

Improving Grazing Management

KENNY SIMON

LITTLE ROCK, ARK.

One of the demonstrations associated with "300 Days of Grazing" is improving grazing management. Improving grazing management allows increased utilization of the available forage, thus helping extend the grazing season. Research demonstrated increasing the pasture rotation frequency from twice a month to twice a week increased the number of grazing days by 40%.

Many livestock producers have permanent cross fences on the farm, but all too commonly the gates are open and livestock roam freely. The first step in improving grazing management is to shut the gates and confine the livestock to one pasture at a time and begin rotating among the existing pastures.

The second step is to subdivide the existing pastures with electric fence. Electric fence offers many benefits over traditional barbed or woven wire. One big advantage is cost. In improving grazing management demonstrations, electric fence costs approximately \$0.30 per foot – a \$0.73 per foot cost savings over traditional fence, not including labor. Other benefits of electric fence include its durability, its ease of construction and maintenance and its light weight and ease of transport.

Electric fence is a psychological barrier, not a physical barrier like barbed wire or woven wire. Therefore, the effectiveness of any electric fence depends on the fence's ability to deliver an unpleasant shock when touched. The ability of the fence to deliver that shock depends on two main things: 1) the energizer and 2) the grounding system.

At the heart of an electric fence system is the energizer, also called the charger. There are several factors to consider when selecting which energizer will be best suited for your individual operation. What will be the power source for the energizer? What size energizer is needed? What is the impedance of the energizer? What are the energizer's warranty and service after the sale?

The three main sources of powering an energizer are 1) 110V or 220V plug-in, 2) battery or 3) solar. Plug-in main power units are the most cost-effective per joule. They are usually the most practical for permanent systems, require less maintenance and are available in higher joule ratings than battery- or solar-powered units. Battery- or solar-powered units work well in remote locations where a power outlet is not available.

Battery-powered units will cost more per joule than plug-in units, plus there is an additional battery cost. Deep-cycle batteries, which can discharge slowly and completely, should be used for powering these energizers.

Solar power units are the most expensive per joule. Solar panels can be used with battery-powered energizers to keep the battery charged. However, solar panels can be expensive, often costing as much or more than the energizer. The joule rating determines what size energizer is needed.

A joule is the amount of power that pushes the electrical pulse down the fence wire. When comparing energizers, check to see if the unit is rated in stored joules or output joules. Stored energy is the amount of energy stored in the capacitors of the energizer. The output joule is the amount of energy delivered to the fence and is about 30 percent less than stored energy. A general rule of thumb is 1 output joule is needed per 3 miles of wire. This is dependent of the type of wire being used, quality of the insulators, the grass/weed load on the fence, etc.

Most of the energizers on the market today are low impedance. Impedance means leakage. So, a low impedance energizer will have the ability to resist leakage caused by minor shorts or vegetation on the fence. For an energizer to be considered low impedance, the duration of the pulse must be less than 0.003 of a second. The duration of pulse for better quality energizers will be 0.0003 of a second. Having a very short duration of pulse eliminates the risk of fire, because no heat is built up on the wire.

Before making the final selection of an energizer, check the manufacturer's warranty. Warranties will vary in length and items covered. Some manufacturers offer a two-year warranty, while others have a one-year warranty. Some units cover lightning damage. Like anything else, the unit may need to be serviced. Ask the retailer if the unit can be repaired "in house" or if the unit will have to be shipped off for repairs. What is the average turnaround time on units that need to be repaired? In the event the unit needs to be serviced, are loaner units available?

A proper grounding system is the most important step in having an effective electric fence. Eighty percent of electric fence problems can be eliminated with proper grounding. The ground rods serve as an antenna for collecting soil electrons.

The better the grounding system, the more electrons collected, which enables the energizer to deliver a powerful shock. Galvanized ground rods of ½ inch or larger diameter should be used. Three feet of ground rods are needed per output joule. For units that require more than one ground rod, space the rods 10 feet or more apart and connect ground rods to the energizer with one continuous wire. The ground rods should be placed in area that holds moisture, such as a drip line on the north side of a building.

In summary, electric fence is an effective way of controlling livestock. Take the time to research energizers. Do not let price alone be the deciding factor: remember, the energizer is the heart of the system. If the energizer is not of sufficient quality, then the whole system fails. The energizer must be grounded properly to work efficiently. Even the best energizer will not function properly if the grounding is inadequate. Take time to talk with your neighbor or other producers who are using electric fence and learn some of the dos and don'ts. Δ

KENNY SIMON: Program Associate-Forages, University of Arkansas