

Cape Elizabeth Community Garden, Organic Bulletin #2

Striped Cucumber Beetles

What are they?

The striped cucumber beetle is a small beetle approximately half a centimeter in length, and characterized by brown-yellow elytra completely covering the abdomen and longitudinally transversed by three thick black stripes.



Large numbers of adults emerge from diapause in the spring to feed on the foliage, flowers, and pollen of cucurbit species. Between one and two generations of beetles can pass in a season depending on the region, with the final generation settling into another period of diapause to wait out the winter.

Females will lay eggs on or in the immediate vicinity of the stem of a viable host plant, often a member of the genus *Cucurbita*. Eggs are a bright orange color and less than a millimeter in diameter. Eggs hatch after a short period and larvae feed on the roots of the plant.

Striped cucumber beetles can cause significant amounts of foliar damage to cucurbit crops, particularly to older plants, and larval root feeding also damages the plant. The most damage is often seen in the early part of the year during the emergence of overwintering beetles, but feeding damage continues throughout the entire growing season. Furthermore, adult beetles are one of two known vectors of the bacterial wilt *Erwinia tracheiphila*, an incurable and often fatal disease of cucurbits. Bacteria passes from the frass of the beetle into feeding wounds that reach into the vascular tissues of the plants, where they proliferate to the point of blocking the xylem.

How are they managed?

You can protect young cucurbit seedlings from cucumber beetles by covering them right after planting with floating row covers, individual screens, or cones. It's also a good idea to plant cucurbits later in the season -- those planted early (by your neighbors, perhaps) will attract any beetles in the area, and your plants may be spared. Also, remove and destroy (don't compost) plants infected with bacterial wilt immediately so that they won't attract more beetles to the area. Adult beetles found on plants can be hand-picked and squished.

☒ Crop rotation and sanitation are important. Avoid leaving cucurbit crop debris available for overwintering sites. Plow debris under after harvest and plant a cover crop to reduce the overwintering population. Keep headlands mowed. Rotate cucurbits to distant fields to help delay infestations.

☒ Floating row covers are very effective for avoiding beetle damage. Remember to temporarily remove the covers periodically to weed early, and leave off permanently when the flowers appear to allow pollination.

☒ Use of trap crops is possible for this pest. Cultivars vary dramatically in their attractiveness to beetles. The inexpensive variety Dark Green Zucchini is very attractive and takes up little space (see Cornell 2004). Blue Hubbard squash is also an effective trap crop that is not susceptible to wilt. A trap crop can be planted early around the perimeter of the cash crop, and allowed to attract beetles.

☒ Use transplants instead of direct seeding. They will be older when beetles arrive and therefore more tolerant, or you can plant later after peak beetle activity is over. A relatively new natural material called Surround, made from kaolin clay, has been showing good results in trials. It comes as a powder that is mixed and sprayed, so it coats leaves with a white film that confuses or deters the pest. It is being used for many pests in apple orchards and seems to hold promise for many vegetable pests. ([See below](#)).

Predators: Tachnid flies, soldier beetles, parasitic nematodes and braconid wasps. Lacewings and ladybugs eat the eggs. (these can be found at organic control websites)

Repellent plants: Broccoli, calendula, catnip, goldenrod, nasturtiums, radish, rue and tansy. If you want to try marigolds to repel them use the more pungent varieties like African, French or Mexican marigolds. The more common marigolds may actually attract them, therefore could be used as a trap crop. Many authors recommend planting radish seeds with squash. The beetles will preferentially destroy the radishes and can then be removed.

Control Methods:

- Use a portable vacuum to get the adults in the early evening. Put them right into a plastic bag, seal it and dispose of them.
- Try placing cuttings of the tansy plant as a mulch in-between rows in the garden.
- Spread any type of onion skins on the soil around the planted areas.
- A deep mulch of straw helps by keeping the adults from walking plant to plant. Heavy mulching can deter cucumber beetles from laying eggs in the ground near plant stems and may hinder feeding by larvae migrating to fruits. This cultural control method, however, does not protect the leaves against attack from adult insects. Injury to fruit by tunneling of larvae is dependent on very moist soil as fruits ripen. Limiting irrigation at this time can minimize damage
- Try a spray of hot peppers, water and garlic.

- Trellising plants can make leaves less accessible to insect larvae and may decrease egg-laying. Like mulching, trellising does not protect plants against attack by adult insects
- Plant radish seeds right in the hills with the cucumber plants.
- Floating row covers are an effective control method during the early season of plant growth. They prevent insect attack by forming a barrier between insects and plants. Row covers need to be removed during the late vegetative stage, at the onset of flowering, to allow for bee pollination. To fool cucumber beetles: flatten a square of aluminum foil around the base of plants to bounce light on the undersides of leaves. This also helps the plants in giving them more light.
- Cultivate in the fall to expose the eggs.
- Neem oil, which can act as an ovicide, can be used as a soil drench to treat eggs and larvae. It does seem to help with control of the adults as a repellent and antifeedant. Further tests must be done using Neem but it does look promising. ([see below](#))

See also:

<http://www.ghorganics.com/CucumberBeetles.htm>

<http://www.vegedge.umn.edu/vegpest/CUCS/scb.htm>

<http://yourorganicgardeningblog.com/neem-oil-for-the-garden-ahead/>

<http://web.pppmb.cals.cornell.edu/resourceguide/mfs/08neem.php>

<http://www.planetnatural.com/site/surround-wp.html?id=LXgmu9Mr:64.185.128.221>

<http://www.arbico-organics.com/product/Aphid-Whitefly-Sticky-Traps/pest-solver-guide-aphids>

