

Horticulture 2012 Newsletter

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Video of the Week: [Drying Flowers - Long Lasting and Colorful](#)

VEGETABLES

Tomato Leaf-Spot Diseases



This time of year two common leaf-spot diseases appear on tomato plants. 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. Cages and stakes should be cleaned if they supported diseased plants the previous year. Wash cages with a dilute bleach and water solution (1 part bleach to 10 parts water) before use.

In some years, tomatoes will develop these diseases even when these recommendations are followed. In such cases, rotation is a good strategy. 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 Fungicide, Ortho Garden Disease Control, GardenTech Daconil and others. Be sure to start protecting plants when the disease is first seen. It is virtually impossible to stop it on heavily infected plants.

If chlorothalonil doesn't seem to be effective, try mancozeb (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 green just before you spray if you use Mancozeb as they will ripen inside. (WU)

FRUIT

Black Rot on Grapes



We are seeing a very common disease on grapes known as black rot. At first it appears as a brown area on the fruit but eventually the fruit will shrivel and turn black so that it resembles a raisin. These shriveled berries remain in the cluster so that you often have a mix of green and brown to black berries. Spraying will not control infections that have already taken place. Control should start when the shoots begin to emerge from the vine as this disease can also affect the leaves. Spray about every 10 to 14 days (use 10 days during wet

weather) and use the homeowner available product Immunox. Avoid Immunox Plus as it is not labeled for fruit. Captan, the common fungicide found in fruit tree sprays, is relatively ineffective on this disease. Commercial producers have a much broader range of recommended materials including Abound, Adament, Bayleton, Elite, Flint, Mancozeb, Pristine, Rally, Sovran, and Ziram. The infection period for black rot usually ends by veraison (grapes begin to color) but you may need to control other diseases such as powdery mildew. You can find a grape spray schedule on page 10 at <http://www.ksre.ksu.edu/library/hort2/c592.pdf> (WU)

Summer Care of Strawberries



Taking good care of strawberries this summer and fall will make a difference in the amount of fruit you harvest next spring. Next year's fruit buds will be set in September and October. Larger, healthier plants set more fruit buds. If you use a garden cultivator, rototiller, or hoe for weed control in and between rows, throw about a half-inch of soil over the crowns. Strawberry plant crowns continue to develop at the top, and new roots are initiated above old roots on the crown, so they need about a half-inch to an inch of soil covering the crown.

You will provide a good rooting medium for new runner plants by keeping the soil pliable or resilient rather than allowing it to harden on the surface. Remember to keep soil moist. Strawberry plants need about 1½ inches of moisture each week when temperatures reach 90 degrees. (WU)

Tan or White Drupelets on Blackberry and Raspberry Fruit



Blackberry and raspberry fruit will often develop white or tan drupelets on the berry.

Though we are not completely sure of the cause, two commonly given reasons are stinkbug damage and sunscald. Damage has been attributed to stinkbugs if the pattern of off color (not white) drupelets is random. Stinkbug damage is caused by the insect feeding on the blackberry receptacle and injuring drupelets on either side. Sunscald damage will be on the side of the fruit exposed to the sun and has several drupelets in a small

area being affected.

Neither condition affects the eating quality of the fruit unless the stink bug releases the “stink” with which it is associated rendering the fruit inedible. By the time damage is seen, it is too late for control. (WU)

PESTS

Sweet Corn Earworm

Corn earworm tends to be a problem every year on sweet corn in Kansas. The earworm moth lays eggs on developing silks at night. When the egg hatches, the larva crawls down the silk and into the ear. Feeding starts at the tip of the ear and works down. Though several earworms



may hatch and attack a single ear, only one is usually present at harvest due to the cannibalistic nature of the insect.

Control is challenging as silks continue to grow over a period of time. This means that even if silks are treated, new silk will appear that hasn't been protected. Applications every 2 to 3 days are needed for insecticides to be effective, especially in late June to early July when peak flights of these moths usually appear.

