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Selecting Wire Fencing Materials

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There is an old adage that says "good fences make good neighbors." This is particularly true today in suburban areas of Missouri where a neighbor's cow or horse is seldom welcome in nearby lawns or gardens. The most economical solution is a wire fence capable of containing your livestock.

The purpose of this publication is to assist you in selecting materials for your fence.

Fence posts

Posts used to support fencing are available in either wood or steel in a variety of sizes and shapes. Selection of a post type for your fence should be based on:

- Availability and cost of the post
- How long you expect the finished fence to last.

Wooden posts are plentiful throughout most of Missouri and are generally less expensive than steel posts. For permanent fencing, you should select either a decay-resistant variety such as Osage orange or posts that have been pressure-treated with a preservative material. Table 1 gives the life expectancy of wooden posts from different tree varieties.

Table 1

Probable life expectancy for untreated and pressure-treated posts from different woods

Variety	Life expectancy (years)	
	Untreated	Pressure-treated
Osage Orange	25 to 30	see footnotes * and **
Red Cedar, Black Locust	15 to 25	see footnote*
White Oak	5 to 10	25 to 30

Southern Pine, Hickory, Red Oak, Sycamore, Poplar, Cottonwood	2 to 7	25 to 30
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***Treatment is not usually recommended for these varieties.**

****Osage Orange is no longer generally available in Missouri.**

Wood preservatives help guard against decay. Several types of preservatives are available, but the most commonly used for posts are pentachlorophenol (penta) and creosote. Pressure treatment is a commercial process that forces preservative into the wood under pressure. A preservative retention of six to nine pounds per cubic foot of wood is desirable for fence post treatment. Surface application of preservative to wooden posts is not recommended because wood will not absorb enough preservative to give effective protection from decay.

Wooden posts are available in lengths from 5-1/2 to 8 feet and in top diameters of 2-1/2 to 8 inches or larger. The larger the top diameter, the stronger the post. A 4-inch post has twice the strength of a 3-inch post and a 5-inch post has four times the strength of a 3-inch post. Line posts can be as small as 2-1/2 inches, but a minimum of 3-1/2 inches will provide a stronger, more durable fence. Corner posts and gate posts should have a minimum top diameter of 8 inches. Posts used to brace corner posts or to provide added strength in lines of steel posts should have at least a 5-inch top diameter.

Post length will be determined by the combination of fence height and depth of setting. Anchor posts should be set a minimum of 3-1/2 feet into the ground. Line posts are set 2 to 2-1/2 feet into the ground. Add together the depth of setting, the height of the top wire above ground, and an additional 6 inches to obtain required post length. For example, a corner post set 3-1/2 feet deep for a 4-foot-high fence would have to be 8 feet long.

Wooden post sizes are usually given in inches top diameter, then length in feet. A 7-inch top diameter post, 8-feet long would be referred to as a 7" by 8' or 7" x 8'.

Steel posts offer a number of advantages over wooden posts. They are lighter in weight, fireproof, extremely durable, and relatively easy to drive. They also ground fence against lightning when in contact with moist soil.

The common types of steel posts available include "U" Bar, Studded "Y," Punched channel and Studded "T." Steel posts are available in lengths varying from 5 to 8 feet in 6-inch increments. Steel posts normally cost more than wooden posts and can be bent or forced out of line by livestock crowding. Wooden anchor posts placed every 50 to 75 feet are sometimes used to provide added bending resistance for steel line posts.

Wire and protective coatings

Many different types of wire are available for fencing. The two most common for pasture use are barbed wire and woven wire. A satisfactory fence may be constructed of either type or a combination of both types.

Most wire sold today has a coating to protect the wire from rust and corrosion. Galvanizing is the most common protective coating. The degree of protection depends on thickness of galvanizing and is classified into three categories; Classes I, II, and III. Class I has the thinnest coating and the

shortest life expectancy. Nine-gage wire with Class I coating will start showing general rusting in 8 to 10 years, while the same wire with Class III coating will show rust in 15 to 20 years.

Aluminum coating is also being used to protect some wire manufactured today. Under the same climatic conditions, aluminum-coated fencing will resist corrosion three to five times longer than galvanized wire with the same thickness of coating.

The stay or vertical wires in woven wire are 6 or 12 inches apart and usually the same gage as the intermediate wire.

The style or design of a woven wire is designated by a three- or four-digit number. The last two digits indicate the height of the wire in inches, while the first one or two digits indicate the number of line wires in the fence. In some cases, style numbers may carry additional digits that indicate, respectively, the spacing of vertical stays and the gage size of intermediate wire. For example, a style 1047-6-9 is a 47-inch-high fence with 10 line wires, vertical stays every 6 inches and 9 gage intermediate wire.

Table 2

Weight classification and wire size for woven wire stock fencing

Weight	Gage of top and bottom line wires	Gage of intermediate line wires
Light weight	11	14-1/2
Medium weight	10	12-1/2
Heavy weight	9	11
Extra heavy weight	9	9

Barbed wire

Barbed wire is less expensive and somewhat easier to work with than woven wire fencing. It is sold in 80-rod rolls (1,320 feet = 1/4 mile) and is available in several wire sizes and patterns. The more common sizes are listed in Table 3.

Table 3

Available sizes and description for barbed wire

Line wire gage	Points per barb	Barb spacing
12-1/2	2	4 inches
13-1/2 high tensile steel wire	2	4 inches
14	2	4 inches
14-1/2	4	5 inches

13-1/2 high tensile steel wire	4	5 inches
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Smooth wire

Nine-gage smooth wire with galvanized coating is used in brace assemblies. This wire is usually sold by the pound and is normally available in 10-pound coils.

Fasteners

Steel post manufacturers provide specially designed metal clips to fasten wire to the posts. Make sure your dealer provides you with a supply of these when you buy steel posts.

Wire is normally fastened to wooden posts with 1-1/2 to 2-inch staples. Staples are sold by the pound.

Fence styles

Barbed wire or woven wire may be used alone or in combination to provide a number of different fence styles. Barbed wire is used in combination with woven wire to

- Keep large animals from leaning over and breaking down fencing
- Keep small animals from digging under the fence
- Both of the above

Your choice of fence style should be based on the following:

- The type of animals you have or are planning to get.
- How much money you have to spend.
- Personal experience or preference.

Four-wire barbed-wire fences are common for use with cattle or horses. Three-wire barbed-wire fences are used primarily for temporary or intermediate fence lines — not for outer line fences. Combination fences with one or two upper barbed wire strands are often used for cattle or horses. Upper barbed wire strands can be eliminated if used for hogs only.

Your materials order

The first step in putting together a fencing materials order is to establish where the fence will be located and how long it will be. A rough sketch of

the proposed fence will help you locate and determine the number of corner and brace posts. You will need a corner post assembly each time your fence changes direction. Intermediate brace post assemblies should be used every 650 feet whenever a straight run of fence exceeds this distance.

Line posts should be 15 to 20 feet apart with the shorter distance being used for smaller posts.

A general listing of materials you may need includes: corner posts, woven wire, leather gloves, brace posts, smooth wire, post hole digger, line posts, staples, fencing pliers, barbed wire, wire stretcher.

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Related MU Extension publications

- G1192, Constructing Wire Fences
<http://extension.missouri.edu/publications/DisplayPub.aspx?P=G1192>
- G810, Missouri Fencing and Boundary Laws
<http://extension.missouri.edu/publications/DisplayPub.aspx?P=G810>
- NRAES11, High-Tensile Wire Fencing
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