

EFFECT OF ORGANIC SOILS ON TREE FORM AND QUALITY TRAITS OF OPEN-POLLINATED LOBLOLLY PINE IN THE COASTAL PLAIN OF NORTH CAROLINA

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Loblolly pine (*Pinus taeda L.*) is the dominant pine plantation species in the southeastern United States. The productivity and product quality of these even-aged plantations can be influenced by a wide range of factors, including genetics, silvicultural practices, soil types, pests and disease. Genetically improved loblolly pine trees grown on highly organic soils have demonstrated significant increases in tree volume; however, the effects of genetics and intensive silviculture on tree form and wood quality is less understood on these soils. High incidences of stem and branch defects, forking, ramicorn and heavy branching have been observed in loblolly pine grown on high organic soils in the coastal plain of North Carolina. In addition, fusiform rust infection has been observed to be higher on organic soils than on mineral soils in the same geographic region, when studying the same genotypes. 3. In an effort to optimize performance for both growth and quality traits, fifteen open-pollinated loblolly pine families were grown on one organic soil site and one mineral soil site in Brunswick County, North Carolina, and evaluated at age seven. A row-plot design was used and a number of quantitative traits were measured, including tree height, diameter at breast height, sweep and fusiform rust infection. Quality traits assessed included forking, ramicorn branching, sweep, saw-timber potential, height to live crown, crown width and branch diameter.