

Making dormant season grazing work

AT A GLANCE

Supplementing with protein once a week to range cows grazing dormant forage will increase forage harvesting efficiency, minimize weight loss and reduce subsequent winter feed costs.

The Situation

The quality of forage on dormant rangeland does not meet a cow's nutrient requirements. Without any intervention, livestock production and ranch profitability are impacted. Using protein supplementation and rotational grazing can assist in maintaining cow body condition. If cows lack a "reserve" of adequate body condition when leaving early winter rangeland, it can impact production efficiency and herd fertility the following year.

Our Response

In 2016 to 2017, we conducted an experiment at the USDA-ARS U.S. Sheep Experiment Station in Dubois with 292 cows from the University of Idaho Nancy M. Cummings Research, Extension and Education Center (NMCREEC). Cattle grazed dormant rangeland pastures from mid-October to mid-December and were split into four treatment groups:

1. Cows managed in a continuous grazing system (stayed in the same pasture) and with no protein supplement.
2. Cows managed in a continuous grazing system with 7 lbs of a 28% crude protein supplement



UI research cows from Nancy M. Cummings REEC being trailed to shipping corrals following a late season grazing trial.

(Bova Cubes, Furst-McNess Company) fed once a week at mid-day.

3. Cows managed in a rotational grazing system (rotated through at least two pastures) with no protein supplement.
4. Cows managed in a rotational grazing system with 7 lbs of Bova Cubes fed once a week at mid-day.

A small subset of two-year-old cows (24 cows/year) were fitted with collars containing both a GPS logger and an accelerometer. An accelerometer is used on rockets to measure velocity in three directions. It is also the device that switches the screen orientation when a smart phone is rotated. Accelerometers were used to determine daily grazing, resting and walking activity in the current study.

Program Outcomes

Cow Production — Figure 1 shows the cow performance for this experiment. Cows that received no supplement and stayed in the same pasture for the entire grazing period lost weight. Cows that received a protein supplement gained weight. Additionally, cattle that received no protein supplement but had the opportunity to rotate pastures also gained weight. Providing cattle with a new, previously ungrazed pasture during late-season grazing can be perceived as a quasi-form of supplementation.

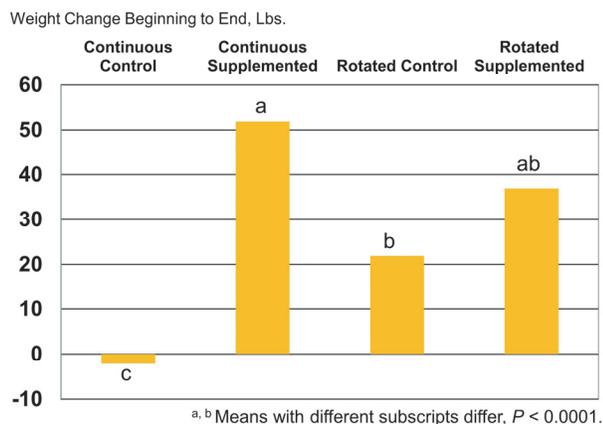


Figure 1. Weight change for protein supplementation trial.

Cow Behavior — Supplemented cows graze forage more efficiently than non-supplemented cows. They spend more time resting (up to one hour more per day) and less time futilely searching for better quality

forage; thus expending less energy to graze. This increased harvest rate (Figure 2) enables supplemented cows to gain more weight. Additionally, the supplemented protein feeds rumen microbes, thus increasing both the digestibility of forage and the passage rate of forage through the rumen. The increased passage rate allows for increased intake of dormant forage, allowing cows to better meet maintenance requirements.

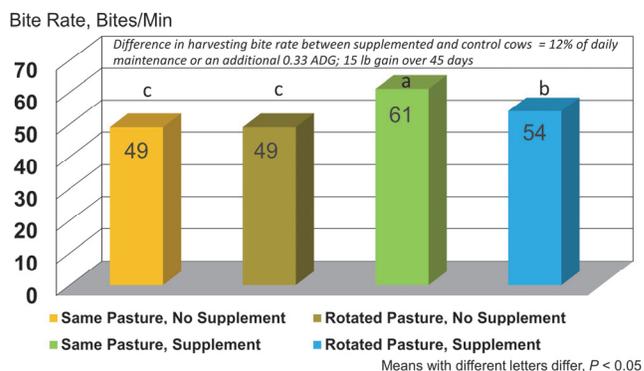


Figure 2. Harvesting rate for supplemented versus control.

Cooperators and Co-Sponsors

Jim Sprinkle, Joseph Sagers, John Hall, Melinda Ellison and Joel Yelich (University of Idaho).

Dr. Bret Taylor (U.S. Sheep Research Station, Dubois), Dr. Jameson Brennan (South Dakota State University, Rapid City, South Dakota) and Dr. Jim Lamb (Furst-McNess Company, Rexburg).

FOR MORE INFORMATION

Jim Sprinkle, Extension Beef Specialist • University of Idaho Nancy M. Cummings Research, Extension & Education Center • 208-756-2749 • sprinkle@uidaho.edu

28-21-jsprinkle-grazing-work • 6/21