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Potato Leafhopper

Potato leafhoppers are actively feeding with damage being obvious on red maple. These leafhoppers attack oak, maple, red mulberry, red bud, cottonwood, birch, apple, dogwood, hawthorn, wafer ash, euonymus, black locust, and cherry.

Red maple is most severely damaged. The expanding leaves at branch tips are curled and stunted, and they are mottled with light green, red, and brown. Leaf edges and entire leaves may turn brown or black. Stem growth is greatly reduced. Annual growth can be reduced from a couple of feet to a couple of inches. Thus, this can be a serious nursery pest.

Overall, the damage looks similar to 2,4-D injury. Damage is heaviest at the top of the tree. On other host species, leaves may be misshapen, have brown areas, show early fall color, or have stippling (light dots).

Damage to winged euonymus (burning bush) appears as reddish areas on leaves in the summer well before it would occur as fall color.

Potato leafhopper adults are wedge-shaped, green, and about 1/8 inch long. They fly readily from foliage when approached and are very migratory, making it difficult to find the insects on damaged foliage. They are strongly attracted to lights at night and are small enough to go

through the mesh of window screening. You'll probably recognize these pests as the little green bugs that fly around the newspaper or book you are trying to read during summer evenings indoors.

As nymphs, potato leafhoppers are similar in appearance to adults but are smaller and cannot fly. Even so, nymphs are quite active and will walk sideways to the other side of the leaf when it is inspected, making them difficult to see. Frequently, the only insect parts that can be found are the transparent, cast skins left behind by the molted nymphs.

Treatment at this time is effective in preventing additional damage through the growing season. Acetamiprid (TriStar), carbaryl (Sevin), clothianidin (Arena), thiamethoxam (Meridian), and labeled pyrethroids are effective. Retreatment every two weeks (carbaryl) or month (pyrethroids) may be needed as long as new leaves are being produced. (*Phil Nixon*)

Regulated Weeds

The State of Illinois has two "legal" lists of problematic plants that require attention – Noxious Weeds and Exotic Plants.

Noxious Weeds

The Illinois Noxious Weed Law, set into Illinois Administrative Code, lists 10

weeds that must be controlled on property owned or managed. These weeds have detrimental effects on public health, agricultural crop production, or animal production. This law is under the direction of the Director of the IL Department of Agriculture. Most counties in Illinois have a designated Weed Commissioner for local control authority.

Weeds on this list include Common Ragweed (*Ambrosia artemisiifolia*), Giant Ragweed (*Ambrosia trifida*), Marijuana (*Cannabis sativa*), Musk Thistle (*Carduus nutans*), Canada Thistle (*Cirsium arvense*), Kudzu (*Pueraria montana*, *P. lobata*), Perennial Sowthistle (*Sonchus arvensis*), and various sorghums including Johnsongrass (*Sorghum halepense*) and Columbus grass (*Sorghum almum*).

The two ragweeds need only be controlled within the corporate limits of cities, towns and municipalities. All other weeds on the list must be controlled anywhere in Illinois.

Noxious weeds must be controlled so they don't produce seeds or any other means for propagating, or totally eradicated using legal means.

It should be noted these are outdoor-grown weeds. That's important now with one of the weeds.

More information on the IL Noxious Weed Law can be found at:
<http://www.agr.state.il.us/Laws/Regs/8iac220.pdf>

Exotic Weed Act

The Illinois Exotic Weed Act, also set into Illinois Administrative Code, is man-

aged by the IL Department of Natural Resources. These non-native plants, when planted, will spread by seeds or vegetative propagules (rhizomes, bulbs, tubers, corms, etc.) and naturalize, degrading natural communities, reduce the value of fish or wildlife habitat, or threaten an Illinois endangered or threatened species.

For most of these plants, it's the seeds that have caused these plants to spread, particularly in forested and wooded areas.

