ELYTRODERMA NEEDLE CAST

Elytroderma deformans (Weir) Darker

DISTRIBUTION

Throughout the range of ponderosa pine and lodgepole pine in BC, primarily the central interior and Kootenay areas.

Figure 207. Upturned broom on ponderosa pine.

Figure 208. Discoloured needles and narrow black fruiting bodies

Figure 209. Lion's tails and dead foliage.

HOST SUSCEPTIBILITY:

Ponderosa pine and lodgepole pine of all ages.

SIGNS & SYMPTOMS:

Current year's needles are infected, but do not show symptoms until the early spring of the following year. Entire needles turn red, but fade to straw colour. Black fruiting bodies are seen on the needles by late spring or early summer. Infected needles are cast in early fall resulting in lion's tails. Systemic infections in ponderosa pine produce small tufted brooms with upturned thickened twigs, and in lodgepole pine infections develop into thickened and sometimes upturned branches. Stem infections appear as live cankers with sunken and slightly resinous bark, and typically spiral up the stem. Infections can girdle the stem and suppress growth, and may eventually kill the tree. Most infections occur within the first 10 years and are often located within 2m of the ground. The bark is not fed on by rodents. Highest risk for Elytroderma is near water bodies.

DAMAGE:

This fungus is a unique needle cast fungus because it can spread from needles to shoot tissue. This results in broom formation and a perennial, systemic infection, allowing the fungus to survive periods of climate unfavourable for spore release. Light infection of less than 25% of the needles causes little damage. Severe infection will produce thin, ragged crowns and growth reduction. Tree or lower crown mortality can result from severe defoliation. Heavy infection can also predispose trees to attacks by other pathogenic fungi or insects. Younger trees are affected to a greater extent than older trees. Lodgepole pine up to 2 m in height can become systematically infected and remain stunted with needles in tufts at branch tips.

SIMILAR DAMAGE:

Pine needle casts such as *Lophodermella concolor* may be confused with Elytdroderma. Look for the small dark streaks of the fruiting bodies on dead needles to confirm Elytroderma. Mistletoe brooms may occasionally be confused with Elytroderma. However, mistletoe broom needles are green and aerial shoots or basal cups are present.

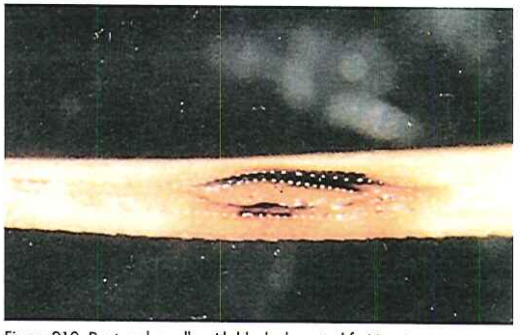

Figure 210. Ruptured needle with black elongated fruiting structure.