



Ridin' Herd

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

Using salt to limit intake

Cattlemen continue to investigate ways to reduce cow costs. Standardized Production Analysis (SPA) and Integrated Resource Management (IRM) records indicate that labor costs affect annual cow costs. Management strategies to reduce cow costs, in particular labor costs, would increase profit potential of the cow-calf enterprise. One management tool frequently used is regulating feed intake with salt. Research would suggest that regulating feed intake with salt is not precise, meaning the salt content may need to be adjusted throughout the feeding period to achieve the desired feed intake. As a management practice, self-feeding supplements tends to allow timid, slow-eating cows to get their share, and it is an easy method of providing vitamin A, phosphorus (P) and other feed additives.

Salt needed by beef cows

Salt should always be supplemented to beef cows. Salt (NaCl) is made up of sodium (Na) and chloride (Cl), and these elements are used in a number of important reactions in the body.

The daily salt requirement for mature cattle is less than 1 ounce (oz.) per head. Voluntary salt intake often exceeds minimum needs.

Because there are practical limits to the amount of salt cattle eat, salt can be used to restrict the consumption of highly palatable feeds. In such instances, daily voluntary intake of salt will approximate 0.1 pound (lb.) salt per 100 lb. body weight for most classes of cattle.

Using salt to limit intake of a feed or supplement

Total salt intake is the amount in the feeds that are eaten and the amount in the water that is drank. Salt toxicity is seldom seen in cattle because of their high tolerance for salt. The one-time lethal dose for mature cattle is 4-5 lb. of salt.

Salt is rapidly absorbed from the intestinal tract into the bloodstream. It is then excreted by the kidneys through urine. However, the animal is able to eliminate excess salt only when adequate clean water is available.

As a rule-of-thumb, cattle on salt mixtures drink 50%-75% more water than normal, or approximately 5 gallons (gal.) of additional water for each pound of salt. If only salty water is available, cattle will often refuse the supplement or may be forced into a toxicity situation.

Salt content of water is usually measured by total dissolved solids (TDS), which includes calcium (Ca), magnesium (Mg),

sodium chlorides, sulfates and bicarbonates. Caution is necessary in using salt-limited supplements when water contains above 5,000 parts per million (ppm) TDS. This analysis can usually be obtained through analytical laboratories.

When cattle are accustomed to eating supplements but are unaccustomed to self-feeding, overeating can be prevented by starting with a high salt level (50:50 or even 60:40 salt to meal) and then reducing salt level to obtain desired level of intake. If cattle have not eaten concentrates before, a training period of a week or more of daily hand-feeding of meal without added salt may be necessary, particularly with young cattle. Usually, it is necessary to increase the salt content of the mix over a period of time, as cattle become accustomed to the high salt level. Self-feeders should protect the feed/salt mixtures from wind and rain and be portable.

When using salt to limit intake of feeds or supplements consider the following:

- The proportion of salt to limit intake in self-fed mixtures will vary from 5% to 60%.
- The amount of salt needed will be determined by the desired feed or supplement intake.
 - Use plain white salt. Coarsely ground salt is better than finely ground salt.
 - Logically, to increase supplement intake, decrease salt in the supplement. To decrease supplement intake, increase salt in the supplement.
 - As the weight of the animal increases, the amount of salt needed to limit intake of the supplement to the desired level will need to increase.
 - Age seems to affect salt intake. If cattle weigh the same, less salt will be needed to

limit supplement intake to the desired level in the younger, compared to the older, animal.

► As animals become more accustomed to the salt in the supplement, more will need to be added to limit the intake to the desired intake level.

► To assure calves do not overeat, set the levels high the first two to three days, and consider hand-feeding the feed or supplement.

► To prevent separation of feeds in the supplement, particle size needs to be similar. That's the reason for the recommendation to use coarsely ground salt.

► If grains are included, they should be cracked or coarsely ground.

► Including an ionophore, especially Rumensin®, in the feed or supplement that is being limited using salt will reduce the amount of salt needed to limit the intake to the desired level.

► If the water that is available for the cattle to drink when salt is used as a feed limiter is above 5,000 ppm TDS, caution is necessary.

► Feeders should be portable, and feed should be protected from wind and rain.

► Strategic placement of the feeder can affect grazing distribution.

► Do not place feeders next to the water source in a pasture, as it will affect grazing distribution.

► To monitor supplement consumption, know the initial amount of supplement in a feeder. For the first three to four days, check the feeder every day to get a rough estimate of the amount of feed being consumed.

Final thoughts

Fuel and labor costs continue to increase and affect profit potential of the cow-calf enterprise. Just because a supplement is offered "free choice" to cattle, doesn't mean that all cattle will consume it. Data would suggest that some cattle won't eat the supplement, some will consume about what you have limited it to, and some will consume more than what you have limited it to.

Make sure there is plenty of clean, fresh water. If salt is used in the winter to limit feed intake, make sure the water source is not frozen. Consult your Extension office for information when considering using salt to limit intake of a feed fed to cattle.

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Editor's Note: "Ridin' Herd" is a monthly column written by Rick Rasby, professor of animal science at the University of Nebraska. The column focuses on beef nutrition and its effects on performance and profitability.