

OUTBREAK OF CANKERS ON PLANTATION-GROWN COTTONWOODS IN MISSISSIPPIT. H. Filer, Jr.<sup>1</sup>

This paper reports preliminary observations on a basal canker that killed eastern cottonwood (Populus deltoides) in a 6500-acre commercial plantation at Fidler, Mississippi.

The trees, which had been planted as cuttings on abandoned fields, were 2 to 3 years old and ranged in height from 6 to 12 feet. The plantation had been cultivated the first growing season to reduce competition from weeds. Diseased trees had cankers near the ground line. The earliest gross symptom was yellowing and bronzing of the terminal leaves. As the canker enlarged and girdled the tree, the stem and leaves above died.

Pustules of black fruiting bodies occurred in the bark of the cankered area. Under bell jars in the laboratory, cankers produced sporehorns of Cytospora chrysosperma Fr. and Phomopsis macrospora T. Kobayashi & Chiba. Small amber-colored perithecia of Nectria sp. also appeared on the surface of the cankers, and bacterial ooze was found under the bark. The same organisms were isolated from freshly collected cankers. The bacterium probably is a saprophyte.

From 600 to 700 trees were examined each month from May through December 1963 -- a different group of trees each month. At each examination, trees were selected in groups of 50 at 1/4-mile intervals. On May 12, 21% of the trees sampled had cankers. Some fields were nearly free from cankers, while in others the infection was as high as 80%. In mid-June and again in mid-July new cankers were found on an additional 2% of the trees. No new infections were found after July.

Almost all the diseased trees sprouted from the rootstock and attained heights of 8 to 10 feet by the end of the growing season.

Rainfall was below normal in the Fidler area in 1962 and also during the following winter and the growing season of 1963.

Research is under way to determine the relative importance of the organisms isolated and the effects of site, moisture, temperature, and age of tree on infection and disease development.

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