

Concurrent Session B3 - Selection/Growth and Yield/Valuation

Improvements in Stem Form and Growth of Elite Genotypes in Loblolly Pine

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For over fifty years the genetic improvement of loblolly pine for growth, form and disease resistance has produced significant gains for plantation forest production. Additional value has been added to forest plantations through the improvement of stem straightness, but other stem form traits such as branching and sweep are also important. While previous research showed that volume was the most important trait for economic return, there is increased interest in capitalizing on genotypes with desirable form for sawtimber production. The Lower Gulf Elite Population, a joint breeding effort among 3 cooperative breeding programs in the southeastern United States, provides a unique opportunity to assess the potential stem form improvement of elite loblolly pine selections. Forty-eight parents from three cooperative breeding programs were bred in a series of six 8-tree disconnected diallels, comprised of selections from the Atlantic Coastal Plain, Florida, and Livingston Parrish provenances. Previous results from a complementary polymix test series of the same parents demonstrated 6-year volume gains exceeding 40% over local checks. An analysis of six year growth, disease, and stem form traits will be presented.