

Approach to Reducing Beef Production Costs Challenges Traditional Assumptions

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Reducing costs of beef production in the Northern Plains may require a change in some basic assumptions about effective management practices, says a North Dakota State University range scientist.

"Preliminary results of studies at NDSU's Dickinson Research Extension Center indicate that beef production costs are high in part because traditional pasture-forage management practices implemented in the region are not well-suited to the modern beef animal," says Lee Manske, a range scientist at the Dickinson facility. "Combining old management practices and modern livestock leads to great inefficiencies in the capture of the nutrients produced on a land base and in the conversion of those nutrients into a saleable product. These inefficiencies contribute to high production costs."

Traditional pasture-forage management strategies used in the Northern Plains were developed during the era of low-performance livestock. During the past several decades, the type of livestock in the region has shifted to a fast-growing, high-performance animal, but pasture-forage management strategies have not been adjusted to take full advantage of modern livestock's genetic potential, Manske observes. Attempts to produce high-performance livestock through the use of traditional low-performance management strategies result in calves with weaning weights below potential and in high annual expenses for cow maintenance.

Traditional low-performance pasture-forage management practices focus on providing livestock with adequate dry matter and supplement nutrients only when absolutely necessary, Manske explains. Under these strategies, low-performance cows produced lightweight calves. These practices were successful for low-performance livestock because the animals had low production drain and were able to store nutrients when they were available and draw on nutrient stores during periods when forage quality was low.

High-performance livestock have high production drain and do not produce at potential levels under traditional strategies. These modern animals perform more efficiently when nutrients are provided as they are required during each production period, Manske emphasizes. "Expecting a high-performance cow to produce a large healthy calf when depending on stored body fat and poor-quality feed is like expecting a professional athlete to perform remarkable feats on the diet of a couch potato."

In contrast to traditional practices, effective management strategies for high-performance livestock focus on providing animals with adequate nutrients throughout the year and supplement dry matter when necessary. Producers can match forage nutrient supply to livestock nutrient demand by selecting appropriate combinations of pasture and harvested forage types that grow well in the Northern Plains and by timing livestock use of those forages so that herbage production curves and nutritional quality curves of the plants match the dietary quantity and quality requirement curves of cow production periods, Manske says.

"Coordination of forage quality and quantity with livestock requirements is necessary for efficient beef production," Manske stresses. "This coordination improves individual animal performance, reduces acreage required to carry a cow-calf pair for the season, increases total accumulated weight gain, reduces costs per pound of accumulated calf weight, and increases net return after pasture-forage costs per cow-calf pair and per acre."

Investigations into the effectiveness of beef production practices and their incorporation into 12-month pasture-forage management systems are ongoing at the Dickinson Research Extension Center.