

## Analysis of Fusiform Rust Incidence and its Impact on Growth and Stem Quality

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The identification and selection of disease-resistant seedlings is critical to loblolly pine (*Pinus taeda* L.) reforestation programs. Fusiform rust (caused by *Cronartium quercuum* (Berk.) Miyabe ex Shirai f.sp. *fusiforme*) is a wide-spread disease across much of the southeastern United States and rust resistance is a primary trait for selection and deployment in high-hazard areas. Rust resistance has been incorporated into selection indexes along with growth and stem form traits, but the incidence level on any given site depends on many factors. In this study we will explore the relationships between field trial and greenhouse incidence, the gall location on the tree, and the impact that trial incidence level may have on selection index weights. A total of 50 trials planted in the Piedmont and Coastal regions of the southeastern United States were assessed at age 6 and ranged from 8% to 72% in rust incidence. An additional set of data from 25 greenhouse trials at the USDA Forest Service Resistance Screening Center (RSC) in Asheville, NC were also included which ranged in rust incidence from 15% to 77%.