

Number 1 – April 20, 2015

First Issue for 2015

This is the first issue of the University of Illinois Extension Home, Yard, and Garden Pest Newsletter for 2015. It is written to keep professional landscapers, arborists, golf course superintendents, lawn care personnel, and garden center operators up-to-date on the commercial management of diseases, weeds, insects, and other pests. We will report on the pests we are seeing and anticipating throughout Illinois. To assist us in these efforts, we ask for your help in reporting pest situations as you see them through the year.

Our main authors are plant pathologists Travis Cleveland (tclevela@illinois.edu), Suzanne Bissonette (sbissonn@illinois.edu), and Diane Plewa (dplewa@illinois.edu), weed scientist Michelle Wiesbrook (buesinge@illinois.edu), and entomologists Kelly Estes (kcook8@illinois.edu) and Phil Nixon (pnixon@illinois.edu).

We plan on publishing 17 issues this year. The next issue will be in two weeks, followed by weekly issues through the third week of June, with issues every other week in July, August, and September into mid-October. The last issue in mid-October will contain an index to 2015 issues. The web site contains several years of back issues with a search function as well as indexes in the final issue of each year. (*Phil Nixon*)

2015 Season at the University of Illinois Plant Clinic: Welcome to our New Diagnostician and to the Diagnostic year!

New Diagnostician: What a fantastic start to the 2015 season! The University of Illinois Plant Clinic is very pleased to introduce our new Diagnostician, Diane Plewa. Diane was hired late last fall as our Plant Diagnostic Outreach Extension Specialist-Crop Sciences. Diane has degrees in Plant Pathology from the University of Illinois and the Ohio State University. Just prior to joining the clinic, Diane was an Extension Educator, Horticulture, with U of I Extension and served as our part time interim Diagnostician. Many of you may have already met Diane this winter at our First Detector invasive species area workshops, or seen her articles here in the newsletter. I am so pleased to have her fully on board now at the clinic. In her duties as Diagnostician, she collaborates with departmental Extension Specialists and others to diagnose plant health problems and provide management recommendations. She interfaces with counterparts in the North Central and National Plant Diagnostic Network (NPDN). Additionally, Diane develops short courses and outreach for plant diagnostics as outlined in the NIFA-Extension CPPM-EIP grant.

2015 Season: Samples have already been arriving this spring here at the Clinic in our 40th year of operation. The

warm weather has inspired early yard work and observations of pest issues in home and commercial landscapes. The University of Illinois Plant Clinic is open year round to serve your plant diagnostic needs.

Plant Clinic services include plant and insect identification, diagnosis of disease, insect, weed and chemical injury (chemical injury on field crops only), nematode assays, and help with nutrient related problems, as well as recommendations involving these diagnoses. Microscopic examinations, laboratory culturing, virus assays, and nematode assays are some of the techniques used in the clinic. Many samples can be diagnosed within a day or two. Should culturing be necessary, isolates may not be ready to make a final reading for as much as two weeks. Nematode processing also requires about 1-2 weeks depending on the procedure. We send your final diagnoses and invoices to you through both the US mail and email. If you provide your email address on the sample form you will get your information earlier.

Please refer to our website <http://web.extension.illinois.edu/plantclinic/> for additional details on sampling, sample forms, fees, and services offered. If you have questions about what, where, or how to sample call us at **217-333-0519**. Whenever submitting a sample, provide as much information as possible on the pattern of injury in the planting, the pattern on individual affected plants, and details describing how symptoms have changed over time to cause you concern.

Our fees vary depending on the procedure necessary. General diagnosis in-

cluding culturing is \$15, ELISA and immunostrip testing is \$25, Nematode analysis for SCN or PWN is \$20, Specialty Nematode testing (such as corn) is \$40. Checks should be made payable to the University of Illinois or to the Plant Clinic. Call if uncertain of which test is needed.

Sending a sample thru US mail or delivery service address to:

University of Illinois Plant Clinic
1102 S. Goodwin, S-417 Turner Hall
Urbana, IL 61801

Other Contact Information: Our phone and voicemail is 217-333-0519. Our email is plantclinic@illinois.edu or, if you enjoy social media you can follow us on Facebook at <https://www.facebook.com/UofIPlantClinic>.

