

# Horticulture 2023 Newsletter

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1712 Claflin, 2021 Throckmorton Plant Science Cntr.  
Manhattan, KS 66506 (785) 532-6173

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**Video of the Week:** [Common Tomato Problems; Part 1](#)

## REMINDERS

- Renovate strawberry beds after last picking of fruit by cutting off leaves, fertilizing and narrowing row to 10 inches. <https://tinyurl.com/y7mlwn3k>
- Tip blackberries, black raspberries and purple raspberries as needed. See <https://www.ksuhortnewsletter.org/newsletters/tip-blackberries-black-raspberries-and-purple-raspberries1349880>

## ANNOUNCEMENTS

### Kansas Turf & Ornamentals Field Day

The Kansas Turf & Ornamentals Field Day will be held Thursday, August 3 at the K-State Research Center in Olathe (35230 W. 135th).

The field day program is designed for all segments of the turf & ornamentals industry - lawn care, athletic fields, golf courses, landscape, nursery, and grounds maintenance. Included on the program are research presentations, problem diagnosis, commercial exhibitors, and equipment displays. There will be time to see current research, talk to the experts and get answers to your questions.

One hour of pesticide recertification credit in both 3A and 3B are available, as well as GCSAA education points.

For a copy of the program and to register to attend, go to <https://www.kansasturfgrassfoundation.com/>

## VEGETABLES

### Physiological Leaf Curl in Tomatoes



Tomato leaves will sometimes curl as a result of imbalanced growth above and below the soil. Gardeners may see vigorous top growth during mild spring weather. Below the soil the roots may not be keeping up. When the weather turns hotter during the summer the roots are not established enough to support the size of the upper growth. Curling leaves, in this instance, is a physiological condition that enables the plant to reduce its surface area and conserve water. Leaves may also become tougher and leathery.

Physiological leaf curl is most often seen as the seasons change from spring to summer but can also be caused by heavy cultivation that has damaged the roots, improper fertilization and poor watering practices. Though the plants typically self-correct with time and as conditions improve, prolonged periods of time with improper care can affect yield. To avoid leaf curl, it is important to properly harden off tomato seedlings. Use a layer of mulch around tomato plants to regulate soil moisture and temperature. Apply fertilizer as needed based on soil testing. You may also choose determinate (bush-type) varieties of tomatoes which are less susceptible to leaf curl than the indeterminate (vining) varieties. (Cynthia Domenghini)

## Hornworms on Tomatoes



Tomato Hornworm

Hornworms on tomatoes are easy to identify by the horn-like tail. The large caterpillars can devastate a tomato plant feasting on leaves and even the fruit.

Full-grown hornworm caterpillars can reach several inches in length and are nicely camouflaged with their green coloring. The two most common hornworms are the tomato hornworm which has white V-shaped markings on the sides and a blue or black horn and the tobacco hornworm which has diagonal white stripes and a red horn. Hornworms have five sets of prolegs that grip tightly to plant stems.

The adult moths can have a 4 to 5-inch wingspan and are grayish-brown. The adult tobacco hornworm is the Carolina sphinx moth. The adult tomato hornworm is the five-spotted hawk moth. The larvae causes the plant damage and indicate their presence with large dark green or black droppings on the leaves.

Tomato hornworms overwinter in the soil and emerge as adult moths in the spring to mate. Female moths lay eggs on plant leaves which hatch into caterpillars that will be full-grown within a few weeks. Mature caterpillars burrow into the soil to pupate and begin the second generation as moths emerge two weeks later. The second generation of caterpillars feed until late summer and then pupate until the spring moths emerge.

In addition to tomatoes, tomato hornworms have been known to cause damage to potato, eggplant and peppers as well as several varieties of weeds.

Monitor plants for tomato hornworms regularly to catch them before the damage is extensive. Keep the area around plants weed-free to remove host sites. The best control for hornworms is manual removal. Drop caterpillars into a bucket of soapy water or squish them to kill them. If you notice a tomato hornworm with white oval-shaped objects attached along its body, leave it in place. This caterpillar is being parasitized by a predatory wasp. The white objects are wasp cocoons. When the larvae hatch, they will feed on the inside of the hornworm, killing it, and then move to find more hornworms to eat.

