Home, Yard, and Garden Pest Newsletter

Issue 4 • June 20, 2023

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Aphids

Aphids (Family: Aphidae) are one of the most common insect pests in the home landscape. They have small, pear-shaped bodies that can be many colors, including green, brown and yellow. Aphids can be identified by small structures called cornicles, which look like tailpipes on the rear ends of the insects. Aphids can be winged or wingless, with winged individuals appearing later in the season. Aphids can have many generations in a single year, so it is a good insect to scout for throughout the growing season.

For an in-depth discussion of the complex aphid life cycle, please refer to this previous Home, Yard, and Garden article.

Oleander aphid (Aphis nerii), Joseph Berger, Bugwood.org

There are many species of aphids in Illinois and they feed on a large range of host plants. Aphids suck fluids from stems and leaves while the leaves are still expanding. This can result in discoloration, leaf-curling, misshaped leaves and stem distortion.

Aphids also produce sugary droppings called honeydew. The honeydew coats the leaves giving them a shiny, sticky appearance and supports sooty mold growth. Aphids are primarily controlled to prevent honeydew, rather than their feeding injury.

Injury caused by aphids may be present before gardeners spot the aphids themselves. Inspect the undersides of leaves and the tips of twigs and new leaves to confirm that aphids are causing the injury.

One factor that can complicate aphid control is ants. Some species of ants feed on the sugary honeydew produced by the aphids. This is such an attractive food source that ants sometimes “farm” the aphids and defend them from natural enemies. If you are trying to control an aphid population that is being guarded by ants, you may need to control the ants before you can successfully control the aphids.

Aphids, Phil Nixon, University of Illinois.

Biological Controls:

Aphids have many natural predators including lady beetles, hover flies, lacewings and parasitic wasps. In many cases, aphids may be present, but their populations are controlled by natural enemies and they do not cause significant injury or require treatment. Natural enemies can be encouraged in the landscape by adding flowering plants. Natural enemies can also be released in landscapes or greenhouse areas to increase predator populations and overwhelm the pests.

Cultural Controls:

Aphids may thrive on plants that have received nitrogen fertilizers. Reducing nitrogen fertilization can slow population growth and result in overall smaller populations of aphids.

Mechanical Controls:

For small populations, aphids can be wiped from plants or removed with a blast from a hose. Very localized populations can also be removed by pruning away heavily infested portions of the plant.

Control with Insecticides:

Aphids can be controlled using one of many different insecticide products. Organic options include insecticidal soaps and many oil products. They are also susceptible to many contact insecticides including pyrethroids, chlorantraniliprole (Acelepryn), acephate (Orthene, others) and abamectin (Abacide, others). They can also be controlled with systemic products like imidacloprid (Merit, others), but it is important to apply these treatments only after the plant has completed blooming to avoid exposing pollinators to the treatment.

Sarah Hughson

Weeds That Do Well in Drought

Given the drought conditions that much of the state has been experiencing, it's fitting to discuss weeds that may be thriving now or at least faring better than our cool-season turfgrasses are. Here are a few.

Quackgrass (*Elymus repens*)

This cool-season perennial reproduces by seeds and long-lived, slender, white rhizomes with sharp tips. Quackgrass is a patch-forming, coarse-textured grass that can grow up to 4 feet tall. The root system is fibrous. Roots ring the rhizomes every 3/4 to 1 inch. The rhizomes develop 2 to 8-inches deep. The stems are smooth. The upper sheaths are smooth and rounded, but the lower sheaths may have short hairs. The blades are flat, dull green to light blue-green and taper to a pointed tip. Blades grow 1/8 to 1/2 inch wide and 3 to 12 inches long. On the upper surface, the blades are smooth to rough to the touch and may be sparsely hairy; on the lower surface, they are smooth. Clawlike, slender auricles clasp the stem. Flowers are narrow, dense, and occur in terminal spikes 2 to 6 inches long. They are borne from late May to September. This aggressive grass is found in many lawns throughout the growing season, especially during cool weather in spring and fall. Quackgrass thrives in well-drained soils with slightly acidic pH and favors thin, droughty lawns.

Quackgrass, Michelle Wiesbrook, University of Illinois.

Spotted Spurge (*Chamaesyce maculate*)

This warm-season annual broadleaf reproduces by seeds. Germination occurs when soil temperatures warm to 60° to 65°F and can continue as soil temperatures climb to more than 90°F. Spotted spurge develops a central shallow taproot from which prostrate stems form a flat, extensively branched mat up to 2 feet in diameter. The stems exude milky sap when broken. Leaves of prostrate spurge are opposite, small, oval, and up to 3/5 inch long. They are sometimes purple spotted and/or hairy. The petioles are short. Spotted spurge flowers are very small, inconspicuous, cup-shaped, and develop in terminal clusters or leaf axils from June to October. This weed is found in poor, drought-stressed open turf. It germinates and grows well during hot, dry weather on thin soils and is often found on closely mowed sites. Prostrate spurge is very similar and considered by some taxonomists to be the same species.

