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Scouting Watch

Bridal wreath spirea, or Vanhoutte spirea (*Spiraea x vanhouttei*), is blooming 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*)

Buffalo Gnats

We have received reports of large numbers of buffalo gnats, also known as

black flies, attacking people particularly in the Springfield and Moline areas. Buffalo gnats are small, 1/16- to 1/8-inch-long, humpbacked black flies. They bite exposed skin, typically leaving a small, red welt. When the gnats are numerous, the toxins from their bites can kill poultry and other birds. They feed on the thinly haired areas of dogs, cats, and horses, such as ears and undersides. There are a number of species that occur in Illinois, and some species are relatively specific to host. With this host specificity, one type of animal may be attacked much more than others. Only in the last few years have we had common human-biting species. Many buffalo gnat species live as larvae in clear, fast-moving streams and feed by filtering food from the water. With the public activity in reducing water pollution and associated federal and state water protection legislation over the past few decades, the streams, rivers, lakes, and ponds of Illinois are becoming clean enough to support life that has been much reduced since the 1930s. Although there are species of buffalo gnats that live in eutrophic, nutrient-laden water, increases in human-biting species has coincided with measurably-cleaner streams.

Adult buffalo gnats can fly from 7 to 15 miles from their source; but generally, Illinois residents that are bothered live within a half mile of the stream producing the flies. Although there are reports of DEET-containing insect repellents not being effective, scientific literature reports that DEET repellents provide the most effective protection. In areas with high populations of buffalo gnats, people commonly wear head nets, hats with insect protective netting that covers the head down to the shoulders.

These are sold in sporting goods stores. Unlike mosquitoes, buffalo gnats do not bite through clothing, so only exposed skin is susceptible to attack. They also do not enter buildings.

Controlling the buffalo gnats as larvae is generally not an option. *Bacillus thuringiensis israeliensis* (Bti) is effective against the larvae but is restricted by extensive regulation before it can be applied to running water. Other insecticide application would not only be in violation of federal and state laws but would likely kill fish and other wildlife. Running water is extensively protected by law because most running water eventually is used as human drinking water. If the buffalo gnats follow the pattern of previous years, they should be a problem for only 3 to 4 weeks and are not likely to return until next year. (*Phil Nixon*)

Gypsy Moth

Gypsy moth caterpillars hatch when common lilac, *Syringa vulgaris*, blooms. However, its main hosts, oaks, are typically just leafing out at that time. It is recommended to delay treatment until there is sufficient foliage expansion for sprays to have enough leaf surface to be effective.

Newly-hatched caterpillars are blackish and hairy. They migrate to the top of the tree to feed. However, a few caterpillars stay on the leaves of lower branches, making it easier to detect infested trees. Binoculars are useful in detecting caterpillar activity at the top of trees. Within a week or so, the caterpillars grow and molt to a size and stage that is easier to detect. They are still black and

hairy, but have obvious orange areas on their back. Later, they will develop the characteristic five pairs of blue and six pairs of red balls down their back.

Feeding continues through the spring. The caterpillars get progressively larger as the males go through five larval instars and the females go through six. In June to early July, the fully grown larvae approach two inches in length and migrate to pupate in protected areas. The adult moths emerge 10-14 days later.

Control Gypsy moth caterpillars with sprays of *Bacillus thuringiensis kurstaki* (Dipel, Thuricide), diflubenzuron (Dimilin), tebufenozide (Mimic, Confirm), or spinosad (Conserve). Because Gypsy moth larvae feed primarily at the top of trees that are frequently quite tall, it is important to use equipment that will spray that high.

Systemic insecticides are attractive for the control of Gypsy moth to avoid spraying insecticide so high into the air. However, imidacloprid, sold as Merit and several other brand names, is not effective in controlling caterpillars. Bidrin, sold as Inject-A-Cide B by Mauget, is effective but is highly toxic and requires annual root flare injection. Its packaging in injectors makes it less hazardous to the applicator. Another option is acephate (Lepitect) used as a soil injection. It should take a week or two to move into the trees' foliage and should provide about a month of control. (*Phil Nixon*)

Selective Control for Nimblewill Now Available

For years, homeowners and professional lawncare applicators have had to rely on

non-selective herbicides such as glyphosate when controlling nimblewill (*Muhlenbergia schreberi*) in residential lawns. Along with the nimblewill, non-target desirable plants such as bluegrass may be seriously injured or killed if contacted by glyphosate. Finally, we have a selective herbicide option for nimblewill.

Nimblewill is a warm-season perennial grass that is fairly common in Illinois. Typically found growing in shady or wet lawns and landscapes, it creeps by aboveground, horizontal stems that can root at the nodes and readily form patches. Its leaves are smooth, quite narrow, and short compared to many grass species. Individual plants look almost wiry. In fact, another name for this grass is wire-grass. A closer look at this plant will reveal a very short, membranous, toothed ligule. The leaves are rolled in the bud. The flower is a fine, slender panicle.

