

Number 9 - June 18, 2010

International Herb Conference

The International Herb Association is holding its annual conference this year in Collinsville, Illinois on Saturday, July 10 through Monday, July 12, at the DoubleTree Hotel (618) 345-2800. Pre- and Post-Conference tours will be held on Friday, July 9, and Tuesday, July 13.

There will be a Marketplace for retail vendors on Saturday and Sunday. Hosted dinners will be on Saturday evening at the Oatman House Tea Room in Collinsville, not far from the host hotel.

The complete conference brochure, including information on cost for the various parts of the program, the tours, the dinners, and hotel accommodations, is available on the International Herb Association's website at <http://www.iherb.org>, or contact IHA headquarters at P.O. Box 5667, Jacksonville, FL 32247-5667. Tours, Public Day, Hosted Dinner, Vendor Space, and Professional Program are priced separately, so only the parts that one desires to attend are paid.--*Chuck Voigt and Phil Nixon*

NPDES Webcast Postponed

Due to technical difficulties with the webcast vendor, EPA's Draft NPDES Pesticides General Permit (PGP)

webcast has been postponed to Thursday, June 24th at 1:00 pm EDT. Those that were registered for the June 17 webcast will remain registered for this postponed webcast. The PowerPoint presentation of the webcast is available at

http://event.on24.com/event/21/87/01/rt/1/documents/slidepdf/draft_pgp_webcast_download.pdf There are explanatory articles about the NPDES Pesticides General Permit in the previous two issues of this newsletter.
--*Michelle Wiesbrook and Phil Nixon*

Warm Spring Causes Early Insect Emergence

Central and northern Illinois has had a warm spring this year. This is probably causing several insects including bagworm, Japanese beetle, and the masked chafers to emerge early this year in those areas of the state. Southern Illinois has had more typical spring temperatures, resulting in more average insect development in that area of the state.

Overwintering white grubs, both Japanese beetle and masked chafer, rise to feed in the turf root zone when it warms to 50 degrees F. In Champaign, there were 14 days with a soil temperature of at least 50 degrees F in March and April of 2009, whereas there were 37 days in 2010. In DeKalb, there

were 13 days with a soil temperature of at least 50 degrees F in March and April of 2009, whereas there were 31 days in 2010. In Carbondale, there were 53 days with a soil temperature of at least 50 degrees F in March and April of 2009, but only 43 days in 2010. The soil temperatures were similar in 2008 and 2009.--*Phil Nixon*

Japanese Beetle

Japanese beetles are emerging throughout the state. The warm spring weather in northern and southern Illinois has probably resulted in their emerging early in the northern two-thirds of the state. This is the normal time for their emergence in southern Illinois.

Male beetles emerge before the females and are attracted to turf areas where female adults are about to emerge. They try to mate with her as she emerges from the soil, with many males trying to mate with each female. This causes a phenomenon called balling, where a ball-shaped mass of males forms on the turf in their efforts to mate with a single female in their midst.

Emerging females fly to host plants to feed, being followed by the males who will continue to mate with the females for several weeks. Although Japanese beetles are known to feed on about 200 kinds of plants, they prefer smartweed, linden, crabapple, birch, willow, Japanese maple, rose, cherry, grape, raspberry, blackberry, and currant. Unlike many insects, they prefer to feed in the sun, being most common on the upper side of the leaves at the top of the tree or shrub.

Two types of damage are caused. They feed through the upper leaf surface, consume the interior of the leaf, and leave the lower surface intact. This is called window-feeding. The exposed lower leaf surface is initially whitish, but soon turns brown as the exposed cells die. They will also eat holes through the leaf, frequently leaving only the major leaf veins. This is called leaf skeletonization; only the veins or skeleton of the leaf are left behind. Due to the beetles' preference for sunny locations, damage will appear as brown leaves or sparse foliage at the top of the tree and progressively work its way down as feeding continues.

The beetles change hosts about every three days, being attracted to plants with damaged foliage, particularly that damaged by other adult Japanese beetles. The beetles are present for about six weeks, so plant damage continues to increase. Due to this tendency to attack previously attacked plants, control of leaf damage early in the flight season is the most critical.

An interesting habit of adult Japanese beetles is that when they are disturbed in late afternoon through evening, they tend to fold their legs and drop from the plant. Earlier in the day, they tend to fly away. This habit makes it easy to hand-pick them. Partially fill a wide-mouth jar, such as an empty peanut butter jar, with rubbing alcohol or soapy water. Hold it under the beetle, poke at it, and the beetle will drop into the liquid where it will be killed. Homeowners that do this every other evening or so for the first week or two of emergence will greatly reduce the feeding damage over the flight period to their roses, shrubs, and small trees.