Spurge, Michelle Wiesbrook, University of Illinois.

Black Medic (*Medicago lupulina*)

This summer annual (or less commonly a winter annual or biennial) reproduces by seeds. Black medic is shallow-rooted, with multi-branched, slender, prostrate, slightly hairy, somewhat square stems spreading 12 to 24 inches. The alternately arranged, dark green leaves are compound with three oval leaflets. The center leaflet is stalked, and the side leaflets occur close to the stem. Leaves are sparsely hairy, and the leaflets are 1/5 to 3/5 inch long. The 1/8- to 1/6-inch-long bright yellow flowers are clustered on short stems that emerge from the leaf axils. Each cluster is about ½-inch long, round, and comprised of up to 50 individual flowers. Flowering occurs from April through October. The seedpod is black and tightly coiled. Black medic occurs in a variety of turf settings but does well in nutrient-poor and drought-prone soils.

Black medic, Michelle Wiesbrook, University of Illinois.

Common yarrow (Achillea millefolium)

This perennial, reproduces by seeds or short underground rootstocks. Upright common yarrow stems emerge from taproots to form dense mats under close mowing. The stems are usually not branched; are smooth to densely covered with long, soft or woolly grayish-green hairs; and are 4 to 24 inches tall. The tops of the stems may branch. The stem leaves are alternate, finely pinnately dissected, fern-like, and covered with hair. The basal leaves are longer at 3 to 8 inches long. The flowers which develop in flat-topped clusters at the top of branches consist of white or pink ray flowers and yellow disk flowers occur in June to October. Common yarrow often is found in poor, gravely, droughty, and infertile soils. It does not compete well with turf on rich soils. It is wear- and drought tolerant. This is a tough, durable, and offensively aromatic weed.

Common yarrow, Michelle Wiesbrook, University of Illinois.

Controlling these weeds

In established lawns, populations of these weeds can be managed by maintaining proper turf density. However, in hot and dry conditions, turfgrass may be allowed to go dormant. Fertilize in the fall. Small populations of black medic and spotted spurge may be removed by hand. Physical removal of quackgrass and common yarrow will be more challenging due to the rhizomes present. For best results, apply postemergence herbicides in late spring through midsummer when plants are young and actively growing. Applications to common yarrow and black medic could extend into autumn even. Keep in mind that dry conditions may result in less than stellar control and a second application may be warranted. Carefully read and follow label directions.

More information on Quackgrass can be found here.

For assistance with identification, consult with your local University of Illinois Extension office or the booklet, "Identifying Weeds in Midwestern Turf and Landscapes".You may also submit plant samples to our Plant Clinic located in Urbana.

Michelle Wiesbrook

Optimizing the Activity of Tenacity Herbicide

Tenacity (active ingredient mesotrione) is a herbicide that can control a variety of weeds in cool-season turfgrasses. Most herbicides used in turf fall into two categories, either postemergence (which means the herbicide is applied to emerged, actively growing weeds) broadleaf herbicides, (e.g. Trimec), or preemergence (which means the herbicide must be applied prior to weed germination and emergence) grass herbicides, (e.g. Dimension or Barricade). Tenacity doesn't neatly fit into either of those two categories, which makes a valuable herbicide for some difficult to control turf weeds. The label states that Tenacity has both preemergence and postemergence activity. And while this is technically true, the preemergence activity in turf is relatively short-lived and not economically or agronomically valuable. I believe this is in part because a turf environment is conducive to more rapid breakdown of herbicides as compared to when the herbicide is applied to bare soil as when used in corn.

Crabgrass bleached white in response to a mesotrione herbicide application, Travis Cleveland, University of Illinois.

Tenacity is a good postemergence herbicide that can control a number of broadleaf, and importantly, grass weeds. Tenacity can control several perennial grass weeds that are very difficult or not possible to control with other herbicides, including creeping bentgrass (Agrostis stolonifera), nimblewill (Muhlenbergia scherberi), and annual bluegrass (Poa annua). Tenacity provides postemergence control

of a number of broadleaf weeds such as dandelion, white clover, ground ivy, etc. and postemergence control of annual grass weeds such as crabgrass, yellow foxtail, and barnyardgrass. This is a versatile herbicide, but the steps needed to optimize the activity, and get maximum control are not commonly practiced.

