

Extended GRAZING

Graziers have options when tending cows to allow the animals to do much of the forage gathering.

by Troy Smith

The long suit of the bovine brute, or any ruminant animal, is its ability to utilize forage. A cow can live, and often thrive, in just about any environment that produces adequate forage. Particularly where cultivation of crops is impractical — because the elevation is too high or too low, the climate is too wet or too dry, or the terrain is too rough, with rocky or sandy soil — there usually exist plants that a cow finds palatable. Her ability to adapt to various production environments by utilizing a variety of forage resources is, in a sense, job security.

Graziers, those folks who tend grazing animals, are really in the business of managing forages. For most of them, job security depends on a profitable and sustainable integration of cattle and forage resources. Harboring the notion that the cow should do as much of the work as possible, graziers may look for ways to implement extended grazing. That means increasing the length of the grazing season to include time periods, such as winter, when harvested feeds are usually fed.

The primary reasons for extended grazing are to make more efficient use of resources and to reduce costs, with an eye on improving profitability. Many of the most profitable beef production systems minimize feeding of harvested forages. Feeding less harvested forage may save costs associated

with the purchase and maintenance of machinery for harvesting and feeding forage, along with fuel and labor costs. And since extended grazing usually involves planned use, with consideration for rest and regrowth, pasture or rangeland vigor and productivity can be improved.

Without planned allocation of grazing resources and careful attention to stocking rates, attempts to extend the grazing season can be detrimental to the resource base and to the producer's bottom line.

Rangeland options

According to Pat Johnson, professor of range science at South Dakota State University (SDSU), extended grazing of native range or seeded pastures may be accomplished by grazing some pastures earlier in the spring or later in the fall, or by deferring some pastures for winter use.

Early or late grazing is most applicable where cool-season grasses and forbs are dominant, since they are most productive during spring and fall, but dormant during the heat of summer. Johnson says cool-season introduced pastures often are more tolerant of grazing. But she advises producers to use caution when grazing native ranges, since native plant communities are more easily damaged by heavy, early grazing.

"Rules of thumb for early grazing include



► When grazing cows later into the fall or winter, leave sufficient standing plant material to serve as thermal cover and to catch snow, South Dakota State University range scientist Pat Johnson recommends.

keeping the grazing period short," Johnson warns. "Stocking rates should be conservative, and pastures grazed early should not be used again until cool-season species are dormant. And do not graze those pastures the same early-spring period during the next one or two years."

When extending the grazing season into late fall, Johnson encourages the use of introduced pastures when available. Late grazing on native range should be limited to pastures that were deferred until fall, or grazed only lightly during the growing season. Livestock will favor fall regrowth, and overgrazing may damage plant viability. This is especially true during and after drought. Again, Johnson recommends relatively low stocking rates. Leave sufficient standing plant material to serve as thermal cover and to catch snow. Pastures grazed late in the fall should not be used during the following spring.

Grazing dormant, stockpiled forages in the winter is another method of extending the grazing season. "Stockpiled" forages are the result of deferring pastures from any grazing, or utilizing only part of the available forage during the growing season.

Deferral, followed by winter grazing, can

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help improve range or pasture condition unless prolonged winter use removes all standing cover. On Western ranges and drought areas, standing plant material catches snow, which is a valuable source of moisture.

Of course, the utilization of standing forage during the winter can be challenged by wet conditions or deep snow. Having hay on hand for supplemental feed is advisable. And even when the weather is cooperative, the quality of winter pasture usually is low, so supplemental protein may be needed.

Johnson warns that extended grazing should not be implemented without considering the number of pastures available for rotational use and adjustment of stocking rates.

"If a producer doesn't add pastures to the system, the grazing season can't be extended without adjusting animal numbers," she emphasizes. "Repeated and/or heavy grazing reduces root growth, leading to decreased forage production and increased plant mortality. Extended grazing adds complexity to the system, increasing the demand for producer commitment and time for proper management."

More grazing resources

A wide variety of complementary forages can be used in conjunction with existing pasture or rangeland to extend grazing. Options include development of seeded pastures with perennial cool- or warm-season grasses. Additional grazing time may be gained through utilization of annual

cool-season cereal crops such as oats and triticale, or warm-season annuals such as pearl millet, Sudan grass and corn. Crop residues, with cornstalks being most abundant, are commonly used to extend the grazing season. When the risk of bloat is managed appropriately, alfalfa and other legumes also can be incorporated into extended grazing systems.

University of Nebraska Range and Forage Specialist Jerry Volesky says irrigated pasture can be a valuable part of extended grazing systems. Devoting irrigation to forages intended for grazing, instead of to more traditional crops, becomes more attractive during times of low grain prices and rising costs of purchased or rented pasture. And a variety of grasses and other forages are applicable, seeded alone or in mixtures, to supplement nonirrigated pastures and native range.

"There are multiple options for increasing forage availability at different times of the year. If early grazing is needed during April and May, for example, high production and return per acre can be achieved with winter annuals such as wheat, rye and triticale. For grazing from October through January, those winter annuals can be used, or warm-season annuals can be grown and stockpiled for the winter," Volesky offers.