Spraying every two weeks with carbaryl (Sevin), cyfluthrin (Tempo), or other labeled pyrethroid insecticide will also provide control. With the beetles out for about six weeks, this will require three sprays. If the client is unwilling to pay for three sprays, the first spray will provide the most plant protection for the cost and effort. Because the beetles primarily cause only aesthetic damage, not causing obvious health problems to the plants, leaving plants untreated that are less important to the landscape's appearance is an option. When the beetles change host plants every three days, they tend to fly at least one-half mile to a new host. Leaving untreated hosts in the landscape is unlikely to cause an increase to treated trees or to result in an increase in egg-laying and subsequent white grubs in the nearby turf.

Japanese beetle traps are available that attract male beetles with a sex pheromone lure and female beetles with a floral lure. These have been shown repeatedly to increase the amount of foliar damage in the area around the trap. The trap attracts beetles from a large area, but many feed on nearby plants rather than going directly to the trap.--*Phil Nixon*

Dutch Elm Disease or Elm Yellows?

There are still many elms in Illinois. When one starts to decline, most of us suspect **Dutch elm disease (DED)**. This disease is well known for causing the death of most American elms in the state. Some think it kills "Dutch elms", but there is no such elm. The disease is named Dutch elm disease because it was

first found in the Netherlands (in 1921). It moved to the US in the 1930s. There are two species involved, *Ophiostoma ulmi* (formerly known as *Ceratocystis ulmi*) and *Ophiostoma novo-ulmi*. The first fungal species killed elms through the 1970s. The second species is more aggressive and caused a second wave of infection starting in the 1970s. We can identify DED at the Plant Clinic by culturing live, symptomatic wood. We cannot differentiate these species.

Check out RPD No. 647

(http://web.aces.uiuc.edu/vista/pdf_public/647.pdf) for more on DED. In Illinois, most new infections are first observed during June, so you might see problems now. Leaves on one or more branches wilt, turn dull green, yellow, then brown, curl, and usually drop prematurely. Most elms usually die in one year, but large elms die slower, sometimes over two or more years. The most diagnostic symptom is vascular streaking as seen in the image. This streaking will appear immediately when bark is peeled. If the streaking appears after exposed to air for a few minutes, that is not caused by the DED fungus. Verticillium wilt can also cause streaking, as can some canker diseases. Cultures from live wood showing vascular streaking will produce sporulation, allowing a positive identification in as little as 5 days.

Elm Yellows can cause elms to decline and die too. The symptoms are a bit different but easily confused with those of DED. Elm yellows is also called Phloem Necrosis because the causal pathogen kills the phloem. The first symptom is wilting. Foliage may be sparse in the spring with many yellow (not brown) leaves. The wood is not streaked as with DED but the inner bark

turns tan or butterscotch in color and has a wintergreen odor. A report on plant disease discussing elm yellows can be found at

<http://www.aces.uiuc.edu/~vista/abstracts/a660.html>.

The pathogen causing elm yellows is a phytoplasma. Although similar to a bacterium, phytoplasmas cannot be cultured in the lab. They can be identified through PCR and further testing, not yet available at the University of Illinois Plant Clinic. Private testing labs such as Agdia, Inc can provide this service. The cost can be prohibitive to some clients. Consider eliminating DED as a possibility through standard lab culturing. Consult the University of Illinois Plant Clinic web site,

<http://plantclinic.cropsci.illinois.edu/>, for details on how to send a sample for testing. A very helpful USDA pamphlet, How to Differentiate Dutch Elm Disease From Elm Phloem Necrosis, can be found at http://www.na.fs.fed.us/spfo/pubs/howtos/ht_dednecrosis/ht_dednecrosis.htm.--Nancy Pataky

Slime Molds, Mushrooms, and Algae, Oh My!

Everyone seems to understand the value of landscape mulch. It does, unfortunately, have a few inhabitants that are offensive to people. There are aesthetic problems like slime molds and mushrooms. There are also some health and safety concerns such as mushrooms and algae. Artillery fungi can be costly. Landscape mulch made from wood and bark is wonderful because it decomposes and adds to soil health.

Bacteria and fungi help organic matter decompose, so it is only natural that such mulches will sometimes have fungi and bacteria growing in or on them. In wet weather we see some things that may raise questions.

Slime molds feed on decomposing organic matter, and can be found in almost any given spot in the home landscape; sidewalks, mulched areas, wood chips in play areas, or over vegetation such as turf, strawberries, flowers, ground covers, weeds, and the base of woody plants. They will not cause direct harm to your plants or your family. Of course, they should not be eaten.

