

Forest Pest Bulletin



SOUTH DAKOTA
DEPARTMENT OF AGRICULTURE
DIVISION OF RESOURCE
CONSERVATION & FORESTRY



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Red Rot of Ponderosa Pine

CAUSAL AGENT

Dichomitus squalens

HOSTS

Ponderosa pine (*Pinus ponderosa*).

SYMPTOMS

Red rot is a condition often found in decaying wood on the forest floor. White, scaly fruiting bodies appear about four years after infection. Red rot is very difficult to identify in living trees because the rot only develops in dead branches and is disguised as branch decay. The fungus causing Red rot doesn't leave any traces, such as scars or fading, which makes it even more difficult to identify. Branches with the fungus present begin decaying rapidly beginning at the branch tips. In immature trees, branches affected by the fungus break off as if waterlogged. Unaffected branches offer resistance and break with a snap. If bark on the branch doesn't peel off easily or takes particles of wood with it as it is peeled off, the fungus could affect the branch. Trees less than 20 years old are less susceptible because the branches on these younger trees aren't usually large enough to sustain an infection. Red rot in mature trees can result in basal heart rot leading to tree failure and a reduction in wood volume and quality.

LIFE CYCLE

The Red rot in Ponderosa pine spreads through fruiting bodies dispersed from infected trees. These white fruiting bodies appear after four years of infection, commonly on decaying wood close to the ground (Fig. 1). The fruiting bodies develop annually for six years. Spores from the fruiting bodies are carried by the wind to other trees. If the spores lodge in cracks or insect tunnels, they will most likely germinate and lead to infection. Infection usually takes place towards the outer ends of branches but can rapidly lead to infection on the trunk of the tree. As the infection progresses, wood strength and structure are affected, and the wood contains a reddish-brown discoloration. In an advanced infection, white

pockets in the discolored wood appear. These pockets appear to be filled with a substance resembling lint. As decay and infection progress, pockets become more numerous until the wood appears completely white and fibrous. Black spots could also be present in the discolored wood.



Figure 1. White fruiting bodies on log.
Rocky Mountain Research Station/Forest
Pathology Archive, USDA Forest
Service, Bugwood.org

MANAGEMENT

The removal of mature and over mature trees can greatly reduce the risk of infection in Ponderosa pine stands. Pruning is also very helpful in keeping Red rot out of trees by reducing entrance points and severing branches with infection likely to spread to the trunk of the tree. Not much is known when it comes to Red rot control, but the removal of trees with Red rot is recommended as soon as Red rot has been identified in the tree.

Due to numerous pesticide labels and/or label changes, be sure the product label includes the intended use prior to purchase or use. Please read and follow all pesticide label instructions and wear the protective equipment required. Spraying pesticides overhead increases the risk of exposure to the applicator and increases the likelihood of drift to non-target areas. Consider the use of a commercial applicator when spraying large trees due to the added risk of exposure and equipment needs. The mention of a specific product name does not constitute endorsement of that product by the South Dakota Department of Agriculture.

For further information contact your nearest South Dakota Division of Resource Conservation and Forestry office. Hot Springs 605-745-5820; Lead 605-584-2300; Mitchell 605-995-8189; Pierre 605-773-3623; Rapid City 605-394-2395; Sioux Falls 605-362-2830; Watertown 605-882-5367.

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