LOBLOLLY PINE BIOMASS CROPPING STUDY

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Loblolly pine is grown on millions of acres across the Southeast because of its rapid growth and responsiveness to silvicultural and management inputs. Considerable genetic differences within species exist for growth, stem form and wood quality traits that influence biomass/biofuel production. By planting genetically superior trees with desirable biomass/biofuel traits, it is possible to dramatically increase the amount of biomass produced at any given site.

As part of the NC Department of Agriculture & Consumer Services Bioenergy Research Initiative, the NC State University Cooperative Tree Improvement Program established a trial in the Piedmont of NC near Butner with 20 of the fastest growing families, each with different characteristics that influence their bioenergy potential. At age three years, there were significant differences in height and stem forking between Coastal and Piedmont families. Most Coastal families were substantially taller than Piedmont families but had a higher frequency of forking. Shortly after completing these measurements, there were two severe ice/snow storms and very cold temperatures at the site, providing a unique opportunity to assess differences in cold hardiness between provenances and families. On average, Coastal families experienced higher stem breakage (33%) than the Piedmont families (25%). Five-year measurements were recently collected and will be reported at the conference along with future plans for the study site, which includes a harvest/thin at age 10 years to evaluate biomass and sawtimber yields.

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