

KENTUCKY NURSERY BULLETIN

UK NURSERY CROPS TEAM

END OF SEPTEMBER 2021

Warmer Than Average Temperatures in October, Variable Precipitation

The month of October is when most, if not all of the Commonwealth has it's first frost. Typically, the eastern region gets one first, with the southern and western parts of the state experiencing their first fall frost later than the rest of Kentucky. For the coming October, this pattern is likely to continue, though all of the long range forecasting is predicting an above average chance of higher than average temperatures.

Average First Frost Dates in KY

Image: Spectrum Meteorology, 2020



In regards to precipitation, the picture is more complex. The first week of October is currently forecasted to be above average likelihood for higher than average precipitation for most of Kentucky. This flips in the second week of October, with drier than average conditions being more probable. In the second half of the month, the picture is less clear with current forecasts indicating an equal chance of wetter or drier than average conditions. The relationship between dry/wet conditions and frost formations can be very complicated.

In any event, it's important to remember climate forecasts only predict the larger trends. The weather conditions on any given day can run contrary to the larger trend. This is the time of the year when it is crucial to watch for warnings of frost conditions. Often times a period of warmer weather can follow a frost, so surviving the first killing frost can let the growing season continue for specialty crop growers.

See **UKAg Weather's Long Range Outlooks** for a variety of forecasts of temperature and precipitation probabilities.



College of Agriculture,
Food and Environment
Cooperative Extension Service

NURSERY CROPS EXTENSION & RESEARCH

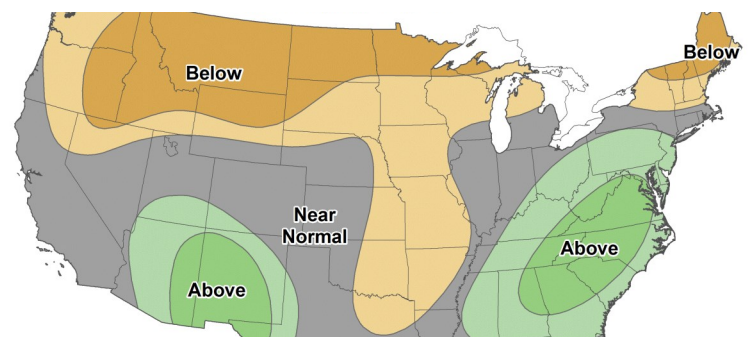
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Joshua Knight, Senior Extension Associate & Managing Editor

This Month

- **Bacterial Leaf Scorch Can Torch Landscape Trees**
- **Fall Oak Pest Symptoms**



Precipitation Probability, October 4-8, 2021

Image: NOAA Climate.gov, 28 SEP 2021

Bacterial Leaf Scorch Can Torch Landscape Trees

Kim Leonberger, Extension Associate, Plant Pathology

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Kentucky's landscapes are populated by many trees that are susceptible to bacterial leaf scorch. This disease may not kill trees instantly, but over time, it can have devastating effects. Pruning and reducing stress can prolong the life of infected trees; however, there are currently no methods to prevent or cure bacterial leaf scorch.

Bacterial Leaf Scorch Facts:

- Infected trees exhibit premature leaf browning (Figure 1), marginal necrosis, and defoliation. In subsequent years additional branches will present the same symptoms until the entire tree becomes prematurely brown (Figure 2).
- Symptom development typically occurs in mid- to late summer
- Symptoms of bacterial leaf scorch can resemble abiotic/stress, so confirmation by a diagnostic lab is advised.
- Trees such as sycamore, maple, and oaks are susceptible. Pin oak and red oak are the most commonly reported hosts in KY.
- Caused by the bacterium *Xylella fastidiosa*
- Spread by leafhopper and treehopper insects.

Management Options:

There is no cure for bacterial leaf scorch, and trees will eventually die once infected. The following suggestions may help preserve the appearance and life of diseased trees:

- Prune newly infected trees to preserve appearance.
- Water trees in the heat of summer to reduce stress
- Tree-injections can be costly and do not cure the disease; however, they may prolong the life of the tree.

Replace infected trees with species that have shown resistance to the disease. Suggestions include:

European beech
Kentucky coffeetree
Shagbark hickory
Common sassafras
Tuliptree



Figure 1) Premature leaf browning of a pin oak tree branch infected with bacterial leaf scorch.

Photo: John Hartman, University of Kentucky



Figure 2) Pin oak tree that has turned entirely brown prematurely from many years of bacterial leaf scorch infection.

