

TABLE 1.—SIX-YEAR HEIGHT AND SURVIVAL OF LONGLEAF PINE OF DIFFERENT GEOGRAPHIC ORIGIN PLANTED IN VIRGINIA

Seed source	North latitude	West longitude	Approximate average annual temperature Degrees F.	Survival ¹ Percent	Average height ¹ Feet
Nansemond County, Virginia	37°	77°	60	90.3	7.76
Rapides Parish, Louisiana	31° 12'	92° 42'	67	87.8	
Harrison County, Mississippi	30° 36'	89° 04'	67	81.2	7.38
Treutlen County, Georgia	32°	83°	67	76.4	
Hillsborough County, Florida	28°	82°	72-73	48.0	2.51

¹Sources included within the brackets are not significantly different at the 1 percent level.

Florida Longleaf Pine Fail in Virginia

Since 1954, when the huge study of geographic sources of southern pine seed got underway, plantations scattered throughout the South have been testing theses concerning the possibility of racial variation in southern pines caused by temperature zone, latitude, and longitude.¹ Now, after 6 years, a plantation of longleaf pine in Nansemond County, Virginia, established to see if racial variation is primarily associated with differences in temperature, has some interesting data to report.

Highly significant differences in height and survival were apparent after six growing seasons (Table 1). However, height and survival were not significantly related to temperature zone, or latitude, or longitude of the seed source. Omission of the Florida source does not affect the results. These relationships will be explored more thoroughly when the Subcommittee on Geographic Source of Seed of the Southern Forest Tree Improvement Committee analyzes all the results of the regionwide study.

Longleaf seedlings raised from seed sources in Florida, Louisiana, Mississippi, Georgia, and Virginia were planted in February 1954 in Nansemond County, Virginia. Four replications, each containing 49

trees spaced 6×6 feet, were planted for each of the five seed source locations.

As in most experiments of this size, certain unforeseen outside influences confounded the data being sought. Hog damage was so severe in one of the Georgia replications that information on this plot was discarded. Sonderegger pine, a hybrid of longleaf pine × loblolly pine, was discovered in seedlings from the Virginia seed source. At the end of the sixth growing season, 36 of these trees were considered phenotypically not longleaf and were excluded from the height growth comparisons.

The Florida longleaf pine stock has been the least vigorous since the plantation was established and has consistently had the poorest survival. At the end of the fifth

growing season the seedlings were growing rapidly when the tops were apparently killed by severe frosts (Fig. 1). From November 30 through December 3 the low temperatures at the nearest weather station nine miles away were 12°, 15°, 26°, and 26° F. Some of the damaged seedlings put out new shoots the following growing season, others died.

These results indicate, as have other racial variation studies, that it is generally best to plant seed of local origin. Seed from the warmest part of the longleaf pine range are not suitable if the seedlings are to be planted in the northern part of the range.

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FIG. 1.—Injured and healthy longleaf pine seedlings from Florida at the end of the fifth growing season (foreground) and uninjured trees from other geographic locations (background).

¹Wakeley, Philip C. Five-year results of the Southwide pine seed source study. Proc. of the Fifth Southern Conference on Forest Tree Improvement. pp. 5-11. 1959.