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THE PURDUE LANDSCAPE REPORT

In This Issue

Oh What a Tangled Web They Weave!

(Cliff Sadof, csadof@purdue.edu)

Figure 1. White webs of fall webworm are a common site along roadsides and forest edges.

Just after the browned leaves on branches of trees attacked by periodical cicadas began to disappear from view, webworms and their associated browning started to spread through the landscape. Two of the more common webworms I have been seeing are the mimosa and the fall webworm. While neither of them can outright kill trees, they are unsightly, especially at the end of the summer when substantial portions of the tree are disfigured. Treatment late in the summer does little to reduce injury, because it can be difficult to penetrate the webs with insecticides, and because most of the damage has already been done. The best course of action is to plan on managing these insects next year, when they are more easily controlled with insecticides.

Fall webworm attacks a wide range of deciduous trees including flowering fruit trees, black walnuts, elm, hickory and bald cypress. They are most common in suburban areas, roadsides and forest edges that lack the predators and parasites the webworms encounter in the forest. In June adults emerge from wintering sites to lay eggs in the canopy. Eggs hatch into caterpillars that encase branches in webs as they feed. By the end of the second generation in late August webs can cover substantial portions of trees. Caterpillars are yellowish-green with black spots and long white hairs, and grow up to 1.5″. Caterpillar feces falling from trees can be a problem during heavy infestations.

Figure 2. Fall webworms and fecal pellets feeding in web.

Figure 3. Brown webbing caused by the mimosa webworm is extensive on honeylocust plantings throughout the state.

Figure 4. Late stage mimosa webworm caterpillar, webs and fecal pellets.

Unlike fall webworm, the mimosa webworm only attacks honeylocust and mimosa trees. Leaves on ends of branches become webbed together and turn brown as lime-green caterpillars skeletonize leaf tissue. Heavily infested trees appear frosted brown. In early June, adults emerge and lay eggs on trees. First webs can be seen on ends of branches in mid-June when oak leaf hydrangea and tree lilac are in bloom. The second generation of adults fly and lay eggs starting in late July. A third generation occurs in the fall. The dangling caterpillars can be a nuisance under heavily infested trees. We are seeing an uptick in the abundance of this pest because the last two winters have not been cold enough to kill them.

Control of webworm caterpillars is best achieved if actions are taken before the trees become covered with webs. By identify trees that are heavily infested this year, you can target your efforts next spring before webbing becomes extensive. Small webs can be simply pulled off and destroyed if easy to reach, and only a small proportion of the tree is affected. Pesticides should be used when there are too many webs to make their removal practical. When foliar sprays are feasible, due to small tree size or cooperative neighbors, you can kill caterpillars biorational pesticides (spinosad, Bacillus thuringensis, or chlorantraniliprole). When sprays are not feasible, a systemic insecticide, such as acephate, dinotefuran or an injection of emamectin benzoate can be applied by a professional to control the problem.

Use the Purdue Tree Doctor app to get a diagnosis and a recommendation for webworms and other pests.

Half the Battle

(John Bonkowski, jbonkows@purdue.edu)

Figure 1. : Galls on juniper branches (sporulating galls with orange telial horns and older galls without horns) caused by the cedar apple rust pathogen, Gymnosporanium juniperi-virginianae.

Photo Credit: PPDL

How are your plant identification skills? Personally, without a reference, I tend to have difficulty identifying some of the less commonly used trees in the landscape. However, being a disease diagnostician/plant pathologist I do have a fallback strategy – the diseases. One of the key points here is some symptoms are so characteristic of, or some diseases are specific to, a small group of hosts that finding them can get you into the plant ID ballpark.

If you are looking at a cedar apple gall on an evergreen, you can deduce that it isn't a pine or spruce, but a juniper and there is likely an apple tree not terribly far. If you are seeing large black, hard gall like structures on a tree, you are probably looking at a cherry or other *Prunus* spp. (Figure 2). If you aren't sure if a tree is chestnut, horsechestnut, or hickory, but you are seeing severe Guignardia blotch, then you have been able to narrow it down to *Aesculus* sp. (Figure 3)!