Drop off a sample: You can also drop off a sample at S-417 Turner Hall. Park in the metered lot F 28 on the east side of Turner or at the ACES library metered lot on the west side of Turner. Come in the South door. Take the elevator located in the SE corner of the building. Turn left when exiting the elevator; we are located along the SE corridor of the 4th floor. Please use the green drop box located just outside S-417 if we are temporarily out of the office. (*Suzanne Bissonnette*)

Glyphosate and Cancer and Why It's Still Recommended for Weed Control

Recently the IARC (International Agency for Research on Cancer) designated glyphosate as a "possible carcinogen". In sharp contrast, other reviewing bodies, including the U.S. EPA have deter-

mined that it is not a carcinogen. Still, much damage has been done by misleading or alarming headlines and questions are being asked.

There has been no shortage of news stories, emails, blog posts, and discussions on social media about the topic. After reading and hearing much about this, my initial concerns have been put to rest.

The IARC based their determination off of previous studies which have likely been reviewed by the EPA. There was no new research done by the IARC. Glyphosate is still registered for use by the EPA and Illinois Department of Agriculture.

The IARC made their determination after reviewing glyphosate and several other chemicals for only one week. Reviews of glyphosate in the United States and other countries have taken up to 5 years.

The IARC made their determination based on potential hazard rather than actual risk of harm. The rates were much higher than what product labels allow. What happened to "the dose makes the poison"? Anything at a high enough dose can cause harm. Estrogen at a high enough dose can cause cancer.

The "Risk Bites" videos are great at explaining toxicology in an easy to understand yet entertaining manner. The creators use animation to explain what it means when something could "probably cause cancer". Here they have tackled the "glyphosate is a carcinogen" topic and put it into perspective.

Remember, the dose makes the poison.
https://www.youtube.com/watch?feature=player_embedded&v=CbBkB81ySxQ

[re=player_embedded&v=CbBkB81ySxQ](https://www.youtube.com/watch?feature=player_embedded&v=CbBkB81ySxQ)
Glyphosate is a well-studied herbicide. Many studies have made the news. Many studies have been proven to be flawed. Just as we've seen with medical issues, corrective reports are often deemed less newsworthy than the original eye-catching headline. At that point, the damage has been done.

Glyphosate is loved by many and hated by many. Many of the haters include those who are against GMO crops. Glyphosate is widely used for weed control in both corn and soybean crops that have been genetically modified to tolerate the use of this herbicide. Today, glyphosate is sold and distributed by many companies. However, it was originally developed by Monsanto. Therefore, glyphosate is a popular target by those who march against Monsanto and other forms of "big" or conventional agriculture.

Sometimes good, solid science is twisted and misrepresented by these anti-GMO groups. As Kevin Folta of University of Florida Horticultural Sciences describes in his article, imagery is matched with conclusions that clearly do not match the research findings. These memes are then posted to social media. It's a wild-fire that can't be put out. Perhaps you saw this headline posted on your Facebook page, "Glyphosate causes endocrine disruption in human placental cells at levels allowed in U.S. drinking water." <http://www.geneticliteracyproject.org/2015/03/23/anti-gmo-activist-groups-twist-science-claiming-glyphosate-infests-drinking-water-threatens-babies/>

In short, given the lack of any new evidence that would steer us otherwise,

we and other weed control professionals across the country will still continue to recommend glyphosate as it is a widely used and effective weed killer – not only in genetically modified corn and soybeans, but also in orchards, forests, wetlands, landscapes, etc. Overall, it is inexpensive and works very well in many situations. We are committed to safety, yet we are also committed to helping both professionals and land/home owners win their battles against invasive, habitat-destroying, yield-robbing weeds. If credible science proves otherwise, we will appropriately revise our recommendations. Of course in most situations, there are other herbicides and weed control methods you can choose from. Glyphosate is not the only option.

Users of products which contain glyphosate or any pesticide for that matter should carefully read and follow all label directions. The label will provide guidance on what clothing or personal protective equipment should be worn so that exposure and therefore the overall hazard associated with using the chemical is reduced. For applicators, reducing exposure by covering up the skin reduces the hazard.

Recommended Reading

Glyphosate and Cancer: What does the data say? By Wyoming weed scientist, Andrew Kniss. This is long but very thorough in looking at the data. He offers a much longer list of suggested links than this one. And he takes the issue seriously as he works with glyphosate and other pesticides regularly.

