

Number 2 - April 30, 2010

Newsletter Weekly for Next Two Months

We will have weekly issues of the Home, Yard, and Garden Pest Newsletter during May and June. In July, we will switch to an every two-week publishing schedule. There tends to be more pest problems arising during the spring, requiring timely management methods. As we get into summer, pest problems tend to be fewer and less sensitive to timeliness of management options. --
Phil Nixon

Pest Management Timing Using Phenology

Don Orton's original edition of the book, *Coincide*, was published in 1989. *Coincide* addresses the prediction of pest occurrence on ornamental plants by using phenology. 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 disease or insect pest. Thus, "early" and "late" springs associated with unusually high or low temperatures, respectively, cause similar responses in both plant and pest. Degree days can also be used to accurately predict pest occurrence, and *Coincide* provides these numbers as well.

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.

A major revision of this book was published in 2007 that contains a few additional insects, but also covers diseases. The name of the book was changed to *Coincide: The Orton System of Pest and Disease Management*. It is still available from Dennis W. Jamieson, Labor of Love Conservatory, 723 Dawes Avenue, Wheaton, IL 60189-6587. The publisher can also be contacted at 630-668-8597 and dennyjam@aol.com. The price per book is \$39.00 plus \$5.00 shipping and handling. *Coincide* is also available through some trade organizations and bookstores, including The Morton Arboretum Gift Shop. --*Phil Nixon*

Scouting Watch

Bridal wreath spirea, or Vanhoutte spirea (*Spiraea x vanhouttei*), is blooming in most of Illinois. This is a major phenology plant in Don Orton's book *Coincide*. 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 atenioides (first generation).

Full to late bloom: Lilac (ash) borer newly hatched larvae; euonymus caterpillar early webbing, 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*

Bristly Rose Slug

We've had several reports of bristly rose slug in the past week, causing rose foliage to be lacelike. The green larvae are more numerous on the undersides of the leaflets. Although causing window-feeding when young, the larger larvae eat holes in the leaflets and even cause defoliation.

The **bristly rose slug** is green, with fine, hairlike spines, and grows to about 1/2 inch long. **Rose slug** looks like bird manure when young but when older looks like the bristly rose slug without the bristles. Both are present at this time of year.

Although these insects look superficially like slugs or caterpillars they are sawfly

larvae. They will not be controlled with slug baits or *Bacillus thuringiensis* kurstaki. Acephate (Orthene), bifenthrin (Talstar), carbaryl (Sevin), and cyfluthrin (Tempo) are effective.

Insecticidal soap will also be effective with very good coverage. Avoid getting the insecticide on flowers, although most rose varieties have had the nectar and pollen bred out of them and are not attractive to pollinating insects. Species roses and particularly some single-flowered varieties will attract pollinators, which could be killed by insecticide sprays on the blooms.

Because carbaryl is more likely to cause bee kills, avoid spraying Sevin on blooming rose bushes being visited by pollinators.--*Phil Nixon*

Galls, Galls, Galls

Spring commonly brings large numbers of leaf galls, with oaks having the greatest share of leaf and other galls. Galls are plant growths formed due to stimuli provided by insects, mites, disease organisms, or mechanical injury. They can be thought of as benign plant tumors. Frequently, insects and mites feed on the plant tissue, releasing chemicals that cause the plant to form the gall. Sometimes, even the physical injury caused by feeding or egg-laying can apparently cause the gall to be formed.

Gall insects and mites typically attack areas with large amounts of meristematic tissue such as leaf, flower, and stem buds as well as expanding leaves and elongating stems.

Meristematic plant tissue contains embryonic or undifferentiated cells that will form various organs of the plant

based on hormonal (chemical) stimulation by the plant. Gall insects and mites use their own chemical messengers to stimulate gall formation. The developing insects or mites then feed on the gall tissue and are protected from natural enemies by it. The galls that are formed by the plant are so specifically located and shaped as to allow identification of the gall maker to species.

