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Aphids

High populations of aphids have been reported in northeastern Illinois. With warmer, drier weather in the forecast, other areas of the state may see high populations as well in the next couple weeks.

Aphids are small, soft-bodied, pear-shaped, sucking insects. Although many species are green, there are aphid species in many other colors as well. Most species range from pinhead-sized to one-eighth inch in length, although giant bark aphids are about one-quarter inch long. Aphids feed by tapping phloem vessels, removing large quantities of sap. Aphids tend to feed on branch tips and younger leaves. This sap removal can cause curled and distorted leaves and shoots. Although some aphids are important vectors of plant diseases, that is not a major concern in landscapes.

All animals need nitrogen, but plant sap contains very small amounts. Aphids and other piercing-sucking phloem feeding insects have developed the ability to preferentially remove most of the nitrogen, some of the water, and a little of the sugars and other carbohydrates from the plant sap. The bulk of the sap contents bypass most of the digestive tract and is expelled in large quantities from the anus. This sap

emerges as a concentrated sap or light syrupy liquid called honeydew.

Honeydew drips from infested trees and shrubs, making the leaves shiny and sticky as well as surfaces below the plants such as sidewalks, outdoor furniture, and cars. Over the years, I have had several calls from people who wanted to know why it was raining under the tree, but not outside of it. These were trees with heavy aphid or soft scale infestations, and the “rain” was honeydew. Not only is the honeydew glossy and sticky, but a black sooty mold will grow on it, turning leaves, stems, sidewalks, and other items black. There is some evidence that black sooty mold can reduce photosynthesis by not allowing sufficient light penetration to the leaf.

Aphid populations build quickly due to a high rate of reproduction. Most aphids hatch from overwintering eggs on a winter host. Those that hatch are all females which are able to give birth to living daughters without mating within a few days. After one to three generations on the winter host, they fly to their summer host to feed and give birth to all females for the summer. About 30 generations are common on summer hosts, allowing for extremely high populations to build up. As fall approaches, the longer nights cause these female populations to give birth

to both daughters and sons. These resulting females are unable to reproduce without mating. Adults of this generation fly to the winter host, males mate with females, and the females lay overwintering eggs.

There are many species of aphids, essentially one for each plant species. As a result, aphid infestations usually do not spread in a landscape to unrelated plants. However, if conditions are conducive to aphid infestations, other aphid species may be numerous on unrelated plants at the same time. There are also several species of aphid that feed on several related hosts. In landscapes, the spirea aphid is a light green aphid that feeds on numerous rose family and other hosts, so the same aphid may be found on spirea, rose, crabapple, hawthorn, and other plants. The melon aphid is a dark green aphid that feeds on a wide variety of herbaceous and woody hosts including chrysanthemum, aster, begonia, hibiscus, hydrangea, holly, lily, rose, sunflower, and verbena.

Natural enemies usually provide a high level of aphid control. In the last 15 years or so, the multicolored Asian lady beetle has apparently kept most tree and shrub aphids in check. This lady beetle, that enters houses in large numbers in the fall, was imported to control pecan aphids and scale in the southeastern U.S. and then spread throughout the eastern U.S. Other lady beetles feed on aphids as well as lacewing larvae, syrphid fly larvae, and parasitic wasps. Aphids attacked by parasitic wasps become round and brownish. Always check for natural enemies before using an insecticide,

because natural enemies typically will almost eliminate an aphid infestation within a couple of weeks.

Aphids are easily controlled with forceful streams of water, insecticidal soap, summer spray oil, and various labeled pyrethroid insecticides. Insecticidal soap not only kills the aphids on contact, but it helps wash off honeydew and sooty mold, and allow more natural enemies to survive. The remaining natural enemies will usually control any aphids remaining if insecticidal soap is used. Systemic insecticides such as imidacloprid (Merit, Xytect, Imicide, Pointer) and acephate (Orthene, Lepitech) are also effective, but they will usually take a few days to move through the plant and provide control if applied by injection or soil drench. --*Phil Nixon and Jim Fizzell*

Spider Webs

The high winds in the last couple of weeks have resulting in masses of webbing on turf and trees. When spiders hatch, each disperses by spinning out a long strand of silk, which catches in the wind and allows them to float for long distances to new locations. This is how spiders disperse and is called ballooning. If a common spider species with many individuals are ballooning on windy days, frequently these webs blow into each other and merge into large masses. This commonly occurs in the fall because the eggs of many spider species hatch in the fall and disperse at the same time.

Although many species of spiders hatch in the spring and balloon at that

time, it is unusual to see this at this time of year.

