

1976

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Schmidt, Thomas L. and Kuhns, Michael R., "G76-314 Native Wood Fence Posts (Revised February 1990)" (1976). *Historical Materials from University of Nebraska-Lincoln Extension*. 867.
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Native Wood Fence Posts

This guide evaluates native Nebraska tree species for use as wooden fence posts.

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Fencing is a major part of most farming and ranching operations. Fences are costly and require regular repair and maintenance. Wood fence posts cut from native Nebraska trees can be less expensive than steel posts or wood posts imported from other states. When deciding whether to use native wood fence posts, consider durability, availability and ease of handling.

Wood Fence Post Durability

The lifespans of wood posts depend on the species, where they are installed, and whether or not they have been treated with a preservative to help resist decay fungi and insects. Wood posts should last 10 to 50 years depending on species, environment and preservative treatment used. Posts in a wet environment such as a meadow or along a stream will decay faster than posts on an upland site with good drainage. Posts tend to last longer in sandy soils due to better drainage.

Posts of very decay-resistant species or treated posts are generally the most expensive. These posts should be used only where needed, as in a naturally wet area with clay soils. Posts on the top of a sandhill can be less decay resistant because there is less moisture available for decay fungi.

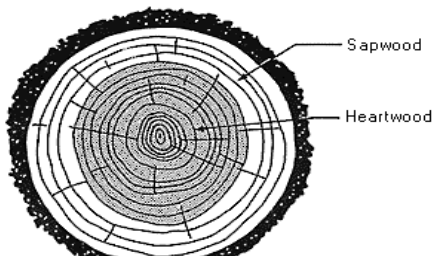


Figure 1. Heartwood and sapwood

Heartwood is defined as the dark, old wood in the center of the tree that forms much of its support (*Figure 1*). Heartwood is generally more decay resistant than sapwood and the more heartwood the more decay resistant the post. The characteristics that make heartwood decay-resistant (very slow to absorb moisture and denser than

sapwood) also make it difficult to treat with preservatives.

Sapwood is the light-colored, porous, young wood just beneath the bark (*Figure 1*). Sapwood conducts water and minerals between the roots and leaves. It decays quickly but absorbs preservatives readily. Untreated posts should contain a minimum of sapwood. Posts for treating should have at least one inch of sapwood surrounding the heartwood.

Untreated posts from most species generally have a shorter lifespan than treated posts because the sapwood decays rapidly. Two species of trees that make long-lasting posts without treatment are osage-orange (hedge) and eastern redcedar. Untreated posts with more than one inch of sapwood can loosen in the ground and lose staples as the sapwood degrades after several years. Untreated and split posts should have a minimum small-end diameter of three inches to counter potential sapwood degradation.

Species of trees vary in their resistance to decay. *Table I* includes common post species in Nebraska. While many of these species can be used for untreated fence posts, it is recommended that most be treated with a preservative for maximum post life.

Table I - Decay resistance of selected native Nebraska trees		
Species	Expected lifespan if untreated	Comments
Osage-orange (hedge)	35+	Best native post species in Nebraska. Does not need treatment. "Outlasts the hole."
Black Locust	20+	Used for railroad ties & posts. Good strength. Holds staples well. Does not need treatment.
Eastern Redcedar, Juniper	20+	Readily available. Heartwood is very decay resistant. Does not need treatment.
Honeylocust	15+	Good strength. Little shrinkage. Best if treated.
Hickory	15+	Very hard, moderate decay resistance. Best if treated.
Catalpa	15+	Good species to plant for posts. Treating will extend life.
Mulberry	15+	Easily grown for posts. Best when treated.
Bur Oak	10+	Slow growing. Treating will extend life.
Black Walnut	10	Good short-term post. Best if treated.
Hackberry	<10	Holds staples well. Short lifespan as post. Little shrinkage.
Green Ash	<10	Holds staples well, good strength. Needs treatment.
Ponderosa Pine	<5	Decays rapidly if untreated. Use only if treated.
Cottonwood	<5	Poor choice for use as post.

