

SURVEY OF SYCAMORE PLANTATIONS FOR CANKER,
LEAF SCORCH, AND DIEBACK

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ABSTRACT

Twenty-six sycamore plantations surveyed in Louisiana, Mississippi, Arkansas, and Tennessee in 1973 had leaf scorch symptoms; cankers caused mortality in six lower Mississippi Delta stands. Symptoms of the disease are leaf scorch, top dieback, and trunk canker. No trees under 4 years old had dieback, and none under 6 years old had lethal trunk canker.

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A trunk canker apparently associated with leaf scorch and twig dieback is killing sycamores (*Platanus occidentalis*) in commercial plantings in the South. Infected leaves appear scorched, eventually turn completely brown, but are not prematurely shed. The twig dieback is caused by twig cankers that extend one to two inches above and below the leaf petiole (Fig. 1A).

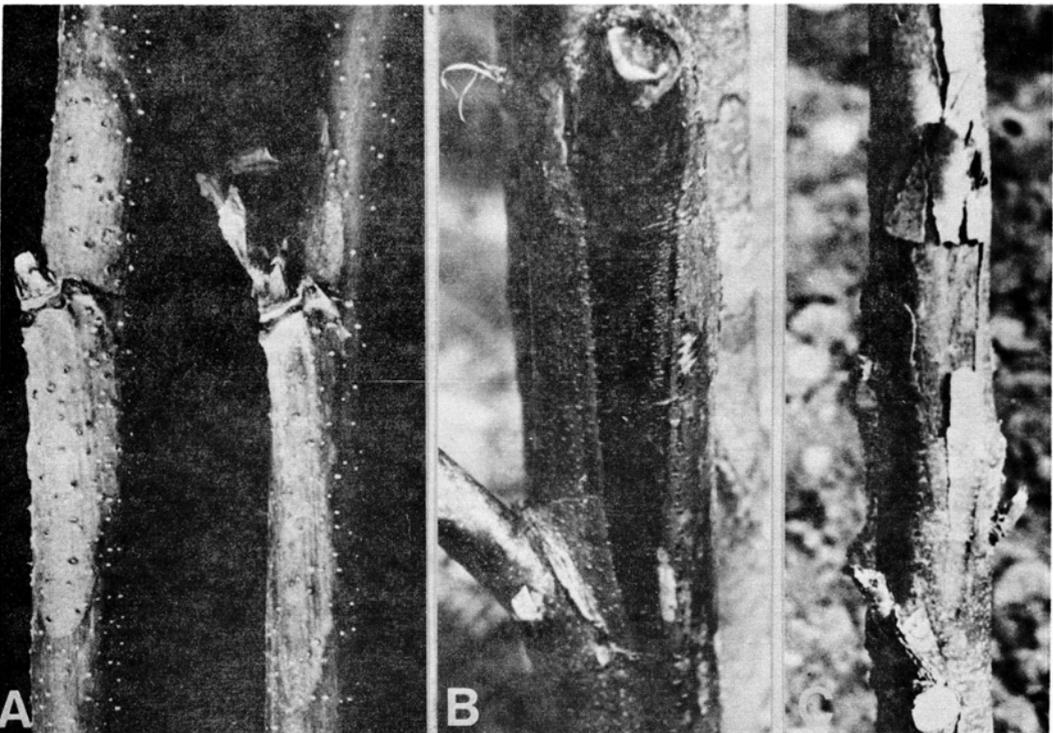


FIGURE 1. Canker of sycamore. A -- Twig canker originating from an infected leaf bud. B -- New canker on trunk originating from infected lateral branch. C -- Old canker on bole extending down trunk.

These twig cankers may only serve as infection courts for the organism inciting the lethal trunkcanker. Trunk cankers begin as necrotic streaks (1 to 2 inches in diameter) in the crown (Fig. 1B) and spread downward (Fig. 1C) to the root collar, eventually killing the tree. Several fungi have been isolated from diseased trees.

The disease was first observed in a sycamore plantation at St. Joseph, Louisiana, in 1971, and it is becoming increasingly prevalent in the lower Mississippi Delta plantations. This survey shows its distribution and incidence in sycamore plantations in Mississippi, Louisiana, Arkansas, Tennessee, and Alabama.

SURVEY

Twenty-six sycamore plantations (2 to 13 years old) in five Southern States were selected so that they were well distributed throughout the geographic range in which the disease might occur (Table 1). In each plantation 100 to 250 trees were randomly selected and examined in the fall for leaf scorch, twig dieback, and tree mortality caused by cankers.

Table 1. Sycamore plantation survey -- 1973.

Location	No. Trees sampled	Leaf scorch (%)	Dieback (%)	Canker/Mortality (%)	Age (years)	No. Plantations
<u>Mississippi</u>						
Starkville	400	22	0	0	2-4	2
Tunica	200	22	0	0	3	1
Greenville	345	57	26	2	6	2
Port Gibson	200	88	7	9.5	8	1
Vicksburg	733	66	0	0	2-8	6
Fitler	204	32	42	6	9	1
Natchez	226	84	0	0	3	1
Yokena	227	40.5	34	5.3	12	1
<u>Louisiana</u>						
St. Joseph	100	-- ^a	40	2	6	1
<u>Arkansas</u>						
Helena	200	35	3.5	0.5	13	1
<u>Tennessee</u>						
Ripley	1400	23	0	0	5-13	7
<u>Alabama</u>						
Tuscaloosa	400	30	0	0	3	2

^aPercent of leaf scorch made was not determined, but appeared to be over 50.

Leaf scorch was evident at all locations. Twig dieback and tree mortality were observed in six plantations in the lower Mississippi Delta. Young sycamore may have some juvenile immunity. No trees under 4 years old had dieback, and none under 6 years old died.

Although mortality in 1973 was less than 5%, the disease may be a serious threat in specific locations. For example, about 20% of the trees at Fitler, Mississippi, and St. Joseph, Louisiana, were killed between 1971 and 1973.