

Oilnut Parasitism of Firs



Oilnut roots and haustoria on fir root

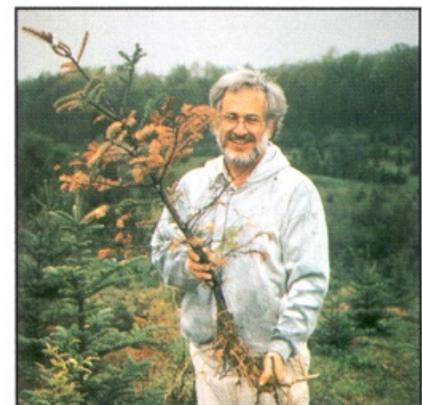


Oilnut

Chlorotic foliage was observed on individual lower branches of 2-6 year old balsam and Fraser fir Christmas trees in a southern West Virginia Christmas tree plantation. Over a period of months, the foliage turned brown, associated branches died, and within a year of initial symptoms, most affected trees were dead. The plantation had been established on a hillside converted from a hardwood forest 12 years earlier. When the root systems of several trees were excavated, numerous haustoria (specialized absorbing organs that penetrate host roots) and an associated root network were observed, suggesting the presence of a root parasite. The haustoria are conical to hemispherical in shape and 2-14 mm in diameter by 1-8 mm thick. Both the haustoria and sparsely branched root system of the parasite are white, making them easy to distinguish from the dark brown fir roots. When roots connecting the haustoria were traced, they originated from oilnut or buffalo-nut (*Pyrularia pubera* (Michx.)). This plant is a common shrub in the mixed mesophytic and oak-hickory forest types of the region. A limited number of haustoria also were found on the roots of white and Scotch pine growing in the same plantation, but these plants did not show chlorotic symptoms. Herbicides have shown to be effective in control of oilnut, without harming the host.



Known range of oilnut



Symptoms of parasitized fir

Based upon the research of S.C. Haynes, W.L. MacDonald, and L.J. Musselman. From WV Department of Agriculture, West Virginia University, and Old Dominion University, respectively.



For more information, contact your county agricultural agent, State Forester, or State Extension Specialist.

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