Nimblewill patches should have been obvious about a month ago when the cool-season grasses first started to green up. Nimblewill, being a warm season-grass, is much slower to green up and goes dormant earlier in the fall. While dormant, its appearance is that of very light tan-colored, "puffed up" patches (the patches look like buff-colored scouring pads). When nimblewill greens up to a grayish- or bluish-green in late spring, its appearance is more inconspicuous. In Illinois, Nimblewill may be confused with zoysiagrass which has a similar growth pattern. However, dormant zoysiagrass is more of a golden tan in color and unless planted it is very unlikely for it to suddenly appear as a weed.

For optimal control when using postemergent herbicides, nimblewill

should be treated when it is young and actively growing in the late spring to early summer. It is recommended that you extend spray coverage beyond the immediate patches as creeping stems are prone to lurk in these areas. Stolons missed by applications may form subsequent patches.

Tenacity herbicide by Syngenta was approved this spring for use on most cool-season residential lawns. The active ingredient is mesotrione. It can control over 40 weed broadleaf and grass species including nutsedge. It can be used pre- or postemergence as well as at the time of seeding. Be sure to carefully read and follow all label directions. Spot treat patches of nimblewill with 2 to 3 applications (2 to 3 weeks apart) of Tenacity mixed with non-ionic surfactant. Avoid broadcast applications unless reseeding. Use a flat fan nozzle for even coverage. Affected plants will turn white as it is a bleaching herbicide. Whitening of turfgrass may last for several weeks which can be alarming to the uninitiated. Be sure to prepare clients before using Tenacity on their lawn.

Tenacity is now available in 8 oz. bottles. Some professionals were leery about making the 1 gallon investment as the price is reportedly on the more expensive side. The use rate is quite low at 5 fl. oz. per acre. Additionally, Tenacity was granted "Reduced Risk" status by the EPA; compared to many registered herbicides it has favorable ecotoxicity and human health profiles.

Proper cultural practices can significantly aid in controlling lawn weeds. Be sure that watering, fertilizing, and cultivating are done properly and at the right time.

Many of our cool season turf grasses are dormant during hot summer days. Meanwhile, nimblewill is actively growing and enjoying the lack of competition. This unbalance can allow nimblewill to be a serious weed problem. Therefore, controlling patches while they are smaller is recommended. For up-to-date lawn weed control recommendations, consult with the University of Illinois Extension publication, "*Illinois Commercial Landscape & Turfgrass Pest Management Handbook*" as well as the "*Home Yard and Garden Pest Guide*". (Michelle Wiesbrook—adapted from an article by Michelle Wiesbrook & Tom Voigt)

More on Stressed Spruce and Deep Planting

The U of I Plant Clinic continues to receive many spruce samples. These samples are examined and evaluated for disease, insects, and mites. The bulk of the recent samples, however, have not yielded a biotic cause of decline.

Our next step is usually to evaluate the branch tip growth. The idea is to look at stem growth in length over several years. The terminal bud each year leaves a scar on the stem, seen as multiple rings around the stem, as if a rubber band had been tightly wrapped at that point. Distance between terminal bud scars from two successive years is the amount of growth for that year. Multiple years of 1 to 2 inches of stem growth clearly indicate a stressed tree.

Stress can be from overcrowding, deep planting, poorly drained soil, water stress over the past year, and even salt injury, depending on the site. Keep an

open mind and check into these possibilities when determining the cause of your tree's decline. This becomes a very frustrating situation for the diagnosticians as well as our client.

We can only assume that the spruce is under some sort of stress, but we are not able to determine what is causing the problem in our lab. Unfortunately, we cannot visit the planting site. Many times we depend upon pictures to help give us an idea of any environmental problems that may be causing spruce decline.

In the case of this spruce sample, we received some awesome pictures.

Deep planting is when a tree or shrub is planted too deeply, the lower stem is placed below the soil and gaseous exchanges cannot occur freely through the bark. This condition does not immediately kill the plant. Decline may occur for many years before the plant passes the point of no return. Once the bark begins to fall from the trunk, the end is near. A similar slow decline may occur when mulch is mounded around the base of a tree.

In order to determine if your tree is planted too deep you will need to locate the first major root coming off the trunk. It should be at or just below the soil line. A flare of the trunk should be visible above the soil line. The trunk should not be the same width at the soil line as it is 4' up the trunk. It is really a pretty

simple concept: roots are below ground and everything else is above the ground.

Does a tree that is planted too deeply need to be removed? That is not usually the case, but arborists can help the tree grow better. Deep planting is a major problem in our landscapes and one that is completely avoidable.

The International Society of Arboriculture (ISA) created www.treesaregood.com to provide quality information on tree care to the public. A section on planting new trees explains the planting process and has a helpful diagram to illustrate major points. One crucial mistake often made in planting is placing the root ball in the soil exactly as it comes from the nursery. Because nurseries use cultivation to cut down on weeds (and avoid herbicides), and because cultivation often throws soil up around the base of the tree, some of this soil may need to be removed before planting. Identify the trunk flare (where the roots cause the trunk to widen) and be certain this flare is partially visible when the tree is planted. The tree should be planted so the first root is just below the soil surface. Do not bury this flare with mulch once the tree is planted. Other details--such as digging the correct hole, mulching, and follow-up care--are discussed on the ISA Website. Taking the time to plant your tree correctly can help ensure a healthy tree for many years to come. Deep planting only causes years of tree decline and frustration in tree care. (Stephanie Porter)