RESEARCH LABORATORY TECHNICAL REPORT

BARTLETT TREE EXPERTS
SCIENTIFIC TREE CARE SINCE 1907

Tubakia Leaf Spot

By The Bartlett Lab Staff
Directed by Kelby Fite, PhD

Tubakia leaf spot, also known as Actinopelte leaf spot, is caused by the fungus, *Tubakia* sp. *(*formerly *Actinopelte)*. This is a late season fungal disease that commonly attacks oaks, particularly those in the red oak group (black, red and pin oak). Tubakia has also been reported on chestnut, maple, elm, ash, hickory, tupelo, redbud, sassafras, sumac and sweetgum. This distinct fungus is probably distributed worldwide, but in the United States it has been reported primarily east of the Mississippi.

Disease Symptoms

Leaf symptoms consist of small to large, dark brown or reddish-brown spots (Figure 1) that are circular to irregular in outline and may coalesce to form larger necrotic areas or blotches (Figure 2). This disease may be confused with Anthracnose, another leaf disease of oaks; however, symptoms of Tubakia typically develop late in the growing season when temperatures are warmer. The fruiting structures of this fungus, which appear as very small (0.1 mm) black specks, are born on short stalks above the necrotic tissues on either or both leaf surfaces (Figure 3). Because of their superficial nature, the black fruiting bodies can be easily scraped from the tissues. Under magnification, these unique asexual fruiting structures resemble a shield (Figure 4).

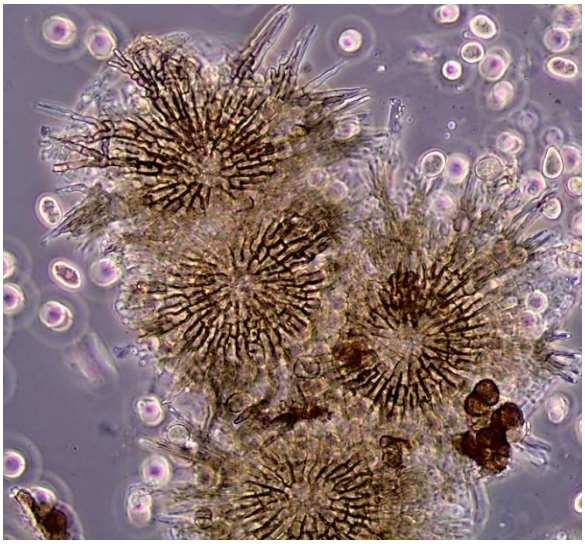
Figure 1: Tubakia leaf spot on Northern red oak

Figure 2: Shumard oak infected with Tubakia

Severe outbreaks of Tubakia leaf spot can lead to defoliation and twig dieback. Repeated outbreaks, especially in combination with other stresses, can lead to tree decline. Tubakia overwinters in infected twigs and in dead leaves that are retained in the tree and on the ground. Spores of the fungus are easily disseminated by wind and rain splash.

Figure 3: Tubakia fungal fruiting structures on live oak

Figure 4: Four shield-like fungal fruiting structures



Management

Remove fallen leaves and twigs from the site to reduce potential inoculum for the following year. Cultural practices to improve plant vitality including fertilization based on soil analysis, irrigation during dry periods and pruning as needed to improve light and air penetration, will reduce the impact of the disease. When disease pressure is high, foliar applications of a registered fungicide will suppress new infections. Treatments should be applied beginning when leaves are expanding in spring and continue at monthly intervals through summer.

Founded in 1926, The Bartlett Tree Research Laboratories is the research wing of Bartlett Tree Experts. Scientists here develop guidelines for all of the Company's services. The Lab also houses a state-of-the-art plant diagnostic clinic and provides vital technical support to Bartlett arborists and field staff for the benefit of our clients.