PEST PROFILE

If a healthy plant suddenly undergoes unusual damage or decline, it could indicate the presence of an invasive pest or pathogen.

Oak Wilt  *Bretziella fagacearum*

Oak wilt (OW) is an aggressive disease that affects the vascular system of oak trees. In some species, the disease progresses rapidly with large, healthy trees dying in as little as a couple of weeks.

Thousands of trees die from oak wilt each year and the disease continues to spread. Natural spread of OW occurs two ways—above ground and below ground. Above ground transmission occurs when sap and bark beetles visit an infected tree, pick up spores and then visit a healthy tree. Additionally, oak trees growing in proximity to other related oaks form natural root grafts. This communal root system allows the pathogen to move from infected tree to healthy tree and is the reason why symptoms typically occur in neighboring oak trees (B).

OW can be confused with many other problems, therefore laboratory testing is needed to confirm diagnosis and ensure you take the appropriate disease management steps.

**Hosts**  
All oaks (*Quercus* spp.) are susceptible to oak wilt, but some species are more so than others. Oaks can be divided into three groups, red, white and live. Oaks in the **red group** (A) are the most susceptible species, experiencing high mortality when infected. Oaks in the **white group** (C) are susceptible but the disease progresses more slowly and may not kill the tree. Oaks in the **live group** (D) are moderately susceptible but experience high levels of mortality when infected.

**Symptoms**
- wilting beginning at the top and moving downward
- leaf discoloration: tan to bronze beginning at leaf margin and progressing towards midrib (A&C) or interveinal chlorosis on live oak leaves (D)
- early and excessive leaf drop (E)
- tree death

**Signs**
Some OW infected **red oaks** produce fungal mats (F) beneath the bark. As pressure builds in a fungal mat, the bark splits. Fungal mats have a distinct fruity odor that attracts sap and bark beetles.

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SCOUTING GUIDE

Symptoms of oak wilt vary depending by species. Oaks in the red oak group are characterized by lobed leaves and pointed tips, examples include northern red oak, pin oak and Texas red oak. Oaks in the white oak group are characterized by lobed leaves and rounded tips, examples include white oak, bur oak and post oak. Texas live oak is an example of an oak in the live oak group and is characterized by unlobed leaves and either a rounded or pointed tip.

1. see where it is
Oak wilt is affecting trees across much of the central and eastern U.S. and it continues to spread. Explore the EDDMapS’ OW page to see where OW has been confirmed.

2. monitor and report
If OW is present in your state or in a neighboring state, we need your help to monitor and report sightings to slow its spread. Use the First Detector form to report suspect trees through EDDMapS. Experts will review your report and contact you if it could be oak wilt.

3. protect your oaks
To limit the spread of OW avoid pruning oaks in spring and summer when sap and bark beetles are most abundant. These beetles are attracted to fresh pruning wounds and can move spores to other oak trees further spreading the disease.

4. don’t move wood
OW can spread to new locations when infected wood is moved. When red oaks die from OW they develop fungal mats beneath the bark. These fungal mats contain the spores that can start a new infection on a new host. To prevent human assisted spread of OW, learn how to dispose of infected wood properly.

ADDITIONAL RESOURCES
More information, photos and partner links are available on the First Detector OW page.

Download and print a pocket-sized scouting card from our pest identification page.

GET INVOLVED

Photos: (B, D, F) Joseph O’Brien, US-FS; (C & H) Fred Baker, Utah State University; (E) Steven Katovich; (G) Ryan Armbrust, Kansas Forest Service; (I) Ronald Billings, Texas A&M Forest Service. all images bugwood.org

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