UtahState UNIVERSITY extension

# Small Fruits & Vegetables IPM Advisory

UTAH PESTS

Weekly Pest and Production Update, Utah State University Extension, **July 11, 2008**

## Insect/Disease Information

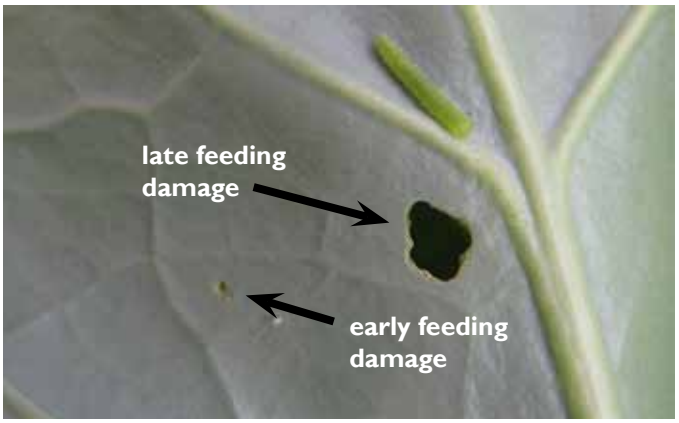
### VEGETABLES

#### Cabbage Looper

We mentioned cabbage looper adult trapping results in last week's advisory. Caterpillars are active now. Monitor for them by looking at the undersides of leaves. The earlier instars feed just on one layer of the leaf while older instars chew holes through the leaves. They are easy to identify as they move in an inchworm pattern and are green in color with white stripes down the back and sides.

*Treatment*: Bt and spinosad both provide excellent control. Carbaryl can also be used.

#### Imported Cabbageworm




Adults are continuing to actively lay eggs but many hatching larvae seem to be getting eaten by birds or other predators. These larvae are different from cabbage looper larvae in that they have a velvety fuzz on their bodies and are more sluggish in motion.

To conserve natural enemies, do not treat unless necessary. In fields, randomly inspect at least 25 plants. If a plant has at least one caterpillar, consider it infested. Action thresholds for caterpillars in crucifers, as recommended by University of Massachusetts is:

| Crop & Stage | % Infested Plants |
|---|---|
| cabbage, broccoli, cauliflower (before head formation begins) | 35% |
| cabbage & broccoli head formation to maturity | 15% |
| cauliflower (after heading) | 10% |
| kale, collards & other greens | 10-15% |

#### Cabbage Aphid on Crucifers

Cabbage aphids are active now, and they will continue to build colonies throughout the season. Their feeding causes a localized yellowing of the foliage, leaf cupping, and stunting of smaller plants. They generally do not cause reductions in yield, but they tend to move deep into head-forming crucifers, thus making the harvested portion of the crop unmarketable. The colonies are easy to identify as these aphids have a white waxy coating

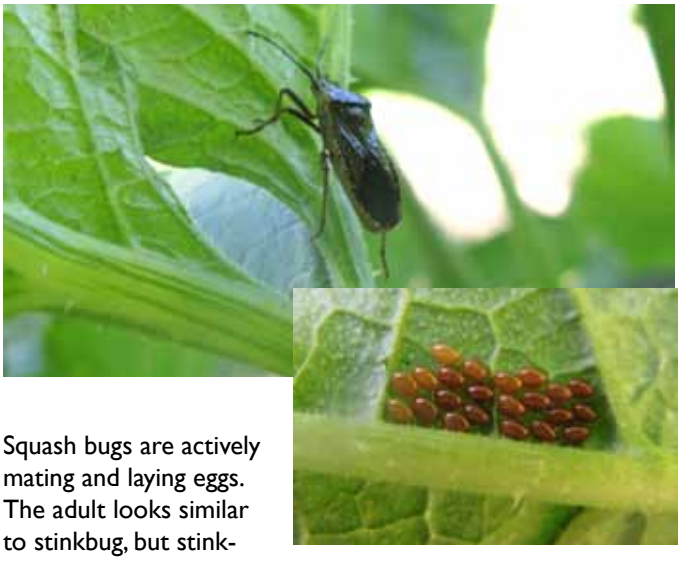
For cultural controls, remove and destroy crop debris after harvest, and remove alternate hosts (weeds in the mustard family) from nearby borders. Also, when transplanting Brussels sprouts, make sure plants are clean since infestations can start in seedling trays.

## Insect/Disease Activity, continued

It is advisable to avoid multiple sprays for aphid control so that you are conserving natural enemies that help to control crucifer caterpillars. If a treatment is necessary, wait until pre-heading and apply a single application.

*Treatment*: (**commercial**) acetamiprid (Assail), imidacloprid (Admire), *Beauveria bassiana* GHA (Botanigard 22 WP); (**residential**) insecticidal soap (can be phytotoxic on Brussels sprouts and cabbage), permethrin (Ace Multi-Purpose Dust, Bayer Advanced Complete Dust, Bonide Eight)

### Squash Bug



Squash bugs are actively mating and laying eggs. The adult looks similar to stinkbug, but stinkbugs rarely visit cucurbits, and might be found instead on tomatoes and legumes. The egg clusters are easy to spot and are laid in the V of leaf veins. They take about 1-2 weeks to hatch. Egg-laying will continue until approximately mid-August. Nymphs will often feed in clusters on the undersides of leaves and sometimes on the developing fruit. They will feed all summer and overwinter as adults. There is a single generation each year.

In Utah, squash bugs seem to primarily prefer squash (winter squash especially) and zucchini. They feed by sucking plant juices, causing yellow speckling, browning, wilting, and in extreme cases, death of small plants. They can sometimes feed on the fruit surface.

Control of squash bug, in particular the adults, is difficult. There are a few natural enemies, but not enough to maintain low levels. So the key to management is to target the newly hatched nymphs. This entails early detection of egg-laying and hatching through regular monitoring. For larger fields, look at the undersides of leaves of approximately 20-25 plants at least 2-3 times per week. Focus on the lower leaves. A treatment should be applied if there is more than an average of 1 egg mass/plant. While plants are in bloom, spray only in early morning or evening to avoid harming pollinators.

In small gardens, the squash bug population can be reduced by placing boards on the soil near the plants where adults will hide at night. Lift the boards early every morning and kill the bugs (squish or put in a can of soapy water) underneath. Also, look for the easy-to-find egg masses and destroy.

*Treatment*: (**commercial**) acetamiprid (Assail), esfenvalerate (Asana), permethrin (Ambush, Pounce), bifenthrin (Tundra), carbaryl, lambda-cyhalothrin (Warrior), piperonyl butoxide+pyrethrin (Pyrenone); (**residential**) neem oil (Concern, Ferti-Lome), permethrin (Ace Dust, Bayer Advanced Dust, Bonide Eight), kaolin clay (Surround), carbaryl.

NOTE: carbaryl can cause phytotoxicity (plant damage) when applied in hot weather.

### Leaf Rolling on Tomato

Leaf rolling on tomato can often occur due to a variety of abiotic factors, and does not affect yield. It can be caused by too much or too little moisture, excess fertilizer, heavy pruning, root damage during cultivation, or damage from herbicides. Usually the lowest leaves are the most symptomatic, and they may eventually become thickened and leathery. This condition is most common in staking varieties whereas bush varieties seem to be less susceptible to environmental changes. It is important to know what is causing the leaf roll so that pesticides are not applied unnecessarily. If all plants in the garden or field have the same symptoms, it is probably one of the causes mentioned above. Provide even, regular watering, a balanced fertilizer, and take care with herbicide applications.



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