

Number 3 - May 19, 2014

Bridalwreath Spirea and Insect Management

Bridal wreath spirea, or Vanhoutte spirea (*Spiraea x vanhouttei*), is blooming in throughout the state. This is a major phenology plant in Don Orton's book *Coincide*. With phenology, stages of plant development (usually bloom time) are used to predict stages in pest development. This method is more accurate than using calendar dates because the plant is exposed to the same climatic conditions as the insect. Thus, "early" and "late" springs associated with unusually high or low temperatures, respectively, cause similar responses in both plant and insect.

Don Orton revised *Coincide* in 2007 to include phenology information on diseases as well as insects. It continues to be published by Labor of Love Conservatory, 723 Dawes Avenue, Wheaton, IL 60187, (630)668-8597, dennyjam@aol.com. Although occasionally sold in gift stores in locations such as the Morton Arboretum, Chicago Botanic Garden, and Missouri Botanic Garden, it is normally not seen in bookstores. It is probably easiest to obtain directly from the publisher.

Phenology helps predict when pest stages susceptible to control are likely to be present, but it is not a spray guide. When a phenological event predicts that a pest is susceptible to control, one needs to scout to verify that the pest is present

and in a susceptible stage before using a control measure. We include phenology information from *Coincide* in our University of Illinois Extension pest management recommendations published in the *Illinois Commercial Landscape and Turfgrass Pest Management Handbook*. Following are the most common pests that are in susceptible treatment stages during vanhoutte spirea bloom.

Full bloom: Birch leafminer young larvae; elm leaf beetle young larvae; European pine sawfly feeding larvae; gypsy moth feeding larvae; pine needle scale crawlers (first generation), black turfgrass ataenius (first generation).

Full to late bloom: Lilac (ash) borer newly hatched larvae; oystershell scale (brown) crawlers.

Finishing bloom: Bronze birch borer newly hatched larvae.

Most blossoms brown, still a few white: Flat-headed appletree borer larval hatch; peach tree borer newly hatched larvae; viburnum borer newly hatched larvae.

Bloom finished: Oystershell scale (gray) crawlers. (*Phil Nixon*)

Hydrangea Leaf-tier

Hydrangea leaf-tier, *Olethreutes ferriferana*, has been noticeable in central Illi-

nois and is present in other areas of the state. Damage appears as two to four cupped leaves tied together with silk at the end of a branch. An attacked plant will typically have ten to twenty of these cupped leaf sets. Pulling the leaves apart reveals a slender greenish caterpillar up to one-half inch long with a blackish head.

This insect emerges in the spring as a small brown and white patterned moth. The white pattern somewhat resembles bird droppings, and thus provides camouflage from bird predation. Eggs are laid on the branch tips of various hydrangea species. Hatching caterpillars web the leaves together and feed on the enclosed flower bud and surrounding leaves. The larvae drop to the ground to pupate in summer to emerge as adult moths the following spring.

Although the amount of damage is relatively minor, the cupped and tied leaves are aesthetically obvious as well as the reduced number of blossoms. Control can be achieved by opening the leaf pouch and smashing the caterpillar inside or by removing and destroying infested leaf masses. Forcefully spraying the cupped leaves with a single application of *Bacillus thuringiensis kurstaki* (Dipel, Thuricide, others) or a labeled pyrethroid will also be effective. (*Phil Nixon*)

Euonymus Caterpillar

Euonymus caterpillars are numerous in northeastern Illinois. This insect rarely occurs in Illinois south of Kankakee or west of Rockford. Its main host in Illinois is European euonymus, *Euonymus europaea*. It is listed as also attacking spreading euonymus, *E. kiautschovicus*,

and winged euonymus, *E. alatus*; but I have not received reports of it feeding on those hosts. European euonymus is a slender, large shrub to small tree.

