

## **BEEFLINE PROJECTS - IMPACTING THE PRODUCER AT HOME**

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**A**pplying science-based concepts to the ranch or farm should improve management and reduce production costs. Areas of concern were forage quality, water quality, feed byproduct utilization, performance recordkeeping and mineral supplementation. County extension agents sought cow calf producers in the central North Dakota counties of Logan, Ransom, Stutsman, Eddy and Griggs to cooperate with on-farm demonstration projects.

Five demonstration projects were developed with 27 farm/ranch cooperators. Although each cooperator operates under different farming/ranching conditions, the scientific concepts that underscore each project apply to all cooperators.

### **Logan County Demonstration Project: Determining mineral supplementation needs via grass clipping analysis**

Forage samples were collected once a month during the 2002 grazing season using a technique that harvests only the forage the cows were observed consuming. In addition to summer and winter forage samples, water samples were collected for determining mineral contribution to cow diets. Using the analysis results, a mineral supplement will be designed after determining the cow's nutrient requirements, cow weight, frame score, and body condition score.

Forage quality ranged from 7.7 – 12.6 percent crude protein, 33.3 - 47.9 percent acid detergent fiber, 0.29- 0.68 percent calcium, and 0.09 – 0.34 percent phosphorous depending on month of sampling. Trace mineral content is currently being analyzed. Water quality ranged from 420 – 2650 parts per million total dissolved solids while fecal coliforms ranged from 70 to 3900 coliforms per 100 milliliters. These levels indicate a wide variation in forage and water types within season and location.

### **Eddy County Demonstration Project: Evaluating water quality for cattle use, do we need better water?**

Water is an essential component of a cow's diet and good quality water is needed. Unfortunately, beef cattle producers seldom test water supplies for suitability. To draw attention to better water management and discover potential problems in Eddy County water supplies, livestock water was sampled from 13 locations among six livestock producers during the summer of 2002.

Water quality is measured by various factors including total dissolved solids, turbidity, and concentration of iron, calcium, magnesium, copper, sulfate and fecal coliforms. The water sources measured in Eddy county averaged 689.5 ppm total dissolved solids, 8.0 pH, and concentration of 2.2 ppm iron, 60.3 ppm calcium, 55.5 ppm magnesium, 2.5 ppm copper, 280.8 ppm sulfate and 615.6 fecal coliforms per 100 ml. Coliforms ranged from 0 to greater than 10,000 per 100 ml depending on watering source. Although fecal coliform average concentrations are high, total dissolved solids were relatively low and indicative of very safe water for cattle consumption.

### **Ransom County Demonstration Project: Co-products as an alternative creep feed**

Wheat midd coproduct is an alternative to commercial creep feed for beef cattle. A Ransom county cow calf cooperator was willing to compare commercial creep feed, wheat midds, and early weaned calf performance within his cow herd. Calves (198 head) were weighed prior to creep feeding on July 19, 2002 and at the end of the creep feeding period on October 11, 2002. Calves and cows were segregated by pasture and creep fed either commercially formulated creep feed or wheat midds.

Respective beginning and ending calf weights were 326 and 591 pounds for commercial creep, 300 and 524 for wheat midds, and 274 and 508 for early weaned calves in drylot. Although the commercial creep

fed calves weighed 41 pounds more than wheat midds creep fed calves, the gain has not been adjusted for cow age and calf birth date. Also, the cost of creep feeds and calf value have not yet been evaluated.



**Quality differences in water samples from Eddy County BeefLine Demonstration Project.**

**Griggs County Demonstration Project: Better management using CHAPS 2000 performance record system**

Since genetic and reproductive improvement is paramount to improving productivity in a cow herd, increasing producer use of Chaps 2000 is needed. Griggs County has about 19,000 beef cattle (ND Ag Statistics, 2001) and few are Chaps 2000 users. To demonstrate the value of Chaps 2000, seven cow calf producers were sought that had not previously used Chaps and were shown the value of the Chaps program.

Calves were weighed on-farm in October and November 2002 by the producer or in conjunction with the NDSU SmartCow program. Three of the seven producers' calves averaged 531.4 lbs. (149 head), 563.5 lbs. (69 head), and 505.8 lbs (37 head) at weaning. After cow age, calf birth date, sire and cow calf identification are provided to the Chaps program, reproductive and production performance and indexes can be calculated and provided to the cooperator.

**Stutsman County Demonstration Project: Balancing Beef Cow Rations for better performance and lower cost**

Cow calf producers routinely spend approximately \$220 per head per year in winter feed expenses (ND Farm Business Management 2000 Report region 3 – South Central North Dakota \$221 per cow). Rations balanced for energy, protein, mineral and vitamins are the foundation of proper nutrition. Cow calf producers in Stutsman County have sought ways to reduce feed expenses including co-product feeding and utilizing straws and CRP hays in cow diets.

Six of nine cattle producers have had samples collected and analyzed for crude protein, energy content via acid detergent fiber, calcium and phosphorous. Crude protein content of hays varied from 4.83 percent for mature switchgrass/big bluestem hay to 22.94 percent on third cutting alfalfa. Energy content varied from 35 percent TDN (NEg 0.00) to 69 percent TDN (NEg 0.46) for the same forages. Large differences in forage quality are noted among farm/ranches. Cow and calf rations will be analyzed and reformulated, if necessary.

Demonstrating the benefits of existing research and knowledge may increase producer awareness and acceptance. These projects were designed to explore management changes that may improve productivity within existing cow calf operations in central North Dakota. Grant funds were also available to aid producers in cost sharing new use applications.

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