

## AGRICULTURAL ENGINEERING NEWS LETTER

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### FARM FENCES

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Because of the extremely dry weather during the spring months this year, fences have been subjected to more than ordinary service. Farm animals, foraging farther and farther, have strained and damaged fences much more than in ordinary weather. We can therefore expect them to need considerable attention and repairs.

The farm fence, although a comparatively simple structure, must be admitted to possess considerable importance, in locating limits of the farm property, as well as controlling the movement of the farm animals. Too often we find that the fences are poorly kept, and of various sorts, presenting an ugly appearance to a visitor or even to a casual observer. How much more satisfactory it would be if all fences were straight and strong and of similar appearance throughout. Equal strength everywhere is not necessary, of course, but depends largely on the purpose of the fence, and the animals to be enclosed. One might obtain satisfactory posts locally, inferior but more economical than those secured elsewhere. Usually, however, the better class of equipment will prove more satisfactory, because of its greater strength and longer life.

A legal fence, as defined in the Minnesota Statutes, should have posts not more than one rod apart, and the wires should have at least 40 barbs to the rod. A fence of barbed wire should be constructed of not less than four barbed wires, the lower wire to be not less than 12 inches or more than 16 inches from the ground, and the top wire to be not more than 48 inches from the ground. A fence made of woven wire, should be not less than 32 inches high, and should then have above it two barbed wires, the first not more than 4 inches above the woven wire, and the second barbed wire not more than 8 inches above the first barbed wire. The woven wire fences can also be 40 inches or more in height, with one barbed wire not more than 4 inches above the woven wire. For average conditions the most desirable spacing of barbed wires is to fasten the first wire 14 inches from the ground and to space the other three

wires at intervals of 11 inches. This brings the wires at distance of 14, 25, 36, and 47 inches above the ground.

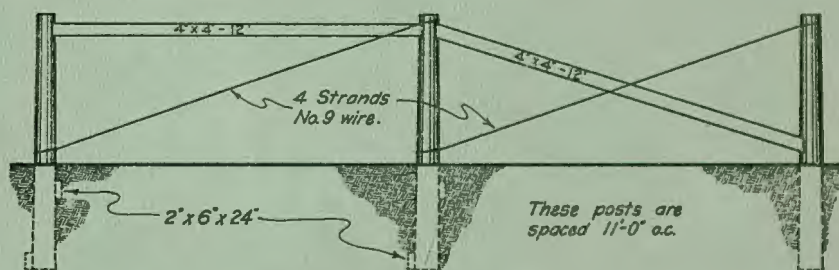
Posts are usually spaced one rod apart, in permanent fences. This is a great advantage when measuring acreage. A mechanical pacer, taking three paces to the rod, is very convenient for locating positions of posts. Spacing at and near corners may need to be less than one rod. A distance of 11 feet for the first two rods is frequently used. This space can be measured with two steps of the mechanical pacer (which has a spread of 5½ feet).

Bracing of the corner posts should be very carefully and strongly made, as the corner post strength really determines the strength of the entire fence. The posts themselves are usually larger and stronger than line posts. Two types of

posts, and buried in the ground. The illustration shows where these cross-planks should be located.

Wooden posts have been used largely in the past. They are usually very strong but do not always last long. Some of the most durable woods for this purpose are white cedar, white oak, and bur oak. A hot creosote or other good preservative treatment will increase the life of most all wooden posts by a number of years. The poorer post woods show a considerable gain in durability when so treated.

Steel posts of various shapes have been used more in recent years. They have the advantage of longer life than wooden posts, as well as being easier to drive and pull from the ground. However, some of the thinner ones are hardly strong enough, even when new, to withstand the



FENCE POST BRACING

bracing are in common use; one having a horizontal brace between the tops of the posts, and the other having a diagonal brace with its high end at the corner post. In each case, it is necessary to have diagonal wire bracing, the lower end being toward the fence corner. The wooden or steel bracing takes the compressive stress, while the wires are in tension. It is well to use both of these braces, in series, for a tight fence, although either brace alone might be sufficient for three wire pasture fence corners or ends.

When wooden 4-inch by 4-inch braces are used, there is some advantage in using the horizontal type, as this keeps both ends away from the sod, where decay or rotting is liable to occur. Braces are sometimes made of steel pipe, or channels, which may have the advantages of strength and stiffness, as well as longer life.

To keep the corner posts from leaning or pulling up, short cross-planks can be fastened across the lower ends of the

onslaught of a husky farm animal, so care should be exercised in selecting steel posts of sufficient thickness and strength. The cost of steel posts is only a little more than that of good wooden posts.

Concrete posts are frequently used, especially for ends and corners of fences. They are very strong and durable when carefully made. A good concrete post must be made of a fairly rich mixture of concrete, and, of course, requires steel reinforcing. The cost can be expected to be considerably higher than the price of wooden posts.

When changing a fence location or placing a new fence, it is very desirable to determine a permanent location, so that no subsequent changes will be necessary. A valuable saving in materials and labor will thus be made. Likewise it is certainly economical over a period of years to use good materials and construction methods. A fence once well made will give excellent service for years, requiring very little labor or cost of upkeep or replacement.