Irrigation also allows for double-cropping options. Volesky says a winter annual, like triticale, can be planted in September and grazed in the spring, followed by June-seeded Sudan grass, which could be grazed during July and August.

"Cool-season perennial grasses work well," he adds. "Irrigation can lift cool-season grasses out of their summer slump. It's possible to get up to 4½ tons per acre of production from April through October."

Nutritional considerations

When contemplating an extended grazing season, producers should consider cow nutrient requirements. The most efficient grazing strategies match periods of high nutrient demand with forages of high nutrient value. According to University of Nebraska Extension beef specialist Don Adams, a cow's protein and energy requirements increase during late pregnancy

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and are greatest at peak lactation, or 45-60 days after calving. Standing forage usually is of highest quality when rapidly growing and in a vegetative stage of development. Adams believes that timing the calving season and subsequent lactation to coincide with the availability of high-quality grazed forages makes the most efficient use of forage resources, particularly in an extended grazing system.

"The calving date controls when milk production begins, but the weaning date determines when it stops and the cow's nutrient needs are reduced. Her needs are lowest when the cow is dry, so there is the opportunity to utilize lower-quality forages," Adams explains.

Economics

While research indicates that well-managed extended grazing systems often result in lower overall feed costs, all potential effects should be considered before changes are implemented. Extended grazing can lower costs, which may or may not net greater profits. It is advisable to compare current costs with estimated costs associated with the management system under consideration. Per cow costs can be misleading, so figure cost per hundredweight (cwt.) of weaned calf, which incorporates cow costs but also accounts for breeding and weaning success, as well as weaning weight.

Adapting to an efficient extended grazing system might mean changing the times of calving, weaning and marketing. But, Adams admits the producer who plans to continue selling weaned calves in October probably won't be happy with a change to June calving, even if that is when the highest quality forages are available.

"Before making any changes, consider the impacts on production and marketing, including seasonal price differences in markets for calves, yearlings and cull cows," Adams advises. "But remember that integration of cattle and forage resources really isn't about dates on a calendar. It's about forage quality and quantity."



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Supplementing Winter Grazing

For many cattle producers, extended grazing strategies will involve utilization of grazed forages during the winter. Dormant grass or crop residues probably are the most common resources. Since these forages are not green and growing, they often are of low quality and may not meet animal nutrient requirements. Greg Lardy, North Dakota State University (NDSU) Extension beef specialist, urges producers to consider the need for supplemental nutrition, protein in particular.

"You need to know what your animals' needs are, and what nutrients are available in the forage," Lardy stresses. "Forage analysis is recommended — always."

For cows, the postweaning, mid-gestation period is the time when nutrient requirements are lowest. That can be a good time to make use of low-quality forages, with only minimal need for supplements other than salt and mineral. However, cows' requirements climb during the last trimester of gestation and peak during lactation. Lardy says having cows in adequate body condition [body condition score (BCS) 5 or better] at calving is critical. It is difficult to increase body condition postcalving.

In most winter-grazing situations, supplemental protein will be the primary consideration, though adequate levels of vitamins and minerals are important. Cattle must have adequate rumen degradable protein for rumen microbes to digest low-quality forages for energy. But protein supplements are not forage substitutes, Lardy warns.

"Cattle must have adequate forage for protein supplementation to work," he explains.

"Studies have shown that protein supplementation may even increase forage intake by 2 to 3 pounds (lb.) per day," Lardy says. "Supplemental protein helps cattle get the most out of the forage consumed, but it won't extend the forage supply."

For cows grazing an unlimited supply of dormant pasture or winter range, Lardy recommends feeding the equivalent of 1 to 1¾ lb. per day of a 32% all-natural protein cube, or 3-4 lb. of good alfalfa hay. Natural protein sources appear to stimulate rumen microbial activity, so, along with increasing forage intake, forage digestibility usually increases, too. Some urea can be used, but Lardy recommends limiting urea to 30% to 40% of the total protein supplement.

Using alfalfa hay as a supplement usually adds cost because its bulk requires equipment, fuel and possibly more labor to feed. However, alfalfa delivers more energy — up to twice as much — than protein cubes.

Forage intake and digestibility can be reduced when producers try to stretch winter grazing or low-quality harvested forages by feeding corn or other grains for added energy. The starch from grain lowers rumen pH, causing a decline in forage-digesting microbes. Lardy says the results of decreased forage digestibility can be worse than if no supplemental feed was provided.

"Make sure protein requirements are met first, if feeding grain in amounts above 0.4% of body weight (per day). And avoid feeding oil seeds in amounts over 3% to 3.5% of body weight, or they can have a negative effect on forage digestion," Lardy advises.

If energy-based supplements are fed to stretch forages, it should be done every single day. Consistent consumption of supplemental grain is important to rumen stability. However, supplemental harvested forages need not be fed daily. The same is true for protein supplements.

"You can save delivery costs by feeding supplemental hay and/or protein on alternating days, or every third day, without affecting rumen digestion. Some producers who give their cows hay and protein cake (cubes) feed hay one day and cake the next. Or they feed both hay and cake, on alternating days," Lardy states. "Winter grazing is a way to optimize forage utilization with minimal cost, but strategic supplementation will improve beef cattle performance."

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