Photo: John Hartman, University of Kentucky

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Additional Information

Bacterial Leaf Scorch (PPFS-OR-W-12)

http://www2.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-OR-W-12.pdf

Foal Oak Pest Symptoms

Jonathan Larson, Extension Professor, Entomology

Oaks are mighty trees that we love to have in the landscape. Due to the fact that they are mostly native, and they are long-lived and sturdy, we can find many different kinds of insects and mites feeding on them. Overall, these oak feeders rarely cause significant harm, but they can create interesting and distressing symptoms that might frighten the average tree owner. Here are just a few of the critters that bug our oaks and the symptoms they leave behind.

Oak lace bug

Lace bugs are true bugs, and they feed using their needle-like mouthpart to suck juices from the leaves of plants. One species, the oak lace bug, feeds specifically on oak leaves. Our colleagues with the Kentucky Division of Forestry have noted that in 2021, we have seen high numbers of these insects and noticeable damage to oaks across the state. Oak lace bugs are beautiful looking insects as adults, they resemble lace doilies that just happen to have six legs. As they feed, they cause stippling to the leaf. With enough feeding activity, the whole leaf may eventually become bronzed. They also have distinctive feces, their frass looks like black motor oil has been splattered on the leaf's surface.



Figure 1) Adult lace bugs have a distinctive doily-like appearance while immatures are dark in color with small spikes. Lace bugs create speckling as they feed and they also leave behind black, motor oil like, frass as seen in the upper right of the image.

Photo by Ansel Oommen, bugwood.org.

Oak shothole leafminer

Leafminers are usually small insects that as immatures, will live and feed between the top and bottom layers of a leaf. Oaks can host several species of leafminer but one is more noticeable than others, the oak shothole leafminer. These leaf mining flies, spend their maggot stage in leaves feeding, their activity creates a blotch mine that can be mistaken for anthracnose. The mines are most obvious in May. However, as adults, they create damage that can be seen throughout the season. The females of these small flies will stab at new leaves and then drink the sap that is produced by this damage. As the leaf grows, these punctures will also expand creating a Swiss cheese like appearance. This can be seen from summer to fall.



Figure 2) Oak shothole leafminer can create two kinds of distinct damage, one being a blotch like leaf mine produced by the larvae. The other is the almost symmetrical holes left behind by females. They pierce young buds and as the leaf expands, these holes expand and become apparent.

Photo by Steven Katovich, bugwood.org.

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Oak leaf skeletonizer

These small caterpillars can be hard to notice, but their damage is hard to miss. Reaching only about a quarter inch in length before they pupate, the caterpillar is also pale yellow-green. As they develop, they also produce silken pods that they will hide in as they molt. The caterpillars will feed on leaves until there is only the upper layer of leaf left. This makes paper thin, brown leaves or brown patches. There are two generations, one in April and May and one that develops between August and the end of September.



Figure 3) Oak leaf skeletonizers create thin, papery, oak leaves that are almost translucent. The immature form of this pest has fed on all layers of the leaf except for the top creating their distinctive symptoms.

Photo by Ryan Armbrust, Kansas Forest Service, bugwood.org

Oak bullet galls

Oaks can be home to many different species of galls, including apple galls, jumping galls, horned oak galls, and midrib galls. Most galls are mere curiosities, they tend to pose little to no hazard to a tree. Insects that live in galls have adapted to trick trees into providing them a free house that protects them and provides them food. This is done with secretions from the mother insect or from the saliva of immatures causing the plant to form a tumor like growth around them. The bullet gall is no different. The wasp that induces these galls have a complex life cycle, but in the fall many noticeable round to acorn shaped galls can be found on oak. Inside, an immature wasp is feeding and developing. As they feed, they excrete out honeydew, a sugary fecal material that other insects love to devour. Yellowjackets, paper wasps, bees, ants, and many other hungry insects will visit galls to drink up. These congregations of stinging insects are often what people notice before they find the galls.



Figure 4) Oak bullet galls are usually green, brown, and in some cases slightly red. They can be easy to miss as they appear outwardly like a natural part of the plant's anatomy. They do drip honeydew though, which recruits other insects to the tree.

Photo by Steven Katovich, Bugwood.org

Summer is wrapping up

Since we have reached the end of the growing season and most of these insects only cause minor or cosmetic damage, no insecticides need to be applied. Pruning out some of the most affected branches for bullet galls can reduce the population for next year. Fall sanitation can help reduce harborage for some of the others listed here.

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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