Euonymus caterpillar lives in a colonial silk tent that the caterpillars web between leaves. As the caterpillars grow, they expand the web to cover more leaves and branches. The caterpillars are whitish, with two rows of large black dots. When full grown, they are slightly over 3/4 inch long. The caterpillars pupate in the silk tent in June, forming rows of vertical silk cocoons.

Moths emerge and lay eggs on the twigs and branches and in bud axils in July. The slender moths have white wings peppered with small black spots. They are relatively small, with a wingspan of 1 inch. Within a few weeks, their eggs hatch into caterpillars, which crawl under their empty eggshells to spend the fall and winter. The caterpillars become active feeders and silk-tent constructors as the leaves emerge in the spring.

A wide range of insecticides are effective, but sprays must be applied with enough pressure to penetrate the silk webbing to reach the caterpillars. *Bacillus thuringiensis kurstaki* (Dipel, Thuricide) is the insecticide of choice, due to its specificity on caterpillars. (*Phil Nixon*)

Azalea Sawfly

There are three sawfly species that commonly attack azaleas, two in the spring and one in the summer. We are apparently currently seeing *Amauronematus azaleae*. There is one generation per year with the adults emerging to lay eggs on expanding leaves in the

spring. The larvae are feeding at this time in central Illinois and apparently prefer mollis hybrid azaleas, which are deciduous. Nearby evergreen azaleas are not attacked.

The larvae are green with tan heads, blending in very well with the expanding foliage of the host plant. They are about three-fourths inch long when full grown. They feed on the leaf margins down to the mid-vein, defoliating the plants if not controlled. When fully grown, they drop to the soil to pupate.

Handpicking can be effective on these shrubby azaleas, but the larvae are difficult to see. An application of spinosad (Conserve), carbaryl (Sevin), or labeled pyrethroid provides effective control. *(Phil Nixon)*

Dealing with Tree Seedlings in the Lawn and Landscape

The maples are currently on a mission to reforest the Earth. The ash, cherry, and mulberry trees are often on the same mission. For some, birds help spread the seed. For the maples, all that is needed is wind and gravity to blow the samaras to the ground. You've seen them and certainly played with them as a kid – the helicopters or whirlygigs or whatever you called them. This morning I noticed they cover my sidewalks, lawn, and landscape beds. In a few days, there will be baby maples everywhere and much work to be done to reclaim the landscape.

What can you do? I plan to sweep the walk and dispose of the seeds. A leaf blower could be handy for clean-up, if only I had one. Removing the tree last

year with one sharp cut at the base would have been effective. There are seedless cultivars available now that would make nice replacements. Another consideration would be to use a registered and labeled growth regulator to reduce or eliminate fruit development.

Once the seedlings germinate in a landscape bed they can be pulled easily by hand. They are best removed after a rain when the soil is moist. Do not cover them with mulch as germination will likely not be prevented. The seeds are relatively large in size and can germinate from deeper depths. In lawns, simply mow them off relatively soon. Do not wait for them to grow several inches. Mowing regularly should take care of the problem. Alternatively, broadleaf herbicides labeled for use on lawns may be used. *(Michelle Wiesbrook)*

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

Station Location	Actual Total	Historical Average (11 year)	One-Week Projection	Two-Week Projection
Freeport	319	287	391	468
St. Charles	255	276	321	392
DeKalb	261	318	338	423
Monmouth	330	363	414	499
Peoria	367	397	452	540
Champaign	388	399	478	573
Springfield	480	447	580	684
Brownstown	491	499	593	702
Belleville	533	525	639	751
Rend Lake	572	572	684	803
Carbondale	572	543	676	789
Dixon Springs	588	590	699	816

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 University of Illinois Department of Crop Sciences and the Illinois Water Survey). (Kelly Estes)

Emerald Ash Borer Emergence Approaching

Historically, as we approach the Memorial Day weekend, we begin to be aware of the possibility of emerald ash borer (EAB) emergence. Emerald ash borer emergence is predicted to begin when the accumulation of degree days reach 450—500. As noted in the table above, several areas of the state have reached or are closing in on that threshold.