Most galls produced by insects and mites cause little or no harm to the health of the plant. Of the common galls, only gouty and horned oak galls and Cooley and Eastern spruce galls require control if numerous to prevent damage to plant health. Plants having other types of galls are apparently as healthy as those that do not have them. They grow as fast, grow as tall, and live as long as nearby plants of the same species. It is common for individuals of the same species to host vastly different gall numbers, making it likely that host plant resistance is common with galls.

Over the next few weeks, you are likely to find many leaf galls on woody plants, many of bizarre appearance. These are very unlikely to cause any harm to the plant, which is convenient because there is no control for formed galls except physical removal. The biology and life cycle of most galls is unknown, making the timing of insecticides or miticides to prevent gall formation an educated guess at best. Because gall tissues are not normal in terms of cell makeup, including xylem and phloem conductive tissue, systemic insecticides and miticides have limited value.

In the last issue, we discussed galls associated with pin oak and silk tree or

mimosa. This week, we received photos on our Distance Diagnosis System of *Neuroterus minutus* on white oak in southern Illinois. This is a leaf petiole gall wasp that forms large masses at leaf bases. We also saw specimens earlier in the month of apparently *Dasineura porrecta*, a gall midge that attacks developing seeds on American elm. The homeowner was seeing tens of thousands of tiny larvae about one-fiftieth of an inch long on the ground under the tree. In these cases, the outcome of gall attack are reduced leaf canopy or seed production, neither of which are likely to cause serious health effects to the tree. They are nuisances in that the client has less shade or has to sweep the driveway a couple extra times to remove dropping larvae.

All of the above galls are ones that we had not noticed before. There are enough gall makers that there is always something new. Thankfully, they are rarely damaging to their hosts.--*Phil Nixon, Brenda Roedl*

Buffalo Gnats

We are getting reports of buffalo gnats in large numbers in the Springfield area. They are common most springs in the northern two-thirds of Illinois. These are tiny, black biting flies that do not bite through clothing, avoid shady areas, and are repelled with DEET, picloram, and soybean oil insect repellents sold as Off, Cutters, and Bite Blocker. A more complete article was published in this newsletter in issue 4 or 2008. It can be found at:

<http://hyg.ipm.illinois.edu/pastpest/200804h.html>--*Phil Nixon*

Dying White Pines

It is a bit early in the season for these calls, but I have already had several inquiries concerning dying white pines. We usually refer to this situation as white pine decline, for want of an exact cause of tree death. Often the complaint is sudden death, in as little as a month's time. Other times the description is pale growth in the winter followed by death of the tree in the spring. Trees affected in the summer appear to die "almost overnight". The last situation is likely related to pine decline hastened by heat and drought stress.

White pines with decline appear yellow or off-color and have sparse looking growth. New needles may be stunted and yellow-brown as in the image. Some people have described a poor root system on affected trees that were removed after declining was apparent. Most people, however, usually cut the trees at the soil line and never inspect roots. Often one or two trees are affected within a row of otherwise healthy white pines. This is not a situation of transplant shock but rather a condition appearing on trees that have been growing on an undisturbed site for many years. The image shows a severely affected white pine on the left, a mildly affected tree in the middle, and healthy white pine on the right.

Samples received at the Plant Clinic over the last decade have been tested for pinewood nematodes, needle and stem blights, and root pathogens. When roots and soil were available, we have also tested for below ground nematodes and evidence of insect feeding. Occasionally we have isolated the *Verticicladiella* fungus associated with Procerum root

decline. We have not associated any consistent biotic factor with the samples we have received. Some researchers working with declining loblolly and longleaf pines in Alabama have seen a possible association in those species with a root boring insect. That has not been observed on the white pines we have seen in Illinois.

It is suggested that many stress factors are involved in the decline of white pines described here. Some suggestions include wet or poorly drained sites, girdling roots, deep planting or mounded mulch, alkaline soil, flooding or drought stress, and possibly involvement of secondary root invading fungi.

