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HOME, YARD & GARDEN PEST NEWSLETTER
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Scouting Watch

Based on degree day base 50 degrees F, we still about three weeks ahead of schedule in southern Illinois, two to two and one-half weeks ahead in central Illinois, and two weeks ahead in northern Illinois. As described in earlier issues of this newsletter, most insect development proceeds at temperatures above approximately 50 degrees F.

Bagworms are treatable in southern and central Illinois with egg hatch having occurred about two weeks ago in central Illinois. Egg hatching should be occurring at this time in northern Illinois, but they will be ballooning for two to three weeks. Treating before ballooning finishes with a short-lived insecticide such as *Bacillus thuringiensis* kurstaki (Dipel, Thuricide, others) will require retreatment. A pyrethroid such as cyfluthrin (Tempo), permethrin (Astro), or bifenthrin (Onyx) should last at least four weeks and provide control through the ballooning period. Even so, waiting until ballooning has finished before applying any insecticide should provide a higher level of control.

Jumping oak galls are common this spring. They look like small pimples about one-fourth the size of pinheads on the leaves of white oak, bur oak, and other white oak group trees. The larvae move within the galls, making a clicking sound on the tree. The galls eventually fall off of the tree where they will quiver, roll around, and jump slightly on hard surfaces. Tiny gall wasps emerged later in the year, overwinter, and attack young leaves the following spring. They tend to be more common on trees in landscapes and at the edge of forested areas than within the forest itself. They are not considered to be very harmful to the tree, and control is not necessary nor practical. (*Phil Nixon*)

Japanese Beetle

Japanese beetle adults have emerged in southern Illinois, with reports of them being seen during the past week in Massac, Fayette, Madison, Jackson, and Effingham Counties. Thanks to Ron Hines, Robert Bellm, Steve Wunderle, and Kevin Black for their reports. They will probably emerge in central Illinois by June 10.

Typical emergence pattern for most insects is that the males emerge a few days before the females. About a week after the adult Japanese beetles become numerous, “balling” is likely to occur. When a female Japanese beetle is emerging from the soil, males gather at the location. As she emerges, they are attracted to her, crawling on top of each other. The result is a ball of 25 to 200 Japanese beetles, frequently about the size of a golf ball. They are most noticeable on closely mowed turf, so most reports come from golf courses.

Beetles mate, and the females tunnel into the turf to lay eggs. These eggs hatch into white grubs that feed on the turf's roots, resulting in browning and dieback of the turf in late summer and fall. Female beetles are strongly attracted to moist, actively growing turf, so stopping or reducing irrigation during July results in reduced egg-laying, with fewer grubs. The beetles go to the neighbors' moister, greener lawns to lay their eggs. Typically, unwatered lawns do not have enough white grubs to warrant insecticide application.

Male and female beetles are similar in appearance, being stocky, 3/8- to 1/2-inch-long, metallic green beetles with copper-colored wing covers. They are present in high numbers for about 6 weeks. They feed on the foliage and flowers of a wide range of plants, being most common on smartweed, crabapple, linden, birch, willow, rose, grape, apple, peach, and brambles. They do not feed heavily on needled evergreens, ashes, magnolias, oaks, and maples other than Japanese maple. They feed during the day at the top of the plant on the leaf's upperside--they appear to like sunshine. Individuals typically fly to another food plant every 3 days. These flights tend to be long, from 3/4 to 1-1/2 miles.

The adults feed through the upper epidermis and mesophyll, leaving the lower epidermis intact. Initially, damaged leaves are whitish but soon turn brown as the exposed lower epidermis dries and turn brown. This type of damage is called window feeding. Heavy feeding results in holes in the leaves and can progress on favored hosts to skeletonization, with only the major leaf veins remaining. As apples, peaches, plums, berries, and other fruit ripen, the beetles attack them, completely covering the fruit. Apples are eaten to the core, whereas the skin of peaches is commonly left uneaten, leaving a dry, empty shell where fruit once was.

Beetles are attracted to previously attacked plants. Homeowners can greatly reduce damage by handpicking, particularly for the first week or two after beetle emergence. Use a wide-mouthed jar (such as a peanut butter jar) containing rubbing alcohol or a detergent and water mixture. Hold the jar under a beetle, poke it, and the beetle will fold its legs and fall into the jar, being killed by the alcohol or drowning in the soapy water. Doing this daily or every other day for the first couple of weeks results in plants with little damage compared to the neighbors' plants. Throughout the rest of the season, beetles will be more attracted to the plants next door.

Heavily attacked ornamental plants in obvious locations in the landscape can be sprayed with carbaryl (Sevin), cyfluthrin (Tempo), or other pyrethroid. An application typically controls the beetles for about 2 weeks. Because the beetles are out for about 6 weeks, three applications are needed. Due to the repeated applications and large plants that are commonly attacked, the use of insecticide can be reduced by spraying only plants where the damage is very noticeable. Plants in less obvious parts of the landscape and large trees can go untreated because the damage will be less noticeable. The beetles are so numerous and mobile that the beetles on the untreated plants make little difference in the number of beetles attacking treated plants or the amount

of turf injury by the subsequent white grubs.