Scott Schirmer, EAB Program Manager with the Illinois Department of Agriculture shares the following: *"It's been a slow progressing growing season so far, but we are finally approaching EAB emergence here in Illinois. The southern half of the state may be observing some initial EAB emergence at this time, but the northern half of the state may see it in a couple weeks. Municipalities and residents are urged to keep a close eye on their ash trees this spring and observe their condition. It's the ideal time of year to assess the tree's condition and make a determination on whether or not treatment is an option if the tree is looking healthy, or to opt for removal if it is not developing as it should be. Illinois residents are also urged to be aware of the EAB trapping and detection efforts underway once again. Folks may see traps in communities, parks, golf courses, campgrounds, and State Parks, among other locations. Residents are also encouraged*

to report suspect ash trees to the Department of Agriculture, U of I (extension), or their local municipality."

As Scott noted, residents are asked to stay alert, and look for [potential signs of EAB](#). While peak emergence (and activity) is still quite a way off (accumulation of 1000 degree days), it is possible to note potential infestations at the apparent health of the ash tree, presence of D-shaped, and of course the confirmation of the borer itself. (Kelly Estes)

Illinois Invasive Plant Phenology Report

Several invasive plant experts from around the state have started a new series or 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).

Phenology Report for May 16, 2014

(Contributors include Cathy McGlynn, Karla Gage, Marilyn Leger, Jody Shimp, and Mike Daab)

Southern Illinois

- [Princesstree, Paulownia tomentosa](#) – Is in full bloom right now. Mature

trees are easily identified by the dense purple flowers. Keep an eye out for this species on rocky bluffs, ridge top, barrens, and other dry disturbed sites.

- **[Garlic mustard, *Alliaria petiolata*](#)** – Is in full seed development right now. You could still find some flowers on this species right now, but the majority of the plants have green seed pods. These seed pods are long, thin and are upright on the plant. The seed pods have not yet dried, so pulling and bagging the plants is still an option for control. Look for garlic mustard in wooded areas across the region.
- **[Black locust, *Robinia pseudoacacia*](#)** – Is just past full bloom right now. You can still identify this tree species by its dropping clusters of white flowers, but it is starting to be past bloom. Some of the trees will have flowers that are starting to yellow or be obscured by emerging leaves
- **[Chinese yam, *Dioscorea oppositifolia*](#)** – Is emerging now and starting to elongate. With the onset of warmer weather, this species is now starting to put on a lot of growth. Vines can be found easily now with multiple leaves. The heart to fiddle shaped leaves can be easily identified by the purple-red coloration where the petiole meets the leaf. This plant has not yet started to produce its bulbils (asexual reproductive structures) and likely won't for a month or so. Look for Chinese yam along streamsides, ditches, and other mesic-to-wet forest sites or areas with disturbance.
- **[Japanese stiltgrass, *Microstegium vimineum*](#)** – Is germinating right now. You can easily find young, single-lead germinates of stiltgrass carpeting the forest floor in invaded areas. This germination will continue for a while, so control treatments

that do not include a pre-emergent herbicide should be delayed for another month or so.

- **[Bush honeysuckle, *Lonicera maackii*](#)** – Is just coming into bloom right now. In a week or two this species will be in full bloom. The fragrant white flowers turn yellow with age and can be found in pairs along the stems of mature bush honeysuckle shrubs. This plant can grow in most area wooded environment.
- **[Winged burning bush, *Euonymus alatus*](#)** - Has flowered and fruits are just beginning to form.
- **[Chinese privet, *Ligustrum sinense*](#)** - Flowers are beginning to form but have not opened yet.

