

## **Cattle Business in Mississippi – November/December 2005** **“Stocker Cents” article**

### **Refencing Mississippi**

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Many miles of fence in Mississippi remains downed or damaged from recent extreme weather. As cattle producers continue to repair and replace fence across the state, much of the focus is on functionality. Fencing tips and considerations are provided in this article to assist producers in rebuilding efforts. There is no one good answer as to the best way to repair all the downed fences. In many cases, fences need to be completely replaced, while others need a few trees removed and sections patched.

### **Considerations When Repairing and Replacing Fences**

#### ***Electric Fencing***

Priority should be placed on repairing perimeter fences and fences along roads. The decision then becomes the most efficient way to proceed. It may be best in certain situations to build a temporary electric fence inside the fallen tree line. Electric fence is the fastest and most economical way to contain cattle and is a good option for many producers. Advantages of electric fencing include cost-effectiveness compared to other fencing options, ease of installation and repair versus barbed wire fencing, and the ability to have longer wire runs between posts requiring fewer posts. Electric fence can be installed using poly wire, poly tape, or high-tensile wire. A minimum of three strands of electric wire should be used on perimeter fences, and two strands can be used on cross fences. Solid corner posts and gate posts are very important. High tensile fencing tends to place more pressure on the posts. Be sure that H braces are built sturdily.

Choosing an adequate energizer for electric fencing is very important. If electricity is not available, battery or solar energizers can be used. Weeds and poor insulators can bleed off electricity from an electric fence. The longer the fence, the more powerful the energizer must be to send an effective charge throughout the length of the fence. Proper grounding of an electric fencing system is a must. A minimum of three six-foot grounds rods should be driven into the ground at ten-foot intervals. Alternating hot and ground wires on the fence structure can be effective in cattle restraint. Start with the top wire electrified.

A lot can be achieved with new fencing technologies available. Electric fencing makes subdivision relatively fast and inexpensive. However, the effectiveness of these fences relies on proper construction and the ability to carry the charge. The success of electric fencing can also be dependant on the cattle. Well behaved cattle that are regularly handled and know what an electric fence is will treat a single “hot” wire with as much if not more respect than any barbed wire fence. Cattle, especially calves, can be quickly

and easily trained to electric fences by putting a temporary wire up in the pasture with them. Once the cattle have experienced a couple of good shocks, they will not forget.

### **Wire**

There are three main choices of wire for permanent livestock fencing: 1) high-tensile wire often used for electric fencing; 2) woven wire; and 3) barbed wire, the latter two of which are both generally constructed of “soft” or mild steel. Each wire type has pros and cons including ease of construction and cost. While many producers feel more secure with barbed and woven wire fences, the fact is that they are more expensive and can often be less effective than high tensile electric fences. The greatest advantage of high tensile wire is that it is lighter than mild steel, so the same money will buy wire that is 2 ½ times stronger.

Another advantage of high-tensile wire is the elastic capacity compared with mild steel wire. For example, if a corner post or H brace moves ½ inch, a mild steel wire (e.g., barbed wire) will lose over 20% of its original strain, whereas high-tensile wire will only lose 10% for the same amount of movement. This elasticity is not only important for post movement. The constant pressure from cattle and fallen tree limbs can severely damage mild steel fences over time but have less of a damaging effect on high-tensile fences, which are more likely to “bounce back” after pressure is applied.

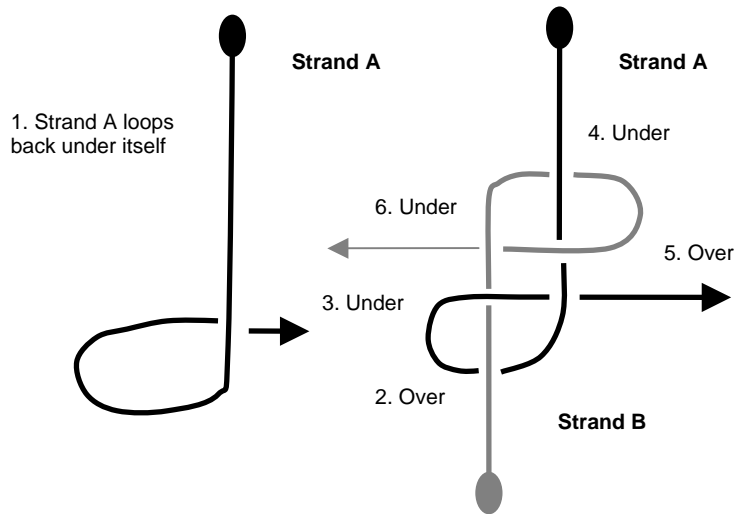
While high-tensile fencing does have significant physical and economic advantages over mild steel fences, many producers do not like working with the wire due to its “highly strung” nature. When installing high-tensile electric fencing, go ahead and splurge for or construct a spinning wheel to string the wire. Otherwise, there will be a lot of wire untangling to do. Difficulty usually arises when needing to join two pieces of wire or tie the wire off to a fence post. The local fencing supply store should have specialized clamps and joiners for this, but, for a quick and inexpensive method, there are two very simple tying methods that can be used.