Seasoning Posts

Seasoning is the process of drying wood to remove excess water. Untreated posts need not be seasoned or dried before using. In time they will lose and gain water until they are in balance with the moisture content of the soil and air. However, there are advantages to seasoning posts before using. Seasoned posts do not check or crack as readily as unseasoned posts, are lighter to handle, and generally hold staples better.

Most methods of treating posts require seasoning prior to preservative treatment. Inadequately seasoned posts check or crack after treatment, exposing untreated wood to decay fungi and insects.

Remove bark before seasoning. Posts cut in late spring or early summer strip easily if peeled immediately. Posts cut in late fall or winter peel easier if piled until the bark loosens. Trim branch stubs smooth. Pile posts loosely on supports at least 1 foot above the ground in a well-ventilated location. Seasoning takes 60 to 90 days in summer and 120 to 180 days in winter. Checking and splitting, caused by drying too rapidly, can be minimized by covering the stacked posts.

Treating Posts

The heartwood of some species has little resistance to natural decay. These species may be used untreated if a short service life (3 to 10 years) is acceptable. However, treating the posts with a preservative will greatly increase their lifespans. Treated posts should contain a high proportion of sapwood because it absorbs and retains preservatives better than heartwood.

Decay fungi in wood require heat (over 68 degrees F), moisture (20 percent to 100 percent), oxygen and food (cellulose and sugars) to be active. Preservative chemicals limit decay by contaminating the food source. Most preservatives also can reduce attack by termites and borers.

Conifer species such as ponderosa and jack pine respond well to treatment and have an expected lifespan of over 20 years if treated. These species treat easily and make excellent posts with proper treatment. Hardwood trees do not treat as well as conifers, though they generally have a greater degree of natural decay resistance.

Posts can be treated by pressure and non-pressure methods. Pressure treatments force preservatives into the wood with good penetration and retention of preservatives. However, high costs and expensive equipment make this method impractical for home use.

Non-pressure treatments do not require expensive equipment and are less complicated. Cold soaking is the easiest non-pressure method of treating peeled, seasoned posts. The only equipment needed is an open tank large enough to submerge posts in preservative solution. Treat the full length of the posts for best results. Posts decay fastest at ground level, so treat a minimum of one foot above ground level if not treating full length. Before adding solution, secure posts to keep them from floating. Posts should be totally submerged while soaking in preservative chemicals. Wood preservatives are toxic chemicals, so read the labels before use and follow instructions.

Preservative chemicals, while available, are restricted-use pesticides. To purchase or apply restricted use pesticides, you must be certified by the Environmental Protection Agency (EPA). Pentachlorophenol and creosote are two effective preservatives for treating posts. Both of these preservatives should be mixed with No. 2 fuel oil. Read the label for specific mixing and application recommendations. Posts should be cold soaked for at least 48 hours or until they do not absorb additional solution. Add solution as needed. Allow posts to drain and dry before using. Use gloves to handle treated posts.

Chemical Caution

Wood preservatives are toxic chemicals. Read the label before use.

1. Follow instructions; heed all cautions and warnings.
2. Apply only as directed.
3. Avoid skin contact with any preservative.
4. Store in original labeled containers. Keep out of the reach of children and pets.
5. Dispose of all containers properly.

The following NebGuides contain information proper chemical handling, use and container disposal.

Farm pesticide Storage (G79-460)

Disposal of pesticide Containers (G79-472)

Disposal of Excess pesticides and Related Wastes (G79-473)

Pesticide Laws and Regulations (G79-479)

Signs and Symptoms of Pesticide Poisoning (EC2505)

Protective Clothing and Equipment for pesticide Applicators (G85-758)

For more information or to obtain a NebGuide, please contact your Extension Agent.

Use all preservatives safely. Read the preservative product label completely and comply with all directions given. Failure to do so may subject you to sanctions or penalties provided by federal and/or state laws.

File G314 under: FORESTRY

D-1, Marketing

Revised February 1990; 7,500 printed.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Elbert C. Dickey, Director of Cooperative Extension, University of Nebraska, Institute of Agriculture and Natural Resources.

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