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Plant Disease Diagnostic Clinic
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Anthracnose of Trees and Shrubs: *Various Fungi*

Introduction

Anthracnose diseases are caused by fungi that are capable of infecting stems, branches, leaves and fruits of a wide variety of deciduous trees and shrubs. Common anthracnose fungi include Discula, Colletotrichium, Gloeosporium, etc. Sycamore, ash, maple, oak and privet are especially susceptible to certain anthracnose pathogens. These diseases can be found throughout the eastern United States. The symptoms of these diseases may be more severe in years with a period of extended, cool, wet spring weather.

Figure 1: Vein damage and leaf blotching caused by Sycamore anthracnose (provided by Dr. Wayne Sinclair, Cornell University)

Symptoms

Symptoms vary according to the plant part and the host attacked as well as by the specific pathogen. Leaf infections may show necrotic spots, irregular dead blotches, or necrotic lesions associated with large leaf veins (Fig. 1). Infections on new shoots may kill them entirely or cause severe tissue distortion (Fig. 2).

Defoliation may occur early in the season followed by a second growth of leaves in early summer. Buds are often invaded and killed. Twig lesions often expand and may girdle the twig entirely, causing death of the parts beyond the lesion. Repeated twig dieback may alter the form of the tree, causing crooked branches and "witches'-brooms" (a development of clusters of twigs around a common point on a branch).

Figure 2: Twig dieback on Sycamore (provided by Dr. Wayne Sinclair, Cornell University)

Cankers may form on branches, and some fungal cankers may remain active beyond one dormant season, girdling and killing branches. Cankers may also be inactivated by callus formation near the margins. Large trees that sustain repeated attacks by a pathogen may be severely weakened showing loss of vigor, dieback of large branches, and increased susceptibility to insect borers and winter injury.

Disease Cycle

Anthracnose fungi that attack both stems and leaves overwinter in infected buds and twigs, in branch cankers, and in debris on the ground. These fungi may resume growth even before any new tree growth occurs in the spring. They contain spores that are dispersed to young buds or new leaves by various means including air currents and rain splash. Spores germinate under moist conditions and infect the new leaf tissue.

Prolonged periods of cold weather may retard tree development after bud break and favor epidemic development of the pathogen over host growth. Persistent moist conditions can lead to additional generations of spore production may be produced in infected tissue to cause new infections, to new or worsening infections, and to colonization of shoots and even woody twigs. While an otherwise healthy tree may often tolerate one year of premature leaf loss, if severe anthracnose occurs in multiple consecutive years, that may weaken the infected tree.

Management Strategies

Good control of some anthracnose diseases can be obtained by destroying infected plant material and debris in which these fungi overwinter. Collect and remove or destroy infected leaves. Leaves can be composted under several inches of soil. Pruning out and removing infected twigs may also reduce the amount of available inoculum and help to reduce the severity of disease in subsequent years. Before planting new trees and shrubs that are known to be highly susceptible to specific anthracnose diseases, look for resistant varieties. For example, London Plane (*Platanus* X. *acerifolia*) may be planted in place of more susceptible sycamore.

When disease is severe, management of many anthracnose fungi may be accomplished through properly timed sprays of fungicides. If needed, some injectable fungicides are also registered for use in managing diseases such as sycamore anthracnose. Note: Although registered for use on landscape plants, injectable products need to be applied by trained professionals. Foliar fungicide sprays also be available, but it may be difficult for a homeowner to obtain adequate coverage of larger trees.

Be certain any formulation of any pesticide you purchase is registered for the intended use and follow label directions. If large trees require treatment, consider hiring a commercial applicator. Commercial applicators should refer to the appropriate commercial pest management guidelines or contact your local Cooperative Extension Office for more information on other currently registered products.

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