Video of the Week:
Common Tomato Problems, Part I

UPCOMING EVENTS

Turf & Ornamentals Field Day
Thursday, August 1
K-State Research & Extension Center, Olathe

The K-State Turf and Ornamentals Field Day will be held Thursday, August 1 at the Research & Extension Center in Olathe (35230 W. 135th). The field day program is designed for all segments of the turf industry - lawn care, athletic fields, golf courses, 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.

1 hour of pesticide recertification credit is available in both 3A and 3B, as well as GCSAA education points. For more information and to register, go to: https://2019turfday.eventbrite.com

TURFGRASS

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)

**VEGETABLES**

**Physiological Leaf Curl in Tomatoes**

Every year we have calls from gardeners who have tomato plants with leaves that curl up. When tomato plants grow vigorously in mild, spring weather the top growth often exceeds the root development. When the first few days of warm, dry summer weather hit, the plant 'realizes' that it has a problem and needs to increase its root development. The plant tries to reduce its leaf area by rolling leaves. The leaves curl along the length of the leaf (leaflet) in an upward fashion. It is often accompanied by a thickening of the leaf giving it a leathery texture. Interestingly, leaf roll is worse on some varieties than others.

Though rolling usually occurs during the spring to summer shift period, it may also occur after a heavy cultivating or hoeing, a hard rain, waterlogged soil or any sudden change in weather. This leaf roll is a temporary condition that goes away after a week or so when the plant has a chance to acclimate, recover from injury, or the soil has a chance to dry out. (Ward Upham)

**Planting Winter Squash and Pumpkins**

This time of the growing season is a good time to plant pumpkins and winter squash so they don’t try to mature fruit during the heat of summer but rather in early October. Fruit that matures during hot weather may shrivel and lose quality. Also, planting at this time will allow these plants to avoid the first generation of squash bugs that can kill plants planted earlier.

These plants take up a lot of room so place a seed or two every 2 feet apart in the row with about 8 to 10 feet between rows. Seeds should be planted 3/4 to 1 inch deep. Keep watered until the plants emerge which usually takes about a week. Gradually back off watering as the plants become established. Winter squash and pumpkins love the heat and do well during the summer. (Ward Upham)

**PESTS**

**Hornworms on Tomatoes**

Hornworms are the largest larval insect commonly seen in the garden. Though usually seen on tomato, they can also attack eggplant, pepper, and potato.
The larval stage of this insect is a 3 ½- to 4-inch long pale green caterpillar with five pair of prolegs and a horn on the last segment. The two most common hornworms are the tobacco hornworm (seven diagonal white stripes and, most commonly, a red horn) and the tomato hornworm (v-shaped markings with a horn that is often blue or black).

The adult of the tobacco hornworm is the Carolina sphinx moth. The five-spotted hawk moth is the adult of the tomato hornworm. Both moths are stout-bodied, grayish-colored insects with a wing spread of 4 to 5 inches. The larva is the damaging stage and feeds on the leaves and stems of the tomato plant, leaving behind dark green or black droppings.

Though initially quite small with a body about the same size as its horn, these insects pass through four or five larval stages to reach full size in about a month. The coloration of this larva causes it to blend in with its surroundings and is often difficult to see despite its large size. It eventually will burrow into the soil to pupate. There are two generations a year.

This insect is parasitized by a number of insects. One of the most common is a small braconid wasp. Larva that hatch from wasp eggs laid on the hornworm feed on the inside of the hornworm until the wasp is ready to pupate. The cocoons appear as white projections protruding from the hornworm's body. If such projections are seen, leave the infected hornworms in the garden. The wasps will kill the hornworms when they emerge from the cocoons and will seek out other hornworms to parasitize.

Handpicking is an effective control in small gardens. Though large, these larvae are surprisingly difficult to see. Missing foliage is often the first clue that you have an interloper. Bt (Dipel, Thuricide), spinosad (Conserve; Colorado Potato Beetle Beater Conc; Captain Jack's Dead Bug Brew, Monterey Garden Insect Spray), cyfluthrin (Bayer Vegetable & Garden Insect Spray) and other insecticides may also be used to control hornworms. (Ward Upham)

**Squash Bugs**

Squash bugs are the grey, shield-shaped bugs that feed on squash and pumpkin plants. If you have had problems with these insects in the past, you know that they are almost impossible to control when mature. This is because the squash bugs have a hard body that an insecticide has difficulty penetrating. Thus, spraying when the insects are small is important. We are now seeing the eggs and nymphs of the first generation. Look on the underside of the leaves for cluster of brick-red eggs and small green insects with black legs. These nymphs will eventually become adults, which will lay eggs that will become the second generation. The second generation is often huge and devastating. Therefore, it is important to control as many squash bugs now as possible.

Because squash bugs feed by sucking juice from the plant, only insecticides that directly contact the insect will work. 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, Pet and Livestock Insect
Control; Lawn & Garden Insect Killer), malathion, and methoxychlor provide control if a direct application is made to young, soft-bodied squash bugs. This means that you MUST spray or dust the underside of the leaves because this is where the insects live. (Ward Upham)

**Borer Control in Peaches**

The first defense against borers is to maintain healthy, vigorous growth on peach trees. Do a good job of pruning, keep trees watered as needed, and control peach leaf curl. Young trees are more likely to be attacked than older ones if the older trees are healthy.

Pesticide applications can be made to provide a protective layer that will kill newly emerged larvae as they try to bore into the tree. Therefore, these applications must be applied before the larvae hatch. These applications are most critical with young trees up to 5 years old. Spray should be heavy enough to run down the trunk and into the soil at the base of the tree. Pesticides labelled for peachtree borer include permethrin (Hi-Yield Lawn, Garden Pet and Livestock Insect Control; Eight Vegetable, Fruit & Flower Concentrate) and carbaryl (Sevin). Apply two applications at 3 week intervals starting in early July. (Ward Upham)