There is a three-week period from silking to harvest, but there is only a two-week period from when the silks appear to when they begin to dry. Since moths prefer juicy silks and shun those that have started to dry, insecticides are only needed the first two weeks of silking.

Homeowners can use cyfluthrin (Baythroid; Bayer Powerforce Multi-Insect Killer) or spinosad (SpinTor; Captain Jack's Dead Bug Brew; Conserve; Borer, Bagworm, Tent Caterpillar & Leafminer Spray). Spinosad is an organic product. Commercial growers have additional choices including zeta-cypermethrin (Mustang Max), bifenthrin+zeta-cypermethrin (Hero), spinetoram (Radiant) and flubendiamide (Belt).

Though more time consuming, mineral or other light horticultural oils may also be used. The oil is placed inside the silk end of the ear with a medicine dropper (1/2 to 3/4 of a dropper) after the silks brown. This will coat the earworms already present and likely suffocate them, though some damage to the tip of the ear will likely have occurred. Applying the oil before the silk has browned may interfere with pollination, leading to incompletely filled ears. (WU)

Spider Mites on Tomatoes



Hot, dry weather often means spider mites on tomatoes. Look for stippling on the upper surface of the leaves as well as some fine webbing on the underside of the leaves. These tiny arthropods (they are not true insects) are often difficult to see due to their size and their habit of feeding on the underside of leaves. If mites are suspected, hold a sheet of white paper beneath a leaf and tap the leaf. Mites will be dislodged and can be seen as tiny specks on the paper that move about.

Spider mite control can be challenging. A strong jet of water can be used to remove the mites but may not be as easy as it sounds. A high-pressure directed spray is needed to dislodge the mites. Since spider mites feed on the underside of the leaves, the spray is most effective if it comes from below. This can be difficult to accomplish with a thumb over the end of the hose. The only commercial product I have been able to find that is made for this purpose is the Jet-All Insect Wand from Kimbrew-Walter Roses.

Horticultural oils and insecticidal soaps (Safer's, for example) can also be helpful. Spray early in the morning when temperatures are cooler and plants have rehydrated. Resprays will likely be needed. (WU)

FLOWERS

Aster Yellows on Coneflower



Though aster yellows has a huge host range with more than 200 dicot plants affected, coneflower (Echinacea) is the plant most affected now.

Aster yellows is caused by an organism called a phytoplasma. The disease is common on weeds such as goldenrod and beggar-ticks (*Bidens* sp.). It is also damaging to perennial flowers such as coneflower, black-eyed Susan, marigold, perennial statice, gladiolus and many others. It has the potential to infect vegetable crops as well.

Symptoms of aster yellows may be variable depending on host plant, strain of the phytoplasma, etc. Initial symptoms may include vein clearing or yellowing progressing to an overall yellowing of the leaf. Infection early in the season will cause stunting, shortened internodes, and dwarfed, deformed or lopsided flower heads. The most diagnostic feature is adventitious shoot proliferation, which appears as a mass of leaves with a bushy or witch's broom effect. This may also occur in place of normal flower production. Because the phytoplasma is a systemic pathogen, plants will remain infected. Sensitive plants may be killed by the organism. Aster yellows is transmitted from plant to plant primarily by the aster leafhopper. We think that most plant infection in a given year is caused by the migration and feeding of infected leafhoppers from south and southeast of Kansas in early spring. The disease tends to be sporadic depending on the yearly flights of these leafhoppers. Although native leafhoppers appear to be less important in the transmission of the phytoplasma, some late-season spread of the organism from diseased to healthy plants may occur in this manner.

Control of aster yellows is difficult. By the time you see symptoms, it is too late. Any infected plants in the garden should be removed. Application of granular insecticides at planting or regular foliar treatments when leafhoppers are present will help reduce the severity of this disease, but this isn't practical except in a commercial cut flower operation. (WU)

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