

Plant Clinic Fact Sheet: **Common Deciduous Tree Diseases in Illinois**



Anthracnose

Anthracnose diseases are caused by a number of different fungi which produce a specific type of fruiting body. Tree anthracnose diseases affect a wide variety of hosts with maple (pictured), oak, sycamore, and ash trees being the most common in Illinois. Large, necrotic lesions with distinct, wavy margins are produced on leaves. Tree anthracnose diseases are favored by cool, wet weather, and symptoms are usually seen in early spring. The pathogen can overwinter in branch cankers on some hosts. While severe infestations can cause complete defoliation

of a tree, it is unusual for these diseases to cause lasting damage and most trees will leaf out again after a few weeks. Sanitation, maintaining tree vigor, and pruning out cankers are recommended for managing anthracnose diseases.

Rusts

There are three common fungal rust pathogens in the genus *Gymnosporangium* that affect deciduous trees. Apple, crabapple, pear, hawthorn (pictured), quince, and serviceberry trees are the most common hosts in Illinois. All three diseases require juniper and red cedar plants as alternate hosts. Spots appear on the upper surface of deciduous leaves in early summer. As the season progresses, the lesions develop a dark orange or brown center surrounded by a yellow halo. Severe infections cause premature defoliation while repeat infections stress the host and reduce vitality. Management for these diseases consists of planting resistant varieties, removing unwanted hosts, and fungicide applications.



Fire Blight

Fire blight is a bacterial disease caused by *Erwinia amylovora* that affects plants in the Rosaceae family. The most common hosts in Illinois are apple, crabapple, pear, hawthorn, quince, and serviceberry. Characteristic symptoms include "shepherd's crooks" at the ends of branches (pictured), and sunken cankers along infected branches. The disease decreases the aesthetic value and fruit production of infected trees, and may be lethal to highly susceptible varieties. Bacterial blast is a disease of minor concern which produces similar symptoms to fire blight; laboratory testing is recommended to confirm the diagnosis. Management techniques for fire blight include pruning out diseased branches, planting resistant varieties, and antibiotic or copper protectant sprays.

Bacterial Leaf Scorch

Bacterial Leaf Scorch (BLS) is caused by the bacterium *Xylella fastidiosa*. The bacteria travel systemically through the plant's xylem tissue, causing a slow decline and eventual death. BLS affects a wide range of host plants in over 30 families. The most common hosts in Illinois include oak (pictured), maple, and sycamore. Scorch symptoms first appear in early summer to midsummer, then intensify in late summer. This disease is easily mistaken for Oak Wilt or environmental scorch. Testing at a diagnostic lab is the only way to definitively diagnose the disease. Antibiotic trunk injections, improving tree vitality, and replacing affected trees with non-susceptible hosts are recommended for management of BLS.



Oak Wilt

Oak wilt is caused by a fungus, *Ceratocystis fagacearum*, that colonizes vascular tissue. The fungus is spread via root grafts and a number of beetles. This disease can kill mature trees in the red oak group (black, pin, red, and shingle oaks) in one season. Trees in the white oak group (bur, swamp, and white oaks) are more tolerant of the pathogen and may take several years to die. Leaf scorch and wilt may be observed in late spring and early summer, leading to complete defoliation by late summer. The inner vascular tissue becomes discolored, causing streaking of the wood (pictured). Because the fungus is so virulent and because the symptoms are easily confused with other disease or abiotic factors, laboratory testing is strongly recommended for diagnosis. Management includes removal of the affected tree(s), trenching to destroy root grafts, and avoiding pruning in spring and summer. Fungicides may be effective as a protectant for red oaks and as a curative for white oaks, depending on the extent of infection.

Taphrina Blisters

Taphrina fungi cause leaf puckering and distortion to a wide range of host trees. These diseases are known by a number of names including Peach Leaf Curl, Plum Pockets, and Oak Leaf Blister (pictured). Symptoms will appear in late spring or early summer following a cool, wet spring. The deformities are usually confined to leaves, though Plum Pockets primarily affects fruit. Defoliation may occur if a tree is heavily infected. These diseases can decrease a tree's aesthetic value but rarely pose a serious threat to healthy hosts. Management focuses on sanitation and maintaining tree vigor. Fungicides are recommended for severe disease on *Prunus* hosts, but are usually not warranted for most oak hosts.



Verticillium Wilt

There are a number of species of plant pathogenic fungi in the *Verticillium* genus known to cause wilt disease. Verticillium wilt affects over 300 hosts, including maple, ash, elm, and oak trees in the red oak group. The fungus is capable of surviving in the soil for several years. Once inside the plant the fungus colonizes the vascular system, leading to the decline and death of the host. A common symptom in woody hosts is flagging, where the foliage on one branch suddenly wilts and dies. Improving the vigor of the host and planting resistant varieties are recommended management techniques.