<http://weedcontrolfreaks.com/2015/03/glyphosate-and-cancer-what-does-the-data-say/>

Henry Miller's article in Forbes:

<http://www.forbes.com/sites/henrymiller/2015/03/20/march-madness-from-the-united-nations/>

Is Glyphosate Dangerous? – A list of associated links by the Genetic Literacy Project:

<http://www.geneticliteracyproject.org/tag/glyphosate/>

Glyphosate Technical Fact Sheet by the National Pesticide Information Center:

<http://npic.orst.edu/factsheets/glyphotech.html>

Basic Information about Glyphosate in Drinking Water:

<http://water.epa.gov/drink/contaminants/basicinformation/glyphosate.cfm>

Agricultural Health Study:

<http://aghealth.nih.gov/>

“A prospective study of cancer and other health outcomes in a cohort of licensed pesticide applicators and their spouses from Iowa and North Carolina. The AHS began in 1993 with the goal of answering important questions about how agricultural, lifestyle and genetic factors affect the health of farming populations. The study is a collaborative effort involving investigators from National Cancer Institute, the National Institute of Environmental Health Sciences, the Environmental Protection Agency, and the National Institute for Occupational Safety and Health.”

A Method to Measure the Environmental Impact of Pesticides - Joseph Kovach and his colleagues have found a standardized way to compare differences in pesticides in terms of their relative dangers to humans and the environment. An Environmental Impact Quotient (EIQ) is then assigned to a pesticide. These val-

ues can be used to compare pesticides and pest management programs to determine which is likely to have lower environmental impact. A table of herbicides is provided. These values can change over time, but at press time, glyphosate has an EIQ of 15.33. Most of the herbicides listed have higher values, but the lower the number, the lower potential for impact. Learn more at:

<http://www.nysipm.cornell.edu/publications/eiq/default.asp>

(Michelle Wiesbrook)

Modified Growing Degree Days (Base 50°F, March 1 through April 15)

Station Location	Actual Total	Historical Average (11 year)	One-Week Projection	Two-Week Projection
Freeport	108	76	140	177
St. Charles	110	78	141	175
DeKalb	106	89	141	180
Monmouth	144	111	183	228
Peoria	165	125	210	259
Champaign	168	126	212	261
Springfield	210	144	261	315
Brownstown	206	175	263	323
Belleville	246	189	306	368
Rend Lake	263	207	329	397
Carbondale	261	202	323	387
Dixon Springs	274	223	342	412

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)

Illinois Invasive Plant Phenology Report for April 14, 2015

Several invasive plant experts from around the state are continuing their series of reports focusing on the phenology of invasive plants in Illinois. The intent of these reports is to provide an update on the development of invasive plants across the state of Illinois – what plants are in bloom, leafing out, setting seed, or senescing in different areas of the state.

Readers are encouraged to share what they see in their area of the state by emailing Chris Evans, Invasive Species Campaign Coordinator of the Illinois Wildlife Action Plan (chris.evans@illinois.gov).

Here is the first invasive plant phenology report for Illinois of the 2015 growing season.

Contributors include Cathy McGlynn, Mike Daab, Caleb Grantham, Nick Seaton, and Eric Smith.

*Report based upon observations on April 8-14, 2015

Southern Illinois

- **Multiflora rose, *Rosa multiflora* and bush honeysuckle, *Lonicera maackii*** - These two common woody shrub species are actively expanding their leaves right now and are nearing full leaf expansion. This is not the time of year to treat these species with chemicals. Wait until the leaves have fully expanded before conducting cut stump or foliar applications.
- **Autumn olive, *Elaeagnus umbellata*** - This species is actively expanding its leaves and starting to flower. This is not the time of year to treat this species with chemicals. Wait until

the leaves have fully expanded before conducting cut stump or foliar applications.

- **Callery (Bradford) pear, *Pyrus calleryana*** - This species is past peak for flowering. Many of the plants still have flowers on them but the leaves are expanding now as the flowers fade. It is still a great time of year to find and report new populations. Look for this species along roadsides, rights-of-way, and other open habitats.
- **Garlic mustard, *Alliaria petiolata*** - Garlic mustard is bolting right now and starting to bloom. If a population is bolting but not flowering, it can still be treated with herbicide. Once the population starts flowering heavily, your best option is to hand pull, bag, and remove the plants.
- **Italian arum, *Arum italicum*** - Is starting to actively grow. New succulent leaves can be found. This new invader is showing up in land within and adjacent to urban areas.

