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**ABSTRACT:** Posts of ohia and robusta, pressure-treated with two preservatives--chromated copper arsenate and pentachlorophenol, are being tested for durability at the Makiki Exposure Site, Honolulu, Hawaii. All treated posts are still sound after 5 years. Untreated ohia posts averaged 4 years of service life before failing; untreated robusta posts averaged 4½ years.

**RETRIEVAL TERMS:** fence posts; pressure processes (-wood preserving); lumber preservation; posts; *Eucalyptus robusta*; *Metrosideros collina*; Hawaii.

**OXFORD:** 831.51:841.21:176.1 *Eucalyptus robusta*:176.1 *Metrosideros collina*:(969).

## Preservatives Extend Service Life of Ohia and Robusta Posts

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Fence posts of most wood species require preservative treatment of some sort to lengthen their service life. The best penetration and retention of preservatives in wood is usually achieved by pressure treatment--forcing the preservative into previously air-dried wood in a pressure cylinder.

In November 1962, we began a test to determine if this treatment would extend the service life of 3- to 5-inch diameter posts of two well-known species in Hawaii: ohia (*Metrosideros collina*) and robusta (*Eucalyptus robusta*). Treated and untreated posts were installed in a graveyard test at the Makiki Exposure Site, Honolulu. Two preservatives are being tested: 8.2 percent pentachlorophenol in mineral spirits with water repellent, and chromated copper arsenate. Their retention and penetration, by species, were as follows:

	<u>Preservative used</u>	<u>Retention</u> (lbs./ cu.ft.)	<u>Penetration</u> (inch)
Species:			
Robusta	Pentachlorophenol	4.9 of solution	0.5
Robusta	Chromated copper arsenate	.85 of salt	.6
Ohia	Pentachlorophenol	12.4 of solution	.9
Ohia	Chromated copper arsenate	1.4 of salt	.6

Twenty-five posts of each treatment and of each species were installed together with 20 untreated control posts of each species.

After 5 years all the treated posts are still sound. But all the untreated ohia posts have failed. They averaged 4 years of service life. Five of the untreated robusta



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posts are still serviceable; the rest have failed--they had an average life of 4-1/2 years.

Decay was the primary cause of failure in the untreated posts. The sapwood of most posts had been damaged by subterranean termites, but insects had entered the heartwood in only two ohia posts.

We expect the two preservative treatments to extend greatly the service life of the posts.

The Hawaii Division of Forestry provided the posts and the exposure site. The Honolulu Wood Treating Company, Ltd. treated the posts and helped install them.

The Author

ROGER G. SKOLMEN's first Forest Service assignment, in 1959, was as a member of the Experiment Station's soil-vegetation survey in Berkeley and Arcata, California. In early 1961, he joined the Station's research staff in Honolulu, Hawaii, where he has been investigating the uses, properties, and processing of forest products. A native of San Francisco, he holds bachelor's and master's degrees in forestry from the University of California, Berkeley.