

EVALUATION OF EUCALYPTUS VARIETIES FOR COMMERCIAL APPLICATIONS IN THE SOUTHEASTERN UNITED STATES

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Eucalypts are preferred hardwood species for short rotation woody crop systems because of their faster growth and multiple end uses. They are also adapted to various edaphic conditions due to their diverse genetics. Selected *Eucalypts* have been recommended for commercial planting in the southeastern United States based on growth performance and tolerance to freezes. South Florida has received more attention lately due to the subtropical climate where the trees grow throughout the year maximizing productivity. Current commercial *Eucalyptus* plantings in south Florida are limited to *Eucalyptus grandis* and a hybrid (*E. grandis* x *urophylla*). Well managed *Eucalyptus* hybrid has productivity up to 32 green tons/acre/year at 7-year rotation. ArborGen has been testing 66 new *Eucalyptus* varieties in south Florida. The best Varietal had 19% and 36% height and diameter at breast height (DBH) gain, respectively, over the current commercial hybrid in a single tree test at age 1.5 years. The same Varietal had 22% and 27% height and DBH gain, respectively, in a block test at the same age. Three more block tests were planted in 2013. Combined best linear unbiased predictor (BLUP) analysis was done using the standardized height and the result suggested that the best Varietal had at least 27% height gain over the current commercial hybrid. Five new hybrid *Eucalyptus* Varietals were introduced for commercial applications in south Florida. Factors such as growth performance, resistance to blue gum chalcid (*Leptocybe invasa*) and non-native species planting permit requirement in the state were considered during selection.

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