

Weekly Pest and Production Update, Utah State University Extension, June 22, 2009

Insect/Disease Information

VEGETABLES

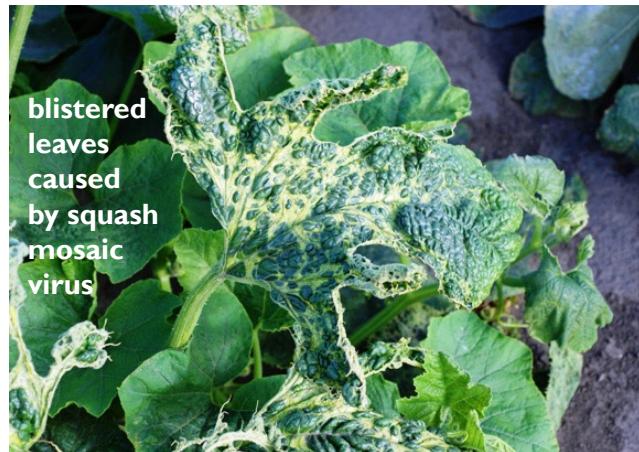
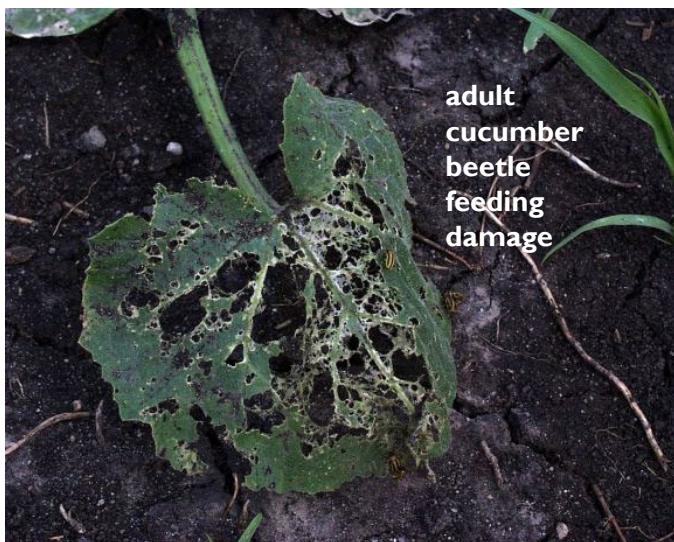
Cucumber Beetles



Manitoba Ag., Food and Rural Initiatives



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Adult cucumber beetles are becoming active, now feeding on foliage, and laying eggs. There are two species in Utah: western striped and western spotted cucumber beetle, and both cause similar damage. At this time of year, adults are feeding on foliage and stems, and larvae of the western striped beetle feed on roots.

Later in the season, adults and larvae of both species feed on the rinds of fruit, and larvae also feed on the roots. Watermelon, cantaloupe, zucchini, and cucumber are not affected.

Both species (along with aphids) vector squash mosaic virus. (They also vector bacterial wilt, which is not a problem in the West.) Diseased plants will show a mosaic, blotchy, or ring pattern of chlorosis on the leaves often associated with blisters, and fruit will be deformed.

These insects overwinter as adults, and emerge in spring to mate and lay eggs. If the preferred vegetable plants are not available, they will feed on other host plants. There are two summer generations of both species.

To monitor for cucumber beetles, examine all plant parts including undersides of leaves at least once/week. At this time of year, concentrate on the field or garden margins to detect entrance into the field from overwintering sites. For small plants, a control is warranted if unacceptable damage is detected.

Insect/Disease Activity continued from previous page

Treatment: spinosad (Conserve, Entrust, Success, Bonide^H, FertiLome^H, Monterey^H), pyrethrin (Ace Flower and Vegetable Insect Spray^H), imidacloprid (Admire), carbaryl (Sevin^H, Bayer Advanced^H), indoxacarb (Avaunt), kaolin clay (Surround), synthetic pyrethroids (many)

^Halso for homeowner use

Onion Thrips



Onion thrips are actively feeding on onions, and now is the time to scout for their presence in the field. Look for these tiny insects on the newest leaves near the center of the onion neck. Try to quickly count them before they hide. In the early season (until July), if more than 15 thrips/plant are found, treatments should be made to prevent later population build-up. (In mid to late summer, treat when more than 30 thrips/plant are found.)

Onion thrips overwinter as adults and start feeding in early spring on volunteer onions and new plantings. Although they have a broad host range of other vegetable, field, and weed plants, onions are their primary host, and they are the most destructive pest of onions in Utah.

They thrive in hot, arid conditions, so their populations will begin to build in the near future and they cause the most damage in July. Feeding damage is white to silvery streaks. Heavy feeding can cause plant wilting, and during July and August (when bulbs are rapidly enlarging), it can also cause reduced bulb size due to loss of plant vigor. Thrips can also vector viruses such as the iris yellow spot virus.