Other control options include: Bt (Dipel, Thuricide), Spinosad (Conserve; Colorado Potato Beetle Beater Conc; Captain Jack's Dead Bug Brew, Monterey Garden Insect Spray), cyfluthrin (BioAdvanced Vegetable & Garden Insect Spray) among other insecticides. As always when applying insecticides pay attention to the harvest interval between applying the treatment and harvest date. (Cynthia Domenghini)

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## Tomato Leaf-Spot Diseases



Two common leaf-spot diseases will likely appear on tomato plants soon if they haven't already. Septoria leaf spot and early blight are both characterized by brown spots on the leaves.

Septoria leaf spot usually appears earlier in the season than early blight and produces small dark spots. Spots made by early blight are much larger and often have a distorted "target" pattern of concentric circles. Heavily infected leaves eventually turn yellow and drop. Older leaves are more susceptible than younger ones, so these diseases often start at the bottom of the plant and work up. Mulching, caging, or staking keeps plants off the ground, making them less vulnerable. Better air circulation allows foliage to dry quicker than in plants allowed to sprawl.

Mulching also helps prevent water from splashing and carrying disease spores to the plant. In situations where these diseases have been a problem in the past, rotation is a good strategy. It is too late for that now, but keep it in mind for next year. Actually, rotation is a good idea even if you have not had problems in the past. But many gardens are too small to make it practical. If you have room, rotate the location of the tomatoes each year to an area that has not had tomatoes or related crops (peppers, potatoes, eggplant) for several years.

If rotation is not feasible, fungicides are often helpful. Be sure to cover both upper and lower leaf surfaces, and reapply fungicide if rainfall removes it. Plants usually become susceptible when the tomato fruit is about the size of a walnut. Chlorothalonil is a good choice for fruiting plants because it has a 0-day waiting period, meaning that fruit can be harvested once the spray is dry.

Chlorothalonil can be found in numerous products including Fertilome Broad-Spectrum Landscape and Garden Fungicide, Ortho Garden Disease Control, GardenTech Daconil, Bonide Fungonil and others. Be sure to start protecting plants before these diseases are first seen if they have been a problem in the past. It is virtually impossible to control these diseases on heavily infected plants.

If chlorothalonil doesn't seem to be effective, try mancozeb (Bonide Mancozeb Flowable). Note that there is a five-day waiting period between application and when the fruit can be harvested.

You may wish to pick some tomatoes before they are fully red just before you spray if you use Mancozeb as the tomato fruit will ripen inside. (Ward Upham)

## Squash Bugs



Squash bugs are a devastating pest that uses its piercing-sucking mouthparts to feed on many varieties of cucurbits including squash, pumpkin, watermelon and cantaloupe. Damage from these pests can cause wilt and even death to the host plant.

Adult squash bugs are greyish-brown and have wings that lay flat over the back. They have orange-brown stripes on the underside of the body. Nymphs are small and greenish with black legs but turn greyish-brown as they develop. Nymphs do not have wings but wing development may be noticeable as they age.

Unmated adults overwinter in plant debris. From late April through May the adults emerge, mate and find a host plant. Female adults lay clusters of brownish-red eggs over several weeks on the underside of leaves. Within two weeks the eggs hatch and nymphs begin to feed on their host plant. Nymphs reach maturity in 4 to 6 weeks when they mate and begin a second generation during the same growing season. Adults from this generation will overwinter to lay eggs the following year.

The hard body of the adult squash bug is difficult to penetrate making control during the nymph stage essential. Regularly monitor plants for signs of squash bugs. Remove plant debris to disrupt overwintering habitats. General use insecticides such as permethrin (Bug-B-Gon Multi-Purpose Garden Dust; Green Thumb Multipurpose Garden and Pet Dust; Bug-No-More Yard and Garden Insect Spray; Eight Vegetable, Fruit and Flower Concentrate; Garden and Farm Insect Control; Lawn & Garden Insect Killer), malathion, and methoxychlor provide control if a direct application is made to young, soft-bodied squash bugs. Contact with the nymphs is required for control so be sure to spray the undersides of the leaves. (Cynthia Domenghini)

## TURF

### Controlling Yellow Nutsedge in Lawns



Yellow nutsedge is a relatively common problem in lawns, especially in wet years or in lawns with irrigation. Although sedges look much like a grass, they are different.

Unlike grasses, sedges have triangular stems, and the leaves are three-ranked instead of two-ranked, which means the leaves come off the stems in three different directions. Yellow nutsedge is pale green to yellow and grows rapidly in the spring and early summer. Because of this rapid shoot growth, it sticks up above the rest of the lawn only a few days after mowing. This weed is a good indicator of poor drainage, but it can be introduced into well-drained sites through contaminated topsoil or nursery stock. As with many weeds, nutsedge is less competitive in a dense, healthy lawn than in an open, poor lawn.

