Forest Disease Management Notes

United States Department of Agriculture

Forest Service
Pacific Northwest Region

Rhabdocline Needle Cast

Rhabdocline needle cast of Douglas-fir is caused by the fungus *Rhabdocline pseudotsugae.* This disease is occasionally common, but seldom damaging in Douglas-fir stands unless the trees are off-site.

Host: Douglas-fir.

Recognition: Yellow and purple blotches appear on infected needles in the fall and following spring. Needles drop 1 year after infection. Purplish-pink fruit bodies break through the undersides of 1-year-old needles to expose orange-brown spores.

Disease Spread: Fruit bodies mature in May to June on 1-year-old needles and spores released from them are windborne, spores require considerable moisture to germinate, because of this and since infected needles are not killed and cast until the following year, the disease is most visible following wet years; only current season's needles are susceptible. There is considerable variation in the susceptibility of Douglas-fir to this disease, in general, coastal Douglas-fir is less susceptible than the inter-mountain variety and local seed source stock is less susceptible than offsite stock, but trees within any stand show different levels of infection (many trees are immune); disease is most common on trees 5-30 years old.

Management: Usually none is warranted; disease normally causes growth loss, not mortality; nonsusceptible trees can be favored when thinning; establish plantations with local seed sources; may be controlled by fungicides or rogueing in Christmas tree plantations.

May be Confused With: Swiss needlecast, root diseases.

Browning of previous year's needles infected by *Rhabdocline pseudotsugae*

Defoliation caused by Rhabdocline needle cast

Fruit bidies of *Rhabdocline pseudotsugae* on undersurface of Douglas-fir needles