

Ridge Planting Improves Early Growth of South Florida Slash Pine

The poorly drained soils of the south Florida flatwoods are often completely saturated during the summer-fall rainy season. Water stands on the soil surface for a few days up to several weeks at a time. What effect does this excess water have on South Florida slash pine seedling survival and early growth?

Farmers in this area ditch and dike their agricultural lands and provide an intensive form of drainage and water control for maximum crop production. This intensive effort is not considered practical for forestry purposes, but a modified system of plowing furrows and making ridges appears promising as a means of increasing growth of South Florida slash pine (*Pinus elliotii* var. *densa* Little & Dorman).

Two exploratory test plantings of 180 and 200 trees each were established on land now owned by the Alico Land and Development Company, LaBelle, Florida. The purpose of the test was to determine if differences in survival and height growth could be demonstrated by planting in different positions on a ridged-furrowed planting site. A randomized block design was used in both tests. One planting was in an old field at the edge of a wet slough, and the other was on poorly drained cutover pine

flatwoods. In the old field, seedlings were planted in the furrow centers and on the ridges. The seedlings in the other test were in three planting positions: in the furrow centers, at the furrow edge, and on the ridges made by plowing a series of fire line furrows on 9-foot centers two years prior to this planting (Fig. 1).

Survival by planting position in the old-field area was significantly better on the ridges (91 percent) than in the furrows (24 percent). In the other test, survival by planting position was not significantly different, although the trend was similar. In the latter, survival averaged 62 percent for the ridge, 65 percent for the furrow edge, and 52 percent for the furrow center.

Up through five growing seasons the seedlings planted on the ridges have grown significantly better than those planted either in the furrow centers or at the furrow

edges in both plantings (Fig. 2).

Height growth differences between treatments appear to be still increasing at five years (Table 1). How long this increase can be sustained is conjecture. But if the average height difference between ridge and furrow center plantings reached, for example, 5 feet at 25 years, differences in yields¹ would vary from about 250 to 500 cubic feet depending on stand density.

In summary, the combined results of these two studies at five years showed that the slightly elevated ridge planting position had superior growth in both studies and better survival in one. These early results indicate that the ridging treatment has a place as a site treatment on the wet, flatwood soils in South Florida.

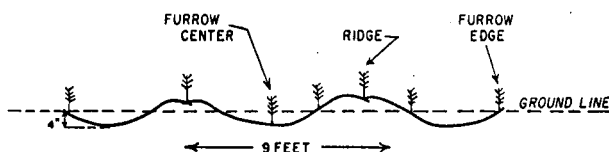
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¹Langdon, O. Gordon. Yield of unmanaged slash pine stands in south Florida. U. S. Forest Service, Southeastern Forest Expt. Sta. Paper 123. 13 pp. Illus. 1961.

TABLE 1.—AVERAGE HEIGHT DIFFERENCES OF SEEDLINGS AT 3 AND 5 YEARS BETWEEN SPECIFIED TREATMENTS

Years since planting	Old field planting		Cutover pine flatwoods planting	
	Ridge versus furrow center	Ridge versus furrow center	Ridge versus furrow edge	Furrow edge versus furrow center
	Feet			
3	1.65	0.91	0.44	.47
5	1.89	2.25	1.08	1.17

Below
FIG. 1.—Planting positions of seedlings.



Right

FIG. 2.—Average height of furrow center, furrow edge, and ridge-planted seedlings of South Florida slash pine in (A), an old field planting, and (B) a cutover pine flatwoods planting.

