22, and 26 grams of salt per day, respectively. Generally, it is not practical to attempt to provide all of the salt range cattle require via a free-choice mineral.
- ❑ The salt in Vigortone's free-choice mineral products is at a level designed to complement the naturally-occurring levels of Na in range

plants, hays, and silages. This is analogous to supplementing the naturally-occurring calcium and phosphorus in the same feedstuffs with calcium carbonate and calcium phosphates via free-choice mineral.

- ❑ Most cool-season grasses (fescue, brome, orchardgrass, bluegrass, and timothy as examples) contain enough Na to meet 70 to 80% of the requirement. Warm-season, subtropical species like bermuda and bahia are adequately high in Na to provide approximately four times the requirement. By comparison, warm-season grasses well adapted to the Western Plains (bluestems and buffalograss as examples) contain a level of Na adequate to supply only about 20% of the requirement.
- ❑ Hay or silage made from grain crops (oats, wheat, corn, and sorghum) will satisfy at least 60% of the requirement. Alfalfa, clover, and lespedeza, although infrequently used as the only source of forage for beef cattle, contain adequately high levels of Na to meet 100% of the need.
- ❑ **Prevailing logic would suggest, then, that a free-choice mineral, when used with forages like those mentioned above, would need to provide 30 to 80% of the requirement for Na.** The majority of Vigortone range minerals contain 14 to 23% salt. When consumed at 3 to 4 ounces/cow/day, 12 to 26 grams of salt would be supplied. This level is adequate to provide 50 to 120% of the Na required by the gestating cow or 45 to 100% of that required during lactation.

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- Drinking water is another source of Na. Some water supplies can provide up to 6 grams of salt equivalent per day to a mature cow.
- Remember that cattle exhibit very little nutritional wisdom and are decidedly more responsive to the sensory qualities (taste and aroma) of a mineral than to its nutritive value. Cattle possess no innate sense whereby they can detect their need for specific nutrients. You've no doubt heard it said that "cattle know when they need mineral." While this is not true, cattle do have a strong

natural craving for salt and easily learn and remember where it is located.

Understand from this that salt is a management tool which: 1) is essential to good magnesium nutrition, 2) stimulates intake of an otherwise unpalatable range mineral, and 3) can be used to improve grazing distribution. For more guidelines on springtime mineral management, refer to the article entitled **Addressing Beef Cow Profitability Through A Mineral Feeder** in the March 2005 issue of **Bunk, Bull & Business**.