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Bridalwreath Spirea and Insect Management

Bridal wreath spirea, or Vanhoutte spirea (*Spiraea x vanhouttei*), is blooming in southern Illinois. It will probably start blooming in central Illinois in a week or so, and in northern Illinois around the end of this month. 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, denny-jam@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*)

Gypsy Moth

Be on the lookout for young Gypsy moth caterpillars in northern Illinois. Gypsy moth overwinters in the egg stage, hatching out at saucer magnolia, *Magnolia x soulangiana*, petal drop. This coincides with bud break to early leaf expansion on many oak species, probably the Gypsy moth's favorite host. Larvae are susceptible to insecticidal control beginning with the bloom of common lilac, *Syringa vulgaris*. Not only is it necessary for the caterpillars to be present, but there needs to be enough foliage expansion on the oaks to receive insecticide spray.

The hairy caterpillars are dark colored in lightly infested areas, tan in heavy infestations. Illinois infestations, although heavy in our experience, are still light enough to be composed of dark-colored caterpillars. When young, the caterpillars have a row of orangish spots down their back with smaller white markings alongside. Half-grown and older caterpillars have a double row of blue and then red balls down the back. Fully grown caterpillars approach 2 inches in length.

The caterpillars eat the leaves from the margins inward, leaving only the midvein in heavy infestations. They feed on a wide range of trees, including oak, maple, poplar, willow, crabapple, birch, linden, white pine, and spruce. They are most numerous at the top of the tree, working their way down as foliage is consumed. They feed primarily at night when they are young, but older caterpillars feed day and night. The caterpillars in heavily infested trees produce a rain of feces onto those who walk underneath. When molting between instars (stages), the caterpillars descend lower onto the tree trunk,

returning to the foliage after molting. This results in patches several inches in diameter on the trunks consisting of silk webbing and cast skins (exuviae) from the caterpillars.

When fully grown, the caterpillars descend from the trees to search for a protected area to pupate. In light infestations, these larvae tend to pupate beneath flakes of bark. In heavy infestations, these areas become occupied quickly, and huge numbers of caterpillars crawl across the ground and pavement looking for pupation sites. This behavior greatly upsets residents due to the caterpillars' crawling up the walls of buildings, over lawn furniture, and covering streets and sidewalks. Pupation should occur by the end of June, with moths emerging in July.

Male moths are brown with black V-markings on the wings. They have a 1-1/2-inch wingspan and are excellent fliers. Female moths are too heavy-bodied to fly. They are whitish, with a 2-inch wingspan. They also have black V-markings on the wings. It is common to see male gypsy moths flying constantly around trees containing large numbers of females. Female moths typically crawl only a short distance from their pupal cases before mating and laying their eggs. Egg masses containing up to 1,000 eggs are about 1 inch long by 1/2 half inch wide and covered with the tan hairs of the female moth's underside. These eggs overwinter and hatch the following spring.

As long as caterpillars are feeding, insecticide applications can be made. However, insecticides are more effective against younger caterpillars. Recommended insecticide sprays include acetamiprid

(TriStar), *Bacillus thuringiensis kurstaki* (Dipel, Thuricide), clothianidin (Arena), diflubenzuron (Dimilin), indoxacarb (Provaunt), spinosad (Conserve), and tebufenozide (Mimic). Emamectin benzoate is also very effective as a trunk-injected insecticide against gypsy moth caterpillars. (Phil Nixon)

Buying Healthy Plants

It is that time of the year when you head to your local garden shop to purchase plants for your landscape or garden. We would like to take this opportunity to stress how important it is for you to purchase healthy plants to help avoid plant problem frustration as the season progresses. Now this may seem like a silly topic, but some of the recent U of I Plant Clinic samples, have been those that have been recently purchased and found to be infected with disease.

When purchasing plants, a good rule of thumb, is to choose a plant with foliage that appears to be full and green. Avoid plants that are yellow in color, show signs of wilted leaves, or consist of spindly growth. These all could be symptoms of disease, stress, nutrient deficiency, or neglect. Small plants that have premature flowering can also be a sign of stress. It never hurts to be familiar with some of the common signs of disease or insect damage, so that you can carefully examine plants before purchasing, as it's never worth introducing a new pest or pathogen into your garden.

While the above-ground portion of the plant can give clues about plant health, it is also very, important to inspect the roots. Carefully pull out the plant from its container (provided it's not enor-

mous) to check for excess soil moisture issues as well as minimal or excessive root growth. If the plant appears to have a minimal root system, this could lead to an increased risk of future plant transplant shock. If you observe a large mass of roots that have started growing around in circles or out of the bottom of pot, the plant is most likely root bound. Lastly, if a plant's root system appears to be small, brown, and rotted, this could be an indication of a root rot. *Pythium* root rot has been observed quite, frequently this spring, on various annuals.

