YEAR AROUND GRAZING MANAGEMENT

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Grazing usually is a less expensive way to feed livestock than using hay or silage. It may cost over 50 cents more per head each day to feed harvested feeds than to allow livestock to harvest their own feed by grazing. Identifying forages and grazing methods that permit grazing for as many days out of the year as possible can help lower production costs.

One effective strategy is to identify and grow grazable forages that will provide most or all the nutrients needed by cattle every day of the year. No one plant or types of plant will be able to accomplish this objective. So, several different types of forage plants are needed to develop a year-round grazing program.

Primary forages

Perennial grasses are the main forages in most grazing programs. These grasses can be classified as either cool-season or warm-season grasses. Both types of grass have strengths and weaknesses.

Cool-season grasses are hardy, productive, nutritious, palatable, and relatively grazing tolerant when used properly. They often produce more than 50% of their annual growth prior to June 1. They frequently become dormant, unproductive, and low-quality during summer. Growth resumes in fall due to cooler temperatures if moisture is available. Cool-season grasses dominate pastures in most of the Corn Belt region of the United States. Important cool-season grasses include smooth brome, orchardgrass, tall fescue, and Kentucky bluegrass.

Graziers relying on cool-season grasses alone have a dilemma. They can graze spring growth effectively, but then forage supply will run out during summer and animals will lose weight. They can graze lightly during spring to conserve forage for summer, but feed value of summer-saved grass will be low and spring grazing will use high-quality grass inefficiently. Or they can harvest excess spring growth and feed it during summer.

Warm-season grasses start growth about 4 to 6 weeks later in spring than do cool-season grasses. They produce 60% to 90% of their annual growth after June 1. Their growth rate slows by late summer and they become dormant in early fall. Warm-season grasses once dominated the Tallgrass Prairies. Little native prairie remains, but warm-season grasses can be seeded for pasture throughout the original Tallgrass Prairie region. Some important warm-season grasses are the bluestems, switchgrass, indiangrass, sideoats grama, and eastern gamagrass.

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Graziers that rely primarily on warm-season grasses have high quality grazing for only a very short season. The annual production cycle of livestock must be matched very carefully with growth of the warm-season grasses to avoid costly supplementation or poor animal performance.

Obviously, one strategy to extend *good* grazing is to use both cool-season and warm-season grasses. The different growing periods of these grasses helps provide desirable pasture during much of the growing season. Also, their response to grazing can be manipulated more effectively when each type of grass is available for grazing.

Adding legumes like alfalfa, birdsfoot trefoil, and red clover to grass pastures sometimes can help extend the grazing season. Most perennial legumes produce growth more uniformly during the growing season than do either cool- or warm-season grasses.

Management

Optimum production on pasture requires management that grows grazable forage efficiently and economically. Also, forage must be harvested using grazing methods that utilize a high proportion of the forage available. Cultural practices like fertilization and grazing methods can influence the amount and quality of forage grown. In the following sections, each of these practices will be discussed briefly.

Grazing methods. Rotational stocking and management intensive grazing have been shown to extend the grazing season. Grazing can begin earlier in the spring and forage remains available later in the year when grazing management harvests growth efficiently and permits plants adequate time to recover from grazing stress.

Soil fertility. Fertilization and liming when natural soil conditions do not provide needed nutrients in sufficient quantity to optimize plant growth can improve production of forage and the animals grazing that forage. *But, fertilization rarely is economical unless the extra forage grown as a result of the fertilization also is harvested effectively.*

Nitrogen stimulates grass growth. When this is desired and other growth factors (especially moisture, phosphorus, and temperature) are not limiting, each pound of actual N will produce 20 to 30 pounds more forage. With rotational grazing, each pound of N often increases liveweight gain by about one pound until N rate becomes so high that it no longer stimulates much additional grass yield. Local recommendations are available to determine N rates that can provide economical yield and livestock gain increases.

Timing of N application is important. To maximize the yield increase, apply N to cool-season grasses in early spring, before corn planting begins. Apply N to warm-season grasses in late May, just before rapid growth begins. And in mixtures, time application to stimulate the group of grasses most needing stimulation.

Maximum yield increase sometimes is not as important, though, as when additional growth occurs. For example, delaying N application on cool-season grasses until mid-May, after grazing the initial flush of growth at least once, can help extend their forage production further into summer as long as soil moisture is sufficient

to use the added N. And early August applications of N on tall fescue will increase availability of stockpiled forage for fall and winter grazing.

When legumes are part of the pasture mix, fertilization often becomes more complicated and, sometimes, more controversial. Compared to grasses, legumes need soils with more phosphorus and potassium to thrive. And, soil pH must be closer to a neutral 7. Fertilizing a grass/legume mix with N will stimulate grass growth but do little to benefit the legumes unless they lack nitrogen-fixing nodules (which can happen if uninoculated seeds were planted or if soil pH is too low). Fertilizer N will make the grass more competitive, potentially crowding out some legumes, but also lowering bloat potential if bloat causing legumes are abundant.

Phosphorus and potassium rarely increase grass yields unless soil test levels are low or very low. Then, adding P and K along with N is needed to increase grass yields; any one of these nutrients alone will not increase production significantly.

Phosphorus and potassium stimulate legume growth when soil test levels indicate a need. Fertilizing grass/legume mixtures with P and K makes legumes more competitive, potentially crowding out some grasses and increasing bloat potential if bloat causing legumes are abundant. But, stimulated legumes will fix more N, some of which will become available to stimulate grass growth. Effective grazing management can keep grass/legume mixtures in balance so legume stimulation can end up stimulating the entire mixture.