The webbing disperses over a few days, excess spiders will eat each other, and the phenomenon will pass. Webbing can be washed off of trees and shrubs or into turf with forceful streams of water. There are no pesticides that are very effective against spiders, although pyrethroids, such as cythruthrin (Tempo) would have some contact toxicity.--*Phil Nixon*

Plant Bugs

Fourlined plant bug is a pest on mint, lavender, sage, artemisia, sunflower, and other herbs. It is particularly a problem on mint, being its most severe pest. Damage appears as contorted leaves with brown to black spots.

Frequently, the spots are numerous enough to coalesce into large areas that may consume half or more of the leaf.

Close observation in spring reveals the red nymphs hiding in the leaf axils. At this time they are about one-eighth inch long, but will continue to feed and grow to about one-quarter inch long. They will then molt into the one-quarter inch long adults that are greenish-yellow with four black stripes running the length of the body. The adults are very active runners and fly readily when disturbed. The adults are obvious on the plants because they do not hide. By the end of June, they will have mated and inserted their eggs into plant stems where they will remain until hatching next spring. Because the eggs overwinter in the stems, removing plant debris in early spring should reduce their numbers.--*Phil Nixon*

Rose Downy Mildew

We have had a few reports of downy mildew on rose. I doubt home growers will see this problem, but it is something to watch for this spring. It is far more likely that rose downy mildew will appear in the nursery or in garden centers where roses are kept in high humidity environments or where they are watered via overhead irrigation. The effects are quite devastating, causing major leaf drop on entire rose plants.

Rose downy mildew is caused by *Peronospora sparsa*, a fungal-like oomycete. The pathogen thrives in cool conditions (60-70 degrees F) where the humidity is above 85%. Recent cool weather has been ideal for this pathogen.

Downy mildews can affect other ornamental hosts such as aster, coreopsis, geranium, potentilla, snapdragon, salvia, pansy, veronica and viola. The symptoms on rose, however, are more severe. Rose leaves may exhibit yellow angular blotches on the upper surface. These lesions become purplish to brown and are often accompanied by yellowing of surrounding tissues as seen in the attached image. Severe defoliation follows.

We can confirm the disease in the lab fairly quickly. The downy mildew fungus forms a downy mass of spores on the underside of leaf lesions. This downy growth is difficult to see without a hand lens or microscope, but is visible on the underside of each lesion. In many cases the downy mass of spores is visible when the sample

arrives. If not, we place leaves in humidity chambers over night for easy viewing of spores the next day. An image of diagnostic conidiophores and spores viewed with a compound microscope follows.

Peronospora sparsa affects the newest growth first and spores are easily spread by wind. Since the pathogen can become systemic and will be carried in cuttings taken from infected stock, it is imperative that the disease is controlled in production areas.

There are many options listed in the *2010 Illinois Commercial Landscape and Turfgrass Pest Management Handbook* as well as the *Home, Yard, and Garden Pest Guide*. These products are listed as preventives and work best before the disease is established. Look at the table at the end of the chapter to see a listing of fungicides, active ingredients, mobility, and company selling the product. Be sure to get thorough coverage of the foliage, especially the underside of leaves. Since the fungus will survive on infected plant parts, remove infected tissue from the site. Place tissue directly into a plastic bag and seal it before moving through the garden.

If you are confused with the difference between downy mildew and powdery mildew, consult the University of Illinois fact sheet on rose powdery mildew at <http://www.aces.uiuc.edu/~vista/abstracts/a611.html>. That fungal disease is far less destructive. The downy mildew of snapdragon fact sheet is at <http://www.aces.uiuc.edu/~vista/abstracts/a657.html>.--Nancy Pataky

Ivy Leaf Spots

There are commonly two types of leaf diseases on English ivy used as ground covers in landscape beds. We see them both fairly frequently in Illinois. The first is caused by one or more fungi and the other is caused by a bacterium.

The fungal leaf spot has been present through winter and spring. New foliage is not yet infected, so you can take measures to protect it where visual impact is important. The fungal leaf spot is generally brown in the center with a dark border. Sometimes concentric rings give the spots a target appearance. Spots are scattered over the leaves.

Several fungi may be involved, with *Colletotrichum* being the most common in Illinois. Fungi form fruiting bodies in the lesions, as seen in the first image. These are more readily seen after rain. They will also appear after incubation over night.

Bacterial leaf spot does not produce fruiting bodies. Circular, dark green, and water-soaked (oily looking) areas on ivy leaves are typical of bacterial infection. Spots may enlarge and have a red/brown to black center with a water-soaked margin. Sometimes a yellow halo appears around the lesion. Stems may be infected as well. The second image shows the bacterial disease on ivy.