The cool, wet weather present over the last few weeks has provided the perfect conditions for the infection of *Pythium* root rot. *Pythium* is a soil born, fungal-like organism that infects the roots of all plants. Symptoms of *Pythium* root rot include stunted growth, smaller than normal leaves, poor foliar color, dieback of stems, or sudden wilt or death of plants. The roots of infected plants may appear to have blackened root tips as well as a soft, dark rot of the outer, root layer. If you suspect that your plant's roots are infected with *Pythium*, gently, wash and inspect the roots. If the outer root layer easily slides off, with the inner root remaining, this could also be a sign of a *Pythium* root rot infection.

Unfortunately, there is no treatment for plants with a *Pythium* root rot infection and these plants should be discarded. If needed, an accurate diagnosis will help with management and will hopefully keep this root rot from spreading. *Pythium* can survive for years in soil, so the best defense is preventing it from entering your garden via diseased plant material, infected garden tools, or water source. (Stephanie Porter and Nicholas Prudhomme)

Rhododendron Winter Burn

This spring, some Rhododendrons are showing symptoms of a form of winter injury known as winter burn. Symptoms may vary, but winter burn usually results in areas of the affected leaves turning brown. Some leaves show symptoms on the margins and tips while others may brown along the midvein.

Winter burn occurs as a result of water stress. In this case, water lost from the leaf tissues was greater than the amount the roots and stems were able to replenish. Broadleaved evergreens are particularly susceptible to this disorder. They have large areas of exposed leaf tissues that allow for increased water-loss during the winter months.

Several environmental factors contribute to this disorder. In terms of moisture availability, dry or frozen soils may limit how much water the plant intake and provide to the leaves. Planting location can also contribute to the problem. Plants located in unprotected sites, exposed to winter winds or excessive sunlight, have greater water loss and are more likely to show symptoms of winter injury.

Winter burn to Rhododendrons and other broadleaved evergreens can be prevented by:

- Selecting an appropriate planting location. Rhododendrons should be located where they receive partial shade and protection from desiccating winter winds.
- Maintaining adequate soil moisture, especially in late fall and early winter. Check the soil moisture around plants and irrigate as needed before the ground freezes.
- Applying anti-desiccants. These products are used to reduce winter transpiration and water loss. They need to be applied in the fall and re-applied at labeled intervals.
- Building protective screens to provide shade and windbreaks. They can be constructed with burlap or other materials. Temporary fences, such as snow fencing, can also be effective.
- Rhododendrons also have mechanisms to help protect their leaves from winter injury. You may have observed rhododendron leaves rolling, curling, and drooping on cold winter days. This action in normal and reduces the amount of tissues exposed to direct sunlight and desiccating winds.

(Travis Cleveland)

Modified Growing Degree Days (Base 50°F, March 1 through May 9)

Station Location	Actual Temp.	Historical Average (11 year)	One-Week Projection	Two-Week Projection
Freeport	192	228	261	333
St. Charles	207	221	272	338
DeKalb	204	254	278	356
Monmouth	237	292	320	404
Peoria	256	322	343	428
Champaign	285	323	373	463
Springfield	292	364	390	490
Brownstown	326	413	427	530
Belleville	340	435	445	552
Rend Lake	386	476	497	610
Carbondale	371	455	473	578
Dixon Springs	388	497	497	608

Insect development is temperature dependent. We can use degree days (<http://www.entomology.umn.edu/cues/Web/049DegreeDays.pdf>) to help predict insect emergence and activity. In warm years, insects emerge earlier, like we experienced last spring. Degree day

accumulations are slightly behind the 11-year average. 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

(<http://www.ipm.msu.edu/agriculture/christmas-trees/gdd-of-landscape-insects>)

GDD of Conifer Pests

(<http://www.ipm.msu.edu/agriculture/christmas-trees/gdd-of-conifer-insects>)

Degree day accumulations calculated using the Illinois IPM Degree-Day Calculator

(<http://ipm.illinois.edu/degreedays/>; a project by the University of Illinois Department of Crop Sciences and the Illinois Water Survey). (*Kelly Estes*)

Brown Marmorated Stink Bugs Starting To Make Their Spring Appearance

Another sure sign of spring and warm weather? Reports of brown marmorated stink bugs (BMSB)! In the past week a couple reports from around the state have filtered into my email, indicating that brown marmorated stink bug adults are starting to be found in and near homes.

