



Forest Health Protection, Southern Region

WHITE PINE ROOT DISEASE,

caused by *Verticicladiella procera*

Importance. - Until recently, white pine root disease was of greatest importance in Christmas tree plantations and newly established forest plantations. However, the fungus is now associated with dying, mature eastern white pines in natural stands in the southern Appalachians. Infection centers of up to a dozen trees have been found in mature sawtimber stands.

Identifying the Fungus. - There are no fruiting bodies associated with this fungus that can be seen with the unaided eye. However, the fungus can be readily identified when grown in pure cultures and observed under the microscope.

Identifying the Injury. - Affected, mature white pines may die from the top down, one whorl at a time. Older and younger trees alike may also turn yellow and lose some needles before turning brown uniformly. Some trees may die within a year after symptoms appear. Others may linger for several years, with mortality occurring apparently at random, and 1 to 3 percent of the affected trees dying annually. A chocolate-brown to dark olive-brown canker may occur under the bark around the root collar. However, cankers are not always present, and tree death may result from the killing of numerous small roots 3/16 inch (5 mm) in diameter and smaller.



Basal canker caused by white pine root disease fungus.

Biology. - In Christmas tree and forest plantations, wet sites appear to favor the disease.

Control. - Avoid planting eastern white pine on wet areas. In young plantations, particularly Christmas tree plantations, either avoid replanting in areas of known infection or remove as much of the infected root systems as possible.