Central Illinois

- **Bush honeysuckle, *Lonicera maackii*; autumn olive, *Elaeagnus umbellata*; and Japanese honeysuckle, *Lonicera japonica*** - These woody species are starting to leaf out, moving towards mid-leaf expansion. This is not the time of year to treat these species with chemicals. Wait until the leaves have fully expanded before conducting cut stump or foliar applications.
- **Callery (Bradford) pear, *Pyrus calleryana*** - This species is beginning to flower now. This is the perfect time of year to survey and find new populations of this plant. Look for this species along roadsides, rights-of-way, and other open habitats.

- **Garlic mustard, *Alliaria petiolata*** - Garlic mustard is not yet starting to bolt in Central Illinois but is expected to soon. These populations can be treated with herbicides or hand-pulled. Once the populations start to flower heavily, then hand pull, bag, and remove the plants.

Northern Illinois

- **Lesser celandine, *Ranunculus ficaria*** - This new invader is starting to bloom. The bright yellow flowers blooming in low woods are easily spotted at this time of year. Be sure to verify identification, as there are native wildflowers that bloom in early spring that could be confused with this species.
- **Japanese barberry, *Berberis thunbergii* and goutweed, *Aegopodium podagraria*** - These two invaders are actively expanding their leaves right now.

Follow the Illinois Invasive Species Awareness [blog](#) for more phenology reports as well as other invasive species news! (*Kelly Estes*)

Walnut Twig Beetle Detected in Indiana

The walnut twig beetle (WTB), associated with Thousand Cankers Disease (TCD) of Black Walnut, was detected in Indiana for the first time. The walnut twig beetle vectors *Geosmithia morbida*, the fungus that causes Thousand Cankers Disease. The beetle was detected in a trap at a Franklin County sawmill as part of a 2014 statewide survey for WTB. Additional walnut twig beetles were found during an inspection of walnut logs and lumber at the sawmill.

These beetles bore into the branches of black walnut, and carry fungal spores that are then introduced to the phloem. Small cankers develop under the bark around these galleries. As feeding areas increase, so does the number and size of the cankers which then begin to girdle the stem or branch. The cankers affect the ability of the tree to transport water and nutrients and it eventually dies.

This is not the first time Thousand Cankers Disease has been associated with Indiana. In 2014, TCD was discovered in Yellowwood State Forest in Brown County in their black walnut plantation. No walnut twig beetles were found associated with this find. The plantation has been quarantined. Currently, the sawmill is quarantined and is destroying walnut material on the property to prevent the movement of TCD.

Thousand Cankers Disease and the walnut twig beetle have not been found in Illinois. The state of Illinois currently has a quarantine in place that restricts the movement of walnut logs, lumber, and other walnut material into Illinois. Surveys have been conducted for the past 4 years in Illinois and will continue in 2015. You can learn more about TCD at <http://www.thousandcankers.com>.
(Kelly Estes)

Gymnosporangium Rusts on Eastern Red Cedar

Telial growth has started to emerge from overwintering *Gymnosporangium* rust galls. Early stages of the telial emergence are pictured in the web version of this article. Three *Gymnosporangium* rusts commonly affect trees in Illinois landscapes: Cedar-apple rust,

Hawthorn rust, and Quince rust. These pathogens require two hosts to complete their life cycles. The most damaging stage occurs on deciduous hosts within the rose family, *Rosacea*. Apples, crabapples, hawthorns and quince are some of the more commonly affected deciduous species. Infections to deciduous hosts occur in the spring as the new leaves are developing, but the infections won't become evident until later in the season. Eastern red cedar and other *Juniperus spp.* serve as evergreen alternate hosts for these pathogens. Infections to evergreen hosts are not as damaging, but are an important stage in each pathogen's life cycle. These rust pathogens overwinter on Eastern red cedars as hard and pitted galls or swollen branches. Galls are light brown to reddish or chocolate brown and range from 1/8 inch to 2 inches in diameter.