This law doesn't require the owner or manager of property to remove these plants like the IL Noxious Weeds. However, do everything to prevent them from spreading, including removing flowers before they set seed. The Act does state you cannot sell or plant these without permission from IDNR.

The following species are on the list. Additionally, and this is crucial, all their cultivars are included, no matter who or what says the cultivars are sterile. Any cultivar of these plants **CANNOT** be legally sold or planted in Illinois without a permit from IDNR. This includes all the so-called sterile purple loosestrife cultivars as well as the Fine-Line® buckthorns.

Included plants include Japanese honeysuckle (*Lonicera japonica*), multiflora rose (*Rosa multiflora*), purple loosestrife (*Lythrum salicaria*), common buckthorn (*Rhamnus cathartica*), glossy buckthorn (*Rhamnus frangula*), saw-toothed buckthorn (*Rhamnus arguta*), dahurian buckthorn (*Rhamnus davurica*), Japanese buckthorn (*Rhamnus japonica*), Chinese buckthorn (*Rhamnus utilis*), and kudzu (*Pueraria lobata*). Kudzu is the only plant on both lists.

At the moment, IL Senate Bill 681 seeks to amend the Exotic Weed act, adding bush honeysuckles (*Lonicera maackii*, *Lonicera tatarica*, *Lonicera Morrowii*, and *Lonicera fragrantissima*), exotic olives (*Elaeagnus umbellata*, *Elaeagnus pungens*, *Elaeagnus angustifolia*), salt cedar (all members of the *Tamarix* genus), poison hemlock (*Conium maculatum*), giant hogweed (*Heracleum mantegazzianum*), Oriental bittersweet (*Celastrus orbiculatus*), and lesser celandine (*Ficaria verna*), teasel (all members of the *Dipsacus* genus), and Japanese, giant, and Bohemian knotweed (*Fallopia japonica*, syn. *Polygonum cuspidatum*; *Fallopia sachalinensis*; and *Fallopia x bohemica*, resp.) as designated exotic weeds.

Interestingly, some of the above are obvious weeds (poison hemlock, giant hogweed, teasels) but are sold for various unsubstantiated herbal or medicinal uses on the Internet.

It should be stressed that these plants are NOT currently illegal to plant or sell in Illinois. Ultimately, it depends on what the Illinois legislature and governor does in the next month. On the other hand, we know the proposed plants are terribly invasive; a wise gardener/landscaper would remove these plants from their design palette, and seriously consider removing these and the designated exotics from the landscape.

For more information, refer to:
<http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1735&ChapterID=44> (David Robson)

Modified Growing Degree Days (Base 50°F, March 1 through June 4)

Station Location	Actual Total	Historical Average (11 year)	One-Week Projection	Two-Week Projection
Freeport	780	621	920	1076
St. Charles	779	585	910	1059
DeKalb	782	674	926	1086
Monmouth	911	736	1057	1216
Peoria	944	778	1095	1260
Champaign	994	803	1151	1322
Springfield	1101	883	1264	1441
Brownstown	1027	953	1192	1371
Belleville	1151	984	1305	1478
Rend Lake	1246	1063	1419	1605
Carbondale	1164	1008	1326	1499
Dixon Springs	1180	1074	1345	1520

Insect development is temperature dependent. We can use [degree days](#) to help predict insect emergence and activity. Home, Yard, and Garden readers can use the links below with the degree day accumulations above to determine what insect pests could be active in their area.

[GDD of Landscape Pests](#)
[GDD of Conifer Pests](#)

Degree day accumulations calculated using the [Illinois IPM Degree-Day](#) Calculator (a project by the Department of Crop Sciences at the University of Illinois and the Illinois Water Survey).
(Kelly Estes)

Invasive Species Updates

Viburnum Leaf Beetle. Reports continue to come in regarding viburnum leaf feeding injury. Our first report came out of Lake County this week. This marks the third known infested county in the state. We encourage homeowners to be vigilant and if they notice leaf feeding on their viburnum to please let us know, particu-

larly if they are outside of the Cook, DuPage, and Lake counties. More information can be found on viburnum leaf beetle in this previous HYG article: <http://hyg.ipm.illinois.edu/article.php?id=701>.

