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Xylella fastidiosa, A NEWLY NAMED BACTERIUM, CAUSES LEAF SCORCH ON SEVERAL SHADE AND FRUIT TREES.

A newly-named, single-species genus of bacteria, *Xylella fastidiosa*, that is closely related to Xanthomonas, causes leaf scorch symptoms on several shade and fruit trees (Wells, et al., 1987). The bacterium has been identified in American elm, American sycamore, red oak, red maple, mulberry, periwinkle, grape, almond, plum, peach and from ragweed. *Xylella fastidiosa* has been found in trees from New York to Georgia.

Vectors: Several species of leafhopper have been found to be the insect vector of *Xylella fastidiosa* for grapes and fruit trees. The insect vector for shade trees has not been identified.

Symptoms: The first visible symptom of infection of the xylem by the bacteria is marginal leaf scorch followed by defoliation.

Xyella symptoms are similar to those caused by drought.

In infected sycamore, basal leaves show marginal and interveinal necrosis, whereas **terminal leaves are unaffected** (Sherald, et al., 1983).

Scorch-affected red maple leaves showed undulating marginal necrotic areas of light and reddish brown tissue separated from green tissue by a chlorotic border. Leaf scorch may start out localized initially in individual branches and spread in succeeding years to additional branches. In the spring, leaves develop normally on previously affected branches; however, symptoms begin appearing in mid to late July and intensify as the summer progresses.

Xylella symptoms appear in mid to late July

Leaf discoloration, initially at the leaf margins, migrates with an undulating front toward the midrib and base of the leaf. Necrotic leaf tissue is composed of light brown areas frequently bordered by narrow to wide zones of dark reddish brown tissue. Necrotic tissue is separated from green tissue by a narrow, but distinct, chlorotic border.

In late August, severely affected leaves abscise prematurely (Sherald, et al. 1987).

Leaves in all stages of symptom development occurred on the same branch of infected mulberry; severely affected leaves abscised prematurely and limited branch dieback was observed (Kostka, et al., 1986).

Isolation: Strains of the bacteria associated with almond leaf scorch were isolated from infected leaf petioles; strains from plum leaf scorch and phony disease of peach were isolated from infected twigs and roots; ragweed strains were isolated from infected stems; elm, mulberry, and oak strains were isolated from chips of infected twigs. All strains grew on BCYE or PW medium but not on standard bacteriological media such as Trypticase soy agar, nutrient agar, or King B medium (Wells, et al., 1987)

Sherald (1988) suggested using serological diagnosis to identify the bacterium. Agdia Inc, a private lab, has developed a serological diagnosis kit. The lab sells kits and also does diagnosis in-house (Agdia Inc., 1901 N. Cedar Street, Mishawaka, IN 46545, telephone 219/255-2817).

Controls: None have been reported for this new disease. Oxytetracycline controlled the symptoms on peach trees, but symptoms returned when the treatment was discontinued (Sherald, 1988).

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