Kentucky Nursery LISTSERV Bulletin

University of Kentucky Nursery Crops Team

End of October 2017

Warmer, Wetter than Average at First…

Though this week started with sub-freezing temperatures and widespread frost, temperatures will climb back up and bring rain for the first half of November.

Later in the month, temperatures are predictions show cooler temperatures, while precipitation chances remain above average across the Commonwealth.

For forecast information, see the UK Ag Weather Center's Long Range Outlooks:

http://wwwagwx.ca.uky.edu/ky/forecast.php#Long_Range_Outlooks

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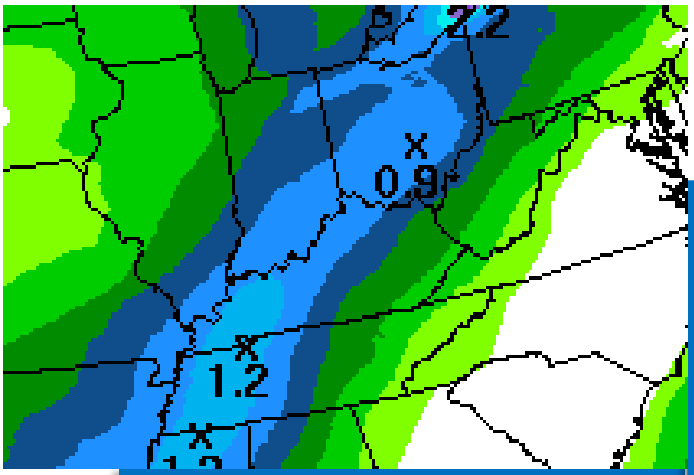

Precipitation, 5-Day Forcast Oct 30—Nov 4, 2017
Image: NOAA Climate.gov

- **Stress and Decline in Woody Plants**
- **Armillaria Root Rot—A Threat to Stressed Landscape Trees**

Stress and Decline in Woody Plants

Kimberly Leonberger, Extension Associate, Plant Pathology
Nicole Ward Gauthier, Extension Professor, Plant Pathology

Figure 1. Dieback is a common symptom of stress

Image: John Hartman, University of Kentucky

Woody trees and shrubs may exhibit decline resulting from the stresses that may occur during their lives. Stress may be the result of improper plant or site selection, incorrect planting or maintenance practices, or poor soil conditions. Injury from physical practices, weather, or chemicals can also lead to stress and decline. In addition, biological stresses such as diseases, insects, and wildlife could result in stress and decline of woody ornamentals. Symptoms of stress and decline include dieback (Figure 1), leaf scorch, stunting, premature fall color or leaf drop, production of water sprouts or suckers (Figure 2), and signs of disease or insects.

Typically, one or more primary stresses cause deterioration of plant health, followed by secondary pathogens and/or insects that further decline or destroy plants. Determining causes of decline requires careful examination of plants and growing sites, as well as knowledge of site history. Nevertheless, diagnoses may be difficult, as the original cause(s) of plant stress may be obscure or no longer present.

Figure 2. Water sprouts or suckers may result from severe stress.

Photo: Daniel Herms, The Ohio State University, bugwood.org

For more information on stress and decline in woody plants and related disease problems, including symptoms, causes, and prevention, review the publication Stress and Decline in Woody Plants (ID-50).

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Additional Information

- Stress and Decline in Woody Plants (ID-50)
  http://www2.ca.uky.edu/agcomm/pubs/id/id50/id50.pdf

- Plant Pathology Publications (Website)
  http://plantpathology.ca.uky.edu/extension/publications

Armillaria Root Rot—A Threat to Stressed Landscape Trees

Kimberly Leonberger, Extension Associate, Plant Pathology
Nicole Ward Gauthier, Extension Professor, Plant Pathology

Tree stress can come from numerous factors including weather, mechanical damage, insects, or poor growing conditions. These stresses make plants more susceptible to the plant disease *Armillaria* root rot. This fungal disease is also known as shoestring root rot, mushroom root rot, or oak root rot. Once symptoms are observed, damage is often too severe to save infected trees, as no effective management strategies are available.

Armillaria Root Rot Facts:

- Symptoms include dieback and decline. Loose or decayed bark near the base of the tree is often observed. When bark is peeled back, creamy white fans of fungal mycelium (thread-like structures) or dark brown rhizomorphs (thick strands of fungal mycelium) (Figure 1) may be present. In fall, distinct "honey" mushrooms are produced at the base of the tree or along decaying roots (Figure 2).
- The fungal pathogen overwinters in decaying wood and can persist for many years on this plant material in soil.
- Common hosts include oaks, maples, pines, hornbeams, taxus, and fruit trees.
- Trees exposed to stressful growing conditions such as drought, winter injury, insect defoliation or borers, mechanical injuries, or construction damage are more likely to become infected.
- Caused by multiple species of the fungus Armillaria.

Figure 1. Dark brown rhizomorphs (or shoestrings) may be observed under the bark of trees infected with *Armillaria* root rot.

Photo: Cheryl Kaiser, University of Kentucky

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Disease Prevention Options:

- Consider removal of infected trees, roots, and stumps.
- Maintain plant health with proper nutrition.
- Select well-drained planting sites that are high in organic matter.
- Minimize stress from environmental factors.
- If site has a history of Armillaria root rot, avoid susceptible tree species.

Figure 2. "Honey" mushrooms may be present at base of infected trees or along decaying roots, especially during rainy seasons.

Photo: Homeowner, Kenton County, KY

Additional Information

- Shoestring Root Rot- A Cause of Tree and Shrub Decline (PPFS-OR-W-05)
http://plantpathology.ca.uky.edu/files/ppfs-or-w-05.pdf

- University of Kentucky Plant Pathology Extension Publications (Website)
http://plantpathology.ca.uky.edu/extension/publications

The University of Kentucky's **Nursery Crop Extension Research Team** is based out of two locations across the bluegrass to better serve our producers.

The **University of Kentucky Research and Education Center (UKREC)** in **Princeton** serves western Kentucky producers while our facilities and personnel on main campus in **Lexington** serve central and eastern Kentucky producers.

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