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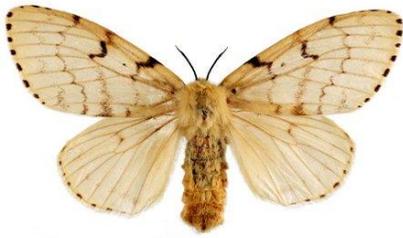
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Appendix N: Oak Diseases and Pests

For more information: [How To Recognize Common Diseases of Oaks in the Midwest](#)



Gypsy Moth

Gypsy moth is a major invasive species. Its caterpillars feed on more than 450 kinds of trees but favor oaks. Found throughout northeastern Illinois, the caterpillars hatch in spring from buff-colored egg masses and begin feeding in groups. The adult male moth is brown and the female is white with black markings. To help slow the spread of gypsy moth, check and remove egg masses on outdoor surfaces during the winter.

Gypsy moths (*Lymantria dispar*) were introduced to North America in 1869. They were brought to the continent in an attempt to create a silk industry, but when a few escaped they became a forest pest (Leonard 1974, Davidson et al. 1999). The caterpillars are voracious and can defoliate many acres of forest in a single season (Davidson et al. 1999). Gypsy moths have a cyclical population structure. They will exist at low numbers for many years, and then experience a population boom for a few seasons, with the population finally crashing back to low numbers (Elkinton and Liebhold 1990, Davidson et al. 1999).

Gypsy moths can be killed by insecticides, but use of these chemicals will also kill other butterfly and moth species. Insecticides should therefore only be used in the most dire circumstances. During low populations, the abundance and impact of the moths can be limited by removing nesting locations and manually trapping the larvae.

In urban areas remove woodpiles, dead branches, and ivy to limit nesting locations (Grafton and Webb n.d.). After larvae have hatched they can be trapped using burlap bands around the base of the trees. Gypsy moths feed at night and seek refuge during the day. During the day they will descend down the tree to find suitable shelter. A burlap flap tied around the trunk of a tree mimics perfect protection, and as the caterpillars rest there they can be collected and destroyed.

Oak Wilt

Accurate diagnosis of oak wilt is essential before costly control efforts begin. Foresters, arborists, or pathologists experienced with oak wilt can often diagnose the problem in the field and help property owners



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develop a plan to limit damage to other trees. Properly sampling suspect trees and culturing in a qualified laboratory may be necessary in some cases.

All oaks are susceptible to oak wilt. However, the red oak subgenus is more susceptible than the white oak subgenus. The fungus invades the water-conducting tissues, preventing the normal flow of water. This causes the foliage to wilt and often kills the tree. Oak wilt can spread from infected trees to healthy ones through root grafts or when insects carry spores from one tree to another. The symptoms often start at the top of the tree and gradually spread downward. The leaves on infected branches curl and turn yellow or bronze in color. Red oaks may decline and die within weeks or months, while white oaks may show branch dieback for years before dying. In some cases, white and bur oaks recover after one year of infection.

It may still be necessary to combat oak wilt if it is actively affecting an area, and there are several strategies for its management. In natural areas trenches can be dug around infected oaks in order to sever root connections and limit transmission to uninfected individuals. In urban areas fungicides can be injected into individual trees to eradicate the fungus. Prevention is perhaps the best treatment in urban oaks, as oaks are especially susceptible to infection if they are previously injured.

[Bur Oak Blight](#)

Bur Oak Blight is a fungal disease caused by a newly described pathogen, *Tubakia iowensis*. Several species of *Tubakia* are known to infect Bur oak (*Quercus macrocarpa*), however, *T. iowensis* is the only species known to cause severe leaf blight. The variety *Quercus macrocarpa* has been reported to be especially susceptible to the disease.

Symptoms

Bur Oak Blight is a fungal leaf disease with the earliest symptoms appearing in June. The pathogen overwinters as pustules on diseased leaf petioles that remained attached from the previous growing season. In the spring, fungal spores are produced and released from the pustules coinciding with bur oak leaf development and expansion. Heavy rainfall has been reported to be an important factor with spore production and dissemination. The primary infection occurs before the leaves are fully developed. However, there is a latent period between infection and when the first symptoms appear in June.

Initially, infections may be limited to the lower branches. Symptoms intensify from year to year and progress from the lower branches to the entire crown. In June, the first symptoms appear as purple-brown spots on the underside leaf veins. In July, the lesions expand, and purplish necrotic veins become noticeable on the upper leaf surface as well. As the veins are killed, wedge shaped necrotic areas appear on the leaf blade. Coalescing lesions may cause the leaves to die. Severely infected trees may have significant leaf mortality or leaves with scorched appearance. Many, but not all, leaves killed by BOB remain attached to the tree into the winter, well after healthy bur oaks have dropped their leaves.



Branch with diseased petioles still attached from previous growing season. Note the small black pustules.



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Management

Over time, severely affected trees may die. Tree death is usually associated with severe blight over many years and damage caused by secondary invaders such as the two-lined chestnut borer and *Armillaria* root rot. Boosting tree vigor may prolong the life of affected trees and ward off invasion by secondary pests. Because the fungus overwinters on infected leaf petioles that remain on the tree, removing fallen leaves is not an effective management tool.

For Further Reading: [US Forest Service Pest Alert: Bur Oak Blight](#)

Oak anthracnose

Oak anthracnose infects twigs, buds, and leaves of the oak tree. This disease can discolor, distort, kill leaves and generally stress the tree. Oak anthracnose is considered a minor stress and trees recover from this disease.

Oak anthracnose is caused by the fungus *Discula quercina*.

The oak anthracnose fungus lives in infected areas of twigs and leaves. During a wet spring, spores are splashed onto new leaves and shoots to cause infection. Only young leaves and twigs or wounded leaves are susceptible to the oak anthracnose fungus.

Management

Oaks can recover from oak anthracnose. The fungus needs leaf moisture to infect and spread. As temperatures rise in the summer months and rains cease, the disease will be reduced.

- Rake up and destroy leaves in the fall. Prune out any dead twigs after November. Fungi survive in leaves and twigs and infect new leaves the following year if not removed.
- Mulch around the base of the tree, from the trunk out to the drip line of the canopy, with an even 2-4 inch layer of organic mulch like wood chips.
- Water trees during periods of drought. Water at least the area from the trunk of the tree out to the edge of the branches.
- Avoid using heavy equipment underneath the tree. This will compact the soil and injure the root system.
- If a tree has lost the majority of its leaves several years in a row, call a professional tree care company to apply a fungicide as leaves open the following spring.