A Comparison of Bareroot and Containerized Loblolly Pine Planting Stock – 6 Year Results from a Series of Trials Planted Over 3 Years by Resource Management Service

Christopher L. Rosier[1], Gerald J. Hansen[2], and Bruce E. Borders[3]

[1]Resource Analyst, Resource Management Service LLC, Wilmington, NC 28405, USA; [2]Retired, Resource Management Service LLC, Wilmington, NC 28405, USA; [3]Manager of Inventory/Growth & Yield, Resource Management Service LLC, Athens, GA 30605, USA; *crosier@resourcemgt.com

Resource Management Service (RMS) established a series of trials between 2013 and 2016 to compare survival and growth of containerized and bareroot seedling stock. The main objective of the trials was to see if the added cost of planting containerized seedling stock is recovered through improved seedling survival and or growth. Two trials were established in each of three operating regions—North Carolina (2014 and 2015), South Carolina (2014 and 2015) and Alabama (2015 and 2016). For each trial, both control pollinated (MCP), and varietal seedlings were planted (as bareroot and container stock) and they were planted on two dates – October and January or February. After 6 growing seasons each trial was assessed for survival, height and dbh. The difference in survival and growth between bareroot and containerized stock was dependent on the operating Region. There were no significant differences between containerized and bareroot seedlings in the four trials planted in NC and SC. In AL, seedling type significantly influenced survival, height and plot volumes with containerized seedling growing better than bareroot. The differences (when significant) between container and bareroot seedlings were greater for October planting dates than for Jan/Feb dates. October planted seedlings were almost always significantly larger than Jan/Feb planted seedlings for height, dbh, volume index and plot volume. In contrast, time of planting did not significantly affect seedling survival for 5 of the 6 test sites. The two genetic sources and plant origin types (MCP and varietal) behaved similarly as bareroot or containerized planting stock for all tree growth characteristics (height, dbh and volume). In 2 trials, bareroot MCP seedling survivals at one planting time were lower than containerized MCP and both bareroot and containerized varietals resulting in a significant seedling type x genetics interaction. Varietals grew better than or equal to MCP seedlings in all studies except for the noncommercial variety AGV-105 planted in 2014 trials. The results from this series of trials suggest that there is no advantage to planting containerized seedlings in Atlantic Coastal Plain sites for either plantation survival or tree growth. However, for upper coastal plain sites in AL there can be opportunities for better survival and growth using containers when planting early in the season. Planting seedlings early in the season (October) can significantly improve tree growth through 6 years. The results were similar whether planting seed-based propagules or vegetative propagule planting stock.