Emerald Ash Borer. Much of Illinois has reached or will be nearing the time of peak activity for emerald ash borer. Emerald ash borer adults have been reported flying throughout most of the state (where confirmed). As a reminder, below is the quarantine map that restricts the movement of ash and ash products. Also indicated on the map are the confirmed locations of emerald ash borer in Illinois.

Symptoms on trees include: dieback of the tree, wilting and yellow of the foliage, and presence of D-shaped exit holes where adults have emerged from the tree. Trees may also have the presence of epicormics shoots at the base of the tree.

Gypsy Moth. Trapping for gypsy moth is in full swing across the state. USDA-APHIS-PPQ and Illinois Department of Agriculture trappers are placing traps throughout the state. As you are driving you might notice some of these traps located in your area.

In areas where gypsy moth is present, caterpillars are active. Generally, gypsy moth caterpillars will reach their last larval stage and begin pupating in late June and early July, with adults emerging in July and August (<http://extension.illinois.edu/gypsymoth/biology.cfm>). (Kelly Estes)

Chlorosis of Woody Plants

Chlorosis is a yellowing of leaves that should normally be green. This is due to a lack of chlorophyll, causing the tissue to lose its bright green color. Usually the veins will stay a dark green while the leaf tissue turns lime green, then in severe cases, yellow. Necrotic (dead) areas may appear if the chlorosis continues without being treated.

Pin oaks are especially prone to chlorosis, though we often see it affecting sweetgum, maples (especially red and silver) and birch. Chlorosis can be caused by a number of different factors, including poor soil drainage, damaged or compacted roots, and nutrient deficiencies. The most common problem seen across the state is an induced nutrient deficiency, caused by the soil being too alkaline (basic). Environmental conditions such as drought, heavy clay soils, and waterlogged soils can worsen the symptoms.

Iron, and to a lesser extent manganese and zinc, deficiencies are common causes of chlorosis. In some cases the element may be missing in the soil. Usually, the element is present but unavailable to the plant due to the soil pH. A pH of 7 is neutral; above that is alkaline (basic) and below that is acidic. Soils with high pH bind certain elements, including iron and manganese, making them unavailable for the plant to take up through the roots. Illinois soils are often alkaline. While each plant species has their own preferred range of soil pH, most of our woody trees like a pH a little below neutral, often in the 6.3 to 6.7 range.

Management for chlorosis involves determining what element is missing, then trying to alleviate the cause of the deficiency. Generally, an iron deficiency causes the most intense symptoms on the newest leaves, while manganese and zinc deficiencies affect the older leaves the most. A soil test can be very helpful, both to identify if any major macro- and micronutrients that may be missing, and to check the pH. If the pH is too high, the soil can be amended to acidify it and reduce the pH.

Soil pH can be amended by digging holes 12 to 15 inches deep at 2 to 3 foot intervals around the base of the tree and under the canopy, then filling the holes with sulfur or injecting them with chelated iron or manganese. The soil injections act faster than the sulfur additions, though they may not have as long-term of an affect. Soil treatments are done best when the soil is moist and the tree is actively growing new leaves in April, May, and early June.

Trunk injections can be used, though by piercing through the plant's bark the tree is opened to infection or pest issues. Foliar treatments may be recommended, based on the severity of the chlorosis. Because foliar treatments only affect the current growth, they are usually not used unless the tree is suffering major injury. Foliar treatments are a short-term, quick fix, but will not solve the problem in the long run.

In addition to amending the soil, trees that are recovering from or at risk for chlorosis should be maintained in a manner that will reduce potential tree stress. Watering during dry periods lasting more than 2 weeks, mulching the base of the tree lightly, pruning out dead wood, and scouting for and responding to pest issues will improve tree vitality and help the tree recover from injuries.
(Diane Plewa)