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## Homeowner Pest Guide

“Pest Management for the Home Landscape” is now available for purchase at \$24.95 plus shipping. It can be ordered online at [pubsplus.illinois.edu](http://pubsplus.illinois.edu), or by calling 1-800-345-6087.

This is the updated version of the “Home, Yard, and Garden Pest Guide” and contains the University of Illinois Extension recommendations for the control of weed, disease, and insect pests of trees, shrubs, turf, vegetables, fruit, and households. It also contains a chapter on IPM and pesticide safety. It is written for Do-It-Yourselfers so all of the pesticide recommendations are for general use pesticides.

Garden center personnel find this publication useful in selling the proper pesticide or other control method. Landscapers, lawn care personnel, and other professionals find it handy in helping clientele with questions outside of their area of service, such as pests associated with fruit, vegetables, or buildings.

The “Commercial Landscape & Turfgrass Pest Management Handbook” is written for the professional’s use and is available through the above sources.  
(*Phil Nixon*)

## Bagworms

Hatching bagworms were found in the Champaign-Urbana area of central Illinois on May 14. Hatching typically occurs in the first half of June, so they are two to four weeks early. The phenology indicator is catalpa full bloom, which was occurring early this week. We recommend that treatment be delayed for two weeks after hatching to allow ballooning to finish. Hatch would have occurred in southern Illinois about two weeks ago, so it is time to treat in that portion of the state.

Bagworm overwinters as eggs in the female bag. They hatch in late spring, exiting the bottom of the bag. The tiny caterpillars climb to the top of the tree where they each spin out a silk strand 1 to 3 feet long. This catches in the wind and carries the tiny larva wherever the wind blows. This is called ballooning. The larva then crawls to the top of whatever the silk caught onto and may repeat the process until it lands on a suitable host. The bagworm population continues this process for about 2 weeks. With this form of migration, it is no surprise that bagworms feed on a wide range of hosts. Eventually, the larvae are faced with the choice of feeding on what they land on or starving to death. They are most common on spruce, eastern red cedar, other

junipers, arborvitae, white pine, crabapple, and pin oak but are found on many other species of trees and shrubs. They are more common on deciduous hosts in southern Illinois than farther north.

Bagworm larvae feed on the edges of broadleaf foliage, sometimes to the midvein. Leaves of needled evergreens are eaten back to the base until nothing remains. Defoliated needled evergreen branches or entire trees frequently die. Because bagworms start at the top of the tree and work their way downward, it is common to see the top third of evergreens dead due to defoliation. Deciduous trees will refoliate, with the damage being primarily aesthetic.

Upon leaving its mother's bag, the newly hatched bagworm spins a silk tent and covers it with whatever is available, typically the host vegetation. The bagworms feed through the summer. As the caterpillars grow, they increase the size of the spindle-shaped bags up to 1-1/2 inches long. There is only one caterpillar per bag. Pupation ranges from mid-August to very early September. Male larvae go through five larval instars; female larvae go through six. For this reason, male bags tend to be smaller than those of the females, and they pupate sooner. As long as the caterpillar is feeding, it places bits of host foliage around the top of the bag. Once it has pupated or died, this practice stops and the top of the bags turn from green to brown. This is useful in scouting because pupated bagworms are not susceptible to insecticide sprays, and killed bagworms do not fall from the tree.

Adult male bagworms are about 1/2-inch-long black moths with clear wings.

Adult female bagworms are larviform; that is, they emerge from the pupa looking similar to caterpillars. The non-feeding males fly from bag to bag, mating with the females inside through the bottom of the bag. The non-feeding females fill most of their bodies with eggs and die in the bag. Each female bag contains 300 to 1,000 eggs.

Because bagworm eggs overwinter in the old bags, an effective control measure on shrubs and smaller trees is to handpick the bags from September into spring and destroy them. Because the sex ratio in bagworms is about one-to-one, every other bag on average will contain 300 to 1,000 eggs. *Bacillus thuringiensis kurstaki* (Dipel, Thuricide), spinosad (Conserve), cyfluthrin (Tempo), permethrin (Astro), and other pyrethroids are effective even on older larvae. Even so, they are more effective on younger larvae, so treatment soon after they stop ballooning is recommended. In addition, controlling younger larvae prevents the damage that would be caused by the larvae through the season. (*Phil Nixon*)

### **Roses are Red, Canes are Dead, ...Now What?**

We are still seeing the effects of the late frost on plant samples at the plant clinic. In roses, frost can destroy fresh growth and cause stems and leaves to wilt, turn black and fall away from the plant.