Some advisors suggest that fertilization is not economical when grazing that uses multiple paddocks is practiced properly. They argue that grass/legume mixtures often develop and are maintained naturally while nutrients from animal wastes (especially P and K) get distributed rather uniformly in multiple-paddock systems. Thus, legumes are stimulated, increasing N fixation and increasing N in animal wastes. Higher N in the system thus will stimulate grass production, also.

Other advisors suggest that N fixation by legumes and distribution of P, K, and N in animal waste rarely are uniform enough or in sufficient quantities to optimize productivity. Small amounts of N, P, or K may increase plant productivity further, and it can be cost effective if the extra growth is harvested efficiently using multiple-paddock systems.

Liming to adjust soil pH rarely benefits grasses but can be essential for some legumes, especially at establishment or when interseeding. At a low pH, legume roots are less able to absorb nutrients from soil. And, the nodules on their roots that convert N from the air into N the plants can use have difficulty forming and working effectively in acid soils. Some soils are acid only near the surface; when legume roots penetrate deeper into the profile they encounter a more neutral pH. Little lime is needed to maintain established plants in these conditions. But if reseeding is needed, the surface should be limed to aid seedling growth.

Alternative forages

Although perennial warm- and cool-season grasses along with legumes should provide the primary forage base for most grazing programs, alternative forages often can strategically provide abundant and/or high quality grazing during critical times within the grazing year. In fact, no matter when an alternative forage might be useful, it is possible to identify an alternative forage that can provide good grazing during any month of the year.

Many alternative forages are annuals. The most commonly used annual forages are crop residues, like corn and milo stalks for winter grazing. Depending on winter snowfall and spring soil moisture condition, crop residues may be grazed until spring growth begins on other pastures. These annuals have been popular for years, and in some regions these relatively inexpensive winter feeds are so abundant that cow populations have increased and put extra growing season grazing pressure on permanent pastures.

Other annual forages can be used throughout the year to strategically provide higher quality or more abundant grazable forage than the traditional forages mentioned previously. Winter small grains, like wheat, rye, and triticale are among the most commonly used annual forages. In areas where early planting, fall moisture, and late freeze-ups occur, superior quality fall grazing is possible. They make excellent weaning pastures and can add valuable condition to cows prior to winter.

Winter small grains can provide forage to graze earlier in spring than any perennial grass and continue to have good feed value until June. They can produce rapid gains on young stock and hasten cycling in cows that recently calved. Grass tetany can be a problem, however, so proper magnesium supplements always should be provided. Double cropping to another annual crop following early spring graze-out often is possible.

Abundant grazing during late fall and early winter can be available from turnips and other brassicas when they are planted in late July or August. Over 100 cow days of grazing per acre have been obtained under good growing conditions. Since seed costs usually are less than $10 per acre, the risk:reward ratio is very high for producers able to take advantage of these plants.

Turnips and other brassicas should not comprise more than 75% of cattle diets because of their low fiber content. Provide adjacent pasture or a palatable, dry hay free choice to cattle when grazing brassicas. This also will help solidify manure, which often becomes very loose when grazing turnips or other brassicas. Also provide a good trace mineralized salt that contains iodine.

Oats is one of our best, least expensive, and most flexible annual forages. Oats can extend grazing late into the fall when seeded between mid-July and early August. Or, they can be cut, windrowed, and left in the field for winter windrow grazing instead of baling hay.

After planting in early spring, oats can be grazed once it is established enough to prevent uprooting (4 to 6 inches). If kept grazed closely, oats will continue to grow until mid-summer.

For supplemental grazing during summer and fall, brassicas like turnips, rape, and kale may be planted in early spring, sometimes with oats. When oat grazing no longer is available after mid-summer, the brassicas soon develop sufficient top growth to support high quality grazing through fall or early winter. If planted alone, brassicas can be ready to graze earlier, by late July.

The most common source of supplemental grazing in July, August, and September is summer annual grasses like sudangrass, sorghum/sudan hybrids, and pearl millet. Their drought resistance and high carrying capacity make them reliable feed sources for many cow/calf operations. Maintaining high quality is challenging, though, because rapid growth often results in stemmy forage. Stock numbers must be timed and adjusted properly to prevent waste of much growth and feed potential. Care also is needed to avoid toxic reactions to prussic acid poisoning from sudangrass and sorghum/sudan hybrids. Pearl millet does not contain prussic acid.

Finally, one of the highest quality summer annual grasses is corn. Corn can be grazed very effectively and economically during mid to late summer; often it is called "grazing maize" when used this way. With sufficient fall moisture, another fall/winter crop can be planted following summer grazing. And, standing, unharvested mature corn can be grazed into the winter months, providing an efficient, economical way to harvest corn grain and get relatively high gains from yearlings without the expense and labor needed when grain is combined and then fed in a feedlot. Yearling gains around 2 pounds per day are common and readily exceed 2.5 pounds with proper supplementation. With cows, it is not unusual to obtain 400 to 500 cow days of grazing per acre and still have cows gain condition if grazing management provides just one or two days worth of feed for grazing at a time.

Finally, perennial haylands are an often forgotten but excellent potential grazing resource. If the grazing season is extended successfully, then less harvested hay will be needed from these haylands, making at least some of their forage available for grazing. Whether the haylands are grassy uplands or alfalfa fields, these forages might be used better as grazinglands than as hay, at least when other grazable resources are not abundantly available.

Summary

Graziers who use their imagination and knowledge of forage resources should need little hay or silage. Perennial forages and crop residues can provide good grazing most of the year.

By identifying when other grazing resources will be needed, some alternative forage can be used to fill that gap. Of course, planning and timing are critical, especially when the alternative forage is an annual that must be planted at the appropriate time prior to when it is needed for grazing. Nonetheless, experience and commitment will enable most graziers to successfully minimize the days and amount of feeding harvested forage.