Mineral Nutrition for Beef Cattle - Extension Program

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Introduction and Need

- Mineral nutrition for beef cattle is a growing interest among cattle producers, especially those who have participated in the South Dakota Grazing school
- South Dakota forages and water offer multiple challenges in regard to mineral nutrition, specifically related to copper, sulfur and molybdenum
- Due to producers and the South Dakota Grassland Coalition seeking more education in mineral nutrition and its' impact on cattle health and performance, this Extension program was piloted in 2017
- The program expanded in 2018 and 2019 to include a collaboration with North Dakota State University Extension

Objective

Provide educational resources and support to producers to assist in improving their cattle mineral program and subsequently cattle health and performance

Program Structure

- 2017
  - May and October – Face-to-face workshop at the SDSU Cottonwood Field Station
  - Optional summer ranch visits

- 2018
  - May and October – Face-to-face workshops in Manning, ND and Selby, SD
  - Optional summer ranch visits

- 2019
  - May and October – Face-to-face workshops in Bismarck, ND (included specialized training for NDSU Extension Agents) and Hot Springs, SD
  - Mandatory summer ranch visits

Curriculum

- **May workshop**
  - Introductions and Goal Setting
  - Mineral Program Options and Basic Mineral Nutrition
  - Animal Grazing Behavior
  - Monitoring Mineral Consumption
  - Forage Sampling Activities
  - Water and Other Feed Sampling Activities

- **Summer Ranch Visits**
  - 2 hours long
  - Focus on individual goals and objectives
  - No two are alike
  - Examples:
    - Forage and water sample collection
    - Cattle BCS
    - Evaluation of forage and water analysis
    - Evaluation of mineral options based on forage and water analysis results.

- **October workshop**
  - Review Ranch Visits and Goals
  - Interpreting Analyses and Applied Mineral Nutrition
  - Diagnosing and Managing Mineral Consumption Problems
  - Mineral Program Considerations from a Producer's Perspective
  - Diagnostics of Mineral Issues in North and South Dakota

Participants to date: 48 beef cattle operations plus 27 Extension and Industry Professionals

Impacts

- As a result of participating in the mineral program, participants' knowledge increased an average of 3.98 in 5 topic areas on a scale of 1-5, with 1 being no increase and 5 being great increase
- Changes participants made as a result of the program:
  - "Added another mineral feeder to get below 40 head per feeder. Changed to a high copper mineral with basic copper chloride"
  - "Better monitoring and better understanding of the tag"
  - "Eliminated unnecessary minerals from mix"
- Effect of the changes on the cattle health and performance:
  - "We have made progress with conception rates but plan to further progress with our mineral program"
  - "Still monitoring, but chelated mineral program from fetal stage saw increase in herd health"
  - "Less foot rot, no pinkeye"
  - "Improved cattle health overall"
- Future mineral goals:
  - "To get our mineral program to fit our feed quality which will help improve herd health, conception rates"
  - "Determining a suitable mineral program by time of year rather than one type all year to best fit our cattle's health and reproduction"
  - "Learn more, sample more, feed more efficiently"
  - "To much better utilize our programs and feeds available to have an efficient and profitable outfit"
  - "Would like to have specific mineral programs for specific pastures and grazing techniques according to forage and water samples"
  - "Based on samples, get ranch specific formulas"
  - "Find more efficient mineral for the time of year/type of season/condition of forages"

Sponsors

Micronutrients
Ward Laboratories
South Dakota Grassland Coalition
CHS