Central Illinois

- **[Callery Pear, *Pyrus calleryana*](#)** - Past full bloom. A few scattered blossoms yet.
- **[Garlic Mustard, *Alliaria petiolata*](#)** - Full bloom, just beginning to form seed. Slightly further north, no seed formation in evidence
- **[Autumn Olive, *Eleagnus umbellata*](#)** - Full bloom throughout the east central Illinois region
- **[Bush Honeysuckle *Lonicera maackii* and others](#)** - Beginning to bloom to the occasional bush in full bloom
- **[Sweet Clover, *Melilotus officinalis*, *M. alba*](#)** - Well-formed, bushing out, forming buds
- **[Field Mustard, *Brassica rapa*](#)** - in full bloom along roadsides and in fields

Northern Illinois

- **[Garlic mustard, *Alliaria petiolata*](#)** is in flower in vacant lots, roadsides, yards, and in forest understories.

- [Lesser celandine, *Ficaria verna*](#) - has been in bloom for several weeks and its flowers may soon die back if they haven't already. Several additional reports of this species have been made along trails and roadsides.
- [Callery pear, *Pyrus calleryana*](#) - is also in full bloom in residential areas, lining parking lots, fields, and prairies.
- [Japanese barberry, *Berberis thunbergii*](#) - is in bloom in many yards and in the forest understory.

Updates/Contributions:

Eric Smith reports from SouthCentral Illinois that Dames Rocket is starting to bloom and Oriental bittersweet is starting to bud

Jim Alwill reports from NorthWest Illinois that IDOT is starting to spray teasel rosettes along the ROWs

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

Impatiens Downy Mildew

Impatiens Downy Mildew (IDM) continues to threaten one of the most popular shade-tolerant bedding plants used in American landscapes. At one point, impatiens was the number one bedding plant sold in the United States. However, as a result of IDM, many growers have opted to cut back on the number of impatiens grown or avoid them all together.

IDM is caused by the fungal-like pathogen, *Plasmopara obducens*. The disease primarily infects garden impatiens (*Impatiens walleriana*) while New Guinea Impatiens (*Impatiens hawkerii*) and re-

lated hybrids have a high resistance to the disease. IDM was first reported in U.S. production greenhouses during the 2004 growing season. Several years later, beginning in 2011, the disease appeared in U.S. landscapes with outbreaks occurring again in 2012 and 2013. At this point, everyone is likely well aware of the devastating impacts of this disease. IDM is an aggressive disease and has the ability to overwinter in the soils of previously infected planting beds. As a result, infections can occur even when growers provide clean disease-free plants. Unfortunately, the cold, harsh winter is not expected to impact the pathogen's survival. The disease is expected to continue to be problematic in 2014.

Alternatives to *Impatiens walleriana* have been heavily promoted for use in the landscape. Most retail greenhouses and garden centers provided suggestions for suitable alternatives. Michigan State also published a fact sheet titled, [Alternatives to Impatiens](#). The substitutes, though attractive, don't offer the same features and color impact as traditional impatiens. Those willing take the risk continue to plant impatiens in select areas. If planting impatiens this year, use additional precautions and keep a careful watch to catch this disease in the early stages. Suggested precautions include:

- Start with clean, healthy transplants.
- Choose planting beds in open areas. Avoid planting impatiens in the same areas year to year.
- Avoid dense, overcrowded plantings.
- Keep the foliage dry. Avoid wetting the foliage while watering.
- Scout plantings on regular basis for IDM. Scouting and early detection is critical with this disease.

When scouting, look for the following symptoms:

- Initial symptoms are subtle and start as light-green yellowing or stippling of leaves.
- Infected leaves may curl downward.
- A white downy-like growth may be visible on the undersides of infected leaves.
- Infected leaves eventually drop leaving a bare stem.
- Under cool wet conditions, infected stems may collapse.

