

THE PURDUE LANDSCAPE REPORT

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Peeling Sycamore Tree Bark is Normal

(Rosie Lerner, rosie@purdue.edu)

Q. We have a large sycamore tree in our yard. Every summer it sheds its bark over a few weeks' time. I think as it grows it is growing new bark and losing the old bark. Am I correct? – J.C., Walton, Ind.

A. You're on the right track. Peeling bark is normal, and is a key ornamental characteristic for a sycamore, also known as American planetree. The bark starts out a bit gray-brown and as the bark matures, the outer layer peels off in large sheets to reveal a lighter-colored, creamy, off-white inner layer. The result appears a bit like a camouflage pattern. No need to worry – the tree is not harmed by the peeling bark.



Sycamore bark peels off in sheets.



Sycamore trunk patchy bark resembles camouflage pattern.



Close up shows patchy bark pattern on sycamore trunk

Purdue University College of Agriculture Fall 2018 Career Fair

(Kyle Daniel, daniel38@purdue.edu)



Purdue University College of Agriculture hosts a career fair every fall and spring semester. Over 150 companies attend, providing recruiters with the opportunity to educate students about their organizations, advertise positions and/or interview students for permanent or internship positions.

During the fall, a Resume Blitz is held the day before the fair. The evening prior to the Fall Career Fair, we host an Employer Panel Discussion. This is an open dialogue with 100 students, lasting 60 minutes, followed by a networking session. If your company is interested in participating in either pre-fair event, please indicated your preference on the registration form for the fall fair only.

The College of Agriculture will host the Fall 2018 Career Fair on Tuesday, October 2, 2018, 9:30 am to 3:30 pm in West Lafayette.

For registering your company with the fair, or for more

information, please visit the website at:

https://ag.purdue.edu/oap/career/Pages/Employer_Career_Fair_Main.aspx

Registration ends at 5:00 pm on September 11th, or when booth spaces are filled. There are a select number of booths left, so hurry now to ensure your place in the career fair.

Opportunistic canker pathogens

(Janna Beckerman, janna@purdue.edu)



Figure 1. The branch stub serves as a wound that enables a pathogen, in this case, *Nectria* spp., to infect. Photo by Janna Beckerman.

Diseases that affect the twigs, branches, and the main trunk of a tree are referred to as cankers or blights. Cankers appear as a general sunken area of darkened tissue on the twigs or branches, often surrounding a branch stub (Fig. 1). Canker diseases can be a serious problem in the landscape when they are not properly managed, and even when they are. All woody plants can be infected by canker pathogens.

Many canker pathogens produce fruiting bodies, which contain sacs of spores (asci or conidia) that forcibly release the spores when the conditions are right. These pustules are easy to find on the surface of the canker (Figure 2). As the canker grows, the twig or branch may become girdled, causing the wilting and death of the leaves past the point of infection on the tree. On stone fruit, this can cause gummosis, too (Fig. 3).



Figure 2. The erumpent pimples on the surface are where the perithecia are breaking through. Photo by Janna Beckerman.



Figure 3. Opportunistic canker pathogens on flowering cherry or flowering plum are often associated with gummosis. Photo by Janna Beckerman.

What causes cankers? Many different fungi (and a few bacteria!) cause cankers. Some of the major players we'll discuss are: *Nectria* twig blight (pathogen: *Nectria cinnabarina*), *Nectria* canker (*Nectria galligena*), anthracnose canker (many species of *Gnomonia*), Phomopsis canker (*Diaporthe perniciosus* and others), and nailhead canker (*Biscogniauxia marginata*). *Cytospora* canker, caused by many different species asexual forms of *Valsa* or *Leucostoma*, are also common opportunistic pathogens. All of these can be a problem for Indiana arborists.

Some bacteria cause cankers, too. Fire blight is the most important and common of these, and infects crabapples, flowering pear, hawthorn, mountain-ash and many other members of the Rose family. There are also other bacterial diseases, such as bacterial canker of flowering cherry and bacterial blight, which infects a very broad range of landscape plants.

