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Management Guide for Brown Trunk Rot

Fomitopsis officinalis (Vill.:Fr.) Bond. et Singer**Topics**

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Key Points

- A major decay throughout older forests.
- One of the three most important sources of defect in conifer forests throughout its range.

The only indicator of decay is the presence of the fungal fruiting body or conk.

Brown trunk rot is one of the three most important sources of defect in conifer forests throughout its range.

Primary Host:

- Western larch
- Douglas-fir

Occasional host:

- Ponderosa pine
- Spruce
- True firs
- Western white pine
- Lodgepole pine
- Western hemlock

History and Distribution

Brown trunk rot is a major decay throughout older forests of the western United States and Canada. It is considered one of the three most important sources of defect in conifer forests throughout its range (Overholts 1967). Although it causes significant amounts of damage, it is considered rare in occurrence (Overholts 1967). It is known historically as a source of agaricin which is used to reduce fevers and in the treatment of certain diseases

such as tuberculosis (Gilbertson and Ryvardeen 1986). The first century Greek physician Diosorides recognized the medicinal properties of this fungus in treating “consumption” and called it agaricum or agarikon (Stamets 2002). The Haida peoples of British Columbia also used it medicinally and spiritually, personifying it as “Fungus man” and including it as part of their creation story (Stamets 2002).

Damage

Fomitopsis officinalis causes a brown cubical rot of the heartwood of affected trees. It is more commonly found in the trunk and upper bole, and only occasionally in the butt portion (Scharpf 1993). The only indicator of decay is the presence of the fungal fruiting body or conk. When a conk is

present, the tree is generally considered to not have useable wood volume or to be a cull for timber production (Allen, Morrison, and Wallis 1996). Trees with conks in recreation areas should be considered high hazards (Allen, Morrison, and Wallis 1996).

Life History

It is not known how the fungus enters living trees. However, wounds, broken tops, and branch stubs have been mentioned as common entry points (Scharpf 1993). Conks occur infrequently on trees, but once they develop they can last for many years and become quite large.

Trees with conks in recreation areas should be considered high hazards

Identification

The conk of brown trunk rot is very distinctive when present, but is generally rare especially on living trees. It is most commonly seen in old-growth western larch and Douglas-fir. The conks become quite large and are white to yellow-white in color. The inside of the conk is chalky, crumbly, and bitter to the taste. The fungus produces a brown cubical decay of the heartwood. The decay is not limited to any particular part of a tree, but is more commonly found in the trunk and upper bole rather than the

butt. Between the cracks in the decay are thick white felts or sheets of fungal material which are also bitter to the taste.

Known historically as a source of agaricin which is used to reduce fevers and in the treatment of certain diseases such as tuberculosis.



Photo to the right: Typical quinine conk fruiting high on the stem of a tree. Photo by John Schwandt.

Management Considerations

Alternatives for reducing the amount of brown trunk rot in a stand are limited to managing for younger age classes. Removing weakened or damaged trees through sanitation cuttings may limit the amount of decay in a stand. Cull factors of the amount of decay present in an affected tree have been determined for northwestern California (Kimmey 1950). Factors for the intermountain states have not been determined, but are likely similar.

In general, a tree with a conk present is usually considered to be completely decayed. Trees with conks in developed areas and heavily used sites should be considered for removal to reduce the risk to users of the facilities and area.

Other Reading

Allen, E., D. Morrison, and G. Wallis. 1996. Common tree diseases of British Columbia. Canadian Forest Service, Pacific Forestry Centre, Victoria, BC, 178p.

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Scharpf, R.F. (Technical Coordinator). 1993. Diseases of Pacific Coast Conifers. USDA Forest Service. Washington, DC, Agriculture Handbook 521, 199p.

Stamets, P. 2002. Novel antimicrobials from mushrooms. HerbalGram 54:28-33.

Forest Health Protection and State Forestry Organizations

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