

## Cucumber Beetle Control

Stanton Gill

If you grow squash, cucumber or pumpkins as well as cut flowers, you are probably extremely familiar with a group of pests called cucumber beetles. "Cucumber beetle" is a common name given to members of two genera of beetles, *Diabrotica* and *Acalymma*, both in the family Chrysomelidae.

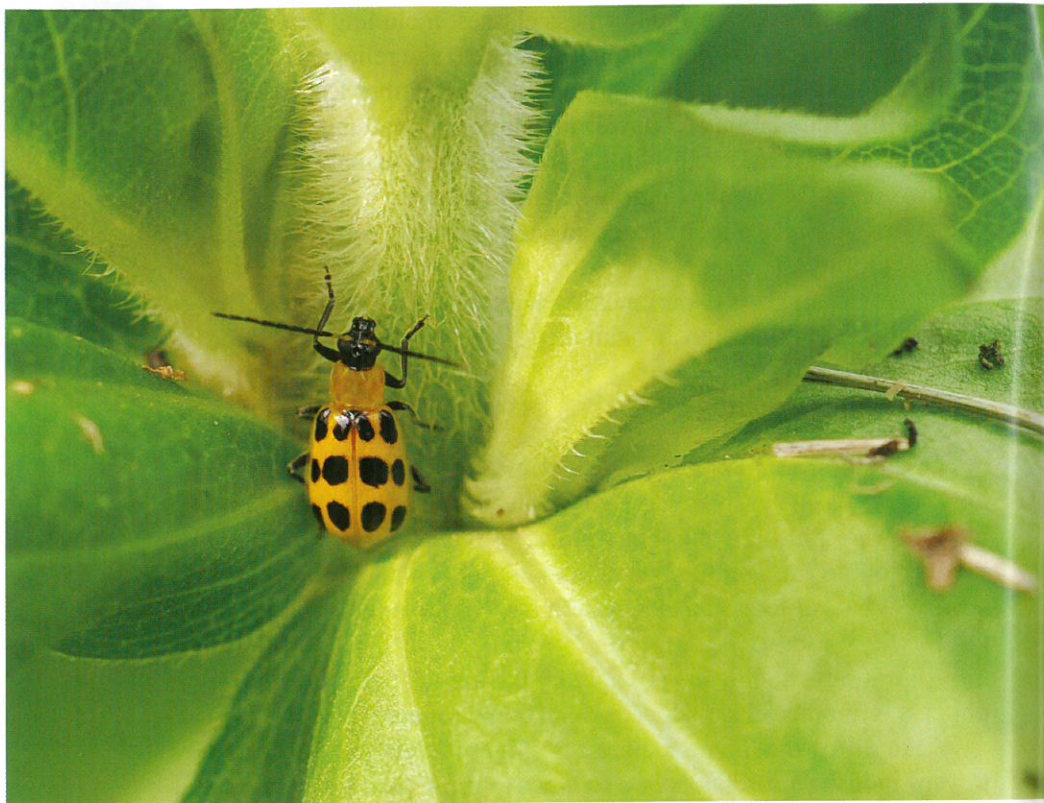
The striped cucumber beetle (*Acalymma vittatum*) and the spotted cucumber beetle (*Diabrotica undecimpunctata howardi*) occur throughout the continental United States.

As a cut flower grower, why should you be concerned about these two beetles? Well, besides feeding on cucumbers and other melon crops, the adults love to feed on the petals of dahlias, zinnias, sunflowers, and occasionally marigolds.

The adults chew chunks out of the ray petals making the beautiful cut flower look ragged and bedraggled. The adults are active from late spring to early in the summer right through the fall, prime cut flower production seasons.

### Life Cycle

Adult cucumber beetles overwinter in protected areas near buildings, in fence-rows, or in woodlots. They become active in mid-spring, when temperatures begin to increase. Currently, there is no good method for predicting when activity will begin. Generally, it's when temperatures reach 70-75F for a couple of days in a row. Beetles quickly locate host plants in the spring. The adults feed, and females deposit eggs in cracks in the soil at the base of cucurbits. We have not directly observed females laying eggs on the roots of sunflowers, dahlias or zinnias, and I could not find in published, refereed literature that anyone has published find-



Spotted cucumber beetle on zinnia

ing the beetle laying eggs on these cut flowers. Still, adult beetles manage to find the plants when they come into flower, and adults are strong fliers.

The larvae can feed on the roots of corn and some ornamental grasses. If someone is growing melon crops within one to two miles of your cut flower operation, adults can fly into your fields.

The eggs hatch and the larvae feed on the roots. These larvae will pupate in the soil, and later in the summer the next generation will emerge, and also feed on the cucumber and melon plants, as well as on sunflowers, dahlias, zinnias, and marigolds. These adults overwinter until the following spring.

### Problems with Chemical Control

Since the adult cucumber beetles feed on ray petals, if you use an insecticide you will likely also be killing pollinators and beneficial organisms visiting your cut flowers. Systemic insecticides applied as soil drenches avoid the spraying but unfortunately, the chemical rarely, if ever, moves into the flower itself.



## Traps and Baits

At the Cultivate 2018 conference in Ohio, I ran into Jan Meneley of AgBio Company in Westminster, Colorado. AgBio carries a sticky trap that you bait with a product highly attractive to adult cucumber beetles. This lure is a proprietary mixture of cucumber beetle pheromones and kairomones (attractants). The bait and yellow color of the trap work together to pull the adult toward the sticky material covering the trap. Jan sent us several traps which we tested at two cut flower sites in Maryland. The traps appear to be effective in pulling in the adult beetles. In addition, a ton of fungus gnat adults and several fly species were attracted to the yellow sticky trap. You will need to change the trap once every week or it becomes too cluttered. So far, we have not seen any damage to the dahlias at either site since we started using the baited traps. We will continue using these traps through the fall and will let you know in future articles and presentations if they continue to be effective.

Trécé Incorporated offers a bait material for cucumber beetles called Cidetrac D (for *Diabrotica*) which is a curcubitacin product from the powdered root of buffalo gourd. This bitter material attracts *Diabrotica* and repels many beneficials. It can be mixed with spinosad (or Mycotrol) and sprayed as a bait spray to attract and kill cucumber beetles with minimum damage to beneficials. Bait spray is large droplets that are widely scattered and can be used on surrounding vegetation.

### Attracting the Beetles to Bait Plants

Cucumber beetle adults love alfalfa plants, so some growers grow a strip of alfalfa in the field or in pots, then vacuum them when they see cucumber beetles on the plants. This is assuming you have a strong vacuum and do not want to spray anything. If you are willing to spray, treat the trap plants with a contact insecticide.

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Cucumber beetle lure and sticky trap

