



Figure 1. When ripped open length wise, these cold-soaked red oak posts revealed excellent absorption of the pentachlorophenol. (The dark areas of wood are impregnated with the preservative.)

Study Cold-Soaking Treatment Of Posts Of Delta Hardwoods

By G. M. FURNIVAL¹

In 1953, a study was begun at the Delta Branch of the Southern Forest Experiment Station to determine whether fence posts cut from Delta hardwoods can be treated satisfactorily by cold-soaking in pentachlorophenol. Species included in the test were overcup oak, red oak (water oaks) sweetgum, tupelo, privet, boxelder, hackberry, hickory, cedar elm, American elm, and bitter pecan. Most of the posts were from small overtopped trees which ordinarily die and are wasted before they become large enough for sawlogs. However, some vigorous privet and boxelder were cut in order to give more valuable trees room to grow.

Posts were cut and peeled in March, during the slack time just before planting season. The bark had begun to slip then and it was easy to get a good, clean job of peeling.

After being cut and peeled, the posts were stacked loosely, well off the ground, and left to dry. Well-seasoned posts were desired so that a good treating job could be obtained. Moist wood does not take up preservative well and penetration is apt to be shallow. Checking and cracking should occur before treatment; not after the posts are set in the ground. A crack which opens after treatment splits the shell of

preservative protecting the post and allows rot and termites to enter.

The posts were allowed to season through the hot summer months until laying-by time. By then all species were thoroughly dry. Checking and cracking were complete, and the posts were ready for the preservative.

Treating was done in the early fall, just before cotton picking began. Posts were soaked horizontally in a five percent solution of pentachlorophenol in diesel fuel. After five days, absorption was apparently complete, because the level of the preservative in the tank stopped going down and no more bubbles rose to the surface.

The amount of the treating solution taken up by each post was measured. In addition, several posts of each species were ripped open with a table saw so that the distribution and penetration of the preservative could be observed (fig. 1).

The species included in the test are grouped below according to the amount and character of absorption obtained:

Red oak	Bitter pecan
Overcup oak	Privet
Cedar elm	
Light absorption but good distribution:	
Hickory	American elm
Adequate absorption but patchy distribution:	
Tupelo	Sweetgum
Light absorption with patchy distribution:	
Hackberry	
Excessive absorption with patchy distribution:	
Boxelder	

Final recommendations must wait until the posts have been in the ground for a number of years. However, the species listed in the first group are almost certain to give good results, and a substantial increase in service life can be expected for the treated hickory and soft elm posts. Furthermore, sweetgum has given satis-

factory service in other areas when cold-soaked in pentachlorophenol. In addition, hackberry has held up well in the Delta after treatment by hot and cold bath in 1948, even though patchy distribution was also obtained then.

On the other hand, it is unlikely that more than a moderate increase in service life will be achieved for tupelo and boxelder. The penetration in these posts was largely from the ends in localized streaks. Other species which exhibited this type of penetration have given poor service in the past.

The cost of the pentachlorophenol solution used in this study was 31 cents per gallon. The posts took up, on the average, about two quarts each. Thus the cost per post for preservative alone was approximately 15 cents.

No other cost records were kept in this study. However, information on labor costs in fence post production may be found in *Fences for Bottomland Farms in the Delta*, and other publications of the Mississippi Agricultural Experiment Station.

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