We've found two factors that can increase the activity of Tenacity. First is the addition of either urea ammonium nitrate (UAN) or urea to the spray solution. If you look at the Ag label for mesotrione, sold under the trade name Callisto, you'll see that they recommend adding either UAN or ammonium sulfate (AMS) for all postemergence applications. For some reason, this recommendation is omitted from the Tenacity label. The amount of nitrogen applied with Tenacity or Callisto is small, usually less than 0.1 lbs N/M, the effect is to increase the activity of mesotrione although the mechanism is unclear.

Second, and more important, is to understand that mesotrione can be absorbed by both the foliage **and** the roots of weeds. Foliar absorption is often sufficient to control many weeds and particularly broadleaf weeds. However, for grasses, where the meristem, or crown, is at the base of the plant, we often see that foliar applications will bleach the exposed leaves, but will not reach the meristem in sufficient quantity to actually kill the plant. These plants will turn white and look like they are dying, but then will recover. The reason for this response is a lack of absorption of mesotrione by the grass roots. My opinion is that variable control with mesotrione observed by many turf managers is simply due to whether or not the turf received rain or irrigation within 7-10 days of a mesotrione application.

As an example, let's say you've decided to try Tenacity to control emerged crabgrass in lawns. Five days after the second application (because the label indicates you need two applications to control crabgrass postemergence) the site receives 0.75" of rain. A week later you notice the crabgrass is gone, 100% control! You're quite happy and you decide that this is the best product for postemergence crabgrass control. But then next year you use Tenacity just like you did the year before, but no rain occurs and you see only 50-60% crabgrass control. In year 2, you're unhappy and are thinking of switching to another product. That is the difference between foliar plus root activity (year 1) and foliar-only activity (year 2). The kicker here is that mesotrione is pretty strongly adsorbed to organic matter so it takes a lot of water to move some into the root zone. Applying a quarter inch of irrigation may seem like a lot but may not be enough to get significant root uptake. So clearly best control will be had when the site receives a significant rain event following application. If rain doesn't come, then by all means irrigate, but irrigate more than you normally would to attempt to push as much mesotrione as you can into the rootzone.

Bruce Branham

Mower Blight

We've all likely experienced the following scenario. While mowing, you notice some tall grass growing near the base of a tree. You move the mower slightly closer to trim the overgrown grass despite knowing better. While you successfully cut the grass, your mower deck also managed to gouge through the tree's bark causing permanent mechanical injury. While completely avoidable, this type of tree injury is all too common. So much so that many refer to it as mower blight.

Recent mower injury on a young tree, Travis Cleveland, University of Illinois.

How much injury can a mower do? As mower decks and trimmers cut through the tree's bark, they damage the vascular tissues essential for conducting sugars and water through the tree. The immediate impact depends on how much of the tree the mower injured. If 25% or less of the bark around the trunk has been damaged, the tree will likely recover, though it may show some stress.

Severe mower injury on a parkway tree, Travis Cleveland, University of Illinois.

Long-term impacts of the injury are harder to predict. Bark also serves as an important barrier that protects the tree's inner tissues from insects, pathogens, and desiccation. Wounded bark exposes the inside of the tree to organisms that decay the wood. After being wounded, the tree begins to compartmentalize the wounded area to prevent and contain any decay. However, compartmentalization is a slow process that still allows organisms plenty of time to enter the tree. Additionally, the ability to compartmentalize decay varies among tree species. Trees that do not successfully compartmentalize may develop advanced stages of decay resulting in structural defects and necessitating the tree's removal.

Your first action should be never to use a mower, string trimmer, or other equipment near the tree trunks. If you need to trim vegetation growing near a tree, use hand-held shears instead. Create a safe zone around the base of the tree that will not require mowing. This area should be mulched and free of weeds and turf. Ground covers are another option that for that space.

Mulch creates a mower-free zone around the base of young trees, Travis Cleveland, University of Illinois.

There are not many options for injured trees. Wound-sealing sprays and paints won't help. There is some evidence suggesting they may prevent or hinder the compartmentalization process. They may also trap moisture and seal rot organisms against the open wound. Instead, use the previously mentioned strategies to prevent further injury.

Travis Cleveland

Modified Growing Degree Days

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.

Station Location	Actual Total	Historical Average (11 year)	One- Week Projection
Base 50^0 F – March 1 through May 24			
Freeport	888	823	1033
St. Charles	872	794	1019
DeKalb	890	818	1040
Monmouth	1090	975	1252
Peoria	1055	1019	1217
Champaign	1142	1069	1300
Springfield	1139	1192	1299
Perry	1127	1120	1286
Brownstown	1335	1103	1490
Belleville	1248	1279	1411
Rend Lake	1341	1368	1501
Carbondale	1252	1302	1407
Dixon Springs	1286	1330	1434

GDD of Landscape Pests

GDD of Conifer Pests

Degree day accumulations calculated using the Pest Degree-Day Calculator (a project by the Department of Crop Sciences at the University of Illinois and the Illinois Water Survey).

Kelly Estes

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