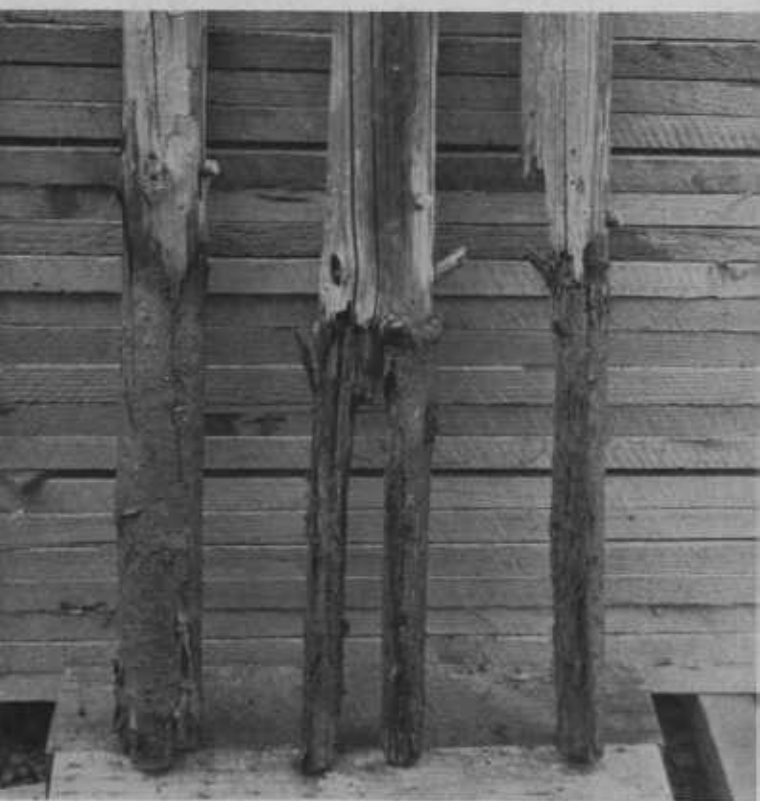
Salt Treatment for *Green* POSTS and POLES



These 24-year-old posts show that salts move UP and DOWN, rather than AROUND, a post. Post at left was treated with 3 holes, the middle one with 2 holes, and the right one with 1 hole.

Cooperative Extension Service
Oregon State University
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Salt-treated grand fir telephone poles in Gilliam County, removed after 10¾ years because larger poles were required to serve an Air Base. Note characteristic distribution of the chemical in strips above and below the 3 bore-holes. Most poles here were sawed off at ground line.

Salt Treatment for *Green* POSTS and POLES

MATERIAL

Use round, green posts with the butt portion unpeeled. This treatment requires a high wood moisture content. The moisture dissolves the salts and carries them through the fibers of the sapwood.

The more the posts dry out the poorer the results. Only by prolonged immersion in water can you hope to approach the original moisture content of the wood.

FORMULA

Use 2 parts (by weight) of common salt to 1 part corrosive sublimate.

Three pounds of this mixture will treat 40 to 45 posts 4 to 6 inches in diameter. One rounded tablespoon of the mixture will treat one post of this size.

NOTE: Old directions called for arsenic in the mixture, but 20-year tests at the Post Farm have shown that posts last as long without this second very poisonous chemical as with it.

This folder was prepared by Charles R. Ross, Farm Forestry Specialist, OSU Extension Service, in consultation with R. D. Graham, in charge, Wood Preservation, Forest Research Laboratory, OSU.

APPLICATION

OLD WAY: Drill a ¾-inch hole 1 to 2 inches deep in the post just above the ground and slanting downward. Insert the dry mixture and close the hole by nailing a piece of tin over it or by a plug, such as a ¾-inch dowel. Be sure to close this hole tight to prevent stock from licking the poison. If convenient, drill the hole below the ground level and cover the plugged hole with earth after treatment.

DOSAGE:

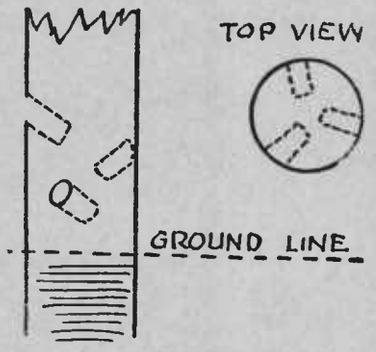
Average-size post, 1 rounded tablespoon in 1 hole.

7- to 9-inch post, 2 rounded tablespoons in 2 holes equally spaced.

10- to 12-inch post, 3 rounded tablespoons in 3 holes equally spaced.

NEW WAY: Since the chemicals move well up and down but very little around posts (see illustrations), use more holes—one for each 5 inches of circumference.

A post 4 to 5 inches in diameter would have three holes. Use ½-inch holes. Stagger them up and down to prevent weakening the post. Use the same dosage per post as above, dividing mixture equally among all the holes.



COST

Chemicals now cost about 15¢ to 18¢ per 4-inch post (chemical cost varies). Once he has all the materials ready for use, one man can treat between 12 and 15 (one-hole) posts per hour. Commercial grades of the mixture are less expensive than refined grades.

