DEMONSTRATING THE PRESERVATIVE TREATMENT OF FENCE POSTS
USING PENTACHLOROPHENOL SOLUTION AND THE COLD
SOAKING PROCESS *
by
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A. Objectives of Preservative Treatment
1. To prolong life of fence posts three to five times and prevent frequent costly replacements.
2. To make useful certain species that are found in woodlot and not normally long lasting without treatment.
3. To reduce cost of fence post investment; no cash purchase outlay when home-grown trees are used; less waste of our resource.

B. Selection of Posts from our Woodlot
1. Use only round materials.
2. Use species most easily treated if available; lodgepole pine is one of our most easily treated woods. Most of our other species used for fence posts are difficult to treat without incising.
3. In selecting posts think about how woodlot can be thinned at same time to improve growth rate of stand.
4. Cut posts during season when bark peels most easily.
5. Utilize tops and other logging wastes whenever possible. Trees recently dead and sound often are seasoned while standing and may be ready for immediate treatment (bug or fire killed trees).

C. Cutting the Posts
1. Use equipment suited to the job - chain saw, axe, crosscut saw, etc.
2. Cut the post supply needed during one period so seasoning of all posts will be uniform.
3. Coordinate post cutting with other timber operations when possible.
4. Cut when bark can be most easily peeled whenever possible.
5. Keep tools sharp and in good working order for safety and ease of work.
6. Work safely - axe and saw are dangerous tools to carry and work with carelessly.

* Prepared for 1949 4-H Leader Training Conference.
D. Peeling Posts

1. Important: Posts be cleanly peeled. If any of the inner bark is left on it turns brown upon drying and resins in it make a layer through which the treating solution will not go. Remove all bark down to sapwood. Do not cut away sapwood as it is usually easier to get penetration in the sapwood.

2. Use best tools for the job – spoke shave, bark spud, etc.

3. Peel before post dries out very much. Early summer is usually best for most species.

E. Piling and Seasoning

1. Posts must be dry before treating. Pile for best air circulation (winter, open cross piling is best; summer, if in sun, not so openly piled, preferably piled in light shade). Quick drying may cause case hardening in outer wood and make treating difficult.

2. Length of drying time necessarily depends on species of wood, season of year, and prevailing temperatures of locality. Winter cut, six months to a year; summer, three to six months.

3. Test for dryness: Weigh a few sample posts from time to time during seasoning period. When weight of post reaches point of constant weight, it is dry enough to treat. Small surface checks along surface of post is another indication.

F. Incising the Post for such Hard-to-treat Woods as Fir, Larch and Cedar

1. Incising is the process of striking wedge-shaped openings in the post at the ground line point. Incise at least twelve inches of the post at this point so after setting post six inches of the incising will be above ground line and six inches under ground line. The depth of such openings should be at least three-fourths inch. Many farmers with mechanical skills may be able to make such a tool in their shops after they have seen one. There may also be such tools available commercially.

2. The idea of making these openings into the side of the post is to assure depth of penetration of the preservative into the wood. The cell structure of wood is such that normally penetration into the side of the post is only about 1/20 the penetration you get lengthwise. Thus if you make openings towards the center of the post, it allows the liquid solution to get further into the wood and extend lengthwise up and down the post from this point. Proper incising of woods such as fir, cedar and tamarack may mean the difference between satisfactory and unsatisfactory penetration. Good treatment at ground line is most important. It is here that rapid decay takes place in posts.

3. Some less durable species such as alder and cottonwood if used, should be treated full length, but our more desirable species need only be treated at the ground end of the post. Use alder and cottonwood only as a last resort or where better species are not available.
G. Buying the Preservative (Pentachlorophenol)

1. It is sold under many trade names and in varying concentration. It can be purchased ready to use or in concentrate form that has to be diluted with a light oil. The concentrate is the cheapest form to buy. In diluting the concentrate, be sure to follow instruction of manufacturers. A five per cent treating solution is recommended. With Lauxtol "A" this is secured by adding one gallon of concentrate to ten gallons of a light oil such as diesel fuel or stove oil.

2. Something about costs involved.

H. Equipment Needed

1. One or two 55-gallon oil drums with top out. Two of these can be welded together for full length treatment or other type of tank available can be used.

2. Fuel oil and Pentachlorophenol concentrate.


I. Mixing the Solution

1. Amount of Pentachlorophenol needed.

2. Amount of fuel oil, etc., to be added to make five per cent solution.

3. Amount needed in treating tank depends upon the number of posts put in (55-gallon drum will hold 15-21 average sized posts).

4. Stir solution.

5. Treating solution should be kept above 65 degrees while treating.

J. Soaking the Posts

1. Set in tank on end (butt end down).

2. Keep solution level in tank stationary by adding solution from time to time as wood takes it up.

3. Be sure posts do not float up.

4. Until experience has been gained as to length of time needed for various kinds of wood, check penetration occasionally during treating period.

5. Not much gained after 48 hours in tank for any species.

6. To conserve treating solution remove readily treated posts after three-fourths inch penetration is secured. A three-fourths inch poisoned circle of wood is sufficient to prevent decay.
J. **Soaking the Posts** (continued)

7. Penetration can be determined by use of an oil soluble dye. Cut a post in two, split and sprinkle the dye on surface. The powder dye will become colored in from edge as far as oil has penetrated. When dark oils are used in mixing the solution the depth of penetration can easily be seen. Another method is by the use of the forester's increment borer. This instrument takes out a tiny core of wood from the side of the post. When core is removed penetration can be seen and measured.

8. Explain relative cost of treating (seven to fifteen cents per post).

K. **Removal of Posts from Tank**

1. After posts have soaked long enough they are removed from tank.

2. They should then be piled neatly and allowed to dry. The excess solution on posts on removal then goes into the wood.

3. Posts should be allowed to dry a day or two before setting in the ground.

4. If posts are to be stock piled for later use, they should be neatly piled in the same manner as used for seasoning. Posts will usually be stored in a place most convenient to the fencing job.

Summary of important points in conclusion.
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2. "Wood Preservation with SANTOPHEN 20 in Oil Solutions by Pressure Processes". Monsanto Chemical Company, St. Louis, Missouri. Copyrighted 1946.


5. "Treating Fence Posts with 'Penta'." C. S. Walters, Assistant Chief of Forest Utilization, Department of Forestry, University of Illinois Agricultural Experiment Station, Urbana, Illinois.

