
Hoos-Your Grazing Network

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Extending the Grazing Season

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Feed costs represent the major cost in most livestock production systems. The primary function of a grassland farm is to convert solar energy to marketable livestock products in the most efficient manner. The fewer steps between the solar energy and the animal product, typically, the more economically efficient the production systems will be.

Providing grazeable forage, in a cost-effective manner to the animal, for as many days of the year as possible, should be the goal of the grazing manager.

Several strategies can be employed to supply forage into the fall or early winter and effectively extend the grazing season by 60 to 90 days, thus reducing the amount of stored feed. These strategies can be categorized into two major groups: 1) stockpiling (conserving cool-season forages in late summer for use in the fall and winter), or 2) utilizing forage crops that continue to grow into the fall and early winter.

Not all cool-season species are adapted to stockpiling because most species reduce growth in the fall because of shorter day lengths and/or lose leaves (quality) after being frosted. Tall fescue and birdsfoot trefoil are two forage species which are suited to stockpile management because they continue to grow into the fall and do not lose leaves as readily as other species after frost.

Tall fescue is a deep-rooted, long-lived, sod-forming grass that spreads by short, underground stems called rhizomes. Animals readily consume tall fescue during the fall and winter. It is the best cool-season grass for stockpiling. It will maintain more active growth at lower temperatures than most other cool-season grasses, and so it will continue to accumulate yield later into the year. In response to shortening day length and cooler night temperatures, tall fescue accumulates a high level of soluble carbohydrates in both the leaves and stem bases. With up to 20 percent of the dry weight of the plant as free sugars, the nutritive quality of fall-grown tall fescue is quite high. The heavy, waxy layer, or cuticle, on the leaves makes the plant more resistant to frost damage than most other cool-season grasses.

To stockpile tall fescue do not graze it from early to mid-August through mid-October. Tall fescue is very responsive to nitrogen fertilization. To produce a high yielding, high quality stockpile, the pasture should be grazed or clipped fairly short and 40 to 80 pounds of nitrogen per acre applied 60 to 90 days prior to the end of the growing season. If the red clover component of a mixed fescue-clover pasture is greater than 40 percent, it is probably not cost effective to apply additional nitrogen.

Birdsfoot trefoil is very well suited to stockpiling since it holds its leaves at maturity and after frost, thus maintaining a relatively high level of quality. To stockpile trefoil, avoid grazing between September 1 and the first frost. This period is needed in order to accumulate root reserves that improve winter survival and growth the following spring. The forage that accumulates during the stockpile period can be grazed anytime after a killing frost.

Some recent work has indicated that a mixture of orchardgrass and tall fescue can be stockpiled for early fall grazing.

Fall Growing Forage

The growth of some forage species is not adversely affected by cooler fall weather and shorter day lengths. The species, which seem to grow best in the fall, are perennial ryegrass, small grain cereal crops such as rye, wheat, oats and triticale, and certain brassicas like turnips, rape and kale.

The use of cereal crops listed above can provide fall or early winter grazing opportunities. However, certain management practices need to be modified from what is normally done for grain production. When small grains are used for grazing, plant them three to four weeks earlier than for grain production. Increase the seeding rate to 2.5 or 3 bushels per acre and apply nitrogen at the rate of 40 to 60 pounds per acre at planting time.

Rye will be more productive than wheat or triticale for both fall and spring production; however, grazing quality will be better with triticale than for rye. Spring oats seeded in the fall can be very productive, but they will die out over the winter. With adequate fall moisture, grazing should be available from October through December and then again in early spring for the rye, triticale and wheat. Spring grazing may be resumed when growth resumes.

Brassicas are annual crops that continue to grow during the fall and into the winter. They are highly productive and digestible plus they contain relatively high levels of crude protein. Seeding by mid-August allows for November and December grazing. Animals will readily consume the plant tops and will also grub the root bulbs out of the ground. The plant tops will typically contain 16-18 percent crude protein, and the roots are highly digestible carbohydrates.

Turnips grow fast and can be grazed as early as 70 days after planting. They reach near maximum production 80 to 90 days. Including spring oats with the turnips increases both the total production and digestibility of the forage. Turnips can be seeded any time after the soil temperature reaches 50 degrees until 70 days before a killing frost.

