DEPARTMENT OF FORESTRY · CANADA ·

Timber Talks

Prepared by V. H. Phelps, Forest Research Laboratory, 506 W. Burnside Road, Victoria, B.C.

DIEBACK IN DOUGLAS FIR

No. 21

A form of dieback that attacks Douglas fir trees occurs in British Columbia. In many areas, the loss due to tree mortality and top-kill is extensive and of economic importance. Vigorously growing saplings and pole-sized trees, growing on good sites, seem most prone to attack.

Early recognition of the presence of this fungal disease is from dead tree tops and branches with reddish needles; after the needles drop the tree has a "spike-top" appearance. Infected branches usually die back to the main stem, where necrotic tissues often girdle the tree. Near this area, the bark is reddish and pitted with depressions, the phloem cells are decayed and discoloured and the cambium is killed. Callus is not formed at the injured area but the bark dries, cracks and the dead sapwood is exposed.

Fruiting bodies, the source of spores for spread of the disease, are formed on bark surfaces that are near the infected area and are exposed to the atmosphere. They vary in size, shape and colour but are usually pin-sized structures that erupt through the bark. Approximately three months, July to September, is required for complete development but after reaching maturity they rarely persist on the tree. Spores are disseminated by wind and when they come into contact with bark lesions, the disease is initiated. They develop within the bark and sapwood, causing cell collapse in the former and cell mortality in the latter.

Climatic conditions are related to the incidence and spread of the disease. Adverse weather conditions, such as early frost before hardening-off, reduces the vigor of trees and predisposes them to infection; high humidity and moderate rainfall are conducive to spore dissemination.

Effective and practical measures to control this disease after it has infected a forest stand have not been developed. Control of the disease on a limited number of trees can be accomplished by the removal and burning of branches.

REPORT: Dermea pseudotsugae N. sp., A Causal Agent of Phloem Necrosis in Douglas Fir. A. Funk, Forest Research Laboratory, Victoria, B. C.