

## Bur Oak Blight



Bur oak blight is a fungal leaf disease found throughout Minnesota. It results in leaf browning and leaf loss in late summer and early fall. A native fungal pathogen called *Tubakia iowensis* causes the disease. Above-average rainfall for the past 30 years likely boosted the occurrence of this pathogen, leading to bur oak blight.

Although bur oak blight gained attention in the mid-to-late 2000s, Minnesota DNR forest health staff noticed its symptoms a decade earlier, before scientists identified the cause. Since bur oak blight is a relatively new phenomenon, we don't yet know its long-term impact on Minnesota.

While the disease can cause severe symptoms on individual trees, it does not affect all bur oaks. Bur oaks can lose about 50 percent of their canopies every year and still remain relatively healthy. However, when a bur oak loses more than half of its leaves for several years in a row, it may become stressed and susceptible to other problems such as twolined chestnut borer and Armillaria root disease.



Wedge-shaped lesions and leaf vein browning are telltale symptoms of bur oak blight.

### Identification

Bur oak blight's early symptoms appear in midsummer, but the most obvious expression happens in late summer. Leaf symptoms include dark veins on the undersides of leaves and brown, wedge-shaped segments between leaf veins. The disease starts in the lower canopy and progresses up the tree. In severe cases, all but the outermost leaves around the canopy will die. Bur oak blight might cause

minor dieback (death of branches starting at the tip), but it will not kill major limbs. (Armillaria root disease, twolined chestnut borer, and oak wilt *will* kill large branches.)

### Management

#### Yard tree management

Just because a bur oak has bur oak blight does not mean you should cut it down. In most cases, the tree will leaf out just fine the following year. In fact, we are aware of bur oaks that have sustained severe bur oak blight every year for well over a decade without apparent harm.

The best time to evaluate bur oak health is in June. If the tree does not have branch dieback or epicormic sprouts (small, young branches growing out of the trunk and big limbs), it is probably not stressed. If your bur oak has significant problems and you choose to cut it down, do not do so in April, May, June, or July. These are prime months for spreading oak wilt infection.

#### Forest and savanna management

Because bur oak blight is a native disease made worse by wet springs and summers, it is not possible to control levels of the pathogen. Since many bur oaks tolerate some degree of the disease, we recommend leaving trees that are not susceptible so that they pass on potential resistance to the next generation. In years with above-average rainfall,



Bur oak blight can have a severe impact on individual bur oaks (oak on the right), but not all bur oaks are affected by it (oak on the left).



Bur oaks showing extreme symptoms of bur oak blight

you can identify tolerant bur oaks from mid-August through September.

During regular harvests, we suggest removing bur oaks with dieback as well as those that have a lot of epicormic sprouts or are regularly defoliated by bur oak blight. These stressed oaks not only are more susceptible to various pests and diseases, they also tend to have more bur oak blight. Bur oak is an excellent species for Minnesota’s future and we continue to promote its planting. We also encourage tree species diversity to make forests resilient to weather, diseases, and insects.

### Fungicide treatment

Unstressed bur oaks that get bur oak blight may be able to survive without any treatments. However, for particularly valuable yard trees, you may choose to do preventative injections of the fungicide propiconazole. This fungicide, when injected at half the maximum label rate in late spring (as soon as leaves have formed), can reduce bur oak blight in some healthy bur oaks for at least three years. Propiconazole can burn bur oak leaves, but healthy trees can overcome this temporary stress.

Only treat trees that:

- Do not have any dieback or epicormic sprouts.
- Have had two consecutive years with more than 40 percent leaf loss.

After treatment, don’t treat again until the tree has lost roughly 40 percent of its leaves to bur oak blight for two years in a row.



The same bur oak photographed above in 2015 and below in June 2017.

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