Slime molds range in color and size, often seeming to appear suddenly after a period of warm, wet weather. They are also commonly found during the summer in irrigated landscapes. The plasmodium, or “feeding” stage, appears as a slimy, amoeba-like organism. Slime molds may be white, gray, yellow (See image by J.Schuster), orange, violet, blue, green, or purple–brown greasy masses and can get as large as one to two feet in diameter. One type of slime mold displays an unpopular resemblance to dog vomit. The plasmodium soon develops colorful, crusty fruiting bodies filled with masses of dusty spores. These organisms do “move”, but too slowly to watch. Homeowners are often concerned when, after a day to several days, they notice that the colorful and slimy “blobs” have migrated a short distance. No chemical controls are known, nor needed, to combat slime molds. They usually dry up and disappear in dry weather. If you have some unsightly patches in a garden that you wish to eliminate, simply remove

the spore masses in a plastic bag and break up the remaining masses by vigorous raking or brushing.

Mushrooms of various sizes and shapes grow in mulch. Most are harmless to plants but can cause other concerns. Some folks worry that dogs or children might eat them. The image shows some mushrooms in mulch near my roses. They dry up with the weather and have not caused any problems to the plants. Artillery fungi are the tiny structures that “shoot” spores as high as two stories of a home. They can cause black spots on siding that will not wash off. More on artillery fungi can be found at this Cornell University site, <http://plantclinic.cornell.edu/FactSheets/artfungus/artilleryfungus.htm>. Still others give off an offensive odor, like stinkhorns. Stinkhorns are members of the Phallaceae family of fungi. When fresh they will smell terrible, thus the name of stinkhorn. Stinkhorns are saprophytic fungi, meaning they live off dead plant material. They do not parasitize healthy plants. The mycelial phase of the fungus is beneath the finger shaped fruiting structure and grows throughout wood chips, rotting roots, or any organic matter in the soil, helping with decomposition. Stinkhorns are often found in parks, wood chip areas, field crops, and composted soil. They usually appear in wet conditions on fertile soil.

Probably the most asked question is, “How do I get rid of these things?” There is nothing you can do to eradicate these foul smelling fungi. If there were no organic matter there would be no stinkhorns, but then, your landscape would be unattractive since plants need organic matter to thrive.

Algae are simple plantlike organisms ranging in size from microscopic to large seaweeds. They do not have roots and leaves but they do make their own food by photosynthesis. They grow in water or on damp surfaces such as on soil, on animals, and even on the bark of trees. A recent Plant Clinic sample of algae growing on rock is pictured here. The concern was not for plants but for safety. The algae made the rocks very slick in an area frequented by the public.

There are many organic structures that will grow on organic mulch or other landscape materials. Assess the threat of such structures before you worry about how to eradicate them. On a recent trip to Penn State University, I found a publication called “What is Growing in My Landscape Mulch?” (<http://pubs.cas.psu.edu/freepubs/pdfs/ul201.pdf>) This publication has some nice images of problems we see on mulch each year.--*Nancy Pataky*

Wetwood

Wetwood is a condition caused by bacteria that enter wounds in a tree. Although you see the oozing, wet areas coming from cracks in the wood, the bacteria usually enter wounds in the roots. Other than sound horticultural practices, you probably cannot do anything to stop the condition. Elms, poplars, cottonwoods, oaks, and maples seem most commonly affected in Illinois, but many other tree species are susceptible. *Enterobacter cloacae* (formerly known as *Erwinia nimipressuralis*) and other bacteria are associated with this disease. This condition in trees is very noticeable by the homeowner because infected trees

often have seepage coming from a major crotch or wound in the trunk. The odor associated with wetwood is the result of fermenting bacteria. Wetwood is a chronic, rarely serious, disease of landscape trees that can contribute to general decline in tree vitality but is not known to cause tree death.

Wetwood is most visible externally as a bubbling seepage of bacteria and toxins from wounded tissue in V-shaped branch crotches, pruning wounds, injection holes, and trunk cracks, as in the image. Liquid often runs down the trunk, leaving a white stain. You cannot always see the wound, but you can see the liquid. Bacteria in the inner sapwood and heartwood of the tree ferment causing internal gas pressure. This pressure commonly reopens old wounds and the sour liquid flows down the bark. As it dries, a light gray to white encrustation remains. This encrustation is called slime flux. The liquid commonly causes localized death of the cambium. Interestingly, the anaerobic nature of wetwood and the toxicity of the liquid usually prevent wood rot in that area of the trunk.

