Kentucky Nursery LISTSERV Bulletin

University of Kentucky Nursery Crops Team

End of September 2015

Entering the Dormant Season

Most Integrated Pest Management (IPM) calendars for our region no longer have specific monthly recommendations after September and before March. This makes sense, as most insect pest and disease activity trends with the growing season. This does not mean the work necessary to manage pests and diseases is done, though. The dormant season is the best time to remove infected plants as well as prune out diseased branches and egg masses.

Winter Weather Pattern Outlook

The NOAA's National Weather Service predicts a 95% chance that El Niño will continue through the Northern Hemisphere. More info: http://www.weather.gov/media/dvn/ENSO-Midwest-September2015-FINAL.pdf

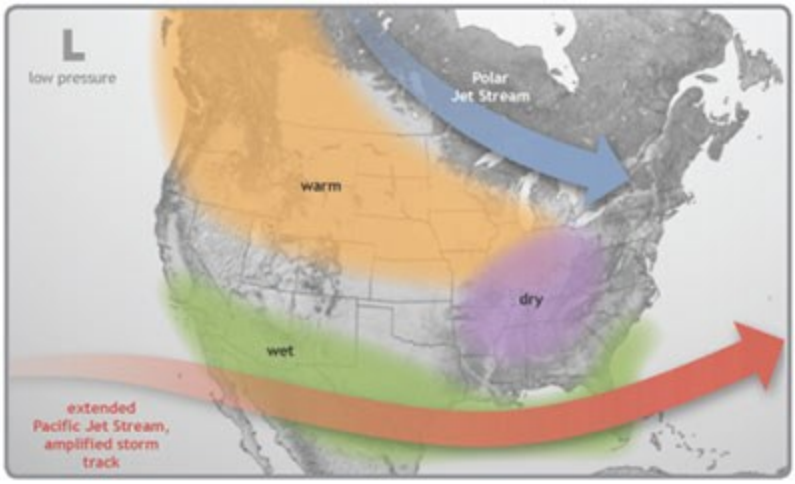

Image courtesy of the National Oceanic and Atmospheric Administration

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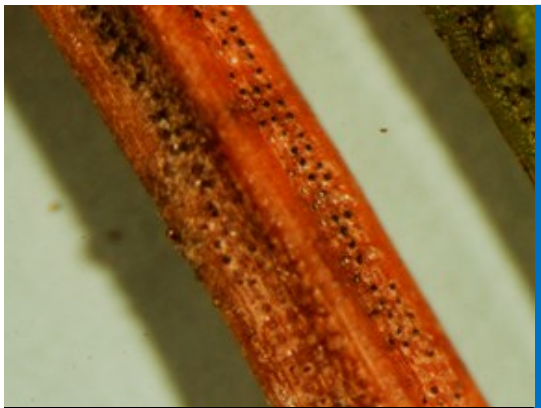

Rows of black Rhizosphaera fruiting bodies on a spruce needle—Image: Univ Wisconsin Extension

In This Issue

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Rhizosphaera Needle Cast May Lead to Skimpy Spruce

Kimberly Leonberger, Extension Associate
Nicole Ward Gauthier, Extension Plant Pathologist

Rhizosphaera needle cast is often to blame for brown or thin spruce in the landscape. In Kentucky, Rhizosphaera needle cast is the most common disease of spruce; it also affects some pine species. This disease causes needle drop on lower branches, resulting in a distinct thinned appearance. Management options include reduction of plant stress, good sanitation practices, and timely use of fungicides.

Figure 1 — Needles infected with *Rhizosphaera* turn purplish brown during summer

Photo: USDA Forest Service Archive

Rhizosphaera Needle Cast Facts:

- Becomes evident in summer when needles on lower branches turn purplish or brown (Figure 1).
- Needles fall within a few weeks and lower limbs are left bare (Figure 2).
- Small, dark fruiting bodies (called pycnidia) form in stomata (pores in needles) and can be used to confirm diagnoses (Figures 3 & 4). Pycnidia are most easily recognized with a hand lens, but are also visible with the naked eye.
- Caused by the fungus *Rhizosphaera kalkhoffii*.
- Spread by rain; moisture is needed for infection.
- If defoliation occurs over 3 to 4 consecutive years, branch death is likely.