Systemic insecticide application is also effective, with imidacloprid (Merit, Xytect, Optrol) applied as a soil injection or soil drench being the most common method of application. The insecticide will move into the foliage within a couple of weeks. Imidacloprid does not typically move into the flowers of rosaceous plants such as rose, crabapple, and hawthorn, but can be found in linden flowers. Imidacloprid has been linked in some studies to colony collapse disorder (CCD) in honey bees, so avoid use on trees and shrubs where the insecticide enters the flowers. As the imidacloprid remains in the plant for almost one year, one cannot avoid movement into the flowers through application timing. (*Phil Nixon*)

Hollyhock rust (*Puccinia malvacearum*)

Various Rust fungi infect a wide range of plant hosts. Hollyhock is commonly a host to the fungal rust *Puccinia malvacearum*. This rust pathogen is classified as an autoecious fungi, meaning the spore stages require only one host. *Puccinia malvacearum* is known to also infect several species of the mallow family (Malvaceae), which includes the common or roundleaf mallow (*Malva rotundifolia*), a common weed. Common mallow can act as a temporary site for the rust spore to reside before it infects hollyhock.

Hollyhocks infected with rust will develop pale yellow spots on the upper surface of the leaves. Brown, rust colored pustules will be present on the lower leaf surface. The pustules house the spores that are responsible for new rounds of infection. Pustules may also appear on the stem of the plant, especially when the infection is severe. Minor rust infections will not harm the plant. However, in the case of severe infection, pustules may prevent the plant from proper photosynthesis and result in wilting and leaf drop. Unfortunately, this disease can be very destructive, and in some cases, limit the use of the hollyhock as an ornamental.

Where there are hollyhocks, there is the possibility of the development of rust disease. There are no specific conditions for rust development; however, windy and wet weather can aid in the spread of this disease. Rust spores are carried by the wind and water, and can infect hollyhocks quite a distance away. As a result, hollyhock rust disease is more prevalent during the spring season after heavy rain.

There are several management strategies in regard to hollyhock rust disease:

1. Cut infected plants at the soil line and remove debris as soon as the hollyhocks are done flowering. This prevents the rust disease from overwintering and infecting in the upcoming spring.
2. In addition, remove and destroy any mallow weeds growing near hollyhocks.
3. Adding a layer of mulch around hollyhocks in the spring will hinder overwintering of spores within in plant debris.
4. Scout hollyhocks in early spring. Remove and destroy the first leaves that appear infected.

5. Proper location choice can be important to reduce the chance of infection. An ideal site will have adequate sunlight, good soil drainage, and sufficient air circulation.
6. It is also recommended to water the plants early in the day, so that they dry relatively quickly.
7. Consider purchasing more resistant varieties such as the *Alcea rugosa* and *Alcea ficifolia*.
8. A preventative fungicide can be applied to plants BEFORE infection or as soon as infection is detected. Frequent treatments will need to be applied as new growth emerges.

(*Stephanie Porter and Zu Dienle Tan*)

Cultivar Reversion

Reversion is a term used to describe when a cultivar, known for a particular leaf shape, color, or other characteristic, 'reverts' back to a different form found in the plant's parentage. The term is often used to describe a variegated shrub or tree that produces non-variegated shoots. Many of the unique cultivars we use in our landscapes originated from sports or mutations growing on plants with normal or true species characteristics. Sports may differ by foliage shape, color, and branch structure. Breeders and growers propagate the more interesting sports and introduce them into the trade. These mutations, however, are not always stable and may revert back to the parent plant form, e.g. all green leaved form. The reverted portion of the plant will generally be more vigorous than the rest of the plant. If allowed to remain on the plant, reversions may eventually outgrow and overtake the desirable cultivar. Your best course of action is to prune out the reverted portion of the plant. Prune back to a portion of the plant displaying normal characteristics of the cultivar. (*Travis Cleveland*)

Poison Hemlock - Beautifully Poisonous

The ditches and roadsides of Central Illinois are showy right now with the white flowers of Poison hemlock (*Conium maculatum*). This plant is found statewide however in dense stands, and has been in greater abundance in recent years earning a spot on both a factsheet and a poster featuring exotic, invasive plants in Illinois habitats. This biennial is native to Europe, Western Asia, and Northern Africa and is commonly found in disturbed soils, pastures, meadows, roadsides, and along pond edges. Poison hemlock tends to prefer moist soils but can tolerate drier sites; it grows well in full sun or part shade.

This herbaceous plant starts off as a basal rosette of leaves the first year. In year two, it grows large quickly, developing an erect, branched stem that can reach up to 10 feet. The leaves are shiny, 8 to 16” long and alternately arranged. They are pinnately compound (somewhat fern-like) with fine serrations along the margins. The leaves have an unpleasant smell when bruised.

The stems are smooth, thick, and ribbed. Look for the purple speckles or spots when identifying this plant. The stems are also hollow between the nodes. The underground portion consists of a fleshy taproot. This plant spreads by seed and the seed stalks persist throughout the winter.

A related species is wild carrot or Queen Anne's lace, whose flowers are also white yet much larger at 3 to 6.5 inches in diameter. The flower heads (umbrella shaped) of poison hemlock are only 1.5 to 2.5 inches across. Each flower has 5 small petals. The leaves of wild carrot have a much more pleasant carrot scent and the stems are hairy.

The entire plant of poison hemlock is very poisonous, containing toxic alkaloids that cause respiratory failure when ingested. It is reported that Socrates was killed in 399 B.C. with an extract of poison hemlock. Also reported are birth defects found in livestock. The weed can irritate the skin so proper care should be taken to either avoid handling this plant or wear adequate clothing such as long sleeves and gloves to cover the skin.

Poison hemlock can be controlled mechanically by digging or tilling. Repeated mowing is also effective. Herbicides such as 2,4-D and glyphosate can be applied in early spring or late fall. As always, carefully read and follow all label directions. (*Michelle Wiesbrook*)