



Forest Health Protection, Southern Region

EASTERN GALL RUST,

caused by

Cronartium quercuum f. sp. *virgininae* (on Virginia pine)

Cronartium quercuum f. sp. *echinatae* (on shortleaf pine)

Importance. - This disease normally causes little or no damage in forest stands. It can, however, cause serious damage in nurseries where seedlings become infected and die. Losses also occur when infected, outplanted stock dies. The alternate host - oak - is not seriously damaged. A variety of pines are primary hosts, but Virginia, sand, and shortleaf pines are the most susceptible.

Identifying the Fungus. - The fungus produces orange spores on the surface of the round pine galls. Orange spores are produced on the lower surface of the oak leaves. Later, hairlike structures are produced on the oak leaves.



Eastern gall rust fruiting on pine.

Identifying the Injury. - Round galls form on the main stem or branches. Portions of the tree beyond the galls normally die. In the spring, the galls on pines turn orange. In the summer, orange leaf spots develop on the oak host.

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

Control. - Fungicides are used to control the disease in forest tree nurseries. The best control in forest stands is the removal of infected trees during thinning operations. Practices that reduce the oak population may reduce the occurrence of the disease on pine.
