

Extended Fall Grazing That Improves Profits

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Beef producers who extend livestock grazing on native rangeland or cropland aftermath past the end of the growing season to mid-November can increase their profits by switching to domesticated wildrye pastures for the last 30 days of the grazing season, says a North Dakota State University range scientist.

“Grazing native rangeland or cropland aftermath pasture-forage types from mid-October to mid-November reduces the quantity of harvested forage needed per cow by about 1,000 pounds of dry matter forage. For this reason, the grazed mature plant residue of these fall pasture-forage types is widely assumed to be the lowest-cost late-season forage,” says Lee Manske, a range scientist at NDSU’s Dickinson Research Extension Center.

“However, performance of livestock grazing this maturing vegetation decreases, and the forage is no less expensive than alternatives that provide the animals with adequate nutrients to maintain weight. Producers who determine the actual forage costs of extending the grazing season for this 30 days on native rangeland or cropland aftermath will find that these management practices are not improving profit margins,” he observes.

Most beef producers know that animal weight gains are lower during the fall than during the early portion of the grazing season, but few producers know the actual amount of the reduction in animal performance during the later portion of the season, Manske says.

Beef producers can infer from experience a close approximation of the weight of calves when they go out to pasture in the spring, and, if the calves are sold at weaning, producers know about the average weight of calves when they come off pasture in the fall. The difference between the two estimated weights gives producers a general idea of calf weight performance across the entire grazing season, Manske says. But the extent of the reduction in cow and calf weight gain during the late portion of the grazing season may not be obvious when animal performance during spring, summer, and fall is averaged.

Cow and calf weight gain performance during the fall portion of the grazing season on traditional grazing management systems is far below the animals’ genetic growth potentials, he says. Cows lose a great deal of weight--from around a quarter to two-thirds of a body condition score in a month. Calves gain very little weight--only around 25 percent to 40 percent of their potential weight gain.

“These reductions in animal performance result from the changes that forage plants undergo as they follow their annual pattern of growth,” Manske explains. “As grasses in the Northern Plains mature during the growing season, they transfer the contents of leaf cells to other plant parts, including the root system. A decrease in herbage weight and nutrient quality results. By the late portion of the grazing season, most plants are in the late stages of aging, or senescence, and herbage quantity and quality are greatly reduced from mid-season levels.”

The weight of the fall herbage on native rangeland pastures not previously grazed that season is only about 40 percent to 60 percent of the mid-summer herbage weight on ungrazed grasslands. Typically, summer stocking rates on traditional management systems are not adjusted after mid-October to reflect the reduction in fall aboveground herbage biomass. That lack of adjustment leads to livestock weight performance reductions beyond those caused by the natural decrease in herbage weight and nutrient quality.

“Nutritional quality of native rangeland grasses decreases rapidly following the plants’ flowering stage, and the quality falls below the crude protein requirements of a lactating cow around mid-July to early August,” Manske says. The crude protein content of native rangeland herbage during the fall is around 4.8 percent, about half the content of mid-summer herbage and about half the crude protein content required by lactating cows. Cows grazing herbage with nutrient content below their dietary requirements draw on stored body fat to provide for a portion of

their milk production, and their weight decreases. The loss of weight leads to decreased milk production, which results in reduced calf weight gain per day.

A study at the NDSU Dickinson Research Extension Center calculated animal performance during the fall separately from animal performance during the other portions of the grazing season. This study with 15 years of data determined the reductions in cow and calf weight gain on native rangeland and cropland aftermath grazed during the late portion of the grazing season and ascertained the high cost of grazing those forage types during the fall.

The study evaluated cow and calf weight performance, fall pasture costs, returns after pasture-forage costs, and costs per pound of calf weight gain for four pasture-forage types grazed by 1,200-pound range cows with calves during the 30-day fall period from mid-October to mid-November. The pasture-forage types were:

- Native rangeland managed by traditional seasonlong grazing practices, at \$8.76 rent per acre. Cow weight performance was a loss of 52.20 lbs, at a rate of 12.90 lbs per acre and 1.74 lbs per day. Calf weight performance on these native rangeland pastures was a gain of 17.73 lbs, at a rate of 4.38 lbs per acre and 0.59 lbs per day. When calf accumulated weight was assumed to have a value of 70 cents per pound, the gross return was \$12.41 per calf, and the net returns after pasture costs were a loss of \$22.98 per cow-calf pair and a loss of \$5.69 per acre. During the 30-day fall period, each accumulated pound of calf weight cost \$1.99.
- Native rangeland managed by deferred grazing practices, at \$8.76 rent per acre. Cow weight performance was a loss of 22.20 lbs, at a rate of 9.96 lbs per acre and 0.74 lbs per day. Calf weight performance on these native rangeland pastures was a gain of 23.10 lbs, at a rate of 10.36 lbs per acre and 0.77 lbs per day. When calf accumulated weight was assumed to have a value of 70 cents per pound, the gross return was \$16.17 per calf, and the net returns after pasture costs were a loss of \$3.36 per cow-calf pair and a loss of \$1.51 per acre. During the 30-day fall period, each accumulated pound of calf weight cost 85 cents.
- Cropland aftermath of annual cereals, at \$2 rent per acre. Cow weight performance was a loss of 48.17 lbs, at a rate of 7.27 lbs per acre and 1.61 lbs per day. Calf weight performance on these cropland aftermath pastures was a gain of 12.57 lbs, at a rate of 1.90 lbs per acre and 0.42 lbs per day. When calf accumulated weight was assumed to have a value of 70 cents per pound, the gross return was \$8.80 per calf, and the net returns after pasture costs were a loss of \$4.46 per cow-calf pair and a loss of 67 cents per acre. During the 30-day fall period, each accumulated pound of calf weight cost \$1.05.
- Altai wildrye, at \$8.76 rent per acre. Cow weight performance was a gain of 16.50 lbs, at a rate of 11.87 lbs per acre and 0.55 lbs per day. Calf weight performance on these Altai wildrye pastures was a gain of 52.77 lbs, at a rate of 37.96 lbs per acre and 1.73 lbs per day. When calf accumulated weight was assumed to have a value of 70 cents per pound, the gross return was \$36.94 per calf, and the net returns after pasture costs were \$24.76 per cow-calf pair and \$17.81 per acre on Altai wildrye pasture. The cost of calf weight gain was 23 cents per pound during the 30-day fall period.

The Altai wildrye was the only grazed forage type that produced a profit during the 30-day fall period. Although calves gained a small amount of weight during the fall portion of the grazing season on native rangeland and cropland aftermath pasture-forage types, the market value of the calf accumulated weight at 70 cents per pound is less than the rent costs of the native rangeland and cropland aftermath pastures. The loss of weight by cows on traditional management treatments also should be considered a cost.

“Cow and calf performance on the Altai wildrye pastures was stronger because that pasture-forage type meets the nutritional requirements of lactating cows after mid-October,” Manske says. “Wildryes such as Altai and Russian are the only perennial grasses that retain nutrient quality in the aboveground portions until around mid-November. No perennial grass in the Northern Plains retains sufficient nutritional quality to dependably meet the nutritional requirements of lactating cows later than mid-November.”

“Extending the grazing season one month on traditionally managed pasture-forage types does not reduce feed cost and greatly reduces livestock weight performance from potential weight gains,” Manske says. “Economically extending the grazing season by about a month beyond the end of the growing season for perennial plants, which usually occurs around mid-October, requires use of pasture-forage types that have sufficient nutrient

quality to meet livestock dietary requirements and sufficient herbage quantity to permit efficient capture of a relatively high proportion of the produced nutrients from the land base.”