

Designing a Time-Controlled Grazing System

Story & photo by **Troy Smith**



PHOTO BY RENAE TOKACH

If you're not familiar with the term, don't be fooled. Time-controlled grazing is nothing new. The concept is centuries old. Prior to the year 1600, observation of grazing animal behavior and grazed plant response led stockmen in the British Isles to ponder the advantages of rotational grazing. A couple hundred years later, a Scotsman named James Anderson advocated the practice of moving cattle at regular intervals

through multiple small enclosures to gain improvement to both animal performance and forage production.

More recently, this concept has been researched, refined and practiced around the world. Also called management-intensive grazing, its principles are taught through a variety of grazing schools conducted in the United States. Increasing numbers of cattle producers have signed up for courses in "intensive grazing," but instructors like Mark Kennedy are quick to discourage use of that shortened and misleading moniker.

"It's not about intensive grazing," Kennedy states. "It's about intensive management."

Kennedy, a Natural Resource Conservation Service (NRCS) state grasslands specialist, is one of several instructors for grazing workshops at the University of Missouri (MU) Forage Systems Research Center (FSRC), near Linneus, Mo. He and his colleagues define management-intensive grazing (MiG) as a goal-driven approach to managing livestock and grazing lands for long-term sustainability. Chief among production-related goals are improvement of forage utilization and animal performance, while improving the health and productivity of the grazing resource.

In general, management-intensive or time-controlled grazing systems incorporate multiple pastures (or paddocks) that are relatively small in area. During the grazing season, each paddock is grazed in sequence. As cattle are rotated, each "just grazed"

paddock receives a period of rest and regrowth (typically 20-40 days in temperate climates) before it is grazed again. Designing a system allowing each paddock to be grazed and vacated relatively rapidly gives the manager more control of forage supply and quality. Rotating cattle daily is ideal, but limiting grazing of each paddock to less than four days will allow managers to realize the sought-after advantages of more uniform forage utilization and better manure distribution.

According to Kennedy, there is no magic number of paddocks that will suit every situation. However, systems including eight or more paddocks typically allow for appropriate periods of rest for forage plants. And allowing for adequate rest periods is key to success. As producers gain experience with MiG, they often see the advantage of having more paddocks.

Where to fence

Assuming a cattle producer wishes to design a grazing system for a particular tract of land, Kennedy advises consideration of several factors when deciding how it will be divided into multiple paddocks. They include consideration of the lay of the land and how landscape features may hinder or help grazing management. Differences in soil type, fertility and plant communities can help identify likely locations for paddock boundaries. A really important consideration is the location of existing livestock watering sources, and where additional water sources might need to be developed.

"I advise producers to design their systems so livestock are always within 800 feet of water, whenever possible," Kennedy states. "Cattle tend to spend less time grazing areas farther from water, so keeping them within that distance will result in better grazing utilization and better distribution of nutrients (manure). They'll spend less time congregated around the water and more time eating grass."

Many grazing system designs have incorporated lanes or alleys through which cattle travel to access water. This is often done to avoid the high costs of developing additional water sources. It may be necessary in some instances, but for the same reasons cited above, it is preferable to have watering sites in the paddocks. If lanes are incorporated in the system, Kennedy recommends they be used only for moving cattle between paddocks.

When planning the size of individual paddocks, Kennedy recommends making them similar with regard to grazing capacity, rather than trying to make them of equal acreage. One paddock might have more fertile soil and produce more abundant



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forage than another. The more productive paddock could be smaller in total area and still carry the same number of animals for the same length of time as a larger, less productive paddock.

“When the landscape allows, the shape of paddocks should be made as near to square as possible. It usually takes less fence. And if the water is centrally located in the paddock, grazing distribution will be better,” Kennedy says. “People sometimes envision a pie-shaped grazing system with a central water source, but they often result in a lot of soil compaction in the watering area — especially in humid climates.”

Kennedy says producers must decide if they want to build a fixed system, with permanent fencing, or a flexible system that relies on a permanent fence around the perimeter of the property, but uses temporary fencing (even just one electrically charged wire) for paddock boundaries. Advantages of temporary fencing include its lower initial cost of materials and its portability. The latter feature can make temporary fencing a good choice on rented land.

“Here again, there is no perfect choice for every situation,” Kennedy states. “In many cases, a combination of permanent

and temporary fences can be used to make best use of available resources. Added to a fixed system later, temporary fence can be used to further subdivide paddocks, adding flexibility.”

And a good measure of flexibility is advantageous to graziers using MiG systems. Most will learn as they go and see ways their systems can be improved.

“In my experience, though, a water system is the most expensive and least flexible component,” Kennedy offers. “You’d better get it set up about right the first time.”

