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Service Life of Treated and Untreated Fence Posts

**on the
T. J. Starker Post Farm**

**Supplement to
Progress Report 11**

by

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December 1958

**STATE OF OREGON
Forest Products Research Center
Corvallis**

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This summary of the 1958 inspection of the T. J. Starker Post Farm is issued as a supplement to the detailed Progress Report 11, October 1957. Complete Progress reports to be issued at intervals of 2-5 years will describe post series mentioned here and will summarize previous work.

Forty-one posts from 13 untreated series, 65 posts from 21 nonpressure-treated series, and 5 posts from 2 pressure-treated series failed (Table 1). Decay continued to be the primary cause of post failure:

Cause	Number of failures	
	1949-1957	1958
Fungi (decay)	406	97
Termites (damp-wood)	18	3
Fungi and termites	105	5
Fungi and other insects	31	6

Pressure-treated posts

Failures occurred only in posts treated with zinc-meta-arsenite (series 33) and with chromated zinc chloride (series 43); estimated service life of each series is 24 and 21 years, respectively. Service life of each of the remaining pressure-treated series is estimated to exceed 30 years.

Nonpressure-treated posts

Posts treated by double diffusion with copper sulfate and sodium chromate (series 99, 102, 105) continued to fail rapidly; their average service life will be only a few years longer than that of untreated posts set at the same time. Failures also occurred in posts treated by double diffusion with sodium fluoride-copper sulfate (series 101, 108) and zinc sulfate-arsenic acid-sodium chromate (series 104).

Posts brushed with or soaked in copper naphthenate (series 80, 63, 65, 67, 77) continued to fail, bringing total failures in these series to 73 posts. Only 5 posts have failed in comparable series treated with a 5 per cent solution of pentachlorophenol in diesel oil (series 79, 62, 64, 66, 68). No failures have

occurred in Douglas fir posts soaked for 6 days in copper naphthenate or pentachlorophenol (series 93, 94), nor have posts soaked in Gasco-creosote failed (series 85, 87, 88, 95).

Untreated posts

A few posts of the following durable-heartwood species failed:

Alaska cedar (series 46), western juniper (series 30), black locust (series 40), Oregon white oak (series 19), redwood (series 58), and Pacific yew (series 13). Each of these series will have an estimated average service life of more than 15 years. Remaining posts in series 47 (cascara buckthorn), 84 (Arizona cypress), 100 (Douglas fir), and 103 (lodgepole pine) failed; average service life of these series varied from 3 to 8 years.

Mountain hemlock posts (series 109) installed in 1956 were failing rapidly.

Table 1. Post failures during 1958.

Species	Untreated		Nonpressure-treated		Pressure-treated	
	Series	Failures	Series	Failures	Series	Failures
Alder, red	106	2	105	6		
Alder, red			108	4		
Cascara buckthorn	47	1				
Cedar, Alaska	46	1				
Cottonwood, black			74	4		
Cottonwood, black			77	3		
Cypress, Arizona	84	1				
Douglas fir	72	2	24	4	33	3
Douglas fir	100	5	25	1	43	2
Douglas fir			63	4		
Douglas fir			65	4		
Douglas fir			67	4		
Douglas fir			73	3		
Douglas fir			80	2		
Douglas fir			81	3		
Douglas fir			89	1		
Douglas fir			91	1		
Douglas fir			101	2		
Douglas fir			102	8		
Hemlock, mountain	109	15				
Juniper, western	30	1				
Locust, black	40	1				
Maple, Oregon			83	1		
Oak, Oregon white	19	2	50	1		
Pine, lodgepole	103	3	56	6		
Pine, lodgepole			99	2		
Pine, lodgepole			104	1		
Redwood	58	4				
Yew, Pacific	13	3				
All species		41		65		5