COOPERATIVE EXTENSION SERVICE
HOME, YARD & GARDEN PEST NEWSLETTER
College of Agricultural, Consumer and Environmental Sciences, University of Illinois at Urbana - Champaign
Illinois Natural History Survey, Champaign

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Modified Growing Degree Days (Base 50°F, March 1 through May 28)

Station Location	Actual Total	Historical Avg. (11 year)	One- Week Projection	Two-Week Projection
Freeport	532	424	619	729
St. Charles	534	403	614	716
DeKalb	537	467	630	745
Monmouth	647	520	744	863
Peoria	683	556	782	905
Champaign	721	569	826	956
Springfield	813	635	926	1061
Brownstown	760	694	879	1019
Belleville	857	727	978	115
Rend Lake	938	785	1067	1215
Carbondale	868	743	991	1133
Dixon Springs	879	801	1007	1152

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

Distance Diagnostics

Correct pest identification is the first step in developing a successful Integrated Pest Management (IPM) plan. Sadly, not every pest is easily identified, especially when you start talking about all the biotic/non-pathogenic problems such as chemical drift, drought, lightning, soil compaction, etc., coupled with the true bugs, fungi and weeds. Who would have thought that chemical injury can look like leafhopper injury? It can.

ID can be difficult. Insects may be nocturnal, working when we don't see them. Problems may show up long after the pest is there. One man's weed may be another's ideal plant. Pathogenic diseases are usually microscopic and difficult to see.

To help, local county Extension offices have access to the University of Illinois' DDDI (Distance Diagnostics through Digital Imaging) system which can send images to specialists throughout the state and on campus. Digital images of the problem are uploaded to the system, though like any system, the quality of the image/s is important. Additionally, having background information of the pest and/or site is also crucial. Without as much detailed information as possible, it may be difficult to accurately diagnose the pest problem. This system is free, with turn-around time generally less than 48 hours.

You might want to bookmark many University of Illinois Extension and state websites which can also assist with pest ID and controls. These include:

Turfgrass Pests:
http://urbanext.illinois.edu/turf/

General Insects:
http://urbanext.illinois.edu/bugreview

Vegetable Problems:
http://urbanext.illinois.edu/vegproblems/vegetables.html

Wildlife Problems:
http://web.extension.illinois.edu/wildlife

General Plant Problems:
http://urbanext.illinois.edu/focus/

Environmental Health Problems (mosquitoes, bedbugs, cockroaches, etc.):
http://www.idph.state.il.us/envhealth/entpestfshts.htm

(*David Robson*)

Rose Rosette Virus

Rose rosette disease was first described in the early 1940s in North America. In the seven decades since, rose rosette has become established across the Midwest and is now found across most of the United States. The causal agent of the disease, a virus, was isolated and identified in 2001. This virus was named Rose Rosette Virus, or RRV.

The symptoms of rose rosette can be striking. Classic symptoms include distortion, discoloration, and overgrowth. Flower petals, flower buds, and new leaves may be elongated and twisted. Multiple small shoots may develop in clusters, forming a growth known as a witches' broom. New growth may be an abnormal red color, with numerous small prickles (thorns) developing rather than the normal fewer, larger prickles. Shoots may elongate quickly, giving the new stems a thick, succulent appearance. Unfortunately, symptoms can vary depending on the variety, age, and condition of the rose host and environmental conditions. Not all symptoms may be present in an infected host.

Roses appear to be the only hosts for RRV. Unfortunately, a wide variety of rose groups including hybrid tea, floribunda, grandiflora, and miniature roses appear to be susceptible. Shrub roses, including the increasingly popular Radrazz roses (better known by their registered trademark name, the Knock Out® Rose), are also susceptible. The invasive weed, multiflora rose, is particularly susceptible to RRV. The virus has been used as a biological control of multiflora rose with varying success. Preliminary testing indicates that there may be some rose species that are less susceptible to RRV, but none are currently used in the ornamental industry.