Figure 2 — Needle drop and thinning of lower canopy are classic symptoms of *Rhizosphaera* needle cast in spruce

Photo: Minnesota Department of Natural Resources Archive

Management Options:

- Stressed trees are more susceptible to infection than healthy plants, so steps should be taken to maintain plant vigor.
- Properly space plants to improve air circulation, thereby encouraging rapid drying of needles.
- Practice good sanitation habits.
- Apply fungicides that contain chlorothalonil, copper, or mancozeb during needle emergence (mid-April). During rainy seasons or in plantings with a history of disease, fungicides may be applied two consecutive years during spring when fungi are most active.

Additional Information

Needle Cast Diseases of Conifers (ID-85)
http://www2.ca.uky.edu/agc/pubs/id/id85/id85.pdf
Homeowner's Guide to Fungicides (PPFS-GEN-07)
http://www2.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-GEN-07.pdf
Landscape Sanitation (PPFS-GEN-04)
http://www2.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-GEN-04.pdf

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Common Problems of White Pines in Kentucky

Julie Beale, Plant Disease Diagnostician
Nicole Ward Gauthier, Extension Plant Pathologist

Excerpted from full fact sheet here, including additional resources:
http://www2.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-OR-W-22.pdf

Introduction Eastern white pine (*Pinus strobus*) is a popular conifer in many Kentucky landscapes, although its use may be limited to loose, well-drained, pathogen-free soil. Often, needle browning is the primary symptom that alerts homeowners and nursery growers of health problems. In Kentucky, brown needles on white pine are often caused by one of the following three conditions: white pine decline, white pine root decline (Procerum root rot), or Phytophthora root rot. The following descriptions and comparison table (Table 1) may be helpful in determining reasons for tree failure.

TABLE 1. QUICK REFERENCE GUIDE OF COMMON WHITE PINE PROBLEMS IN KENTUCKY.

	White Pine Decline	White Pine Root Decline (Procerum root disease)	Phytophthora Root Rot
Age of trees typically affected	Established trees; 10 to 12 years old	Young to established trees; 3 to 15 years old	Young trees; 3 to 5 years old
Soil/site	Clay soil/high soil pH (above 6)	Variable	Wet/poor drainage
Early symptoms	Yellowing, stunting, wrinkled bark on branches	Thinning canopy; resin at base of trunk	Browning, rapid wilting, dieback
Rate of symptom development	Slow progression	Rapid decline (once symptoms become visible)	Rapid decline
Treatment	Prevention through site selection	Tree removal to protect roots of nearby trees	Prevention through site selection

FIGURE 1. WHITE PINE DECLINE SYMPTOMS INCLUDE SHRIVELING BARK (ARROW) AND BROWN NEEDLES.

Cankers caused by White Pine Root Decline begin at the tree base, progress upward, and usually "ooze" a sticky resin.

ROOT LOSS FROM PHYTOPHTHORA ROOT ROT CAN CAUSE DEATH OF ENTIRE PLANTS, ESPECIALLY IN YOUNG TREES.

