

SUMMER PINE PLANTING UNSUCCESSFUL IN NORTH MISSISSIPPI

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As a result of the Flood Control Act of 1944, the U.S. Department of Agriculture was authorized to install upstream flood prevention measures in 11 large river basins. The Yazoo and the Little Tallahatchie in Mississippi are included.

One of the upstream measures on the Yazoo-Little Tallahatchie Flood Prevention Project has been reforestation. Since 1947, in an effort to reduce runoff and hold the soil, over half-a-million acres have been planted to pine trees. Twenty-nine million loblolly pine seedlings are now hand planted annually. Faced with an ever-dwindling labor supply, the Project has been seeking new and better ways to do the job. Because the summer pine planting in Florida was an outstanding success, this method was tried in north Mississippi. The labor necessary for summer planting could substantially reduce the 900-man labor force necessary for the short winter planting season. Fewer, but more efficient, men could be selected for the longer period. Working conditions would be improved since planters would not have to work during inclement winter weather.

Y-LT summer planting, based on a 2-year trial beginning in 1966, has proved unsuccessful. The Mississippi Forestry Commission Nursery at Winona furnished 11,000 seedlings a month during September, October, and November of 1966. The seedlings were lifted and planted within a 2-day period near the middle of each month. One thousand were planted in each of 11 north Mississippi counties. Each thousand was divided into 250 tree lots and planted on four different sites:

1. Clay soil beneath a scrub blackjack oak-hickory overstory.
2. Sandy soil beneath a scrub blackjack oak-hickory overstory.
3. Clay soil without an overstory.
4. Sandy soil without an overstory.

The overstory was treated with 2,4-D in metered injectors within 3 days of the planting. In March 1967 all the living trees were counted. The results are given in table 1.

TABLE 1.—*Projectwide survival of 1966 summer planting*

Month	Open planting		Understory planting	
	Clay	Sandy	Clay	Sandy
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
September-----	25	20	17	23
October-----	36	53	38	45
November-----	62	72	75	64

During the summer of 1967 the Project was planted at the 1966 rate on the same soils from May through November. Seedlings used for the May, June, and July planting were obtained from the Winona Nursery in February 1967 and held in cold storage at 34° F. until planted. The seedlings for the remaining months were lifted during the month of planting from the same nursery. The seedlings used in August were small, nondormant, and succulent. Although planted immediately, they suffered the most mortality. November planting survival averaged 73 percent, comparing favorably with the 14-year Project average survival of 71 percent. Results of an inventory made in April 1968 are given in Table 2.

Why did we get such poor survival? The main reason was probably lack of moisture. Our rainfall pattern is different from that in Florida. Showers are sporadic and scattered during the summer

TABLE 2.—*Survival of the 1967 summer planting*

Month	Open planting		Understory planting	
	Clay	Sandy	Clay	Sandy
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
May-----	52	60	58	67
June-----	18	19	36	36
July-----	25	20	34	40
August-----	7	7	9	9
September-----	14	18	15	18
October-----	53	51	42	51
November-----	80	65	82	76

months. In 1966 at University, Miss., most of the recorded summer and fall rain was in high intensity storms and the water ran off before it could sink in the ground. From September 4 until October 1, 72 percent of the rain came in one storm.

The same pattern occurred in 1967. From June 2 through July 11, 64 percent of the rain came in two storms. No rain fell from June 1 through June 21, but 1.66 inches fell from June 22 through July 6 in 10 scattered showers. During a 38-day period in August and September, 67 percent of all rain fell in

one storm. The August seedling mortality was partially caused by only 1.47 inches of rain falling during the 27 days following planting.

Other mortality causes may have been the use of nondormant seedlings and long periods of cold storage.

In conclusion, it seems reasonable to assume that the character of the rainfall and the long periods of drought make summer planting impractical in north Mississippi.