RRV is transmitted from plant to plant in the environment via the eriophyid mite *Phyllocoptes fructiphilus*. Eriophyid mites are tiny creatures, measuring approximately 0.01 inches in length. They are invisible to the naked eye and require a strong hand lens to be observed. These mites are easily blown by wind currents. They congregate and feed on tender new growth, such as buds and emerging leaves. As they feed, the mites acquire the virus from infected plants, then transmit the virus to healthy ones. How long the rose survives after it is infected is heavily dependent on a number of other factors, including general health of the host before infection. Most roses develop symptoms within 3 months and die within 2 years of being infected. Research indicates that the virus also reduces the cold hardiness of the rose host.

No chemicals have been shown to be effective at either preventing or curing rose rosette. Miticides are not recommended as the mites can quickly reenter an area all season long, necessitating constant miticide applications.

Cultural management to reduce the spread of the virus includes the following: plant and propagate only virus-free plants; when planting roses, leave enough room between plants that they will not be overly crowded, even when mature; sanitize pruners between cuts; remove unwanted roses, plants that can act as hosts to the virus; and scout rose plantings for early signs of the virus. Unfortunately, many of the telltale symptoms of infection are difficult to distinguish on Radrazz roses as they typically grow quickly and their new growth usually has a red hue.

Once the virus has gained entry to the host, it becomes systemic and spreads throughout the entire rose plant. If a plant is suspected of being infected with RRV, the entire plant including the root ball should be removed from the landscape as soon as possible. Wrap the above-ground portion of the plant in a plastic bag before removing it to reduce the spread of the mite vector. The infected plant material (above- and below-ground tissue) can be wrapped in a black garbage bag and left in the sun for several days to kill the plant and any mites that may be present. The infected plant material should be burned or removed from the landscape. If the roots are not completely removed, they may send up new shoots. These should be immediately destroyed.

The virus has been found to persist in root fragments left in the soil; however, research indicates that the virus cannot survive in the soil alone. Plants other than roses can be planted into areas affected by rose rosette immediately while roses should not be replanted until all root fragments are removed or decomposed. (*Diane Plewa*)

Hosta Virus X

Take a tour of any shade garden, especially mine, and you will likely find an extensive collection of hostas. Hostas are one of the most popular herbaceous ornamentals; available in seemingly endless varieties of colors, patterns, sizes, and leaf shapes. Though considered mostly problem free, hostas are hosts to a number of potential pests. Hosta Virus X (HVX) continues to be one of the most important hosta diseases. In the past month alone, I observed two garden centers offering HVX infected hostas for sale. Thankfully, both garden centers quickly removed the infected plants from inventory after I pointed out the disease. Symptoms of HVX can be quite difficult to recognize. As a result, many other garden centers and retailers may unknowingly be selling HVX infected plants.

As with most viruses, HVX will not kill hosta; however it can cause a number of non-characteristic symptoms to appear on the host. Symptoms are usually consistent between plants of the same cultivar, but vary greatly between different cultivars. HVX often results in a change of leaf pigmentation to an either lighter or darker color. Color changes appear as mosaic, mottled, circular or “ink-bleed” (localized discoloration along the leaf veins) patterns. Other general HVX symptoms include: stunting, puckering, distortion, twisting, and necrosis. In general, avoid hosta’s with features that

vary significantly from those known to be normal for healthy plants of that cultivar. Not all HVX infected plants display symptoms. Infected plants may grow several years before displaying symptoms, while others never display symptoms at all. This means that seemingly healthy plants located next to HVX infected hostas may be infected as well.

HVX is transmitted from plant to plant through physical or mechanical means. It is primarily spread during the propagation of infected plants. Fortunately, most reputable nurseries screen parent plants for pathogens prior to propagation. Secondary transmission occurs when HVX infected sap is transmitted to healthy, susceptible hostas by contaminated cutting tools and/or hands. The time of year may play a role in a plant's susceptibility to HVX. Some observations suggest HVX is most easily spread during spring months when hostas are actively growing and is most difficult to spread after bloom.

The following practices are recommended for Hosta Virus X management.