There are no cures for infected trees. Try providing water in periods of drought, fertilizing with an acidic fertilizer, and waiting to see whether the tree will respond. This does not seem to be an infectious situation, so waiting for a couple of weeks should not jeopardize other trees. If you see insects on the declining trees, get some help with identification of the species to determine whether treatment is recommended. Once the tree dies, remove it to prevent secondary insect problems that could spread to healthy trees. Consider digging the roots to rule out root rot, root boring insects, girdling roots, and other problems. There are no chemicals suggested or warranted for this problem.--*Nancy Pataky*

Crabapple Scab Scenario?

Crabapple scab was more severe in 2009 than I have seen it in the past 20 years. The image shows an infected row

of defoliated crabapples in early September, 2009 when other deciduous trees are still green.

The big question is whether we will see this much injury in 2010. Requirements for a disease problem are a susceptible host, a virulent pathogen, and the proper environment for infection. Most of you have seen this portrayed as a disease triangle. As evidenced by last year's infection, we have many susceptible trees. The pathogen, *Venturia inaequalis*, was plentiful in 2009 and over-winters in fallen leaves, buds, and twig cankers. Raking and removing leaves will help reduce infections, but there should be more than adequate pathogen in the landscape from last year. As usual, the bottom line is weather.

There are two types of spores that may cause this disease. Ascospores are the overwintering spores that infect in the spring, usually through petal fall. Central Illinois crabapples are almost finished with flowering for this season. Lesions that result from this primary infection will also produce spores which are called summer spores or conidia. This secondary infection will continue as long as rain events occur in summer and autumn. Infection requires a period of wetness. The length of time of wetness is related to temperature. At 50 degrees (F), ascospores need 14 hours of continuous leaf wetness to infect; and conidia need 11 hours of continuous wetness to infect leaves. At 60 degrees (F) only 9 hours and 6 hours of continuous wetness respectively are required for infection. Consult the Illinois report on plant disease No. 803, "Apple and Crabapple Scab"

(http://web.aces.uiuc.edu/vista/pdf_publications/803.pdf) for more detail. If you saw the problem last year and wet periods are frequent, the disease will be a problem again.

Fungicides are used as preventives and must begin as buds first begin to open. University of Illinois recommendations state that the first spray should be applied when leaves just begin to emerge from buds (about one-quarter inch green). This is to protect new leaves. Sprays must be continued according to label intervals until two weeks after petal fall to give maximum protection against ascospore infection.

Many crabapple cultivars have resistance to scab, and resistance is definitely the long-term solution to infection. If you are planting new crabapples this year, look for varieties with resistance to scab, rust, fire blight, and powdery mildew. A publication that may help is this reference by U of I professors Dave Williams and Gary Kling: *Recommended Crabapples for Illinois Landscapes*. Look for it on the Web at http://www.extension.uiuc.edu/IPLANT/plant_select/trees/Selecting_Crabapples.pdf When looking at resistance options, look at ratings that have been made for your geographical area. --
Nancy Pataky

Tree Declines

As I think over the thousands (or maybe hundreds of thousands) of tree samples I have examined in the last 30 years, clearly clients would prefer to hear that their plant has a solitary problem that

can be remedied quickly. Often many problems are present, such as a spruce with *Cytospora* canker, *Rhizosphaera* needle cast, and planted on a poorly drained site too close to a home. Even that example provides specific problems that can be addressed.

In far too many cases, however, we see slow reduction in tree growth and vitality of a tree. This may be the result of many stress factors. Often those factors cannot be pinpointed. Sometimes a disease or insect may be involved, but not as the major cause of stress. These situations are known as **tree declines**. We see white pine decline (discussed in this issue), ash decline, maple decline (image), and oak decline most frequently in Illinois. Because these are not infectious disease situations, there is usually no value in using pesticides. Instead, focus on investigation into the many causes of stress before formulating a management plan. For example, poor site drainage, root rot, high soil pH, and environmental stress such as high soil temperature and wind have been associated with white pine decline. Research the specific needs of a tree species before planting into the appropriate site. Unfortunately, tree declines take years to develop, showing just when trees have become a major part of the landscape.

Some helpful web sites on tree decline are available from our Indiana and Iowa counterparts on these links.

http://www.ces.purdue.edu/extmedia/BP/BP_37_W.pdf

<http://www.extension.iastate.edu/Publications/SUL2.pdf> --Nancy Pataky

Where Have All the Flowers Gone?

