

The Digestive Tract

Brainstorming your forage use strategy preseason can make all the difference.

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Feed costs are a primary expense for cow-calf operations. The majority of this cost can be

attributed to stored or purchased feed fed during the winter. For the vast majority of cow-calf producers, pasture provides the base nutrition for the herd.

Managing pastureland is key to maximizing grazing days and minimizing days cows need to be supplemented with harvested or

purchased feedstuffs. Grazing management approaches vary greatly across the country due to regional variation in soil types, forage species, environment, labor availability, infrastructure and preferred grazing techniques.

Nutritional needs

Grazing management should focus on balancing cattle needs with forage availability, promoting rapid pasture regrowth and facilitating long-term pasture persistence. Managers should develop a grazing plan to ensure

goals are met. The first step of the plan is understanding cattle requirements and establishing cattle performance metrics. Determining ideal calving dates affects how cow requirements match forage availability.

For operations grazing a cool-season forage base, calving cows in the spring allows for peak requirements of the cow herd to align with the greatest forage quality and availability. Additionally, if operators are also backgrounding calves or developing replacement heifers,

targeted growth requirements of these classes of cattle need to be considered.

Once you have established the classes and requirements of cattle that will be grazing, you can now determine which grazing practices could be utilized to meet those needs. The grazing practice utilized and forage base will ultimately determine the carrying capacity of your pastureland. The carrying capacity of pasture is the stocking rate that is sustainable over time.

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Stocking rate not only affects individual animal performance, but it also influences the total output of the land area. Low stocking rates result in increased animal performance and decreased output per area of land. Increased stocking rates (to a point) increase output per area of land, yet can decrease individual animal performance.

Forage management

Continuous grazing management is the practice of grazing a set number of cattle in a pasture for the entire grazing season. The number of cattle a pasture can support in a continuous grazing management scheme is determined by forage yield during the poorest time of the grazing season.

The advantages of this system are reduced infrastructure (only perimeter fence, single water source, etc.) and reduced labor (not rotating cows). However, the disadvantages of this system are that production per acre is low; spring forage is wasted; and cattle selectively graze, which leads to areas of low productivity and lack of forage species diversity.

Grazing methods that allow for times of rest and forage regrowth can improve carrying capacity of pastures. The optimal time to graze a forage is in the vegetative stage. As cool-season forages mature and lignify, the quality declines. When cattle are continuously grazing a pasture, cows will re-graze the lush regrowth in some areas and trample and avoid areas where forage has matured to reproductive stage.

By dividing a pasture into paddocks and rotating cows through the paddocks, cows have less incentive and opportunity to selectively graze. Increased utilization of forage and

uniformity of grazing helps promote good forage stands.

When cattle are rotated out of a paddock, the paddock then has an opportunity to rest and regrow. This system allows for greater utilization and increased forage growth. Ultimately a rotational grazing system allows increased carrying capacity and results in more pounds of cattle production per acre of pasture.

Where to begin?

There are a variety of approaches to rotational grazing. The number of paddocks utilized determines what percent of the time a paddock will be rested. For example, in a two-paddock system, 50% of the time a paddock is grazed and 50% of the time it is rested. With a four-paddock system, 25% of the time a paddock is grazed, and 75% of the time it is rested.

The number of days you graze each paddock and the number of paddocks used will determine the number of rest days. If we have a four-paddock system and graze each paddock for seven days, each paddock will be rested for 21 days before it is grazed again. The ideal number of days of rest is dependent on forage species. Some species only need seven-15 days, while others ideally need closer to 30 days (e.g., tall fescue).

Transitioning from a continuous grazing system to a rotational grazing system can be daunting at first. I recommend establishing the rotational grazing system over a few years. Initially, you may just

have three to four paddocks. Then you can subdivide in subsequent years so you have six to eight paddocks (or more).

Assuming you have good perimeter fence, interior-divide fences can often be single-wire. There are many excellent fencing options out there for establishing rotational-grazing systems. Water is often one of the limitations to establishing a rotational system. Ideally, cattle should not have to travel more than 800 feet (ft.) to a water source in order to maximize grazing distribution.

Stockpiling forages

Another strategy to extend the grazing system is stockpiling pastures. Stockpiling is the practice of allowing standing forage to accumulate for grazing at a later period, often for fall and winter grazing. Typically, stockpiling begins in late July or early August. Ideally, forage has 60-75 days of growth prior to frost. Tall fescue is the best candidate for stockpiling, although most cool-season perennials can be stockpiled.

Stockpiled forages can be grazed into the winter, depending on weather. The best grazing management practice for stockpiled forages is strip-grazing, as it results in more efficient utilization of the accumulated forage and less waste.

Stockpiling forages for late-fall and early-winter grazing can be a great tool to extend the grazing season. However, it is dependent on timely rain in late summer and

early fall, and fertility of the pasture can certainly affect forage accumulation.

Another potential benefit to stockpiled forages can be seen the next spring. Since the forages are grazed in the late fall or winter when they are dormant, root reserves remain intact and thus can provide a boost to early spring growth.

One of the challenges of stockpiling systems is where to go with the cows during that early-fall period when pastures are being stockpiled. In the upper Midwest and Plains, there is an abundant supply of cornstalk residue.

I believe cornstalk residue is one of the most underutilized feed resources we have, and the timing of corn-residue grazing can coincide well with stockpiling forages. Cows will selectively graze cornstalks, selecting the most nutritious and digestible components first. Thus, strip-grazing management can improve grazing efficiency.

If you are grazing dry cows in mid-gestation, cornstalk residue is a pretty good match to the cows' requirements. If cows are lactating, in late gestation, or you graze the same cornfield for 30 days or more, you will likely need to supplement cows.

Takeaways

It is well-established that the key to profitable cow-calf production is minimizing feed costs. The best way to do that is to maximize grazing efficiency. Utilization of rotational grazing, stockpiling and crop-residue grazing are excellent opportunities to increase grazing days, reduce feed costs and improve profitability. **ABB**

Editor's note: "The Digestive Tract" is a regular column focused on nutrition for the beef cattle life cycle. Dan Shike is an associate professor in animal sciences at the University of Illinois.

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