

# Grazing Systems

Ruminants, such as cattle, sheep, and goats, can digest cellulosic substances and can convert plants to products such as milk, meat, wool, and mohair. Pastureland, therefore, is critical to the production of these ruminants and the products they provide. In order to obtain maximum profits from pasture grazing, producers must manage the land for high production per acre and must manage the animals to minimize forage waste and to ensure that they are growing sufficiently.

Grazing systems provide high-quality forage and reduce feed and veterinary costs while avoiding manure buildup. Feed costs are reduced because farmers and ranchers do not have to grow or purchase forage and grain year-round, and veterinary costs are reduced because animals on pasture have fewer health problems than those that feed in the barnyard. In addition, pastures require few or no pesticides and allow natural recycling of manure. They also provide a continuous soil cover, thus protecting wildlife habitats and important ecosystems.

The three most widely used grazing systems are continuous grazing, intensive rotational grazing, and multispecies grazing.

## Continuous Grazing

The primary grazing system used in Alabama, as in many other states, is continuous grazing. In this grazing system, animals graze a specific pasture area freely and uninterrupted throughout the year or grazing season. Because continuous grazing allows animals to graze selectively, individual animal performance is usually maximal. However, due to the selective grazing nature of animals, some forages are overgrazed while less desirable plants are undergrazed, which damages or wastes pastureland.

## Intensive Rotational Grazing

The grazing system that most effectively uses pastureland is the intensive rotational grazing system, which includes short-duration grazing, rapid



**Figure 1.** Intensive rotational grazing allows for efficient use of pastures.

grazing, cell grazing, and strip grazing. In a rotational grazing system, the pasture is fenced off into subdivisions or paddocks, and animals are rotated according to the forage available and the forage growth rate (Figure 1). Short grazing periods are beneficial because they can increase the carrying capacity of the pasture without plants being damaged. However, research indicates that individual animal weight gains are higher under a continuous grazing system than under an intensive rotational grazing system. Intensive rotational grazing focuses more on animal production per acre than on individual animal performance.

Additional advantages of intensive rotational grazing are that animals can be examined more easily and frequently and that surplus forage can be harvested as hay. In a sheep-grazing study conducted at Alabama A&M University, 1,375 pounds of tall fescue hay and 4,015 pounds of bermudagrass hay were produced on 0.6 acre each (Mayoral, 1992). In another sheep-grazing study, more than one-third of the rotational paddocks were consistently left ungrazed, indicating the possibility for either higher stocking rates or for hay production (Dorsey, 1998). The advantages of hay production under an intensive rotational grazing system become an economic consideration when deciding which grazing system to use.

One other aspect that must be considered when choosing which type of grazing system to use is the fact that a rotational grazing system requires much more fencing than the other systems do. Rotational grazing is more labor intensive and often more expensive than traditional continuous grazing; however, the introduction of electric-powered fences that are easy and quick to build has made subdividing pastures easier and more economical. In 1993, the market for farm and ranch fences in the U.S. was estimated to be \$750 million per year, with electrical fences comprising 10 percent of that (Leidner, 1993). Livestock producers have been using high-tensile electric wire fencing, either permanent or temporary, for over a decade. Electrical fences became popular as a way to exclude both domestic and predatory animals and are also commonly used to prevent livestock from grazing certain areas, such as pasture sprayed with herbicides.

Electroplastic twine is another development that may make it easier and more economical for ruminant producers to establish and improve intensive rotational grazing. This twine is particularly useful with small ruminants in cell or strip grazing systems where portable fencing is used. Electroplastic twine consists of six stainless steel filaments woven into a bright orange polyethylene twine for positive shocking and high visibility. The twine has built-in UV-resistant properties for long life.

A portable fencing system consists mainly of the following features:

- **Portable reel** - heavy-duty reel with self-insulated spool and crank handle that operates like a ratchet to apply tension to the fence
- **Portable reel handle** - mounting handle balanced for carrying and rewinding, with a hook for hanging it on a wire fence or tying it to a post
- **Electrical wire** - 660- and 1,650-foot bobbins of electroplastic twine that can be easily rewound on portable reels
- **Posts** - any kind of material (wood, metal, fiberglass, or fiberrod) can be used. Posts  $\frac{3}{8}$  inch in diameter or larger are easy to put up and take down.



**Figure 2.** Battery-powered energizer

- **Insulator** - the kind used depends mostly on how to best attach the wire to the post. Fiberglass and fiberrod posts do not require insulators because they do not conduct electricity, but wood and metal posts do require insulators. A rod-post insulator for attaching electroplastic twine to posts  $\frac{3}{8}$  inch in diameter is a must for portable fencing.
- **Energizer** - the kind used depends on the amount of wire to be electrified, the source of power, the amount of vegetation around the fence, and the type of animal to be contained. Battery-powered energizers operate with or without solar panel recharging (Figure 2), and AC-powered energizers will charge various distances of wire and maintain various voltages on fence lines subject to heavy loads of grass, weeds, brush, etc.

