



College of Agriculture,
Food and Environment
Cooperative Extension Service

Kentucky Nursery LISTSERV Bulletin

University of Kentucky Nursery Crops Team

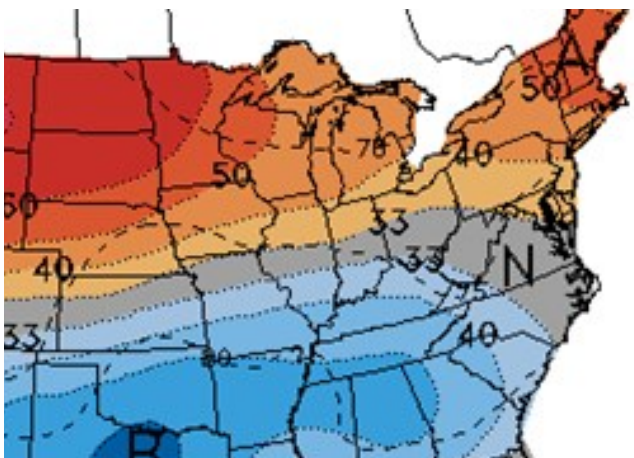
End of June 2021

Cooler Than Average Start to July, Wetter Throughout

While weather reports of extreme heat in the Pacific Northwest and persistent drought in the west come in, the NOAA's Climate Prediction Center is forecasting a cooler than average start to July for us in the commonwealth and across much of the southeastern US. In the latter half of July, there is an equal chance for above average temperatures and below average temperatures for Kentucky.

The picture for precipitation is clearer: above average rates of precipitation for July. In an average year, already July tends to be one of our wettest months, creating conditions for more flooding. This current, long range forecast for July, August, and September is calling for above average precipitation as well.

See [UKAg Weather's Long Range Outlooks](#) for a variety of forecasts of temperature and precipitation probabilities.



July 05-13, 2021 Temperature Probability
Image: NOAA Climate.gov, 28 JUN 2021

Nursery Crops

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Joshua Knight, Senior Extension Associate & Managing Editor

- **Box Tree Moth: A Potential Problem for Boxwoods**
- **Amarillia Root Rot: A Threat to Stressed Landscape Trees**

Box Tree Moth: A Potential Problem for Boxwoods

Jonathan L. Larson, Extension Professor, Entomology

Boxwoods usually have to contend with insect issues like boxwood leafminer or boxwood psyllid. In recent years, we have had concerns arise over boxwood blight also impacting Kentucky boxwood plants. Now, it seems like a new invasive is on the horizon that could attack these commonly planted shrubs- box tree moth.

What is Box Tree Moth?

Box tree moth is an invasive species, originally from Asia (specifically China, Japan, Korea, and Eastern Russia) and it has been highly problematic for over 25 European nations since first appearing Germany in the mid-2000's.

Previously, the only North American infestation was located in Ontario, Canada. However, that changed [at the end of May 2021](#) when reports were released that this pest had been discovered in Michigan, Connecticut, and South Carolina. The USDA is taking immediate action to try and contain the issue and stop this from happening again, but we need to be vigilant to make sure we help contribute to monitoring programs.

In its final instar, the box tree moth caterpillar is about a half inch long. They are primarily yellow green in color, with black and white stripes that run vertically down the body on each side. On each abdominal segment there is a pair of black dots. The adult moth is broadly fan shaped. For the majority of adults, the exterior margins of their wings are brown and there is an inner white triangle that spans the wings and body. Some adults may be completely brown. The box tree moth superficially resembles the melonworm moth in coloration and the patterns on their wings. The box tree moth has white comma like markings near the wing margins that the melonworm lacks. Thus far, box tree moth has only been observed to feed on boxwood plants in the genus *Buxus*. Currently, there are no known resistant varieties of boxwood.

What does it do?

Box tree moth larvae feed on the leaves and the bark of boxwood plants. The younger larvae feed on the undersides of leaves, creating a papery or peeling appearance. As they mature, they will eat entire leaves, leaving behind only the midrib. As the plant is defoliated, the larvae will move to feed on the bark, inducing girdling and possibly killing the plant. Older caterpillars also produce noticeable webbed enclosures. These are messy and may contain the caterpillar, its frass, and old cast off "skins".

Boxwoods are also hosts to boxwood leafminers and boxwood psyllids that may leave behind damage. Box tree moth is the only caterpillar pest of boxwoods and their damage is different in comparison to our other pests. Boxwood leafminers cause the leaves to appear blistered as they feed from the inside. There is also an orange or bronzed color caused by their damage, which is focused in the newest growth. Similarly, boxwood psyllid prefers to attack the newest foliage, but they cause the leaves to cup inward on themselves.



The mature larva of a box tree moth is about 1/2 inch long, with yellow-green coloration, black and white stripes down their sides, and a pair of black dots on each abdominal segment. (Photo by Ferenc Lakatos, University of Sopron, Bugwood.org).

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In clockwise motion from the above image; box tree moth damage, boxwood leafminer damage, and boxwood psyllid damage.



Box tree moth is not the only pest of boxwoods, though their damage looks different than the symptoms left behind by boxwood leafminer and boxwood psyllid. Leafminers create blistered, bronze, leaves in the newer growth while psyllids cause the newest growth to become cupped. (Photos by Ferenc Lakatos, University of Sopron Bruce Watt, University of Maine, and Penn State Department of Plant Pathology & Environmental Microbiology Archives, Bugwood.org in order)

What to do if you believe you have found this pest

If you fear you have spotted damage from this pest or have captured a specimen, please contact us at the Department of Entomology or reach out to the Office of the State Entomologist to begin the process of confirmation. We are hopeful we can keep this invader from the state and we appreciate receiving tips from the field.

Email: jonathan.larson@uky.edu

Office of State Entomologist Website: <https://www.uky.edu/Ag/NurseryInspection/>

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.



Figure 1. Dark brown rhizomorphs (or shoestrings) may be observed under the bark of trees infected with Armillaria root rot. (Photo: Cheryl Kaiser, UK)

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*.

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.

Additional Information

Shoestring Root Rot- A Cause of Tree and Shrub Decline ([PPFS-OR-W-05](#))

University of Kentucky Plant Pathology Extension Publications ([Website](#))



Figure 2. “Honey” mushrooms may be present at the base of infected trees or along decaying roots, especially during rainy seasons. (Photo: Homeowner, Kenton County Kentucky)

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.

Check out our [YouTube Channel!](#)

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