During the spring, adults break their dormancy and move from their overwintering locations such as houses, garages, barns, and other dry places. Like many invasive insects, the brown marmorated stink bug has a very long list of host plants it will feed on. In addition to several woody, ornamental trees, it feeds on many crops that are grown in

Illinois—peaches, apples, grapes, soybeans, corn, tomatoes, peppers, and more. During the spring, adults mate and the females begin laying eggs. Egg laying will occur throughout the summer months.

A single generation per year is expected for most of Illinois. Some areas of southern Illinois could experience another generation. Typically, the adults will begin to move to overwintering locations in September, with peak movement in late September and early October. Homeowners may start to see BMSBs begin gathering on homes, barns, and garages during this time.

BMSB has been making headlines in Illinois for a couple of years. After the first confirmation of this invasive insect was reported in the fall of 2010 (Cook County), additional reports continued in 2011 (Kane, McLean, and Champaign counties). In late 2012, BMSB was confirmed in Jacksonville (Morgan County) and the first report has also come out of the Quad Cities area (Scott County, Iowa).

Adult BMSB have the typical “shield” shaped body of all stink bugs. In reference to their name, they have a marmorated or mottled brown color. Their antennae have distinct white bands; on the edge of their abdomen they have alternating black and white bands. The underside of the abdomen is white and the legs may also have faint white banding. There are several insects found in Illinois that are very similar in appearance, including the squash bug, common brown stink bug, western conifer seed bug, and spined soldier bug.

Currently, the known distribution of this insect in Illinois is limited. The public is

our primary source of information on the whereabouts of BMSB. We are very interested in where these insects may be and continue to try to determine where they are in Illinois. If you believe you have BMSB, we would be very interested in looking at it. To positively confirm any insect as BMSB, we need to look at an actual specimen. Suspect stink bugs may be sent to Kelly Estes, 1816 S. Oak St., Champaign, IL 61820. Please put stink bugs in a crush-proof container (pill bottle, check box, etc). You can also send a photo to kcook8@illinois.edu for preliminary screening if you wish. (*Kelly Estes*)

Lesser Celandine Becoming a Major Problem in Parts of the State

If you live in northeast Illinois and you frequent wooded areas in the spring, you may very likely be familiar with lesser celandine (*Ficaria verna* or *Ranunculus ficaria*) which is also known as fig buttercup and pilewort. This short, invasive perennial like many others was introduced as an ornamental garden plant. It is quickly becoming a serious invasive in this state as well as parts of the northeast U.S. Sale of this plant is only regulated in Massachusetts and Connecticut so Illinois gardeners can purchase this plant for use in their own gardens. I find it amusing that the cultivar, 'Brazen Hussy' appears to be aptly named by a breeder with a sense of humor. I hear that another plant, greater celandine (*Chelidonium majus*), is grateful to be of no relation to lesser celandine.

However, large unwanted populations of this plant are no laughing matter. Mats of leaves can dominate forest floors blocking light to native plants. Just a

quick survey taken this week of a few land stewards finds that there are known populations of lesser celandine in Cook, DuPage, and Lake counties – more specifically, in these areas:

- along the flood plain of the Des Plaines river including the town of Riverwoods
- at the North Branch of the Chicago river
- near lake Michigan ravines and bluff tops
- in the forest preserves
- in the vicinity of the Skokie River.

I'm certain there are many more populations. This plant is becoming a big problem.

It was first collected in Illinois (at least in the Chicago region) in 1978. It is often seen in moist areas in lawns or adjacent wooded areas, near streams. It grows in moist soil of floodplains and seepage areas. It has appeared in wooded wetlands, both in open sun and in shaded areas.

This spring ephemeral is reportedly in bloom now in Lake County. The flowers are attractive, up to 3 inches wide, and aid greatly in identification. They are usually 8-petaled and on stalks. Lesser celandine flowers profusely and deer don't seem to like to eat the plants. From a distance, it could be mistaken for marsh marigold (*Caltha palustris*) however.

The leaves can be irregular in shape but are generally heart-shaped or kidney-shaped. Size is variable but they are shiny, succulent, and often dark green. Once the flowers die back, bulblets (bulbils) are visible above the ground. It has

small tubers that aid with spread and allow it to overwinter. Leaves and basal rosettes appear again in late winter.

Lesser celandine is difficult to eradicate. Some have found success with applications of glyphosate (1.5%) very early in the spring. Wait until temperatures are above 50 degrees F. Small clumps can be dug by hand, being sure to remove all tubers. The rosettes however are discrete and can be difficult to locate. Removing the flowers prior to seed set may help in preventing the spread.

For more information, check out these factsheets:

<http://www.newinvaders.org/species/fig%20buttercup.pdf>

<http://www.nps.gov/plants/alien/fact/rafi1.htm>

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