As spring temperatures increase and moisture fluctuates, the galls form distinct orange, gelatinous spore masses. Spores produced within these masses are then dispersed by air and infect nearby susceptible deciduous hosts.

The most common control strategies for *Gymnosporangium* rusts in the landscape focus on protecting the deciduous hosts. These recommendations start with utilizing resistant or immune species and varieties. Where feasible, infections to broad-leaved hosts can be reduced by removing unwanted host trees within a 1/2 mile radius. Galls can also effectively be pruned out or hand-picked from small junipers during the fall and winter months. Fungicide sprays are effective at protecting susceptible trees from infection. Many of the fungicides used to protect deciduous hosts are also labeled for use on *Juniperus* spp. If fun-

gicides are deemed necessary to protect an evergreen host, they should be applied at two-week intervals during July and August or as directed by specific product label recommendations. (*Travis Cleveland*)

First Foliar Findings of the Season

A number of diseases overwinter on their host plants, including cankers and some evergreen needle blights. However, for many of our pathogens, they spend the winter snug in the leaf litter from last year. This is why sanitation, or removing dead plant material from the landscape, can be so effective at managing certain diseases.

So far this year we've seen a few of these foliar pathogens that did not overwinter on the affected plant, but instead overwintered on dead plant material and had to initiate an infection on new plant tissue. These diseases were noted in the landscape, not in a greenhouse or on plants brought in from warmer climates.

The first was spotted on April 5, on a common weed. Mock or False Strawberry is a cool-season perennial, often found in poorly maintained turf. This plant was diagnosed with *Septoria*, a genus of pathogenic fungi which cause leaf spots to a wide number of host plants (most *Septoria* species have a fairly narrow host range). We often see *Septoria* on tomato, soybean, rudbekia, and dogwood hosts in Illinois.

Another disease was found a few days later, on April 10. Powdery mildew on turfgrass is common on Kentucky bluegrass and various fescues. Moderate temperatures and high relative humidity favor the development of this disease,

especially in shaded locations with low air movement. Powdery mildew, like *Septoria*, is a large group of pathogenic fungi which attack a wide variety of hosts, though the host range for each species of pathogen is fairly narrow. We often see powdery mildew on roses, phlox, bee balm, peony, and oak hosts.

Both *Septoria* and Powdery mildew are common diseases, associated with moderate temperatures and high humidity or wet conditions. We usually see these diseases as we near autumn and the end of the growing season. However, if the environmental conditions are also favorable in spring, the pathogens will not fail to take advantage and infect the new growth in our landscapes. Thankfully, the warmer, drier weather in summer usually halts infection and these are not considered serious diseases in spring.

(*Diane Plewa*)

Meadow Vole

Meadow voles eat runways through turf and strip bark off of trees and shrubs below the snow during the winter.

These field mice are larger than house mice with broad heads and short tails. During the winter, lingering snow cover allows voles to live and feed under the snow with little predator impact. Dogs, cats, mink, weasels, raccoons, opossums, skunks, coyotes, hawks, owls, and many other predators feed on voles, but they are difficult to find under the snow.

Damage to trees and shrubs start at or just below the soil line and extends as high as the snow line. There is no damage above the snow because the rodents are then exposed to predators. Voles eat away the bark, girdling and killing the

plants. Close examination of damaged stems reveals slanted cuts or V-shaped marks left by their teeth.

Voles also eat turfgrasses, consuming the leaves, stems, crowns, and roots. Damage appears as narrow, winding, open-topped runways about two inches wide and is common this spring in the northern third of Illinois. The size of these winding trails is reminiscent of a garden hose left on the turf, resulting in dead turf beneath it. However, the voles remove the grass plants completely, leaving only bare soil behind. Turf damage is most common near cover for these mice, such as heavily mulched and groundcover areas, but the extended

snow cover last winter allowed for damage far from these areas. With rapid growth in spring, these runways will be filled in quickly by the surrounding turf.

With the snow melted, predators make short work of the excess voles. These mice provide food necessary for their predators to raise their young. Vole damage is prevented by applying mulch no thicker than 2-3 inches and thinning out groundcovers. It is helpful to rake away and remove mulch around young trees as winter approaches to reduce vole cover. Removing snow from around young trees during the winter is also helpful. Anything that exposes voles to their predators reduces damage. (*Phil Nixon*)