

FUSIFORM RUST RESISTANCE OF LOBLOLLY PINE INTER-PROVENANCE HYBRIDS

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Fusiform rust (*Cronartium quercuum* [Berk.] Miyabe ex Shirai f sp. fusiforme) is a noxious pathogen that causes decreased productivity and significant economic loss to forest investments in the southeastern United States. Resistance to fusiform rust is a considerable factor in loblolly pine planting stock selection, particularly in areas with moderate to high rust hazard. Rust resistance has traditionally been evaluated using field trials as well as controlled inoculation trials from the USDA Resistance Screening Center in Asheville, North Carolina. Controlled inoculation screening offers an efficient method of rapidly identifying rust resistant families. Historically, rust resistance research has largely been geographically isolated within provenance. An inter-provenance mating strategy can incorporate rust resistance as well as geographic adaptability of loblolly pine. However, the relative resistance of inter- hybrids across the range remains unclear. This study examines rust resistance of select elite full-sib inter-provenance families, intro-provenance full-sib families and open-pollinated families from parental selections within the Piedmont, Coastal, and Western Gulf geographic origins. We evaluated rust resistance using controlled screening trials and discuss the resistance and deployment of elite inter-province hybrids across the range of loblolly pine.