

Plantation Management Research Cooperative

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LOBLOLLY PINE COMPETING VEGETATION STUDY

The loblolly pine competing vegetation study was established in 1984 with the objective of evaluating the effect of competing vegetation in established plantations. The design called for the establishment of paired plots in existing plantations in two age classes, 5-9 years old and 12-16 years old. These two age classes bracketed the age class in a similarly designed PMRC study in slash pine plantations which was initiated in 1976 and resulted in a response across all soil classes of about 1/4 cord/ac/yr after 14 years. Rather than use soil classes in the loblolly study, the installations were stratified over slope positions with about 1/3 of the installations in each of three slope positions: bottom 1/3 of slope, mid-slope, or top 1/3 of slope. An installation consisted of one paired plot selected to have the same soil, type and amount of competing vegetation, site quality, basal area per acre, and trees per acre. One of the pair was randomly selected to receive the treatment that consisted of cutting all competing vegetation manually and then spraying any resprouting with a 3% solution of glyphosate. Gross plots were 7 rows x 100 ft with an interior measurement plot of 3 rows x 70 ft. Measurements were made at study initiation and every 2 years thereafter.

Status

- **The study is no longer being protected by PMRC members due to the age of the plots and the small plot sizes. The 16-year response will be the last measurement. Too few installations remained at response age 18 in 2001 for a meaningful analysis. This study is now inactive.**
- **The latest publication on this study is PMRC Technical Report 1996-5 by Shiver and Shackelford.**
- **These plots represent an opportunity to evaluate wood quality in released stands.**

Key Research Results

- **This study, along with the slash pine equivalent, were the first regionwide studies to examine the effect of largely understory vegetation on growth and yield of the pine overstory at mid-rotation ages.**
- **Age class was not a significant factor in response. Response averaged 1/2 cord/ac/yr over the first ten years of the study.**
- **Response was not uniform over the entire diameter distribution. Larger trees in stands responded more than smaller trees to removal of competing vegetation. Unlike the effect on diameter distributions from controlling vegetation in young stands, the effect in these older stands is to slightly increase the spread of the distribution.**