

Forest Disease Management Notes

United States
Department of
Agriculture

Forest Service
Pacific Northwest
Region



Rust Red Stringy Rot

Rust red stringy rot is caused by *Echinodontium tinctorium*, commonly called the Indian paint fungus. Decay is most serious in old-growth trees. One large conk indicates approximately 40 feet of cull. This is the most important cause of stem decay of true firs in the Pacific Northwest.

Hosts: True firs, hemlocks.

Recognition: Hard, woody, hoof-shaped conks occur, mostly at branch stubs; the upper surface of the conk is dull black and rough, the undersurface is gray and composed of coarse teeth; the interior of the conk is bright orange. Early decay appears as a light-brown stain in the heartwood; advanced decay is a rust-red stringy rot; “punk knots” are sometimes found on infected trees.

Disease Spread: Windborne spores infect new hosts through tiny (0.5 mm) dead branch stubs; the fungus remains dormant until the tree is stressed (usually by wounding). Once activated, it rapidly decays wood.

Management: Maintain a vigorous stand; keep rotations to less than 150 years if possible; salvage infected trees before merchantability is lost; avoid wounding trees; monitor decay in infected trees in recreation areas and remove trees that have conks; when thinning, avoid leaving trees suppressed for more than 50 years; avoid retaining advanced regeneration that is over 50 years old, that is growing under conky old-growth, or that is growing on sites poorly adapted for hemlock or fir growth. A computer program is available to assess the risk of rust red stringy rot in suppressed understories.

May be Confused With: Nothing, especially when conks are present.

Typical rot caused by
Echinodontium tinctorium



Echinodontium tinctorium conk



Interior of
Echinodontium tinctorium conk