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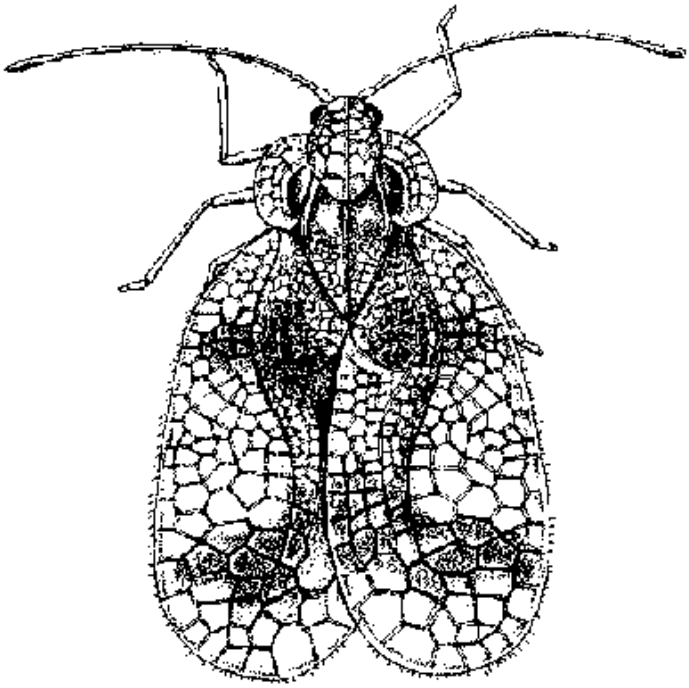
Lacebugs

Brian Skinnell, University of Kentucky Entomology
Lee Townsend, Extension Professor

Excerpted from full fact sheet here
http://www2.ca.uky.edu/entomology/entfacts/ef419.asp



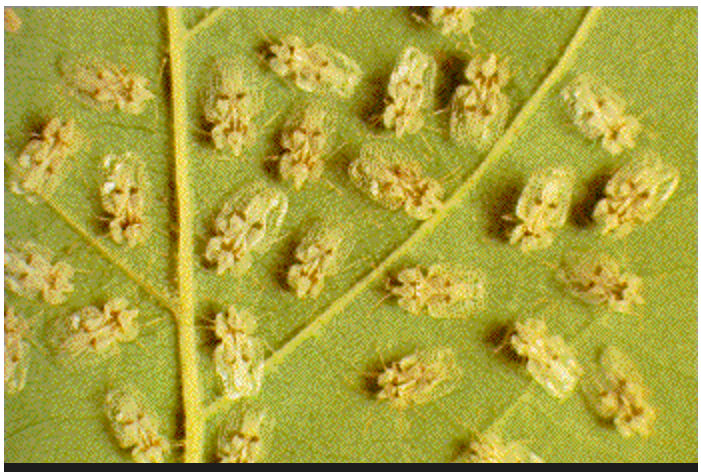
Adult lacebug — Image: University of Kentucky, Entomology

Adult lacebugs are 1/8" to 3/16" long insects with clear, ornate, lacy wings. Nymphs are spiny and wingless. Feeding results in spotted leaves and dark, varnish-like excrement on the under sides. With broadleaved evergreens it is doubly important to prevent damage because the foliage will retain the ugly injury and be less functional for more than one year.

With multi-generation species, numbers early in the season are so small that feeding symptoms may not be noticed. Populations peak in late summer and results of their feeding can make plants unsightly.

Azalea lacebugs are about 1/8" long with light brown bodies. They prefer evergreen varieties but attack deciduous varieties and mountain laurel. Sap removal by adults and nymphs causes a spotting visible on the upper leaves. In heavy infestations, leaves may be white an drop prematurely. Spots of their tarry excrement build up on the under sides of the leaves.

The lacy wings of the adults have dark brown to black markings, nymphs are black and spiny. Populations are greatest in mid- to late summer as the second generation bugs appear.



Sycamore lacebugs
Image: University of Kentucky, Entomology

Sycamore lacebugs (left) have the same general life cycle as the azalea lacebug. In addition to symptoms on the foliage, the insects may fall from the trees onto people below. Attempts by lacebugs to probe can result in a "bite" sensation which can be very annoying, especially when lacebug are at their peak. Some people may have a slight reaction to the bite but the insects are not a health threat.

Control
Repeated treatments may be needed to control these pests effectively. Insecticides such as Insecticidal Soap, Summer Horticultural Oils, Dursban, Malathion, Orthene, Sevin may be used depending on the species or cultivar. Always read product labels carefully before purchase. Look for information on phytotoxicity that can occur on sensitive plants or under some environmental conditions.

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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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