While most plants are self-sufficient and able to “do their thing,” that is flower without much assistance, once in a while that isn’t the case. Dahlias, tulips, and iris are some examples of plants that often have flowering difficulties, leaving the consumer to wonder what happened.

Iris (*Iris* sp. and cvs.) are typically hardy, long-lived perennials that need a minimum of care. Bearded types grow from thick underground stems called rhizomes. The rhizome serves as a storage organ for “food” produced by the leaves. Only one blooming stalk is produced once from each rhizome. If the plants are not divided on a regular basis, they soon become overcrowded and flowering is reduced. It isn’t difficult to determine if a planting is overgrown; the clump will be rather large with a tangled mess of rhizomes, many of which are dried up and no longer productive. The general guideline is to divide a clump every 3 to 5 years, after flowering, in midsummer. Dig up the entire clump and loosen away any soil. Cut the rhizomes apart with a sharp knife. Discard the old rhizome, keeping only young, healthy ones. Each division should have a fan of leaves. To reduce weight, trim the fan back by 2/3. Replant the rhizomes so they are at or just below the soil surface and 12 inches apart. The rhizomes should never be completely buried. Iris generally needs little additional fertilizer; however 1 to 2 pounds of a complete fertilizer per 100 square feet can be applied in the spring and again after flowering to boost growth.

Of all the spring bulbs, perhaps none is more recognized universally as the Tulip (*Tulipa* sp. and cvs.). Unfortunately, they are not as long-lived and productive as

Narcissus over time. Some of the species tulips, *T. gregii* and *T. kaufmanniana* for example, are better at returning year after year. Bulbs used in commercial plantings are usually discarded after one season, but not so with those in home landscapes. In the home garden, the first year is spectacular, the second year okay, and by the third year the bulbs dwindle away. Even a new planting can appear spotty with bulbs that never grew and/or flowered. Some things to consider are as follows:

- The larger and showier the flower, the less chance for return in succeeding years.
- Buy quality bulbs – you shouldn't skimp here; bulbs are not that expensive. Invest in the best you can buy. Avoid bulbs that are "on-sale," "end of season," show signs of rot or soft areas, those that are missing the tunic (the outer brown, papery covering)
- Plant as soon as possible in the fall. This allows them to develop roots and get established. A depth of 8 inches should suffice; planting deeper, especially in clay soil is the kiss of death.
- Choose a site that is well-drained; avoid sites with heavy clay or where water collects over the winter.
- After flowering, allow the foliage to "ripen," that is, turn yellow; this allows the bulbs to build up food reserves. Even if this is done, it does not guarantee re-flowering.
- Fertilize at planting time with a general all-purpose fertilizer.
- Invest in new bulbs each year. As stated above, they are relatively inexpensive and well worth the cost for a reliable display.

Dahlias (*Dahlia* cvs.) are grown for their summer blooms that range in size from 2 inches to dinner-plate size flowers 12 inches or more. Sometimes flowering is reduced, especially from tubers stored from the previous year. Assuming the site is not the issue (dahlias are full sun plants and perform poorly with shade), or weather conditions (a particularly cool season can hamper flowering); possible culprits include over-grown clumps of tubers and/or lack of fertility.

As dahlias grow, they produce a clump of tubers in the soil. At the end of the season, most gardeners dig up the clump and store it for the winter (see image). If the entire clump is planted the next spring, the result is often an abundance of healthy foliage and little flowering. To avoid this, the mature clump should be divided in the fall or spring so that you wind up with many tubers, each with one or two eyes as shown in the second image. They can actually be split apart so that you're planting just one tuber. If you proceed with this method, as you are splitting off the tubers, it is recommended to discard the original tuber and save the newer ones.

Another factor is that dahlias are heavy feeders and need moisture. I suggest applying some type of fertilizer pre-plant when you're working up the soil in the spring and then applying fertilizer, either granular or soluble 2x, again during the summer. Dahlias also require ample moisture and benefit from mulch placed around the base of the plants. --
Jim Schmidt, Extension Specialist, Horticulture