A homeowner's first course of action usually is to prune the unsightly, frost damaged areas on their roses. My concern is the potential for disease infection could now increase not only because of the frost injury, but because many may not know

the proper techniques of pruning their roses. For additional information on pruning roses, refer to the following University of Illinois Extension link: <http://urbanext.illinois.edu/roses/prune.cfm>

However, in the instance of the picture below a disease called Botrytis Blight had the perfect conditions to infect during this spring after frost injury had occurred. This disease can be a common occurrence in a greenhouse, but not in the garden. As we all know, every growing season can be different, especially this growing season!

Botrytis blight can be a problem during periods of continued wet weather and low temperatures. Buds of infected garden roses may fail to open or wilt and become covered with fungal growth. Lesions or cankers may form down the stem. New canes are often infected at nodes and can cause girdling or collapsing of the stems. This fungus can persist year round on plant parts and debris and as sclerotia or conidia in the soil.

The main goal to avoid this disease is to lessen humidity around plants by not watering from above, avoid dense plantings, and reduce ground cover. Cankers often develop after cold temperature injury, so early spring pruning may not effectively eliminate them if late frosts occur; additional late spring pruning may be necessary. All infected plant parts should be cut and destroyed as soon as the first symptoms of Botrytis blight appear. This prevents the formation of large numbers of conidia that can be transported by wind. Pruning cuts should be at an angle in healthy tissue just above a node and avoid wounding canes. Stubs remaining after pruning

should be no longer than 6 mm in length to encourage callus formation. Protective fungicidal sprays can be used to cover wounds. However, a major problem associated with fungicidal treatments is the development of resistance to *B. cinerea*. It is important to use, when available, treatments that have multiple modes of fungicidal activity. (*Stephanie Porter*)

### **Yellow Nutsedge**

Newly emerged yellow nutsedge (*Cyperus esculentus*) has been spotted around central Illinois recently. Also known as yellow nutgrass, yellow nutsedge is a warm-season perennial member of the Cyperaceae (sedge) family that reproduces by seeds and from tubers (nutlets). Though the sedge family contains 98 to 146 genera and over 5,300 species, the most common weedy sedge found in lawns and landscapes across the state is yellow nutsedge. It also holds the distinction of being one of the world's worst weeds. Once cultivated in ancient Egypt for its tasty and oil-rich tubers, it has now spread to all continents<sup>1</sup>. Illinois is home to several different species of sedges, many of which are featured at <http://www.illinoiswildflowers.info/>. This website and some others say yellow nutsedge is a native plant. I can't say who is correct but I can say that identification can be quite difficult. And really, when it has invaded your lawn or garden, do you care what country it originated from? The main focus then is on identification and control.

*Life cycle and appearance.* Individual yellow nutsedge plants have upright, grasslike leaves that emerge from a fibrous root system, and scaly, white or

light-colored rhizomes. The base of the plant is distinctly triangular in shape. Grasses have round or oval shaped stems. One yellow nutsedge plant may produce hundreds or even several thousand tubers in a season. The tubers develop rapidly six to eight weeks after the plants emerge, usually during late July and August, and can persist for many years in the soil. Forming at the ends of rhizomes (not in chains as occurs in other sedges such as purple nutsedge), the nutlets can reach up to 4/5 inch in length. Most tubers can be found in the top 6 inches of the soil and a chilling period is required to break dormancy. New plants emerge from tubers from late May to mid-July. Leaves emerge from the plant's base, are three-ranked, grasslike, and light yellow-green, 1/8 to 1/2 inch wide, up to three feet long, and have parallel veins with a prominent fold in the middle. The upper surface of the leaf is shiny or waxy, and the lower surface is dull. Nutsedge leaves grow rapidly during summer; they often grow above the canopy of cool-season turf. Nutsedge inflorescences (flowers) are flat topped and multiple branched with long, leaflike bracts beneath. The inflorescences resemble burrs and occur at the end of a stout, triangular (in cross-section), yellow-green stem. Each branch of the inflorescence is composed of multiple yellow-to-golden brown spikelets, each up to 1-1/4 inches long. The inflorescences appear July to September during 12-to-14-hour days.

