Forest Disease Management Notes

Western Gall Rust

Western gall rust is caused by the fungus *Endocronartium (Peridermium) harknessii.* This is probably the most commonly observed disease of lodgepole pine. Practically all Pacific Northwest lodgepole pine stands are infected. Severe infection causes stem malformation, breakage, and tree killing, especially of seedlings.

Hosts: Two and three-needle pines, especially lodgepole and ponderosa pine.

Recognition: Small to large globose to pear-shaped galls on branches or stems; galls on main stems may continue to grow for years, forming very large, hard burls or may partially girdle the stems and die, developing into cankers. An inconspicuous white or colorless ooze (pycnia) may appear tween bark fissures in spring; yellow-orange spore pustules (aecia) are produced in cracks on galls in spring and early summer.

Disease Spread: Aecia are produced each spring as long as the fungus is alive in the host (may be as long as 100 years); spores are windborne and infect other hard pines, no alternate host is required; moist conditions stimulate spore release and favor infection;

symptoms may develop the same year as infection or 1 to 2 years later. Infection occurs on succulent stem tissue. The fastest growing trees are more susceptible than suppressed trees.

Management: Selective removal of trees exhibiting numerous galls, especially stem galls (trees with only small numbers of branch galls do not suffer much growth loss and may be retained); favor uninfected or lightly infected trees during thinning or seed collection. Trees with deeply indented ($\frac{1}{4}$ to $\frac{1}{2}$ of the bole) cankers on the upper stem should be treated in recreation areas. Branch galls could be pruned from ornamental pines.

May be Confused With: Stalactiform rust, dwarf mistletoe, atropellis canker.

Endocronartium harknessii gall

Aecia on gall in spring

Old gall on main stem