Figure 2. Black fungal galls on cherry associated with the disease black knot caused by Apiosporina morbosa. Photo Credit: John Woodmansee, Purdue Extension Educator, Whitley County

Figure 3. Guignardia blotch symptoms on horsechestnut with typical, irregular blotches on affected leaves. Photo Credit: PPDL

Now this is typically a backwards situation for most of us working in the plant trade, but it illustrates an important point for diagnostics: **knowing the plant host is half the battle.**

In knowing the host, you know many pieces of information:

- How to identify it
- How it grows
- **What is normal and healthy for that species**
- Site conditions it prefers (pH, drainage, fertility, etc.)
- Winter hardiness for your area
- Cultural practices it can tolerate (shearing, dense planting,

constructive pruning, etc.)

- **Potential disease and insect pests**

Being able to narrow the list of common problems to a handful is very important, especially when trying to diagnose a problem on-site, based on symptoms.

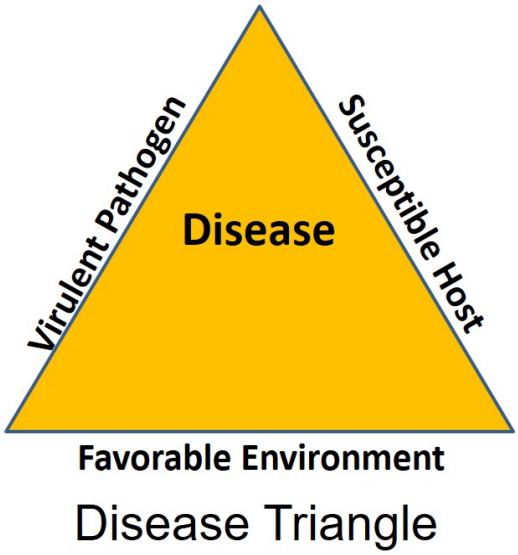

Figure 4. The disease triangle with the three required factors: a virulent pathogen, susceptible host, and favorable environment
Photo Credit: PPDL

The majority of diseases occur due to fulfilling the disease triangle – having three things (Figure 4):

1. A susceptible host
2. Conducive environmental conditions
3. A virulent pathogen

While if you remove one of these sides of the triangle plant disease will not occur, it is important to realize that plant stress can drive or increase disease severity. Knowing how to make a particular plant happy, or at least avoiding major sources of stress, can help mitigate potential damage due to disease. Although, we are not experiencing drought conditions by meteorological data, we have shifted from the deluge to dryer weather. Drought stress, either caused by a true lack of water, or due to being planted at higher elevations (berms and slopes), is a common factor that leads to more severe symptoms in plants with cankers, fungal diebacks, and vascular diseases.

I am a plant pathologist and get excited when I see plant diseases. I don't always identify plants "in the wild." But when I do, it's by their diseases. Stay hydrated my friends.

Purdue Landscape and Arboriculture Diagnostic Tour-LAST CHANCE TO REGISTER

(Kyle Daniel, daniel38@purdue.edu)

THREE DAYS REMAINING TO REGISTER!

Join Purdue Extension Specialists and Diagnosticians on August 18, 2021 in downtown Indianapolis for a walking tour of diagnosing plant problems. In addition to the Purdue Plant and Pest Diagnostic Lab diagnosticians, the entomology, urban forestry, and nursery and landscape specialists will guide attendees through the diagnostic process and provide solutions to problems encountered on the tour.

There will be a morning and afternoon tour to allow for smaller groups.

Credits for categories 2, 3a, and RT are available from the Office of the Indiana State Chemist and International Society of Arboriculture.

Register online: https://www.eventbrite.com/e/landscape-and-arboriculture-diagnostic-tour-tickets-160553211979

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If you have questions, email Kyle Daniel at daniel38@purdue.edu

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