- Avoid introducing infected plants by purchasing from reputable sources.
- Avoid Spreading HVX within the landscape
    - Transplant and divide hostas in the fall or after they bloom.
    - Clean and sanitize tools when working with hostas, especially as you move between plants.
- Have suspected HVX plants diagnosed by a plant diagnostic laboratory.
- No chemical treatments are available. HVX infected plants should be removed immediately and destroyed.

(*Travis Cleveland*)

Milkweed Weevils

Milkweeds are becoming popular in ornamental plantings not only for their beauty as flowering plants but also as food sources for monarch caterpillars. A reduction of host plants is thought to be a major factor in the decline over the last few years in the number of monarch butterflies. Although numerous insects feed on milkweeds, most of them do not seriously damage the plants and are also colorful additions to the landscape. Exceptions to this are two drab weevil species that cause serious dieback of the plants and reduce seed production.

Rhyssomatus lineaticollis is commonly referred to as the milkweed weevil. Adults are blackish and almost one-quarter inch long. They have dark red antennae and tarsi (foot sub-segments), and the front of the head is prolonged into an obvious snout that is directed downwards when feeding. Adults emerge in May and are present into early July. This species feeds on common milkweed, *Asclepias syriaca,* and Mead's milkweed, *A. meadii,* a federally threatened species. The adults feed at night on the young leaves and growing tips of common milkweed when they emerge in the spring. They also feed on leaf midribs.

They lay eggs in the stem near the base of the plant, chewing a vertical series of holes resulting in a three-fourths to one-and-one-half inch long slit that commonly fills with milkweed latex and turns black. Eggs are laid in about a third of these holes, being deposited between the vascular tissue and the pith.

The whitish, legless, hatching larvae feed in the pith, being restricted to a single internodal space. Apparently, they

are unable to move past the node. Large numbers of larvae are commonly present, greatly weakening the stem. Mature larvae are about one-half inch long and apparently leave the stem, drop to the soil and pupate. Some of these emerge as adults later in the summer that lay eggs in common milkweed pods, hatching into larvae that feed on the developing pod wall, internal spongy tissue, and the developing seeds. Mature larvae leave the pod and drop to the soil to pupate. They emerge as adults about two weeks later, feeding on milkweeds before hibernating for the winter.

Rhyssomatus annectans adults are similar in size and appearance to *R. lineaticollis,* but are more slender. Dorsally on the thorax behind the head, there are many low parallel ridges that are longitudinal on *R. lineaticollis* but are oblique, strongly angling outward, on *R. annectans.* An easier method of identification is that *R. annectans* attacks swamp milkweed, *A. incarnata,* rather than *A. syriaca.*

Adults also emerge in May and are nocturnal like *R. lineaticollis.* They feed on the midvein of terminal leaves, causing the leaves to be distorted. They also eat a series of holes in the stems of swamp milkweed, into some of which they lay eggs. This damage to the stem causes the upper stem and leaves of the plant to wilt and break off. Hatching larvae create meandering tunnels through the pith, and numerous older larvae consume the entire pith. Mature larvae pupate in the pith with first generation adults emerging in mid-summer through round holes that they chew in the stems.

In late August and early September, adults chew holes in swamp milkweed pods to lay eggs just under the pod wall. These small holes are easy to find because the green pod tissue surrounding the hole turns red. The resulting larvae feed on the developing seeds, creating a mass of feces and webbing that prevents proper dispersal of unattacked seeds. During the first half of October, the adult weevils leave the pod, apparently overwintering in the soil.

These weevils appear to be excellent fliers as large numbers of *R. lineaticollis* adults have been found in boll weevil pheromone traps in Texas. These traps are typically placed four feet off the ground on stakes. The use of these traps may be a method to reduce the number of milkweed weevils and thus reduce damage. Placement of high numbers of Gypsy moth traps have been successful in northern Illinois in reducing Gypsy moth larval numbers probably by confusing males through excessive pheromone release, resulting in reduced mating.