Look at fresh tissue you to distinguish these diseases and to choose the proper control. Now is the time to spray to protect new growth from infection. Chemical options are provided in the

2010 Illinois Commercial Landscape and Turfgrass Pest Management Handbook as well as the *Home, Yard, and Garden Pest Guide*. Both pathogen groups are spread in splashing water. To avoid spreading the pathogen within the ivy planting, do not work with wet plants.

For more information about these diseases, refer to Report on Plant Disease (RPD), no. 652, *Leaf Spot Diseases of English Ivy*, available at http://web.aces.uiuc.edu/vista/pdf_public/652.pdf. --Nancy Pataky

Know Your Invasives: Learn to Identify Locally Invasive Plants

During a time of year when gardens are being planted, crops are being cultivated, and yards are being adorned with flowers, it is ever so important to be able to recognize what plants are invasive.

What are invasive plants?

Invasive plants are nonnative species that colonize a new area (intentionally or unintentionally) whose introduction does or is likely to cause economic or environmental harm or harm to human health. These plants are able to gain an ecological edge in these environments since the insects, diseases, and foraging animals that would have normally kept it in check in its native range, are not present in its new habitat.

Why are they important?

Sometimes exotic plants from other parts of the world can be welcomed, manageable additions to our gardens, but that is not always the case. Invasives can disrupt habitats. Some do so aggressively and can quickly

overtake large areas, replacing native species. Other may only colonize a small area, but take years to eradicate.

How you can help.

- Verify the plants you are buying for your yard or garden are not invasive.
- Replace invasive plants in your garden with non-invasive alternatives (More information can be found at Landscape Alternatives for Invasive Plants of the Midwest-<http://mipn.org/MIPN%20redraft2.pdf> and Invasive Plants of the Chicago Region with Planting Alternatives - <http://www.chicagobotanic.org/research/conservation/invasive/chicago/>).
- Volunteer at your local park, refuge, or wildlife area to help remove invasive species.
- Help educate others about the threat of invasive species.
- Visit the Illinois Invasive Species Awareness Month web page to learn more about what you can do (<http://www.invasive.org/illinois/WhatYouCanDo.html>)

Species of Concern in Illinois

In each future newsletter we will be highlighting an invasive plant that is a threat to Illinois. A four poster series published by the University of Illinois/Illinois Natural History Survey, USDA, Illinois Department of Agriculture, and the River to River Cooperative Weed Management Area highlights invasive plants that are a threat to Illinois' grassland, woodland, agriculture and aquatic areas. Pdf versions of these posters can be found here:

<http://www.inhs.uiuc.edu/research/CAPS/outreach.html>. --Kelly Estes

On the Watch for Invasives

In today's era of globalization, the risk of invasive plant pest introductions is increasing. While a central geographic location and a superior transportation system afford Illinois a competitive advantage over many other states, these same factors make Illinois extremely vulnerable to accidentally or purposely introduced exotic pests. The U.S. imports nearly \$400 billion in goods from the Pacific Rim; more than \$125 billion from China alone. The busiest corridor in the U.S. for transporting intermodal containers by rail runs from Long Beach, CA to Chicago, Illinois, and Chicago in particular is home to the largest rail gateway in the nation, connecting eastern and western United States and Canada. An excellent highway system of 2,000 miles and 34,500 miles of other state highways make trucking of goods fast and efficient. More than 65 million travelers pass through Chicago's O'Hare International Airport annually. Illinois' 1,118 miles of navigable waterways, including the Illinois and Mississippi Rivers, make barge traffic an excellent option for shipment of grain to the Gulf of Mexico and shipment of imported steel and machinery upriver. However, any activity that allows the rapid movement of commodities also allows

the development of fast moving pest pathways.

These fast moving pathways not only cut through Illinois' commodity regions, but its natural areas as well. Illinois woodlands, wetlands, and prairies may also be affected by the potential invasion of exotic pests. Many of the invasive threats have a large host range. Not only will a potential invasive pest affect the Illinois economy, but it may also affect the beauty of our landscape, the diversity of our environment, and lead to the destruction of natural habitats.

The primary goal of the Illinois Cooperative Agriculture Pest Survey program is to conduct surveys aimed at the early detection of invasive pests. While formal surveys are conducted each year, increasing the number of eyes and ears on the ground increases also our chances at finding that "needle in a haystack". In addition to weekly articles on invasive plants, we will be sharing information on other potential invasive threats we face here. To start learning more about these pests, please visit our Most "Unwanted" Invasive Species in Illinois.

<http://www.inhs.uiuc.edu/research/CA/PS/docs/2010%20most%20unwanted.pdf> --*Kelly Estes*