Ridin' Herd

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A management system to attack feed costs

Most commercial cow herds in the Northern Plains States are bred to calve in the spring months of February, March and April. Typical spring calving occurs in these states before pastures are ready to be grazed. In this scenario, late gestational and lactating females need to be fed high-quality harvested forages and are usually supplemented with energy, protein, or both energy and protein, especially after calving, to meet their nutrient requirements.

Spring vs. summer calving

In most cow-calf enterprises, harvested forages account for a large portion of feed costs. Extending the grazing period in lieu of feeding harvested forages will reduce production costs and will increase net returns in the cow-calf enterprise. Moving calving to late spring and early summer allows cows to meet their nutrient needs for a longer period of time while grazing dormant range with some supplementation, and almost eliminates the need to feed harvested forages.

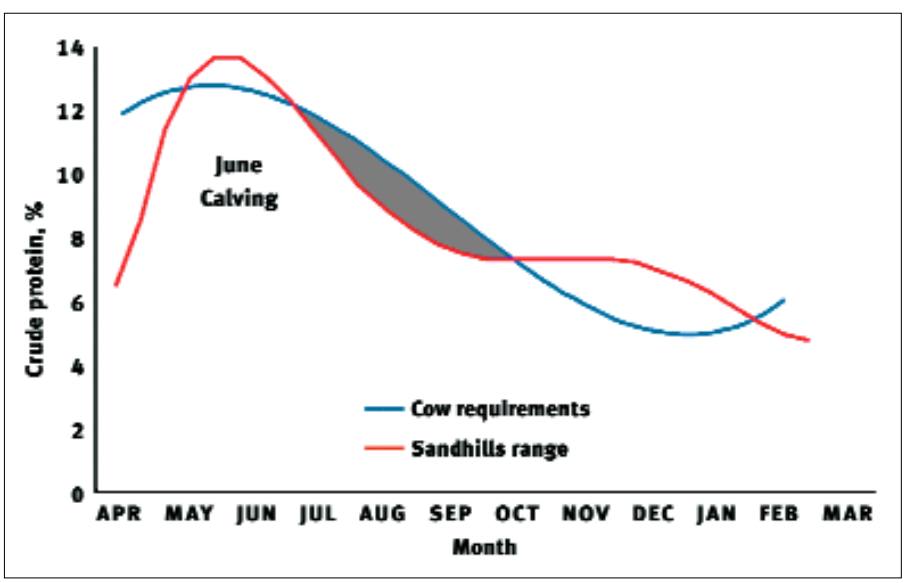
The greatest nutrient demand on beef cows is during lactation. During lactation, cows need to be fed high-quality hay and, sometimes, supplemented to meet energy and protein requirements. In most Northern Plains locations, much like the Sandhills of Nebraska, the primary grasses available for grazing are warm-season grasses that become available in late May and June. If cows calve in March, this means they are fed a lactation diet for about 90 days before summer grazing.

It has been documented that the highest quality in warm-season grasses in Nebraska occurs in late May to mid-June and gradually decreases thereafter (see Fig. 1). Sequencing calving closer to the time when the grazed resource will meet the nutrient demands of the lactating female reduces feed costs and increases profit potential. Basically, this means shifting cows calving in early spring to calve in early summer.

Key advantages to changing calving time using a systems approach include:

- Cows have access to vegetative forage for a short period of time prior to calving;
- Cows meet their energy and protein needs from the pasture resource;
- Hay and supplement costs are reduced because peak lactation now occurs when vegetative, high-quality forage is available;
- Calf losses and sickness are reduced because calving occurs when the weather is warmer;
- Less labor is needed at calving because calves weigh less at birth for June-calving cows compared to February/March-born calves;
- Labor is reduced because less harvested feeds are fed; and
- Different market alternatives are available for the calves, cull cows and bulls.

