1-1-1900

Leafspots of Shade Trees

Purdue University Cooperative Extension Service
Leafspots of Shade Trees

Leafspot diseases of shade trees frequently cause the home owner worry and concern. While leafspot diseases of shade trees are frequently conspicuous and falling leaves in mid-summer are disturbing, the damage they actually do is rarely as serious as the symptoms would suggest. There are many different leafspot diseases of shade trees but those described below are frequently of common occurrence in Indiana.

Catalpa leafspots

A number of fungi such as Cercospora sp., Gloeosporium sp., Phyllosticta sp. and Alternaria sp. may cause leafspot diseases on catalpa. In wet springs leafspot infections may occur on new foliage and appear as yellowish brown to black areas that ultimately result in dead spots on infected leaves. Some leaf fall may result from leafspot infections early in the season but defoliation rarely continues from this cause after mid-July. Catalpa leafspot damage is usually most severe on the lower portions of the tree. Occasionally secondary fungi will cause leafspots on catalpa late in the season. Such infections occur only on trees in low vigor, are entirely secondary and do not affect the vigor of the tree. Leafspots that occur in August or early September on catalpa are of little consequence and should not cause concern to the home owner.

Elm black spot

Black spot leaf disease of elms is caused by the fungus Gnomonia ulmea and occasionally causes premature defoliation in wet seasons. Leaves infected with black spot turn yellow early in the season and show small, noticeable, shiny, coal-black spots scattered over the upper leaf surface. Damage from this disease is occasionally severe on American elm and will cause serious defoliation of Siberian elm in late June.

Horse chestnut leaf blotch

The fungus Guignardia aesculi may cause a conspicuous leafspot on horse chestnut and occasionally on yellow buckeye. In late June or early July small, irregular, reddish-brown spots with yellow edges will appear on infected leaves. The spots gradually enlarge, run together and involve large areas of the leaf causing it to curl and turn brown. Later on, small black dots or spore-producing bodies will develop in the centers of the dead spots. By early August infected leaves will appear as if they have been scorched with fire and premature leaf fall may occur at this time. Leaf blotch is very conspicuous and is frequently a cause for major concern. The damage done by this disease is rarely serious, since trees are never killed and will leaf out normally the following spring.
Maple gray leafspot

Gray leafspot disease, sometimes referred to as purple-eye spot, affects all maples and boxelders and is caused by the fungus Phylllosticta minima. Typical symptoms of this disease are small, irregular, circular brown spots 1/4 inch in diameter with purple-brown margins. Small, black fruiting bodies are usually formed on the dead areas on the upper surface of the leaf. Gray leaf spot may cause some defoliation early in the season but is seldom serious enough to justify control measures.

Maple tar spot

Soft maple is frequently affected by this leaf disease caused by the fungus Rhytisma acerinum. Hard maple and red maple may sometimes be affected but are not as susceptible as soft maple. Tar spot appears first as pale yellowish-green spots on the upper leaf surface.

Later the spot enlarges, becomes thickened and raised and turns tar-colored. Occasional tar spots may attain a size of 1/2 inch in diameter and affected leaves will remain on the tree with diseased areas retaining their green color long after normal leaves change color in the fall. The tar spot fungus lives over winter in the tar-like spots on fallen leaves and produces spores which, when released in May or June, can cause infections on the new crop by young leaves.

Tulip tree leafspot

Leafspot caused by the fungus Marssonia frequently occurs on tulip tree (yellow poplar), white and Lombardy poplar and on cottonwoods. Marssonia leafspots are generally most noticeable on the upper leaf surface and at first appear as small, circular, reddish brown spots with a dark margin. The spots usually increase greatly in size until most of the leaf area becomes involved and early defoliation results.

Late in the season several secondary leafspots caused by fungi such as Septoria, Phylllosticta, and Alternaria may occur on poplars. All of these are secondary and only occur when leaves have passed their peak and are suffering from nutritional deficiency.

Willow scab

Willow scab is one of the destructive diseases of willow in the north central states. Unlike most of the leafspot diseases of shade trees, willow scab is quite destructive and frequently kills trees as a result of repeated defoliation. Willow scab is caused by the fungus Fusicladium saliciperdum and causes a blackening of the tips of scattered leaves at the top of the tree in early spring. During wet springs these early infections spread quickly throughout the tree resulting in blackened leaves and cankered twigs; and olive green felt-like masses of spores will be seen along the veins on the under-side of the leaves.

Black mold

In wet springs, especially when aphids have been a problem, black mold may disfigure leaves of elm, maple, tulip tree, poplar, basswood, and white pine. Black mold is caused by the fungus Fumago vagans which grows on the honey dew secretions of aphids and scale insects and covers the leaves with a heavy, black thread-like growth. Black mold is not a parasite but lives entirely on honey dew secretion. It occasionally may cause defoliation in
addition to spoiling the appearance of leaves on affected trees. Control of aphids and scale insects is the most effective method for preventing development of black mold.

Controlling leafspot diseases of shade trees

Most of the fungi that cause leafspot diseases of shade trees live over winter in infected leaves that fall to the ground. In early spring spores are produced from these sources and are carried by winds and rains to new young leaves where they cause new infections by leafspot diseases. For this reason raking and burning (or composting) falling leaves is an effective way of eliminating the source from which leafspot diseases originate. For the average home owner raking and removal of fallen leaves infected with leafspot diseases in the fall or early spring will provide a convenient method for reducing the damage that these diseases may cause.

Proper fertilization of trees with any good complete fertilizer (10-10-10, 12-12-12, 14-14-14, etc.) in mid-April in the approved way will help to offset the loss of vigor that may result from defoliation caused by leafspot diseases.

If the value of the shade trees justifies the expense, any of the following fungicides will effectively prevent leafspot diseases:

- Puratized Agricultural Spray 1 pint in 100 gallons water
- TAG 1/2 pint in 100 gallons water
- Puratized Apple Spray 1/2 pint in 100 gallons water
- 8-8-100 Bordeaux Mixture
  (8 lbs. copper sulphate, 8 lbs. of fresh spray lime in 100 gals. water)
- Fermate 2 lbs. in 100 gallons water
- Liquid lime sulfur 2 gals. in 100 gallons water

Two sprays of any of the above materials should be applied, when the first buds are breaking and after the first leaves are fully developed. Sprays should be applied with high pressure spray equipment available from most nurseries and commercial arborists.

(15C)

Cooperative Extension Work in Agriculture and Home Economics
State of Indiana, Purdue University
and the United States Department of Agriculture Cooperating
H. G. Diesslin, Director, Lafayette, Indiana
Issued in furtherance of the Acts of May 8 and June 30, 1914.
Maple Tar Spot

Maple Gray Leaf Spot

Hickory Leaf Spot

Horse Chestnut Leaf Spot
Elm Black Leaf Spot

Walnut Leaf Spot

Oak Septoria Leaf Spot

Willow Tar Spot