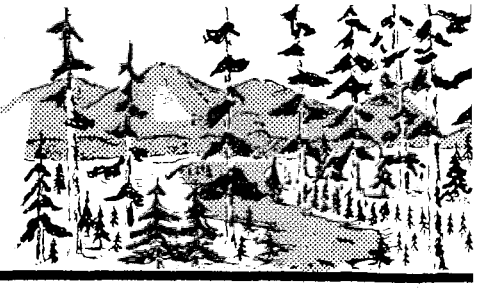
CANADA

Timber Talks



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Potential Hazard in Managing Immature Stands No. 63

Disease from infection by the fungus Fomes annosus causes heavy loss within the forest from butt rot and extensive root decay. The disease usually spreads from established infection centres by airborne spores which colonize freshly-cut stumps and wounds, and from contact of roots of diseased stumps with those of living trees. Many tree species are infected, and the economic loss due to butt rot in old-growth stands of western hemlock is particularly serious in British Columbia. The disease is also present in immature stands but the magnitude of the damage is more difficult to predict. A realistic evaluation of anticipated loss in such stands is especially important at this time, as the increasing number of programs of intensive management of young stands of commercially important species being implemented is creating environmental conditions conducive to spread of the disease. An investigation was initiated to predict loss in such managed stands and to determine a method for its reduction.

Airborne spores of the fungus were collected on white pine discs at 2-week intervals from March 1964 to April 1965 and monthly thereafter to Feb. 1966, from two stands at Cowichan Lake, British Columbia. Stumps of trees of different species and age, cut over a 13-year period, were examined for spore infection at 14 localities on Vancouver Island, and other stumps were inoculated with the fungus to test their susceptibility to infection. Stumps, in which extensive decay was evident, were excavated to expose contacts between diseased and living roots.

Spores were disseminated throughout most of the year. Heaviest populations occurred in October-November and February-March. An average of 19 percent of the western hemlock stumps examined, and 17 percent of the Douglas fir, showed evidence of Fomes annosus decay. The amount of infection varied between stands, ranging from 0 to 40 percent of the stumps of western hemlock and 3 to 37 percent of the Douglas fir.

The fungus may grow as much as 30 inches a year, but growth is usually much slower in stumps whose roots are grafted to living trees. Decay of the roots is variable and, in some instances, quite extensive two years after infection; frequently some parts of a root system are seriously rotted while others are uninfected. Infection centres of 12 to 15 trees in thinned stands of western hemlock were common, and root decay was observed 12 feet from ground. Douglas fir seemed less susceptible although in a 20-year-old plantation, infection centres of 3-5 trees and decay up to 5 feet in the lower bole was observed, as well as extensively rotted heartwood in cedar roots in contact with roots from infected stumps.

A practical and economically sound means of controlling spread of this fungus after it has become established within a stand is not known. A liberal application of borax to the cut surface of stumps reduces considerably their susceptibility to spore infection.

REPORT: "Annosus Root and Butt Rot: A Potential Threat in Managed Stands in British Columbia". G.W. Wallis and G. Reynolds, Forest Research Laboratory, Victoria, B. C.