

## BREEDING AND SELECTION OF FAST-GROWTH HARDWOOD SPECIES IN THE SOUTH

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Efforts in fast-growth hardwood species in the South reached its height from the early 1960's to the end of the 1980's. In particular the U.S. Forest Service program in eastern cottonwood not only led this effort but supplied numerous companies along the Lower Mississippi River with selected genotypes. Additionally, this effort was able to share eastern cottonwood clones on a world-wide basis resulting in many of these genotypes serving as the basis in hybridization programs that are still production today. In the South, only a few industrial eastern cottonwood programs, such as Westvaco and Crown Vantage continued *Populus* improvement effort due to the exceptional production from their breeding and selection programs. However, by the turn of the century and the shift from vertically integrated companies to TIMOs and REITs halted most of the research and development programs. Unfortunately much of the improved fast-growth hardwood material was loss due a variety of reasons including insufficient funds available for preservation or only limited number of genotypes transferred to either academia or other entities such as ArborGen. The current interest in lignocellulosic production has focused on *Populus* for the production of renewable jet fuel and co-products such as carbon fiber. Efforts in breeding of selected 1<sup>st</sup> and 2<sup>nd</sup>-Generation selections of eastern cottonwood was restarted along with a greater emphasis on clonal testing of a variety of *Populus* hybrid taxa. Like *Populus*, *Salix* is also being examined for biomass production but on poorly drained agricultural sites that are unsuitable for *Populus* production. The one species that had seemingly been forgotten was American sycamore. This loss of interest was due to severe disease problems exhibited in a numerous plantations along the Atlantic and Gulf coastal areas. The possibility of using this species in the bioenergy field resulted from a small control-pollinated test in 1997 that provided the insight into the viability of breeding resistant genotypes.