



Forest Health Protection, Southern Region

# COMANDRA BLISTER RUST,

caused by *Cronartium comandrae*

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**Importance.** - Comandra blister rust occurs in northern Arkansas, eastern Tennessee, and northern Alabama. Losses are low, but can exceed 40 percent in individual stands. The primary hosts are loblolly, shortleaf, pond, and Virginia pines. False toadflax (comandra), the alternate host, suffers minimal damage.

**Identifying the Fungus.** - The fungus produces orange spores on the surface of the pine galls in the spring. A different orange spore type is produced on the lower surface of the toadflax leaf. Later, hairlike structures are formed on the leaf.



Comandra blister rust fruiting on pine.

**Identifying the Injury.** - Spindle-shaped galls form on the main stem

or branches of the pine host. Portions of the tree beyond the galls normally die. In the spring, the galls turn orange. In the summer, orange leaf spots develop on the toadflax. The leaves later cup, curl, and turn brown.

**Biology.** - The fungus infects pine through the young needles and grows into the stem, where a gall is formed. Orange spores (aeciospores) are produced on the gall in the spring and infect the leaves or stems of comandra. Uredia are produced on the lower surface of the leaf. Urediospores, from the uredia, are windblown and infect toadflax plants. Later, hairlike structures (telia) are produced on the toadflax leaves and stems. The telia produce basidiospores, which infect the pine.

**Control.** - Forest management practices which reduce the alternate host-toadflax-may reduce the occurrence of pine galls.

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