CAUTION!

Corrosive sublimate (known also as bichloride of mercury and mercuric chloride) is deadly poisonous when taken internally. It can cause severe and permanent injury should a flake of it get into the eye or into the mouth.

In this salt-treated fence more than half the posts were still firm after 15½ years. The peeled tops had not rotted noticeably. Butts were not peeled. Posts were round, Douglas-fir, many small like ones shown. The 2x4 uprights were nailed to the posts to provide a deer fence. Vern McDaniel (shown here), Superintendent, Oregon Forest Nursery, treated the posts.

SAFETY PRECAUTIONS

Prevent contact of the mixture with the skin.

Wear goggles while handling the corrosive sublimate.

Label containers plainly and store in a dry place out of reach of children—better yet, keep no corrosive sublimate on the place.

Some farmers treat the posts over a trench and fill in the trench after the treatment.

BEST METHOD?

Numbers of western Oregon farmers have used the salt treatment for years. It seems to give more consistent results on Douglas-fir posts, which often last 15 to 20 years although tops of posts may develop decay earlier.

The Oregon State Extension Service provides information about the salt treatment, but it does not actively urge its use. Corrosive sublimate is dangerous for ordinary farm handling.

The excellent cold-soaking treatment is not as risky from the standpoint of poisoning. Soaking air-dry, round posts in "penta" requires more labor than does the salt treatment, but may prove more satisfactory. Cold-soaking can preserve tops of posts.

DO THEY LAST?

Douglas-fir

Seventy-two salt-treated posts installed at OSU's T. J. Starker Post Farm near Corvallis were still standing after 24 years service. Most of the tops, however, had become too rotted to hold staples. These posts were round, unpeeled Douglas-fir, 4 to 7 inches in diameter, averaging about 60 percent sapwood. Untreated posts failed in 7 years or less.

Certain farmers have reported an average life of more than 15 years from salt-treated Douglas-fir posts. A few have reported failures of treated posts before 10 years. The OSU Forest Research Laboratory believes fewer failures will result if more holes are used (see page 3). Treating only fresh-cut posts is a wise precaution to avoid failures.

Lodgepole pine

The salt treatment, using only one hole, increased the service life of unpeeled lodgepole pine at the Post Farm. After 22 years, 21 of the original 25 posts had failed; their average life was 16 years. Untreated lodgepole pine posts last an average of 4 to 5 years. Better results would have been obtained with more holes.

Grand fir

Hundreds of grand fir telephone poles 6 to 10 inches in diameter were salt-treated in Gilliam County. In 1960, after $10\frac{3}{4}$ years, few had failed, but most poles had serious butt decay. Average service life that could be obtained was estimated at 15 years. Tops of poles were good for years (photo on page 2).

White oak

A dairy farm near Corvallis tested the salt treatment on round, unpeeled, white oak posts. About 5 out of 6 of these posts failed in 12 years. All failures came at the ground line; tops were sound.

TOPS

To make the top of a post last longer: Slope it so that it will shed rain; peel portion above the ground. Peeled *Douglas-fir* tops usually last 15 years or more.

"Scabbing" will probably give results similar to peeling. Use a drawknife to pull off 2 narrow strips the full length of the top. The tops dry out, and decay is reduced.

Go around the fence line at a dry time and spray or brush tops heavily with a cold-soak preservative (creosote or 5% by weight of penta in diesel oil). Treat wood only, not bark. The seasoned wood will absorb the preservative well. Fill the cracks. Repeat when necessary.

ADVANTAGES

No special equipment is required for application.

Time and labor are saved. The posts do not have to be peeled or seasoned. In many instances posts may be cut along the fence line; this saves transportation and handling.

No training or experience is required in making the application, although *extreme care* should be used in handling the deadly poisonous corrosive sublimate.

No authenticated reports are known of stock having suffered ill effects by chewing on the treated posts or by drinking water poisoned by them. After the salts have dissolved and disappeared from the hole, there appears to be little further danger to stock if the plug falls out or is otherwise removed. Ashes of burned posts could be quite poisonous to livestock.

DISADVANTAGES

The salt treatment is applied only at the ground line and is believed to give little protection to the tops.

The chemicals are dangerous and should be handled with great care.

SOURCE OF CHEMICAL

You may purchase corrosive sublimate from local drug stores or buy it in larger lots from agricultural chemical houses in Portland.

ONE MAN'S VIEW

T. J. Starker, formerly professor of Forestry at Oregon State University, began tests of the Salt Treatment in 1928. He wrote the *Oregon Farmer Magazine,* August 20, 1953, "The salt treatment is not new. It was probably brought over from Germany. Early hop growers used it. The method has much merit. So far as I know there is no other method that gives so much longevity as cheaply and easily. Corrosive sublimate is a dangerous material. But so are chemicals to treat grain and to poison rats. To date I have never heard of anyone being harmed by using this chemical in treating posts. I have personally used it in treating hundreds of posts. Just be careful."

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