

HREC Advisory Board Meeting Report
February 19, 2019
Janna Block, NDSU Extension Livestock Systems Specialist

- **Published results from post-weaning calf feeding trial data summary and analysis in 2018 North Dakota Beef and Sheep Report** (“Evaluation of the interaction of injectable trace mineral and vaccination protocol on feed intake , performance, and immune response of weaned calves”; available online at: <https://www.ag.ndsu.edu/publications/livestock/2018-north-dakota-beef-and-sheep-report-1>)
- **2018-2019 fetal programming research trial** – Funding in the amount of ~ \$70,000 was received from the South Dakota Beef Industry Council to determine the effect of gestational energy source (full feed forage-based diet vs. limit-fed grain-based diet) on offspring postweaning performance, feed intake and efficiency, carcass ultrasound and evaluation, and meat quality and sensory characteristics. NDSU calves were backgrounded at HREC after weaning until the first part of December, and then shipped to the SDSU Cottonwood Research Center for about 30 days. They are currently on a finishing diet at SDSU in Brookings, SD, with target finish dates in May/June.
- **USDA Beginning Farmer Rancher Development Program (BFRDP) Grant (~\$600,000 requested)** – Not funded
- **Planned and facilitated multi-state “Minerals for Livestock Producers” Meetings** – Impact report attached.
- **Educational booth at ND Stockmen’s Association Annual Convention/Trade Show** – Sept. 13-15, Bismarck, ND
- **NDSU Extension Livestock In-Service Training** – Sept. 18-19, Rugby, ND – Conducted heifer selection exercise utilizing performance data and phenotypic evaluation with ~ 25 Extension Agents
- **NDSU Extension Backgrounding Series** – Oct. 16-18, McVie, Spiritwood, Napoleon, Granville, New Salem, and Killdeer, ND – Presented seminar on calf weaning management to ~ 100 livestock producers
- **NDSU Extension/Research Fall Conference** – Oct. 22-24, Bismarck, ND – Presented workshop on mineral supplementation for livestock producers and facilitated a brainstorming session with Dr. Schauer focused on strengthening the link between Extension and research in our state.
- **Beef Specialist Search Committee Member** – Helped develop advertising, screen applications, interview applicants, and develop hiring recommendations for NDSU administration for full-time on-campus Extension Beef Specialist (position vacated by Dr. Carl Dahlen in January of 2018)
- **Two manuscripts submitted to peer-reviewed publications** – Meat Science – In Review; J. Anim. Sci. – Rejected (resubmitting to alternate journal)
- **Presentation at Adams County Beef Day** – Jan. 22, Hettinger, ND
- **Presentation at NDSU Extension Feedlot School** – Jan. 23, Carrington, ND
- **Invited speaker at 2019 NCBA Cattlemen’s College** – Jan. 29-Feb. 1, New Orleans, LA – Presented information on fetal programming to livestock producers and industry professionals from around the nation (workshop selected as one of three Producer Choice sessions and presented four times during Cattlemen’s College).
- **Educational booth at Agri-International Expo., Bismarck, ND** – Feb. 12-13, Bismarck, ND

Beef Cattle Mineral Nutrition

Optimizing livestock mineral supplementation programs

Public Value Statement

Proper mineral supplementation of livestock helps ensure livestock health and performance, which increases production efficiency and helps ensure a stable, high quality food supply.

The Situation

Beef cattle mineral nutrition is a complex issue due to interactions among minerals, variation in mineral content of feed and water, inconsistent consumption of mineral by livestock, and differences in product source and bioavailability. There is increased emphasis on trace mineral supplementation due to health and production concerns that can result from mineral imbalance. Producers want to learn more about factors that impact effectiveness of their mineral programs and strategies for overcoming these challenges.

Extension Response

Extension personnel from North Dakota and South Dakota State Universities worked together to develop a multi-state educational program for livestock producers. This program consisted of two face-to-face workshop sessions per state in addition to individual ranch visits and consultations with



Figure 1. Ranch tour and discussion of mineral supplementation with a program participant

participants. Workshops focused on understanding livestock mineral requirements, basic mineral nutrition and product options, and dealing with consumption challenges. Tools for testing forages, feeds, and water for mineral content and tracking mineral consumption were provided to producers. At ranch visits, Extension personnel helped interpret lab results and worked with producers to develop custom recommendations for mineral program management.

Impacts

Participants collected and submitted 30 forage samples, 14 water samples, and 2 mineral supplement samples to a commercial laboratory for analysis. Three livestock operations reported that they have made changes to their previous mineral supplementation program, including improving mineral intake monitoring, adding additional mineral feeders, and changing to an alternate mineral product that better fits their production situation. Other participants have reported that they are planning to make changes pending additional water and forage analysis results.

Feedback

Producers reported improved reproductive performance and less cattle health issues (footrot, pinkeye, etc.) as a result of changing their mineral program. They appreciated the ranch visits and personalized approach to this production issue.

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Collaborators

Adele Harty, M.S., and Ken Olson, Ph.D. (SDSU Extension)

Non-Extension Collaborators

Dustin Seuss & Jeff Heldt (Micronutrients); Dustin Elkins & Lance Kennington (CHS Nutrition); Rebecca Kern (Ward Laboratories, Inc.); Pat Guptill (South Dakota Grasslands Coalition)