*Ecology.* Yellow nutsedge is often an indicator of poor drainage. It grows on all soil types, especially wet or moist sites or sites receiving heavy irrigation. It usually appears on soils with a pH of 5 to 7. Yellow nutsedge does not tolerate

shade and will tolerate dry sites once it is established.

*Control.* Due to the tubers' reproductive capacity, controlling yellow nutsedge is very difficult after the tubers have formed. To control without chemicals, maintain turf density and health through proper culture; mechanically remove or pull nutsedge plants soon after germination, and increase drainage in moist or wet areas. Keep in mind that tillage will spread this plant. Mow low (to less than one inch on turf species tolerant of that practice) and frequently to reduce growth from the plant base. Purchase nutsedge-free sod and soil. Fertilize turf in autumn after nutsedge growth has slowed. Chemical controls for yellow nutsedge include fumigation and herbicides. Several postemergence herbicides can be used, but total control can be difficult and such products may require multiple applications. Basagran T/O (bentazon) is a contact herbicide and good coverage of application is essential. Systemic options include SedgeHammer (halosulfuron), Certainty (sulfosulfuron), Tenacity (mesotrione), and Dismiss (sulfentrazone). Labels for these products provide information about adjuvants and additional recommendations for controlling this pesky plant. Turf managers have reported that applications of Roundup (glyphosate) have resulted in poor yellow nutsedge control. Be sure to read and follow herbicide labels very carefully.

#### **Literature Cited:**

1. Defelice, M.S. 2002. Yellow Nutsedge *Cyperus esculentus* L.—Snack Food of the Gods. *Weed Technol.* 16:901-907.

(Michelle Wiesbrook, adapted from an HYG article by Bruce Spangenberg, Tom Voigt, and Bruce Branham.)

## Bacterial Leaf Spot on Oakleaf Hydrangea

This weekend, while working in my yard, I noticed my Little Honey wasn't looking too good. Of course, I am referring to my Little Honey Oakleaf Hydrangea. The normal gold to chartreuse leaves had developed numerous dark reddish-purple angular spots. Hydrangeas are known to be hosts to several leaf spots, both fungal and bacterial. Oakleaf Hydrangeas, in particular, are known to develop leaf spots caused by the bacterial pathogen *Xanthomonas campestris*. A few minutes in our plant clinic's diagnostic lab confirmed my suspicions, as I observed bacteria oozing from the leaf spot tissues.

Bacterial leaf spot on hydrangea (*Xanthomonas campestris*) likely overwinters in diseased plant debris from one year to the next. It is transferred to new plant tissues by splashing rain and irrigation water. The pathogen likely enters the plant through stomata, other natural openings, and/or plant wounds. Symptoms of infection first appear as water-soak spots. The spots then darken and develop an angular shape. Several spots may enlarge, coalesce and cause death to mature leaves. Disease development is favored by warm, wet conditions which allow for increased bacterial production and dissemination.

Cultural disease control options should be your first course of action.

- 1) Remove diseased debris from the site. Debris harbors the bacteria and provides inoculum for future infections. Infected debris should be burned, buried or discarded. On-site composting is not advised.
- 2) Monitor the plants closely during the growing season. Leaves displaying leaf spot symptoms should be removed from the plant and site.
- 3) Avoid pruning or working near problematic plants when they are wet. These activities will likely spread the pathogen as well as create wounds and entry points. Disinfecting your pruners between cuts will further help reduce the spread of the pathogen.
- 4) Avoid overhead irrigation and wetting the foliage. If un-avoidable, irrigate at a time of day that minimizes the duration of leaf wetness. Adequate plant spacing will also help limit the duration of leaf wetness.

Pesticides containing copper sulfate and copper octanoate (copper soap) are broadly labeled for control of leaf spots on ornamentals, but are only marginally effective. They should be applied preventatively or at first sign of disease. Use products containing copper with caution as they may cause phytotoxicity. (Travis Cleveland)