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EARLY GROWTH OF PLANTED COTTONWOOD ON DELTA SOILS

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Growth of cottonwood trees varies considerably between soil types, and landowners need to keep this in mind when they plant.

The importance of choosing suitable soils was apparent from recent observations of seven cottonwood plantations within the Delta area of Mississippi. In each plantation, the soil was classified and average tree height and diameter were determined. Table 1 summarizes the information.

Five plantations are on Alligator and Sharkey clay soils in slack-water areas. Two of these are on the ridge or sloping phase of Sharkey clay. They were the worst sites encountered (fig. 1). Both plantations grew slowly, and probably suffered more than the others from the record drought of 1952-1956.

Plantations 3, 4, and 5 are also on slack-water soils, but on more moist phases of Sharkey and Alligator clay (fig. 2). The effect of the additional moisture is clearly demonstrated in the better growth.

Plantation number 6 is on an old natural levee of Forestdale silty clay loam. Its excellent growth may be partly due to a permeable subsoil, which permits recharge of soil moisture from a nearby river.

The Robinsonville silt loam series, in recent natural-levee soils, provides one of the best sites for cottonwood (fig. 3). On slopes moisture may be deficient during prolonged droughts, but the soil is permeable enough to have ample moisture during average weather. Plantation number 7 has grown exceptionally fast in 5

¹Stationed at Stoneville Research Center, which is maintained by the Southern Forest Experiment Station, Forest Service, U. S. Department of Agriculture, in cooperation with the Mississippi Agricultural Experiment Station and the Southern Hardwood Forest Research Group.

²Maisenhelder, L. C. Cottonwood planting on southern bottom lands. U. S. Forest Service, South. Forest Expt. Sta. Occas. Paper 179, 23 pp., illus.

³Broadfoot, W. M. Field guide for evaluating cottonwood sites. U. S. Forest Service, South. Forest Expt. Sta. Occas. Paper 178, 6 pp., illus.



Fig. 1. This plantation is typical of cottonwood growth on sloping sites of Sharkey clay. The trees are 38 feet tall at 11 years of age.



Fig. 2. On a level site of Alligator clay, these 6-year-old trees average 28 feet in height.

(Over)