If you suspect that your impatiens may be infected with IDM, it is important that you remove and destroy infected plants as soon as possible. Bag the infected material, including any fallen leaves or blossoms, as well as any of the nearby Impatiens (they may be infected too), and remove from the site. Composting the diseased material is not recommended. The pathogen produces structures capable of overwintering in the Midwest. Composting may not completely destroy the pathogen. Avoid replanting a previously infected location with susceptible impatiens. If you have struggled with this disease in years past, your only option is to consider planting other shade tolerant species. Fungicides can provide some protection when applied preventatively on an appropriate schedule with a rotation of active ingredients. However, homeowners have fewer fungicide options when compared to commercial applicators and may not be able to protect impatiens for the entire season. Therefore, we do not recommend that homeowners rely on fungicides for control of IDM. (*Travis Cleveland*)

Basil Downy Mildew in 2014

A sample of basil from Wisconsin was diagnosed with downy mildew last week at the University of Illinois Plant Clinic. Basil downy mildew was a serious problem last year and, depending on the weather, we may be seeing more of it in 2014. This pathogen affects both homeowners growing a few basil plants for fresh harvest, and the producers who cultivate commercial basil in Illinois.

According to Dr. Babadoost, a professor in the Department of Crop Sciences at the University of Illinois who specializes in diseases of vegetable crops, this disease is very serious for Illinois growers. Approximately 600 acres of basil are planted in Illinois, which has become one of the leading states in basil production in the country. Basil is a high-value crop, valued between \$10,000 and \$20,000 per acre. While there are a number of other important downy mildew diseases, including the infamous impatiens downy mildew, basil downy mildew is host specific and will not infect other plants.

The disease was first reported in the United States in 2007. By 2009 it had reached Illinois late in the growing season. The disease is caused by *Peronospora belbahri*, a fungal-like oomycete (also known as a water mold). It flourishes in cooler, wet weather, so the disease is generally worst at the beginning and end of the growing season. Hot, dry weather causes the pathogen to go dormant. Symptoms first appear as diffuse yellow areas on the top side of leaves. The pathogen produces spores

on the underside of leaves, giving them a dirty appearance. A hand lens can be used to look for spores and the translucent, thread-like structures that produce them. Under magnification, the undersides of the leaves appear to be covered in grey fuzz. The disease progresses quickly, with affected leaves turning brown and falling from the plant; within a few days an entire plant can be defoliated.

It is unknown if the pathogen can survive the winter in Illinois. It is thought that it overwinters in greenhouses, or travels in on cuttings. The spores can travel large distances by wind. A small initial number of spores can quickly lead to a huge infestation.

Dr. Babadoost's laboratory has been conducting experiments for the last 5 years to identify management options for basil downy mildew. Because this pathogen is known to develop resistance to fungicides quickly, chemicals with different modes of action should be used.

For commercial producers there are a few chemical fungicides that are very effective against this pathogen, but they require a pesticide applicator's license and up to 17 applications a season. Oxidate (hydrogen dioxide), ProPhyt (potassium phosphite), K-Phite (mono- and

di-potassium salts of phosphorus acid), Quadris (azoxystrobin), and Ranman (cyazofamid) are fungicides currently labeled for use in Illinois against downy mildew on basil and herbs. Revus was granted a Section 18 use permit in 2012 and 2013, but is not currently labeled for the 2014 growing season.

Chlorothalonil, a non-selective fungicide available under numerous trade names to individual gardeners, has been shown to be somewhat effective. Copper can also be used, but like chlorothalonil, it is not very effective.

Sanitation (removing and destroying diseased plants) is an important management technique. Plants should be carefully inspected at the nursery or garden store before being brought home. Because the pathogen needs moisture to thrive, reducing humidity and leaf wetness is important. Maximizing planting distances, planting in areas of full sun and air movement, and watering at the base of the plant are cultural techniques that can help reduce moisture on or around the plant, and help reduce disease. Dr. Babadoost reports that basil downy mildew is less virulent towards red or purple basil, which can be used as an alternative to the popular sweet basil. (*Diane Plewa*)