

PEST ALERT: Bur Oak Blight (B.O.B.)

Bur Oak Blight, as the name suggests, is a foliar disease of Bur Oak (*Quercus macrocarpa*). The disease was first observed in the mid-1990's in Iowa, Minnesota, Wisconsin, and Nebraska and was discovered in Illinois in 2012. Initial reports were in northern Illinois, but the disease has since spread southward.

B.O.B. affects only Bur Oak, particularly the small-acorned variety *Quercus macrocarpa* var. *oliviformis* that grows on dry upland sites. It has also been observed in Swamp White Oak (*Quercus bicolor*) but occurrence in this species is rare.

Symptoms

B.O.B. is caused by the fungal pathogen *Tubakia iowensis*. The fungus overwinters in pustules in diseased leaf petioles which remain on the trees through the winter (this can be a good way to find B.O.B.) (Figure 1d). Fungal spores are released in spring when the new leaves begin to expand, and wet springs can encourage the growth of the pathogen. A latent period follows with few symptoms in between infection and when symptoms begin to appear in June. Symptoms progress from the lower branches to the crown and get worse year to year. In July, necrotic tissue can be seen as leaf vein turn purple and become noticeable (Figure 1a). As the veins are killed, wedge shaped areas of brown necrotic tissue appear between the leaf veins, and lesions merge causing leaves to die (Figure 1b). Severely affected trees may have significant leaf mortality (Figure 1c). Several years of leaf mortality can make trees susceptible to other diseases and insects and lead to tree death.

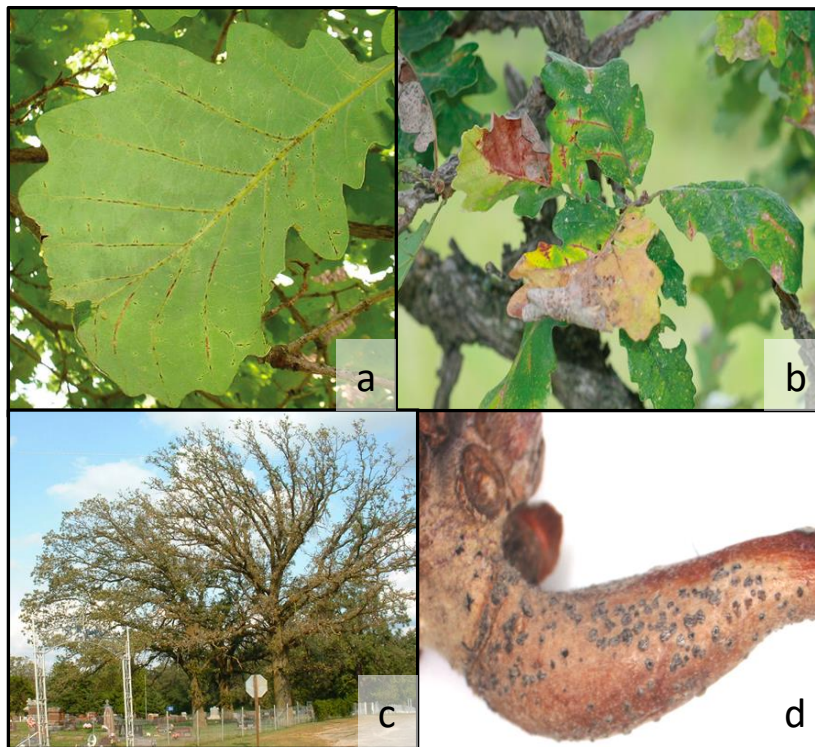


Figure 1. Signs and symptoms of B.O.B. a) necrotic leaf veins, an early sign of disease b) wedge shaped lesions that develop later in the summer c) trees experiencing significant leaf dieback from B.O.B. d) Black pustules on leaf petioles where fungus overwinters on the tree, a diagnostic feature of B.O.B.

Distribution

2019, the Illinois Forest Health Program completed a multi-year survey of all Illinois counties to determine how widespread the disease is in the state. As is shown in Figure 2, B.O.B. is most prevalent in the northern part of the state and is uncommon in the southern part of the state where Bur Oak, particularly *Quercus macrocarpa* var. *oliviformis*, is less common.

BOB Survey As Of December 2019

- BOB Confirmed
- Surveyed: BOB Not Confirmed
- Surveyed: No Bur Oak Found

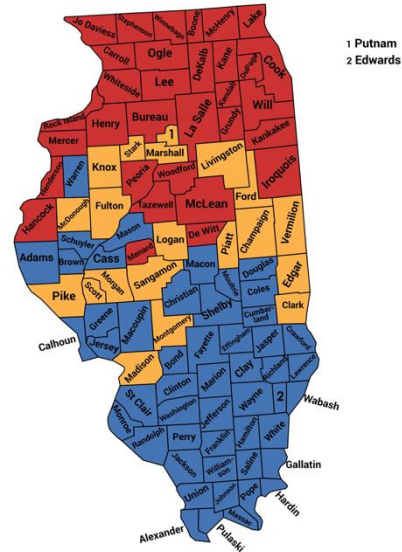


Figure 2. The distribution of B.O.B. in Illinois. Red indicates counties with confirmed cases of B.O.B., yellow indicates counties that were surveyed but the disease was not found, and blue indicates counties where bur oak trees were not encountered.

Management

B.O.B. is not immediately lethal to bur oaks but may eventually kill a tree over a period of years. Like many leaf diseases, B.O.B. makes oaks more susceptible to other pathogens and insects such as the two-lined chestnut borer. Promoting tree vigor through plant care practices such as watering and mulching can help trees survive. Research on the biology, epidemiology, and chemical management of BOB is ongoing, and research from the University of Iowa suggests that trunk injections of propiconazole may be effective in controlling the disease in high value trees. Injections need to be made by a certified professional and correct diagnosis of the disease is necessary before any treatments are made. If you suspect B.O.B. on a high value oak tree, collect leaf samples (with petioles attached) and send them to the University of Illinois Plant Clinic or other laboratory for confirmation. Sampling for BOB is best conducted in late summer (i.e. August and September) when the disease is fully expressed.

Sources:

1. Harrington, Thomas C.; McNew, Douglas L. 2016. Chapter 7: Distribution and Intensification of Bur Oak Blight in Iowa and the Midwest (Project NC-EM-B-10-01). General Technical Report SRS 213. USDA-Forest Service, Southern Research Station. 6 p.
2. Cleveland, Travis. 2012. Bur Oak Blight. Home, Yard and Garden Pest Newsletter. University of Illinois Extension. Issue 14.
3. Pokorny, Jill D; Harrington, Thomas C. 2011. Pest Alert: Bur Oak Blight (Project NA-PR-02-11). USDA-Forest Service Northeastern Area State and Private Forestry. May 2011