Rape is more easily managed for multiple (generally more than two) grazings than are the other brassica species. Approximately six to ten inches of stubble should remain after the first grazing of

rape; this practice promotes rapid regrowth. Regrowth of rape may be grazed at four-week intervals. On the final grazing the plants should be grazed close to ground level.

Swedes, like turnips, produce large edible roots. Swedes yield more than turnips, but they require 150 to 180 days to reach maximum production.

Brassicas require good soil drainage and the soil pH should be in the 5.5 to 6.8 range. Brassicas can be no-tilled into a sod providing the sod has been killed. They can also be seeded into wheat stubble. Clean-till seeding works well but it may have increased insect pressure. Commonly used crop herbicides can affect the establishment and growth of brassicas for up to twenty-four months. Drill the seed on 6-8 inch row spacings and place the seed no deeper than 0.5 inch. When seeding with spring oats or cereal rye, the usual rate is 1.5 to 2 bushels per acre of the small grain.

Fertilizer should be applied at the time of seeding to give the brassicas a competitive edge on weeds. Apply 80 pounds per acre of nitrogen and fertilize with phosphorus and potassium similar to what would be applied for a small grain.

The old variety of turnips has been Purple-Top, but newer varieties would include Dynamo, Appin, Sampson, Barkant, Rondo, and Forage Star Turnip.

When possible, turnips should be strip-grazed. The size of the available grazing area is controlled by temporary electric fencing in front of and behind the animals. Strip grazing limits grazing damage to the root and lower leaf, allowing leaf surface for regeneration of plant growth.

Crop residues are abundant on many Midwest farms. Cornstalks, grass waterways, terraces and field borders offer many possibilities. A cornfield that yielded 120 bushels will have at least three tons of roughage dry matter per acre. With low supplementation, gestating beef cows can maintain body weight with as little as .5 acre of crop residue per month per cow. Two acres per month per cow may be needed if weight gain is desired.

Because grazing cattle will select the portions of crop residues with the highest digestibility and protein concentration, needs for supplemental feeds beyond trace mineral salt and vitamin A are likely to be minimal for the first month of grazing. Simultaneous grazing of stockpiled grass may also supply protein and energy and thereby reduce the need for supplementation. As winter progresses and crop residue quality decreases because of grazing selection and weathering, supplementation of protein and phosphorus may become necessary. Strip grazing of corn residue is recommended in order to minimize trampling and material selection. Animals should consume most of the available residue material before being allowed into a new area.

The growth of cool-season grasses is limited in the summer by both high temperatures and soil moisture deficiencies. Photosynthesis in cool-season plants becomes much less efficient at higher temperatures. **Cool-season legumes** such as alfalfa and red clover have somewhat higher optimum growth temperatures than do the grasses, and they are frequently deep rooted. For these reasons the legumes tend to be somewhat more productive in the summer months. Interseeding legumes into grass pastures can be the first step toward extending the summer grazing season. Grazing management, which provides planned rest periods for the pasture plants, is essential for the maintenance of legumes in pastures.

In a Management-Intensive Grazing system, we can also control grazing pressure to the extent that reproductive stems in the grasses can be grazed off in the early stages of elongation. This will typically result in early initiation of tillers and production of more vegetative regrowth during summer months. The same management used to accomplish this goal of seedhead suppression will also encourage legume development in the sward. The combined effect is greater levels of higher quality cool-season forage in the summer months.

Warm-Season grasses can be used as an alternative to cool-season pastures in the summer months. Warm-season perennial species would include the native tall grass prairie species such as bluestem, eastern gamagrass, indiangrass, and switchgrass. The native species are quite sensitive to grazing management and will respond well to planned rotational grazing. In fact, some recent evidence has shown that under controlled grazing systems cool-season and warm-grasses can be interseeded and warm-season grasses will become an important part of the stand and help increase production during warm, summer months. **Summer annual crops** such as sudangrass, sorghum-sudan hybrids, pearl millet and crabgrass can also be used to supplement cool-season grasses. The cost of establishment of these annual crops must be considered. The taller growing species must be managed so that wastage is kept low. Animal output per acre can frequently be doubled if grazing periods are kept to fewer than 3 days compared to periods of 14 days or longer. Grazing areas need to be kept small.

