

## RAPID GROWTH OF SLASH AND LOBLOLLY PINES ON CULTIVATED PLOTS

Lloyd F. Smith  
Southern Forest Experiment Station  
Forest Service, U. S. Department of Agriculture  
Gulfport, Miss.

In a small cultivated plantation near McNeill, Miss., slash pine averaged 13.0 feet in height and loblolly pine 14.2 feet after 4 years in the field. An average height of 6 to 8 feet at this age is regarded as normal on uncultivated cutover sites.

In March 1956, 1-0 seedlings of slash and loblolly pines were planted on a cultivated old field that had been in grass sod for approximately 25 years. The two species were randomly mixed within eight rows. Spacing was 10 by 10 feet. A total of 143 slash and 142 loblolly pines were living at the end of the first growing season. The soil is a fine sandy loam in the Orangeburg series.

Each spring for four successive years, alternate rows received 1 pound per tree of 5-10-5 commercial, fertilizer applied by hand around the base of the trees. During the first 3 years, the area was disked four or five times annually in two directions with a 6-foot tandem harrow. The small areas near pines was hoed by hand. At the end of the third season, cultivation was discontinued because expanding tree crowns prevented further use of machines (fig. 1).



Figure 1.--Part of the plantation 26 months after planting. Fertilized row on right, unfertilized on left. The first tree in each row is loblolly.

At the end of 4 years in the field, both fertilized and unfertilized slash pines averaged 13.0 feet tall. Fertilized loblolly averaged 15.0 feet, unfertilized 13.3 feet. Differences in height between the two species were statistically significant at the 5-percent level, but differences in height between fertilized and unfertilized pines were not. Height growth averaged about 3 feet in the second growing season, 4 feet in the third, and 5 feet in the fourth (table 1). At plantation age of 4 years, the tallest slash pine was 17 feet and the tallest loblolly 21 feet.

Although there was no uncultivated control it is assumed that the exceptionally rapid height growth was due mainly to increased soil moisture resulting from removal of competing grass and weeds. These results should have practical application in special plantations for seed orchards or progeny testing in tree-improvement programs.

TABLE 1.--Average heights of cultivated slash and loblolly pines.

Years after planting	Slash		Loblolly	
	Fertilized	Not fertilized	Fertilized	Not fertilized
	<u>Feet</u>	<u>Feet</u>	<u>Feet</u>	<u>Feet</u>
1.....	1.3	1.1	1.1	1.2
2.....	4.4	4.0	5.6	5.0
3.....	8.6	7.3	9.8	8.9
4.....	13.0	13.0	15.0	13.3