Properly managed, constructed, and serviced electrical fences can increase the efficiency and profitability of cattle, sheep, or goat enterprises through better management of animals and forage resources. Since an electrical fence serves as both a mental and physical barrier, much less material is needed to build it than is needed to build a conventional fence. Therefore, electrical fences can usually be erected for about half the cost of conventional fences. In grazing demonstrations held in northern Alabama, sheep were contained by fences having only two or three strands of electroplastic twine.



**Figure 3.** Multispecies grazing maximizes forage utilization.

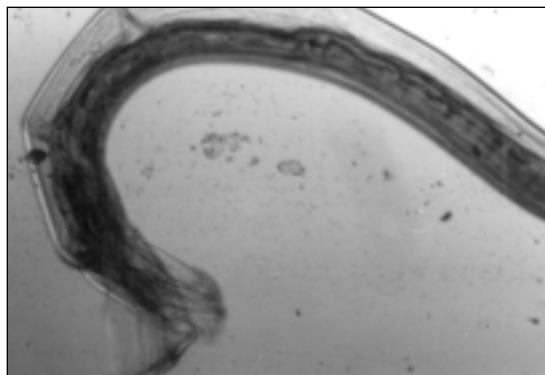
## Multispecies Grazing

Multispecies grazing is a grazing system in which cattle and sheep graze together (Figure 3). Studies in the 1950s and 1960s showed that cattle, sheep, and goats do well together on shared range because they have different grazing behaviors. Cattle mainly eat grasses, and sheep and goats prefer broad-leaved plants such as forbs and leaves from some small shrubs (Anderson and Havstad, 1991). Certain species of animals also graze differently because of their mouth size, lip anatomy, and method of prehension (Matches, 1992). Sheep and goats have a partially lifted upper lip that is very mobile and permits closer defoliation. Cattle have a fixed upper lip that is relatively immobile (Church, 1979).

Multispecies grazing offers producers the opportunity for complementary pasture use since what one species will not eat, the other will. This significantly maximizes forage utilization, which translates into higher animal production rates per acre, lower costs of production, and better returns for farmers and ranchers. In addition, the cattle's presence protects the sheep and goats from coyotes and wild dogs.

## Parasite Control in Grazing Systems

Although intensive and multispecies grazing systems offer many benefits, animals within these systems, especially small ruminants, are very vulnerable to internal parasite infection. Of most concern is the barberpole worm, *Haemonchus contortus*, which feeds on the host animal's blood with a voracious appetite (Figure 4). This parasitic nematode is among the world's most widespread stomach parasite of cattle, sheep, and goats. Producers who use grazing systems must, therefore, develop preventive treatments and control programs to combat this parasite and others.



**Figure 4.** Barberpole worm

The following are some prevention and control practices for treating grazing ruminants for internal parasites.

- Give cattle a deworming treatment about twice a year. A continuous deworming product in block or mineral form can also be used as a supplement to these treatments.
- Give nonresistant sheep a deworming treatment every 2 to 4 weeks during warm, wet weather conditions that favor parasite development. Alternate between the types of dewormers used.
- Give pregnant ewes a deworming treatment about 2 weeks before lambing. This will prevent contamination that results from the rise in periparturient eggs.
- Give goats a similar deworming treatment as that given to sheep, even though goats seem to be more tolerant to internal parasites than sheep are.
- Take fecal egg counts before and after deworming to determine the effectiveness of the dewormers.
- Follow the manufacturer's directions for all approved dewormers, and consult your veterinarian if you have any questions or concerns.



**Figure 5.** Sheep breeds such as the Florida Native are resistant to internal parasites and therefore are well-suited for multispecies grazing.

Sheep producers may choose to raise sheep breeds that are resistant to internal parasites (Correa et al, 1998) (Figure 5). By doing so, producers can reduce production costs while meeting consumers' demands for animal products and pastures that are free of chemical residues. For more information about the use of parasite-resistant sheep, see Extension publication UNP-6, "The Use of Sheep Breeds Resistant to Internal Parasites."

## Summary

Developing good grazing management programs can help ruminant producers reduce the amount of purchased feeds they use and produce the highest net income per grazing land unit. In Alabama, forages are abundant almost year-round, and most improved pasture plants grown in Alabama provide adequate nutrition for ruminants (Ball et al, 1991). Although extreme environmental conditions may require the supplemental use of hay, grain, protein, and minerals, the economic outlook for cattle, sheep, and goat production from pastureland appears to be excellent.

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**Julio E. Correa**, *Extension Animal Scientist*, Associate Professor, Soil, Plant and Animal Sciences, Alabama A&M University

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