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Broadcasting legume seed is a very effective method for renovating pastures and more cost effective than drilling, says **Dave Trotter**, Clark County Extension Educator. Broadcast inoculated seed in late February through march. The natural freezing and thawing action of the soil will incorporate the seeds into the soil. It is recommended that the seeding be done when the soil is 'honeycombing' in the morning hours of late winter and early spring days.

The renovated pasture will be ready for a light grazing when the grass is about four inches tall, at which time the legume seedlings will be about 1.5 inches tall. Early grazing or clipping will prevent the grass from out-competing the legume. Once the legume is well established, implement a rotational grazing system that includes a four to five week rest period, Trotter says.

Fall Rest Period Promotes Quicker Spring Recovery

Pasture plants don't need a rest period in the fall, but they will benefit from it, says Stephen Barnhart, Iowa State University professor of agronomy. He says plants maintain "physiological vigor" when adequate leaf area is present so they can maintain good photosynthesis rates. Close, frequent grazing management is most stressful. Barnhart says perennial pasture grasses and legumes "prepare" for winter dormancy by accumulating sugars and nitrogen compounds in their roots and lower stem bases, as well as undergoing other internal physiological changes during shortening days and cooling nights. He says pasture plants attain the greatest winter hardiness and vigor when given 4-5 weeks of uninterrupted growth (rest) during late September and October. "If plants enter dormancy at a high level of vigor, they overwinter well and recover more quickly the following spring," Barnhart says. He adds these pasture grasses will generally survive the winter without a fall rest period, but their recovery will be slower the following spring.

Legumes Interseeded Into Grass Pastures Beef Up Grazing Interseeding legumes into grass-based pastures provides several advantages for improved grazing quality, says Stephen Barnhart, Iowa State University professor of agronomy. Barnhart says legumes' nitrogen contribution to the associated grasses can be as much as the same growth stimulus provided by 30-50 lbs./acre of fertilizer nitrogen. A less noticed benefit is a better distribution of pasture growth through the summer months than is seen in most cool-season, grass-dominant pastures. "The degree of total benefit will be relative to the percentage of legume in the improved pasture. If the legume proportion is 35-40% or more, production per acre can nearly double. With lesser legume content, you'll see proportionally lesser benefits," he says. Keeping the improved legume component should be an important management goal for the improved pasture, he adds. Be sure to maintain adequate fertility to support legume growth (lime, phosphorus and potassium), and begin a pasture rotation management to allow for adequate rest/recovery periods for the legumes (and grasses).

Excerpted from **Cow-Calf Weekly**

Graziers' Comments

Ed Heckman

Organic matter, organic matter, organic matter. It loosens soil, holds water and grows grass.
Clay McQuiddy.

- A good option for troubled spots in a permanent fence line is 8-foot sections of used utility poles. Cut with a chain saw but be very careful of hardware. Steve Castner
- You must first change your mind, then your management, and last, give your new management a chance to work. Darrell Emmick
- Clover requires twice the calcium as grass. Vaughn Jones
- Successful grass farming is not available packaged, pre-measured, and ready to enjoy. Allan Nation.
- Stockmanship is the most rewarding, but also the cheapest practice, that can be added to any enterprise. Where else can one increase net returns by 15 to 20 percent for a mere attitude adjustment? Burt Smith

- Grazing of stockpiled forages saved an average of 1.25 tons of hay per cow compared to cows fed in feedlots. The grazing of cornstalks saved an average of .7 ton per cow. James Russell
- Haying is a costly operation, often taking low-value forage and turning it into high-cost feed.
- Jim Gerrish
- You can preach a better sermon with your life than with your lips. Oliver Goldsmith
- When a pasture farmer makes a paradise for farm animals, he also makes a paradise for wildlife. The enjoyment begins with creatures whose good work is hardly recognized by the human race in general but held in reverence by the pasture farmer. Gene Logsdon
- Andre' Voison wrote :
- The third year of a new pasture is usually the highest production.
- White clover flourishes with frequent harvest because of better access to light.
- Red clover and birdsfoot tolerate moderate shading.
- Earthworms have calciferous glands in the lining of their esophagus. Consequently, they increase the calcium content of the soil that they consume and excrete.
- Early and late season grazing is furnished almost entirely by grasses.