To manage this pest, consider alternate options before pesticides, as onion thrips can quickly develop resistance. Heavy sprays of water (including overhead irrigation) will dislodge and drown the thrips. Also, applying straw mulch, and inter-planting with carrots as an alternate host, can reduce thrips populations on onion.

Treatment: azadirachtin (Azatin, Neemix), spinosad (Success, Entrust, Green Light^H), spinetoram (Radiant), insecticidal soap^H, kaolin clay (Surround^H), carbaryl (Sevin^H), methomyl (Lannate), permethrin (Ambush, Pounce)

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Early Blight on Tomato/Potato



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Because of the optimal conditions for disease development we have had over the last few weeks (68-86 degrees F, rain, and humidity), growers should keep an eye out on tomato and potato plantings for early blight.

Early blight is caused by the fungus *Alternaria solani*. Both foliage and fruit can be infected. Look at older leaves first for circular spots containing concentric rings like a target. Usually spots will have a yellow halo. Fruit lesions occur at the stem end and are brownish black. Monitor plants for these distinctive lesions and apply a fungicide as a preventative as necessary.

Pruning Tomatoes, continued from previous page

It overwinters on old plant debris and can be a problem where tomatoes and/or potatoes are planted in the same location in successive years.

The best way to prevent early blight is to rotate out of tomatoes and potatoes for 3-4 seasons. Also, till or remove all plant residue in infested fields.

Treatment: Spray fungicide every 7-14 days until wet weather dissipates; fixed copper (Bordeaux^H, NuCop, Cupro-fix, Kocide), maneb, chlorothalonil^H, trifloxystrobin (Flint)

^Halso for homeowner use

SMALL FRUITS

Raspberry Horntail



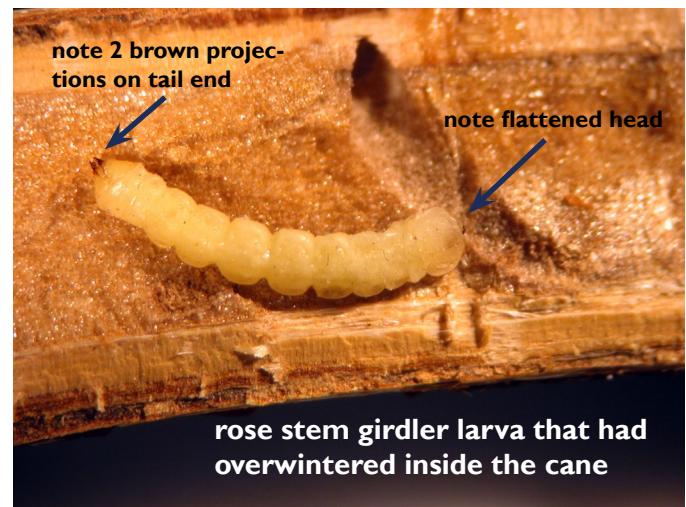
Raspberries are ripening up slowly due to the cold weather, but some varieties may be ready in the next few weeks. Keep an eye out for wilting terminals, as this may be a symptom of feeding by raspberry horntail within the stem.

Adults laid eggs earlier in the season, within a slit on the tips of raspberry canes. Larvae are now feeding within the stem

tissue. In a few weeks, they will move down the cane to pupate. We believe that there is a second generation, however, research is now being conducted in Utah field sites to better understand the biology of this pest.

Growers should monitor plants throughout the season for terminal wilting and prune and destroy the infested plant material. When pruning, be sure that you get the white larva inside the stem. It may be farther down the stem than you think. To get a feel for where the larvae are feeding, slice a few cut stems vertically to locate the larva.

Rose Stem Girdler



The rose stem girdler (*Agrilus aurichalceus*) is a shiny, bronze colored beetle and is related to other "flatheaded beetles" such as the bronze birch borer. Adults are emerging now from the canes of raspberry, currant, gooseberry, and shrub roses.

Pruning Tomatoes, continued from previous page

Females lay eggs near the base of the canes, and the larvae hatch and move into the plant tissue. The insect at first forms random, spiraling galleries on the inner bark of canes, and then moves into the center where it tunnels up or down the cane. Canes may have swellings at the feeding sites, and infested canes may break at weak areas later in the season.

The best treatment option is to remove and destroy infested canes late in the season and over the winter. There are a few insecticides that can be used to kill the eggs and newly hatched larvae, but use caution when spraying flowering plants: treat at dawn or dusk only to avoid harming pollinators, or ideally, do not spray plants in bloom.

Treatment: Malathion^H, rotenone + pyrethrin (Pyrellin EC^H, Bonide Liquid Rotenone Pyrethrin Spray^H; this material is softest on bees), Diazinon. Treat every 7 days for the next 3 weeks.

^Halso for homeowner use



the spiraling trail formed by a young rose stem girdler larva

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