There is no cure for this condition, but the following may be helpful. Fertilize stressed trees in the spring or fall to stimulate vigorous growth. Some people like to install perforated plastic or iron drain tubes in the tree to relieve the gas pressure and to allow continual drainage away from the trunk. The idea is to keep the liquid off the trunk so that the cambium is not killed. Be aware that drain tubes often make the problem worse internally. Trees have the ability to compartmentalize injuries or diseased wood. They may “wall off” the wetwood areas. Since drain tubes create

a deep wound, they may also break the compartment that the tree has made to encompass the wetwood. This process may allow the internal discoloration and any future decay to spread outside the contained area. Removing dead or weak branches, plus promptly pruning and shaping bark wounds is helpful. These measures will encourage rapid callousing of wounds. The sap flow that results from pruned branches is normal and is not the same as wetwood flow. The liquid we see with wetwood may flow year-round and is often followed by the foul smelling slime flux described.

Consult RPD No. 656, *Bacterial Wetwood and Slime Flux of Landscape Trees* for more on this condition (<http://www.aces.uiuc.edu/~vista/abstracts/a656.html>).--Nancy Pataky

Viburnum Leaf Beetle: Garden Menace

Viburnum is one of America's most popular shrubs because of its beautiful flowers and wildlife attracting berries. However, this pretty plant is being threatened by the invasive viburnum leaf beetle (*Pyrrhalta viburni*), a native of Europe that has been moved to North America on infected viburnums. The adult beetle is small, $\frac{1}{4}$ to $\frac{3}{8}$ of an inch long and is a golden brown color with a sheen when in sunlight. The larvae are greenish-yellow and develop dark spots as they age.

Both larvae and adults feed heavily on viburnum plants. Adults lay eggs in new growth of the plant. When the larvae hatch they begin to skeletonize the leaves, often leaving only the midribs and major veins. The larvae migrate to

the soil to pupate. When they emerge as adults, the Viburnum Leaf Beetle continues to defoliate the plant by chewing irregular circular holes.

The viburnum leaf beetle can be easily detected, look for defoliated plants as well as larval exit holes. If you discover the viburnum leaf beetle in your garden there is still hope. The simplest and most effective method of treatment is to remove the infected twigs. They will be leafless with scars on the underside and can be found between early October and mid April. Another option is to encourage beneficial insects that feed on the viburnum leaf beetle, such as lady beetles, lacewings and spined soldier bugs. This can be done by having a diverse array of plants and avoiding broad spectrum insecticides, using organic options instead. The viburnum leaf beetle can also be stopped if Tanglefoot, a sticky pest barrier is placed around the base of the plant. This prevents the larvae from moving down the stem to pupate, effectively stopping the cycle.

The viburnum leaf beetle was identified for the first time in Illinois in 2009. If you see this pest or have questions, please contact the [Illinois Cooperative Agricultural Pest Survey](#) (CAPS).

--Stephanie McLaughlin

Beautiful but Dangerous: What You Should Know About Purple Loosestrife

Purple loosestrife (*Lythrum salicaria*) has become a common site in many places in the United States, including Illinois. This plant's prevalence and beautiful appearance causes many to

write it off as a harmless wild flower. However, purple loosestrife is a very aggressive non-native plant that poses a very real ecological and economic threat.

This plant was first brought over from Europe with settlers in the 1800's. It is a perennial and readily overruns wetland and lake shore ecosystems. Purple loosestrife replaces native plants and creates a dense and impenetrable stand of vegetation. Unlike native plants, purple loosestrife is not suitable as shelter, food, or nesting areas for native animals. This plant also overruns wild rice paddies and fish spawning grounds, some of which are used commercially. It has been estimated that purple loosestrife invades and degrades 190,000 hectares of wetlands, marshes, pastures, and riparian meadows in North America every year. The economic impact of this encroachment totals millions of dollars.

In order to control purple loosestrife, accurate identification is crucial. You can use the table below to identify verify the presence of purple loosestrife. There are many native species that may be easily confused such as fireweed, swamp loosestrife, winged loosestrife, and blue vervain. To see a comparison of these natives to purple loosestrife you can check out this online guide. (<http://clean-water.uwex.edu/pubs/pdf/inv.purple.pdf>)

Once identified, there are different ways to control purple loosestrife. These methods vary based on the size of the infestation and include digging, hand pulling, cutting, chemical, and biological control methods. Even if removal is not an immediate option, cutting off the flowering spikes will prevent that

season's seeds from spreading and increasing the infestation. This is particularly important because each plant can produce over 2 million seeds per year.

Identifying and controlling purple loosestrife infestations is crucial because

the habitats it degrades are not only of commercial value but are some of the most ecologically rich ecosystems in the United States. Despite this, there are still ornamental seed mixes that include this flower. So, please keep your eyes out for purple loosestrife and help stop the infestation.--*Irenka Carney*