Because these two weevils appear to be somewhat host specific, crop rotation may be a viable option in landscape plantings. Although these are perennial plants, removal of attacked milkweed species for a year or two should drastically drop the weevil population, allowing susceptible milkweed species to be grown for several years until weevil populations build to unacceptable levels. Similar adult feeding damage observed in *A. tuberosa* may be an indication that these weevils survive in small numbers on other milkweed species, thwarting any crop rotation plans.

In natural areas, crop rotation is not feasible as milkweeds in surrounding areas will provide numerous invading weevils. Similarly, elimination of the threatened

A. meadii in areas as a host for *R. lineaticollis* is not only ill-advised but illegal as a federally threatened species. Control with insecticides does not appear to be feasible without additional research due to their likely effects on other favored insect species. (*Phil Nixon*)

Viburnum Leaf Beetle

Obvious damage by viburnum leaf beetle is being found in northern Illinois. This is an exotic, invasive species common in areas of the northeastern U.S. that has recently been found in Illinois.

Eggs overwinter and hatch in May into yellow to brown larvae with black dots which feed on the undersides of viburnum leaves. The feeding damage is very characteristic as both the larvae and adults eat elongated oval areas of leaf tissue between lateral veins, creating an interesting angling damage pattern on heavily attacked leaves. Heavily attacked shrubs are defoliated, and those defoliated two to three years in succession are likely to die.

Larvae grow to about one-third inch long and drop to the soil to pupate, emerging as adult beetles in July to feed on the leaves through the rest of the summer. Adult beetles are a drab shade of yellow-green to brown and are one-quarter to one-third inch long.

Female beetles lay eggs into one-eighth inch diameter pits that they chew in rows into small twigs, primarily twigs produced earlier in the year. They cover the eggs with frass, a mixture of fecal matter and wood and bark fragments, whose appearance is different from the surrounding bark when deposited. Over time, the color difference becomes less obvious. These eggs hatch the following spring.

Many viburnum species are fed upon, but the insect prefers species whose leaves are less hairy such as European cranberrybush, American cranberrybush, and arrowwood viburnum. Damage is reduced by planting less preferred viburnum species such as Koreanspice, Burkwood, Judd, carlcephalum, leatherleaf, lantanphyllum, Japanese snowball, tea, and Siebold viburnums. Other viburnums are intermediate in feeding preference.

Acephate (Orthene), carbaryl (Sevin), cyfluthrin (Tempo), imidacloprid (Merit), lambda-cyhalothrin (Scimitar), spinosad (Conserve), and malathion are effective. A spray application to young larvae in the spring is most effective in preventing damage. A second spray may be needed later in the growing season to control heavy adult feeding. (*Phil Nixon*)

Gypsy Moth

Gypsy moth caterpillars are fully grown in northern Illinois and are migrating to pupation sites. They are up to two inches long, dark, and hairy with pairs of blue and red balls in rows down their backs. Mature caterpillars climb down from infested trees and migrate, looking for a place to pupate. They locate a crack or crevice and pupate there, emerging as moths later in June to mate and lay eggs that overwinter.

In this wandering stage, the caterpillars have ceased feeding so any insecticide that requires ingestion such as *Bacillus thuringiensis* kurstaki is not effective. During this time, the internal portion of

the caterpillar has already started to digest the internal layers of the exoskeleton to recycle those materials and use them in the pupation process. In other words, there is less contact between the outside of the caterpillar and the internal organs. For this reason, contact insecticides such as pyrethroids are also unlikely to be very effective.

Physical removal of the caterpillars is time and labor consuming. Sprays of insecticidal soap are likely to be the most effective. They will not only wash the caterpillars off of buildings, but should also dry up and kill them. More than one application may be necessary as many caterpillars will migrate several days after others. Homeowners should be able to accomplish this with an insecticidal soap concentrate applied with a hose-end sprayer.

This is an opportunity to suggest foliar larval insecticide sprays in following springs to not only control the young, feeding caterpillars before they mature and migrate, but primarily to prevent leaf loss and health impact to host trees. (*Phil Nixon*)