Symptoms and Signs



Figure 4. The coral fungus, *Nectria* spp., gets its name from the pink fruiting bodies that break through the bark. Photo by Janna Beckerman.

Nectria twig blight is often mistaken for fire blight because of the wilting that occurs due to the girdling of the twig by small cankers. However, unlike fire blight, there is no blighting of the blossoms, and the shoots do not die from the tip. Bright pink cushions and fungi called sporodochia can be found in the dead tissue of the canker (Fig. 4). This disease appears on trees that appear to be otherwise healthy. *Nectria* canker is usually first found at the node, and appears as a darkened elliptical, sunken area. Bright red to orange perithecia are often observed on the canker in the winter. *Nectria* pathogens are commonly infecting beech, mountain-ash, crabapple and honeylocust.

Anthracnose canker first appears as small, circular red or purple spots when moist. As the canker enlarges, the spots become elliptical, sunken orange to brown areas. Cracks will eventually

develop between the healthy and infected tissue (Fig. 5), and cream-colored acervuli, or fungus cushions, will appear. There are many different species of anthracnose and hosts, but some common canker pathogens infect sycamores, crabapples and dogwoods.



Figure 5. Anthracnose of sycamore. The split to the left of the infected leaf is most likely the beginnings of a canker. Photo by Janna Beckerman.



Figure 6. Phomopsis canker on juniper causing flagging and dieback. Photo by Janna Beckerman

Phomopsis canker and Monochaetia twig canker are generally secondary and only infect dead or dying tissue. This often happens after herbicide injury or winter injury, however, we have been seeing an uptick in Phomopsis of spruce (Fig. 6). If you think about it, anything with a species epithet of '*perniciosa*' is probably bad news that will not be easily managed. This problem is no different.

Nailhead canker, also called blister canker, tends to flare up after drought years. This opportunistic pathogen attacks stressed crabapples, serviceberries, hawthorns and pears, causing dieback or even death (Fig. 7a and b). The 'nailheads' are composed of perithecia, each filled with sac of ascospores (Fig. 8).



Figure 7a. Nailhead canker on serviceberry causing significant dieback



Figure 7b. Closeup of the 'nailhead' canker. Photos by Janna Beckerman

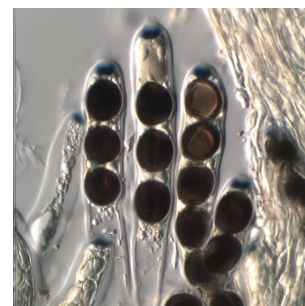


Figure 8. Asci and ascospores of the nailhead pathogen. Photo by Paul Cannon.

Disease Cycle

Canker diseases generally survive the winter in the canker tissue as mycelium and/or conidia. The pathogens spread by conidia and/or ascospores that are dispersed by either wind or water. Most canker-causing fungi infect through a wound such as a pruning cut, a leaf scar, herbicide drift injury, or other damaged tissue. The one exception is the anthracnose pathogen which penetrates through the bark directly. Moist weather tends to favor disease development, and disease development can occur at a wide range of temperatures. New cankers tend to form in either the fall or spring, and this is also when most canker diseases are actively producing inoculum.

Management

Although there are many different pathogens that cause canker, management strategies are quite similar for all of them. The most effective tool in managing canker diseases is the removal of cankered tissue from the landscape. Infected branches should be pruned and then removed from the landscape/nursery or burned. Be sure to prune back at least 15" to remove the fungus completely. By removing infected plant material, the inoculum level is reduced, and the chances for new infection to occur are also reduced. As the pathogens that cause these diseases generally enter through a wound, care should be taken in pruning, and mechanical damage from machinery should be minimized. You can't treat trees with a fungicide after infection. The best you can do is prevent infection from occurring by irrigating during drought periods, careful use of all herbicides, proper fertilization (not after July 1 to allow trees to harden off before winter), and proper pruning to minimize branch stubs. Most fungicides used to control other diseases (chlorothalonil and the 7-11 fungicides like Pageant, Orkestra, or Broadform) are effective in preventing these diseases, particularly after a wind or hail event. However,

fungicide use should be reserved for blocks with a history of problems with the diseases, and even then, underlying problems need to be corrected.

