

GROWTH OF SLASH, LOBLOLLY, AND LONGLEAF PINES ON CULTIVATED SITES

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An earlier article reported the rapid height growth of slash and loblolly pines planted in 1956 on cultivated plots.¹ A longleaf plantation, established in 1958 under similar site and treatment conditions, affords an opportunity to compare longleaf growth with that reported for the two other pine species.

In March 1958, 1-0 longleaf seedlings were bar-planted on an old field that had been in sod about 25 years, but had recently been plowed and disked. The soil is a deep fine sandy loam in the Orangeburg series. Spacing was 10 by 10 feet. In the first 4 years, the plantation was cultivated three or four times per year with a tandem disk harrow, and the weeds near the trees were hoed by hand. In the first 2 years the trees were sprayed to control brown-spot needle blight.

Of the 352 pines planted, 82 percent was living after 1 year and 67 percent after 4 years in the field. Causes of mortality were not determined, but losses were heaviest during the grass stage of growth.

Height growth began in the second year in the field and at the end of that year 94 percent of the surviving pines had started height growth. The remainder began height growth in the third growing season.

After 2 years in the field, pines that had begun height growth averaged 0.9 foot, and after 4 years the average height of all living pines was 7.3 feet (table 1). The tallest trees were 11 feet (fig. 1). Although slash and loblolly pines were about 6 feet taller than longleaf at 4 years, their annual growth rate was only slightly greater at that age.

When longleaf is planted on unprepared sites, early growth is slow and the seedlings normally remain in the grass stage about 5 years. This stage may be shortened by site preparation, cultivation, and brown-spot control. In addition to earlier height growth, these treatments brought about more uniform growth than normally is found among trees in longleaf plantations on unprepared sites. Apparently the main effect of cultivation was the conserving of soil moisture in dry periods so that growth continued through late summer and into fall.

TABLE 1.--Average height growth of three southern pines on cultivated sites

Years after planting	Slash		Loblolly		Longleaf	
	Height	Annual growth	Height	Annual growth	Height	Annual growth
	<i>Feet</i>	<i>Feet</i>	<i>Feet</i>	<i>Feet</i>	<i>Feet</i>	<i>Feet</i>
1.....	1.1	-	1.2	-	0.0	-
2.....	4.0	2.9	5.0	3.8	.9	0.9
3.....	7.3	3.3	8.9	3.9	3.5	2.6
4.....	13.0	5.7	13.3	4.4	7.3	3.8

¹ Smith, Lloyd F. Rapid growth of slash and loblolly pines on cultivated plots, U.S. Forest Serv. Tree Planters' Notes 46, pp. 9-10, illus. 1961.

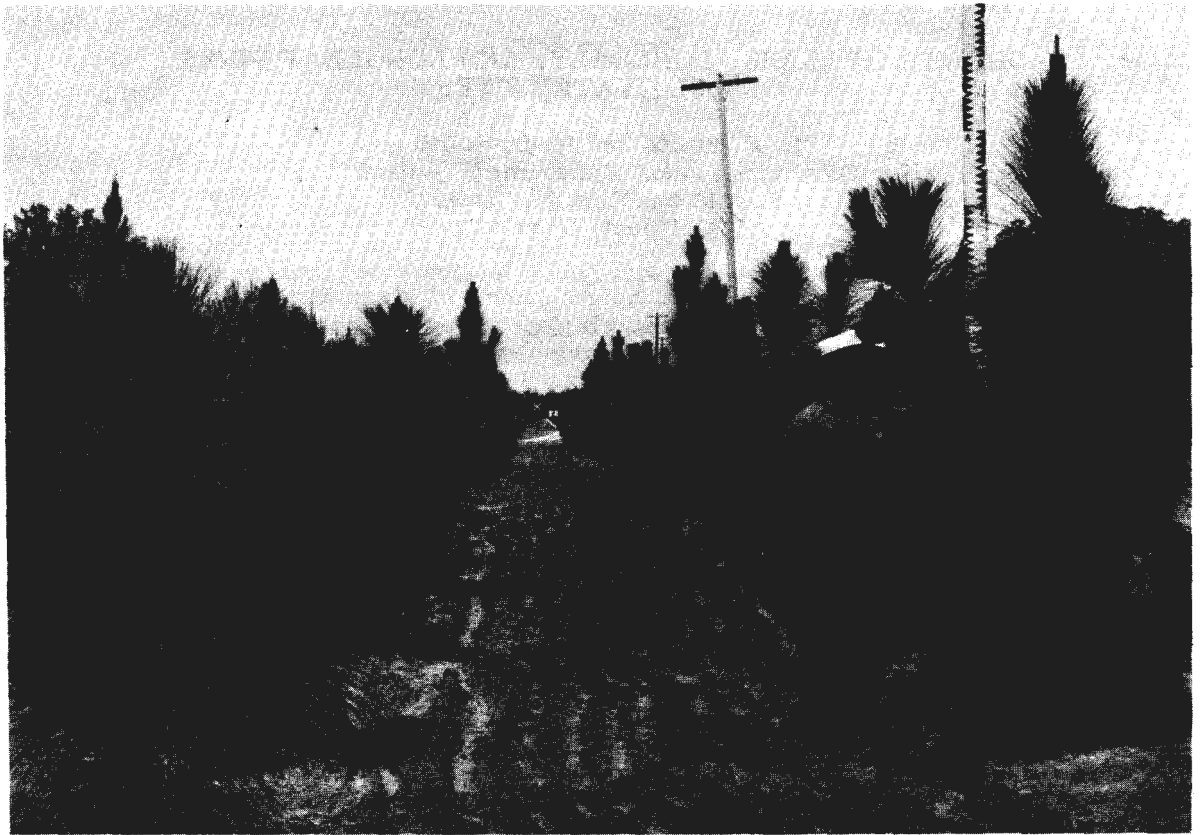


Figure 1.--Longleaf about 4 years after being planted on a cultivated site. A 10-foot square spacing for each tree provided clearance for machine cultivation for 4 years.