

Current Research at MSU: Impacts of salt-limited supplements on intake and grazing behavior

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If you're anything like me, you probably salt your food before even tasting it. While salt is an essential nutrient for life, we all know there are times when we need to cut back.

So, what about our beef cattle? Salt is commonly incorporated into protein, energy, and mineral supplements at 25-35% to enhance palatability and/or limit excessive intake. We may provide a salt lick, a loose mineral salt, and even energy and protein supplements. Now, consider the salt in our water sources and forages . . . hmm, that could add up to a lot of salt!

Recent research at Montana State University may indicate that the amount of salt in our supplements could be influencing digestion and intake. This MOOving Minutes will focus on the intake component of that research. The objective of this research was to evaluate the interaction of multiple salt-limited supplements on supplement intake behavior and the subsequent performance of 14-month-old heifers grazing Summer/Fall pasture in Montana.

For two consecutive years, the beef nutrition lab at MSU measured protein and mineral supplement intake of yearling commercial crossbred heifers grazing native pastures from July-November. To measure intake, they used the SmartFeed Pro Trailer (Figure 1). These trailers allow researchers to program diets for individual animals. Electronic ID readers on the feed bunk recognize and record the amount of feed consumed by each animal. Furthermore, the feed gates will only allow access to animals assigned to that feed in a computer program. While this precision technology comes at a hefty price tag – it's extremely useful in research settings for learning more about supplement intake behavior.



Figure 1. SmartFeed Pro trailer with 4 feed bunks. Two contained 25% salt protein pellets, two contained 25% salt mineral.

At the beginning of the grazing season, heifers were weighed and randomly assigned to one of three diets: 1) Mineral Only, 2) Protein Only, or 3) Protein and Mineral supplement. From there, researchers were able to compare the amount of mineral consumed between Mineral-only heifers and the heifers receiving both supplements. Similarly, they compared protein supplement consumed by the protein-only heifers and the heifers receiving both. All heifers grazed the same pastures during the study and researchers measured forage quality throughout the season. To

measure animal performance, researchers weighed, and condition scored heifers every 28 days. Data are still being analyzed.

Things to consider:

- 1) Test your hay or forage! A test with crude protein and basic minerals should run you about \$25-36 +plus shipping through your local feed store or extension office. One simply cannot manage what we do not measure, and a hay or forage test is a valuable first step towards building a supplementation program.
- 2) If you know that your ranch has saline soils, forages, or water – consider alternative ways to moderate supplement intake or provide a supplement that accomplishes more than one goal, for example - minerals with amino acids or protein pellets with basic minerals included. Your local MSU Extension Agent or feed store can be a huge help here.