Mighty Small Spider Mites Wreak Havoc This Summer.

(Cliff Sadof, csadof@purdue.edu)

What are spider mites? Spider mites are small 8 legged creatures that are more closely related to common house spiders than insects. They injure plants by puncturing the surface of plant tissue and lapping up the fluid that comes bubbling out. Although they are individually difficult to see with the naked eye, they make up for their small size by their ability to rapidly increase their numbers. Heavy feeding by large numbers of mites can discolor plant leaves and cause them to drop prematurely. Some species even cover plants with a fine webbing. Most common trees, shrubs and flowers are susceptible to injury by one or more species of spider mites. Two spotted spider mites feed on a wide variety of plants. Their capacity to injure plants is representative of other species.



Figure 1. Reduce pesticide use to encourage predators like this lacewing larva to eat your spider mites (Photo by L. Buss, U. Fla)

Why are spider mites a problem now at this time of year?

Most species of spider mites, like the heat. Indeed the egg of a two spotted spider mite can produce another egg laying female is a little at 5-7 days when temperatures are above 80° F and humidity is low (< 40%). With each female producing up to 100 eggs, warm and dry conditions can set the stage for a population explosion in the heat of summer. Spruce trees, and rhododendrons and some other broad leaf evergreens lack spider mite problems this time of year because the spider mites that attack them thrive in cooler temperature.

Both warm and cool season spider mites do best in the absence of rain when humidity is low because rainfall can knock some mites off of plants, and many species of mites are attacked by fungi during periods of high humidity.

Use of some insecticides, like neonicotinoids, carbaryl and pyrethroids against some early season pests, like Japanese beetles and defoliating caterpillars and aphids can kill the predatory mites and other insects that also work to keep spider mites under control. This year's outbreaks of gypsy moth, Japanese beetles and bagworm was likely to prompt enough insecticide sprays to wipe out predators and set the stage for late season mite problems.

Inspect your plants for spider mites. Look for plants that begin to fade in color and appear as if covered in dust or appear bronze or covered in webs.



Figure 2. Serviceberry leaves attacked by European red mite appear bronzed (left), and are covered with egg shells, and old spider mite skins (right).

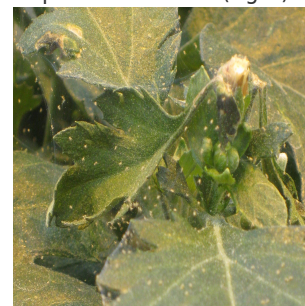


Figure 3. Chrysanthemum covered with fine webs and small spider mites (Photo by R. Lopez, Mich. State).



Figure 4. Professionals or garden enthusiasts could tap a dry branch over a white sheet of paper to look for mites. You will probably need a magnifying lens to see the mites.

How to control spider mites

If you just have one or two affected plants or small parts of a plant affected, consider pruning or removing the infested part and spraying the remaining plant parts with a strong shower of water from your garden hose. This will knock off some mites, and if you do it repeatedly over a week or two, it could encourage the growth of a fungus that kills spider mites. But, be careful. Having water on the leaves for a long period of time is not a good idea for those plants that are prone to leaf diseases.

Apply a solution of 2% insecticidal soap, horticultural oil, or neem oil to kill spider mites if hosing down your leaves is not an option for your plants.

If your plant is dripping with mites and webs and all else has failed, you can use a miticide. Homeowner products with the

active ingredient bifenthrin can kill spider mites and hold them back for as long as a month before the spider mite population

comes back. Professionals have a wider choice of products to choose from. For more information on specifics see our bulletin on [managing spider mites in the urban landscape](#).

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