



ANTHRACNOSE DISEASES OF SHADE TREES

John R. Hartman

Anthracnose diseases occur on many landscape trees; although, in Kentucky, they tend to be most severe on ash, dogwood, maple, oak, and sycamore. They are typically foliar diseases but twigs, branches, and buds may also be affected. Twigs and branches may develop cankers or dead areas that girdle the stem, causing death of distal parts of the stem. Premature leaf drop commonly occurs on infected trees. Anthracnose is not fatal (except for dogwoods in some circumstances); however, severe defoliation from anthracnose year after year can seriously weaken trees. Weakened trees become more susceptible to environmental stresses and secondary pathogens.

Dogwood anthracnose or lower branch dieback caused by the fungus *Discula destructiva*, because of its greater impact, is discussed in U.K. Extension publications ID-67 and PPFS-OR-W-6.

Symptoms

The symptoms of anthracnose vary somewhat from host to host.

Ash

Buds, leaves, and sometimes twigs can become infected. In early spring, infection of buds or expanding leaves results in irregular brown blotches and distortion of leaflets. These blotches are often associated with leaf margins (Figure 1). Infections that occur once leaves have already expanded result in small brown circular lesions. As these lesions enlarge, they may coalesce. Infected leaflets frequently drop from the tree leaving a carpet of leaflets on the landscape below. Although shoots may become stunted, infection on ash does not result in conspicuous twig or branch cankers.

Maple

Infection of this host results in irregular necrotic leaf lesions that vary in size and shape. At least two different anthracnose fungi may be involved. On Norway maple, lesions are purple to brown and follow the veins. Leaves of Japanese maple blacken and shrivel up. Brown to reddish brown lesions form along or between veins of sugar maple (Figure 2).

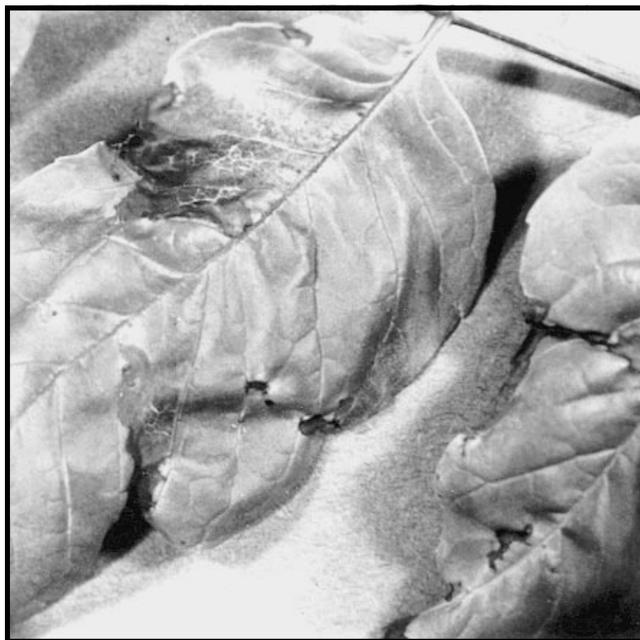


Figure 1.—Anthracnose of ash showing dead areas on leaflet margin.



Figure 2.—Anthracnose of maple showing dead areas along the leaf veins.

Symptoms on sugar maple can be confused with scorch symptoms. Twig infections result in blighting and death of shoot tips (Figure 3).



Figure 3.—Shoot tip dieback of maple resulting from anthracnose infections.

Oak

If oaks are infected early, buds may be killed before they begin to open in spring. As a consequence, twigs remain bare and eventually die. Later, new shoots may grow from the lower branch. If this occurs repeatedly, clusters of dead twigs at the ends of branches produce a witch's broom effect. When infection occurs during leaf expansion, distortion of leaves results. In addition, brown necrotic lesions form at leaf tips and along veins. On fully expanded leaves, infection causes irregular brown spots that eventually enlarge and coalesce. Oak twig infections can cause twig cankers and dieback of developing shoots in spring.

Sycamore

The early leaf blight stage of anthracnose in sycamore causes complete death of young leaves and twigs. Twig infection can cause shoot tips to die back as much as 8 to 10 inches. Cankers may also form on major branches and limbs. Later, leaf infections cause brown, irregular dead areas along veins or leaf margins (Figure 4). As is common with anthracnose on other hosts, affected leaves may drop prematurely. However, on sycamore trees, a new healthy crop of leaves may form later in the season.

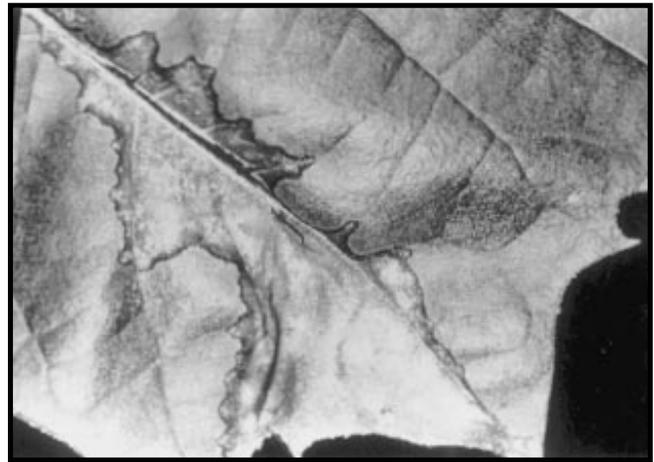


Figure 4.—Sycamore anthracnose showing dead area along the leaf veins.

Spread

Anthrachnose on these hosts is caused by several species of closely related fungi with names such as *Apiognomonia*, *Discula*, *Gnomonia*, *Gloeosporium*, and *Kabatiella*. These fungi overwinter in margins of twig and branch cankers and twigs on the ground. During cool, wet weather in spring, fungal spores are discharged from overwintering fruiting bodies. Infected buds are killed and previous season's cankers expand further. Spores are carried by wind or splashing rain to emerging shoots and leaves.

Control

1. Prune out infected twigs and branches.
2. Gather and destroy fallen leaves and twigs in autumn.
3. Fungicide sprays are generally not warranted. However, if the tree is a valuable one or if it has been attacked year after year, a fungicide spray program may be justified. Three sprays should be applied in spring: at bud break, when leaves are half-expanded, and when leaves are fully expanded.

These chemicals are protectants and therefore must be applied before infection occurs. Once symptoms develop, it is too late to apply fungicides for controlling anthracnose.

Contact your county Extension office for a listing of suggested fungicides.