Fig. 1: Monthly crude protein content and change in crude protein requirement for a June-calving herd



In 1993, a summer-calving herd was developed at the University of Nebraska Gudmundsen Sandhills Laboratory to compare spring- and summer-calving herds. In the spring-calving herd, cows began calving in March, the breeding season began in June, and calves were weaned in October. For the summer-calving herd, calving began in June, the breeding season began in September, and weaning occurred in November or January.

Data were collected in 1994, 1995 and 1996. Summer-calving cows were fed 227 pounds (lb.) of hay per cow per year, compared to 3,947 lb. of hay per cow per year (see Table 1). Similar amounts of protein supplement were fed: summer-calving cows were fed 154 lb. per cow per year, and spring-calving cows were fed 96 lb. per cow per year. The length of the grazing season went from 233 days to 357 days by adjusting the calving time from March to June.

Cow reproductive performance was not different between groups. When calves were weaned at similar days of age, summer-born calves were about 35 lb. lighter. However, January calf prices tend to be higher for the same weight of calf sold in October; therefore, summer-born calves generate similar gross income as spring-born calves.

Due to costs savings in the summer-calving system, primarily due to less labor and less hay fed, the summer-calving system was more profitable — even at weaning time.

Summer concerns

Some concerns with this summer-calving system include the breeding season occurring at a time when the temperatures are high. In the Sandhills of Nebraska, the temperature decreases at night, and the humidity is low. In some areas of the United States, because of high humidity and no night cooling, a breeding season that occurs during this time period could result in lower pregnancy rates.

Table 1: Feed inputs for March- and June-calving cows

	March	June
Hay fed, lb.	3,947	227
Supplement fed, lb.	96	154
Days of grazing	233	357

There have also been reports by producers who have used this system of experiencing more calf scours. We did not experience that in our summer-calving herd. We have experienced a lower rebreeding performance of the first-calf cows during their second breeding season. Pregnancy rates ranged between 75% and 80% for females bred for their second pregnancy.

Nebraska Sandhills upland range is dominated by warm-season grasses that decline in energy and protein in late summer and early fall. Evaluation of the forage indicated that the quality in some situations is not sufficient to meet the young females' nutritional needs during lactation, especially energy and protein needs (the shaded area in Fig. 1).

We have conducted experiments using supplementation regimes to meet the young lactating females' nutrient needs that have resulted in acceptable rebreeding performance of these females. Pregnancy rate for the second breeding season for the supplemented cows was 95%, compared to 79% for the non-supplemented cows. When we repeated the experiment, pregnancy rates were not different between the two groups.

Quality of the grazed forage was different in Experiment 1 compared to Experiment 2. In Experiment 1, drought occurred early in the growing season, which influenced quality during the growing season. We also saw a response in pregnancy rate to supplementation. Bottom-line — it is important to evaluate the grazed forage resource, especially prior to the breeding season, for young cows in this management system.

If one studies the nutrient quality change in Sandhills range in Fig. 1, it appears that late April or early May calving may be a better fit to further reduce feed inputs and supplementation to young females during their second breeding season. By moving the calving time to late April, the cow requirement line shifts slightly to the left, and the shaded area is squeezed down.

Databases that describe protein and energy content of grazed forages, like the ones developed for the Sandhills of Nebraska, are tremendous assets to producers to help them design production systems that fit their operations and have potential to increase profit. In addition, these databases aid producers in designing strategic supplementation strategies.

Final thoughts

Changing calving time, and therefore the timing of lactation, can have a major effect on unit cost of production. If lactation — the time of greatest need for feed quantity and quality for the beef cow — can be matched more closely with the grazed forage resource, harvested feed inputs can be reduced.

As you think about changing the time when calves are born, also develop a marketing plan to take advantage of seasonal price trends for calves, cull cows and bulls.

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Editor's Note: *"Ridin' Herd" is a monthly column written by Rick Rasby, professor of animal science at the University of Nebraska. The column focuses on beef nutrition and its effects on performance and profitability.*