### ***The Figure Eight Knot for Joining Two Ends***

A knot is never as strong as the wire itself. However, the figure eight knot can be about 70 to 80% as strong as the wire.

#### ***Tying a Figure Eight Knot***

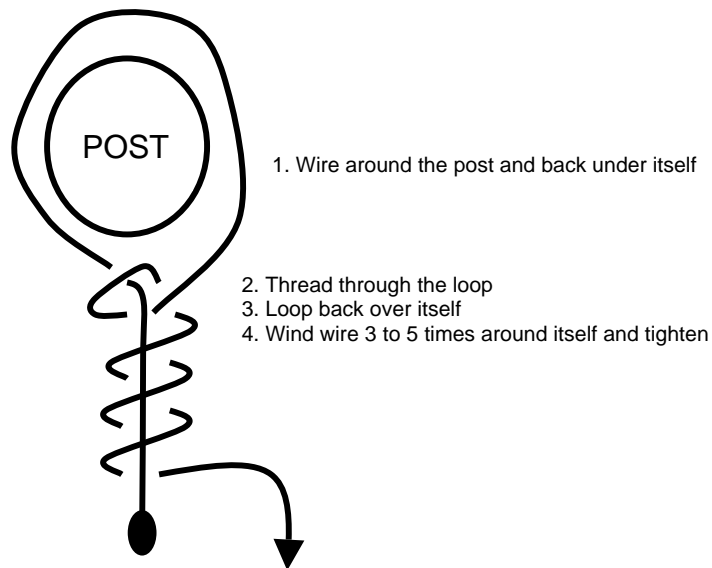
- 1) Take the first strand (strand A) and make a loop in it as shown in Figure 1.
- 2) Take the second strand (strand B) and thread it through the loop of strand A (steps 2 and 3 in Figure 1).
- 3) Thread strand B under strand A (step 4) and loop back over the top (step 5).
- 4) Finally thread strand B back under itself (step 6) and pull tight.



**Figure 1. Figure eight knot to join high tensile wire.**

### *Tying Off to a Fence Post*

- 1) Run the wire around the post and back under itself (step 1 in Figure 2).
- 2) Thread the wire back through the loop made around the post (step 2), and bring it back over the wire (step 3).
- 3) Wind the wire around itself 3 to 5 times (step 4) and pull tight.



**Figure 2. Tying high tensile wire off to a fence post.**

### **Posts**

Setting posts correctly is one of the most important factors in fence strength. The first consideration is setting the post at the correct depth. The correct depth is going to depend on the diameter of the post and the soil type. As a general rule of thumb, in medium to heavy clay soils the post should be embedded at a depth equal to ten times

its diameter. For example, a post that is 6 inches in diameter should be set 5 feet deep (60 inches). At this depth the post will break rather than be uprooted, giving maximum strength. In sandier soils the depth will need to be fifteen times the diameter to ensure the post breaks before uprooting. If posts are too short (or a hole cannot be dug deep enough), a “foot” may need to be used to anchor the post. A foot can be simply constructed from a 1-foot piece of 4” x 4” that is nailed or wired to the bottom of the post to form a “T”. The “T” will help hold the post on the ground. A foot may also be necessary if there are dips or angles ( $> 10^\circ$ ) in the fence line.

Post spacing will vary with the fence type (i.e., electric versus conventional) and the contour of the land. On a flat piece of ground with 2- or 3-wire electric fencing, posts can be spaced over 1000 feet apart so long as T-posts or hardwood posts are placed every 40 to 50 feet. For land that has dips and angle, place posts at the top and bottom of the dip to make sure the fence follows the contour of the land.

### ***Pasture Shape***

The shape of the pasture fenced makes a big difference in the length of fence needed to enclose the pasture. As a rule of thumb, fences enclosing square pastures are more economical to construct than other shapes since they require fewer miles of fence for the same amount of area. Pie shape fencing designs with a central water source can lead to mud holes where cattle congregate at the water source. Following land contours is much more difficult with pie shapes as well. It is worthwhile to calculate the length of fencing needed for various fencing layouts. This will not only help identify the most efficient designs for accomplishing fencing goals, but it will also provide information needed to determine the amount of each fencing supply that needs to be acquired to complete the fencing project.

### ***Fence Placement***

Aerial photographs can be useful in making decisions on fence placement. Local Natural Resource Conservation Service offices can provide aerial photographs of pastureland for producers upon request. The locations of water, shade, and handling facilities are also critical in planning fence layout. Effective lane systems and gate placement can make cattle movement to working facilities and rotation to other pastures much easier. Gates should be placed in the corners of paddocks with ease of animal movement in mind. The goal should be for other animals to follow through the gate and into the lane system when the first animal moves through the gate instead of running inside the fenceline. The size of paddocks needed will depend upon cattle inventory (herd size, weights, and production levels) and forage species and productivity.

In January, “Stocker Cents” will look at a stocker cattle health. For more information on fencing or stocker cattle management, contact your local Extension Service office.