Temporary Electric Fencing Basics

► **"Improving pasture management is equivalent to increasing pasture acreage," Don Ball, former Extension Specialist and Professor Emeritus, Auburn University.**

Temporary fencing is a valuable tool for enhancing pasture management. Temporary fencing is quick and easy to use, flexible for any operation, and an affordable way to achieve livestock rotation and pasture rest. A continuous grazing system does not always allow pastures the time they need to rest. By simply splitting a pasture in half and having the correct stocking rate with adequate rest, the forage will be healthier and more abundant, assuming environmental conditions are equal. (For more information on grazing management, visit the Forage Basics Online Course on the Alabama Extension website at www.aces.edu).

Frequently moving your animals will alter their behavior by increasing competition among them, which in turn decreases selectivity. To easily section pastures without the cost of a permanent fence, use a temporary fence. Unlike a physical barrier, such as barbed or woven wire, an electric fence is a psychological barrier for livestock. Therefore, the first interaction an individual has with the fence can determine whether they will respect it in the future. To have an effective electric fence, ensure that your fence (a) is suited for the class of livestock, (b) maintains constant power, and (c) has minimal shorts that reduce the power of your fence.

Getting started with electric fencing (and particularly temporary fencing) can be a challenge for the new user. There are many equipment options to consider, including energizers, wire, reels, and posts. Each component has major differences in quality and cost. There are also multiple versions of each tool. When choosing the equipment, consider how it will work effectively for your specific operation. What kind of livestock do you have? What type of soil is on your farm? What is my budget? To learn more, see "Temporary Electric Fencing Equipment" on the Alabama Extension website.

Though there are many different tools you can use in temporary fencing, it is important to start with the basics. The three components of any electric fence system are the ground, the power source, and the fence itself.

The Ground

Proper grounding is critical to the success of an electric fence and will minimize issues with the energizer. Refer to your energizer owner's manual to determine the grounding requirements. As the electrical output increases with larger energizers, more grounding is required. One rule of thumb is that the system requires a minimum of 3 feet of ground rod for every joule of power. Typically, more than one grounding rod should be used, with each one at least 3 feet in the ground. Ground rods are readily available at building and farm supply stores and typically come in lengths of 6 feet and 8 feet. When selecting a ground rod, consider the size of the energizer, the material of the ground rod, the type of soil, and the soil moisture level. Many materials, such as copper, galvanized steel, and other metals, can be used. The key point to consider when selecting the material for the grounding rod is to stay consistent with the metal used in the system. For instance, if using common galvanized wire on the fence, use a galvanized steel grounding system. Sandy soils may require deeper grounding to be effective, and rocky soils may not allow the rod to be driven very deep. In these situations, adjust your installation to meet the energizer requirements. In rocky soils, simply add more short ground rods or drive the rod at an angle.

Once the material and depth have been decided, determine the placement of the ground rods. The rods should be at least 10 feet apart and connected to the system using an insulated wire that is the same gauge or larger than the rest of the fencing system. The ground should be close to the energizer, which is often installed along the side of a barn where the soil holds moisture. Avoid locating near phone lines or other utilities, and never use the same ground as the incoming electrical service.

The Energizer

The energizer should be able to support the area you intend to cover and be able to energize a fence to conduct enough electricity to contain the animals. Animals must respect the fence for it to be effective; thus, their initial shock must be substantial to deter further contact. The amount of electricity needed and the type of fence you build will vary based on the species. Energizers are typically labeled with the joules of power, the miles of fence, or the acres covered. Miles of fence are calculated by multiplying the number of strands × the length of fence (total length of all energized wire), not simply the linear distance. It is critical to properly size the energizer to match the fence load, ensuring sufficient voltage to contain the animals. Check the manufacturer's recommendations for fence voltage by species. Once trained to respect electricity, animals should not continue to pressure the fence.

The Fence

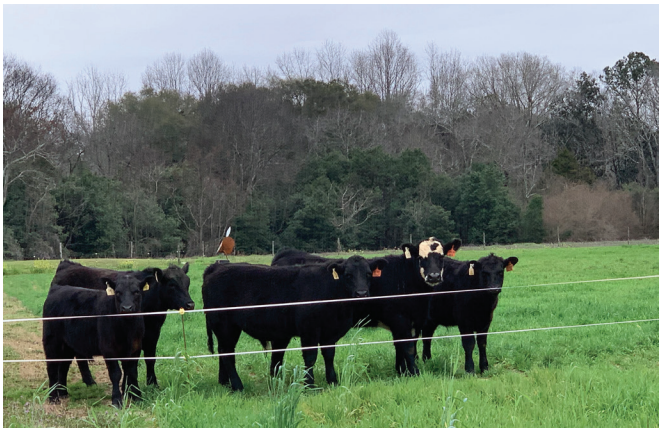
Finally, consider the fence itself. Depending on the type of livestock, some fencing systems may be a better fit than others. For instance, traditional step-in posts with multiple height options are better suited for young animals that have not been trained to a fence, whereas most mature cows can be contained with a single strand of wire and a simple ring-top post. The color of the fencing you choose can also make a difference. Bright colors, like white, can increase visibility and make the fence more effective. Higher visibility can also help wildlife, such as deer, avoid running through the fence. Small ruminants can be quite inquisitive and often require multiple strands of fencing to stay contained; alternatively, electrical netting can be used. It is common to use 4 to 6 strands of a single-strand electrical wire (polywire).

When building a temporary fence, make it work for your operation; no two systems will look the same. When dividing pastures, remember to adhere to the basics discussed in this article and ensure that each paddock has a source of water and shade, while also guaranteeing that there is sufficient forage to support your livestock over the planned grazing period. If you follow these steps, you will likely start to see improvement in the productivity of your operation.

Basic Troubleshooting

The following scenarios are likely to decrease voltage on the fence:

- Weedy or overgrown fence lines, especially thick brush or green grass with plenty of moisture
- Wire touching metal
- Inadequate grounding
- Bad connection to the charger
- Frayed and broken fencing material
- Incorrectly tying two pieces of wire together without adequate conductivity



Additional Uses

Temporary fencing is an extremely useful tool for farmers to change the management of their livestock operation. Permanent fencing has been around for centuries, whether in the form of stone, wood, or barbed wire fences. Yet now, we are provided with a tool that is affordable, easy to move, and flexible for every operation. Because this tool is so adaptable, farmers are coming up with innovative ways to use it, beyond just serving as a stationary physical boundary. Once cattle are trained to respect the temporary electric fence, it can be used to herd livestock, sort groups, or practice innovative grazing management with minimal labor.

Temporary fencing can allow you to move cattle independently with a strand of polywire. If cattle respect the polywire and have been trained to a temporary fence, you can move them by wrapping one end of the wire to a gate or tree and walking around the animals you intend to move, herding them with the polywire. This can be done on a small scale, sorting just one animal, or bringing in a whole group of animals. If you want to bring in a whole group of animals, you could get a couple of people to stretch the polywire and move the cattle across the pasture. This encourages low-stress handling because you do not have to get out on horseback or use an ATV to move cattle; they are just being slowly moved by the fence they are in every day. Livestock that are used to grazing management in temporary fences are accustomed to the positive reinforcement of receiving new, fresh grass when the fence is moved. So, if they are accustomed to this positive reinforcement, they will be more willing to cooperate when using polywire in various scenarios.

For more information and tutorials, refer to these videos on YouTube:

- Rotational Grazing on Small Acreages: Layout and Design
- Rotational Grazing on Small Acreages: Benefits and Suggestions
- Rotational Grazing on Small Acreages: Grazing Math

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