Nutsedge is difficult to control culturally because it produces numerous tubers that give rise to new plants. Pulling nutsedge will increase the number of plants because dormant tubers are activated. However, it is possible to control nutsedge by pulling, but you must be persistent. If you are, eventually the nutsedge will die out though this will likely take more than one season.

If you were going to treat with an herbicide, it would be better to leave the nutsedge plants undisturbed so the herbicide can be maximally translocated to the roots, rhizomes, and tubers. Several herbicides are available for nutsedge control.

SedgeHammer and Hi-Yield Nutsedge & Horsetail Control contain halosulfuron and are effective and safe products. The SedgeHammer label says to apply after the nutsedge has reached the three- to eight-leaf stage. Waiting until this growth stage apparently results in improved translocation of the active ingredient to the underground tubers and rhizomes.

Products with sulfentrazone such as Bonide Sedge Ender, Ortho Nutsedge Killer and Spectracide Weed Stop for Lawns Plus Crabgrass Killer are also effective.

Research has shown that the first application should go down by June 21. If the initial spray is after June 21, mature daughter tubers may be stimulated to grow. (Ward Upham)

## Grub Control in Lawns



If you plan on using a grub preventative on your lawn, the first half of July is a good target date for most products. Preventatives are normally used on areas that have had a history of grub problems.

Traditional grub insecticides such as Dylox or carbaryl (Sevin) are normally applied in late July after grubs are present or as a rescue treatment once damage is seen. Products that contain Merit (imidacloprid) are considered grub preventers. Actually, these products do not prevent grubs, but rather kill grubs when they are quite small, and long before they cause damage. Merit is safer to use around pets and humans than traditional grub killers. Merit can be found in BioAdvanced Season-Long Grub Control, Bonide Grub Beater, Gordon's Grub No-More and Hi-Yield Grub Free Zone II and III.

Another grub preventer with the trade name GrubEx contains chlorantraniliprole. Though this product is very effective, it is less water soluble than imidacloprid. It should be applied earlier, preferably April or May, but applications through June should still be effective. Remember, all grub products should be watered in soon after application. (Ward Upham)

## MISCELLANEOUS

### Stress to Trees and Shrubs is Cumulative



Stress is cumulative. In other words, trees and shrubs can be affected by stresses that happened up to several years in the past. Recent stresses in Kansas include sharp drops in temperature in the fall before some trees had hardened off. This occurred in 2019, 2020 and 2022. This was accompanied by last fall and winter's extremely dry weather which often resulted in damaged root systems. This damaged root system may have been further weakened due to too much rain in some part of the state and continued dry weather in other areas this spring. The excess water in areas that received it harmed root systems due to saturated soils driving out oxygen. Roots need oxygen as much as they need water. Though the roots were able to keep up with moisture demands during the cooler spring weather, they may not be able to keep up when the weather turns hot and dry. Such trees and shrubs may suddenly collapse and die or slough off branches they can no longer support.

This does not mean that all of our plants are doomed. Some plants are just better adapted to our tough Kansas conditions and have suffered little to no harm. However, it is a good idea to check the overall health of your trees. So how do you tell?

One of the most important clues in determining the health of your trees is the amount of new growth that tree has produced. A healthy tree should have a minimum of 4 to 6 inches of new growth each year and usually much more. Check branches with the tips in the open and not shaded by the tree itself. Anything less than 4 inches on the majority of branches suggests the tree is under a great deal of stress. We had an article in this newsletter last week that showed what to look for.

The only thing poor growth tells you is whether a tree is under stress or not. It does not tell you what is causing or has caused poor growth. This year, the most common cause by far is environmental stress caused by the dry fall and winter followed by excessive rain this spring.

So, what do we do for trees under stress? The most important practice is to water as needed. See last week's newsletter for information on proper watering practices. (Ward Upham)

**Contributors:**

Cynthia Domenghini, Instructor ([cdom@ksu.edu](mailto:cdom@ksu.edu))

Ward Upham, Extension Associate ([wupham@ksu.edu](mailto:wupham@ksu.edu))

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Division of Horticulture  
1712 Claflin, 2021 Throckmorton  
Manhattan, KS 66506  
(785) 532-6173

For questions or further information, contact: [wupham@ksu.edu](mailto:wupham@ksu.edu) OR [cdipman@ksu.edu](mailto:cdipman@ksu.edu)

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