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RELATIONSHIPS AMONG WOODY AND HERBACEOUS COMPETITION AND LOBLOLLY PINE THROUGH MID-ROTATION (COMP). J.H. Miller, B.R. Zutter, S.M. Zedaker, M.B. Edwards, and R.A. Newbold, US Forest Service and School of Forestry, Auburn, AL, Virginia Tech Univ., Blacksburg, V A, US Forest Service, Athens, GA, Louisiana Tech Univ., Ruston, LA.

ABSTRACT

To gain baseline data, this study examined loblolly pine *(Pinus taeda* L.) plantations, across 13 southeastern sites, grown with near-complete control of woody and/or herbaceous competitors for the first 3-5 years. Data through 15 years was analyzed. Contrary to the wide spread assumption that hardwoods out compete pines, the hardwood proportion of stand basal area (BA) decreased from years 5to 15 when BA in year 5 exceeded 10 ft'. Hardwood BA was increased on average by 28% by year 15 following early herb control. Woody control initially increased herbaceous cover, with component covers remaining significantly greater at year 15 on high woody sites. Herb cover declined on all treatments with mid- and overstory canopy closure. When combining 15-year data from all sites for No Controls and Herb Controls, highly significant linear relationships were identified between measures of woody competition and merchantable pine volume. These relationships indicated that woody competition detracted pine growth in a similar proportion whether herbaceous plants were present or absent. y -intercepts of No Controls yielded estimates of the of the average 15-year loss in merchantable volume attributed to herbaceous competition and ranged from 712-768 ft^3/ac or detractions of 15-19% of potential productivity. Pine volume was decreased by about 1% for each 1 ft^2/ac of hardwood BA present at age 15.