

EFFECTS OF PLANTING DENSITY, MANAGEMENT, AND SITE ON LOBLOLLY PINE BIOMASS PRODUCTION

Dehai Zhao, Michael Kane, Daniel Markewitz, Robert Teskey, Dale Greene

Warnell School of Forestry and Natural Resources, University of Georgia, Athens, GA 30602

Email: zhaod@uga.edu (D. Zhao)

Oral Presentation

Suggested Session: Biomass Production

Funding Agency: USDA- NIFA (2011-67009-30065)

Georgia's Traditional Industries Program (TIP)

Plantation Management Research Cooperative (PMRC)

Abstract

Loblolly pine (*Pinus taeda* L.) is the most commercially important timber species in the southeastern United States. Managing loblolly pine plantations for traditional wood products along with biofuel feedstock may strengthen financial returns. To correspondingly modify and optimize management practices, a better understanding of long-term different management effects is required, but limited. The Plantation Management Research Cooperative (PMRC) initiated a loblolly pine culture/density study in 1996-1998, with 40 installations across the southeast. Each installation contains 12 plots planted at six levels of density from 300 to 1800 trees/acre in combination with two levels of cultural intensity, operational and intensive. With this unique study and our currently developed biomass equation system, in this presentation we will report the dynamics of biomass production response to planting density and cultural intensity, and how the effects of planting density and cultural intensity on biomass production and allocation strongly interact with the site quality. The results are useful for managing pine plantations for a mixture of traditional forest products and biomass for energy.