

Cucumber Beetle

Integrated Pest Management Options

Ellie Andrews, UCCE 2023



(UC IPM)

Background

- Western spotted & Western striped cucumber beetles are major cucurbit pests
- Overwinter as adults, lay eggs at base of plants, larvae feed on roots and complete their development in the soil
- Adults feed on flowers, leaves, surface of melons, stems of young plants
- Larvae can cause damage by feeding on roots
- They spread squash mosaic virus and bacterial wilt (plant diseases)
- There are usually around 3 generations per year
- They like moisture, dislike heat

Management Options

IPM provides a toolbox approach to pest management: choose a combination of management options that makes sense for your context.

Monitoring

- Start monitoring for cucumber beetles after transplanting or when seedlings emerge thru the fruiting stage
- Set a threshold that is appropriate for your operation; if you see one beetle per plant when seedlings are <4 inches tall, pesticide applications for adults may be warranted
- Late season infestations tend to be less damaging as those that start earlier since numbers tend to be lower

Biological Control

- Most important natural enemy is the parasitic tachinid fly, *Celatoria diabroticae*
- Natural enemies are rarely effective enough on their own to reduce populations below economically detrimental levels

Cultural Methods

- Crop rotation out of cucurbits
- Using floating row cover when possible as a barrier
- Using transplants so they get a head start
- Mulching can help discourage egg laying around cucurbit plants
- Remove any debris promptly out of the field to reduce their habitat
- Perimeter trap cropping: Hubbard squash attracts cucumber beetles more than most other cucurbits, so planting it as a trap crop can distract them away from other crops. This takes some labor but can be a nice way to avoid using insecticides.
- Some growers create insect vacuums out of modified leaf blowers

Physical Barrier Spray

- Kaolin clay: (such as Surround WP) repels them by building up a gummy coating in the cucumber beetles' antennae, which doesn't kill them but makes it difficult for them to navigate

Organic Insecticides

- Beneficial nematodes: (such as Arbico Organic's NemaSeek) kill the pre-emergent grub stage of cucumber beetles in the soil, so there is very low risk to pollinator insects
- The following options are riskier when it comes to off-target damage to pollinator insects
- Pyrethrin insecticides: (such as Pyganic) made from Pyrethrum which is an extract from daisy flowers, good for immediate action and control
- Azadiractin: (such as AzaGuard) extract from the neem tree, good for immediate action and control
- Spinosad: (such as Bonide) bacteria that kills insects, can be applied as a soil drench to kill larvae before the pupate
- Beauveria bassiana: (such as Mycotrol) a fungus that kills insects, most effective on pre-adult stages of cucumber beetle

Mention of pesticide products do not constitute endorsements, merely examples of registered products that can be used for this specific pest. Always follow the pesticide label carefully and consult ipm.ucanr.edu for further resources.

References

<https://ipm.ucanr.edu/agriculture/cucurbits/cucumber-beetles/>

<https://blog-fruit-vegetable-ipm.extension.umn.edu/2020/06/managing-tricky-vegetable-pests-in-2020.html>

Here is a 15-minute on cucumber beetles from the University of New Hampshire Extension:

<https://extension.unh.edu/blog/2020/08/over-informed-ipm-episode-025-what-cucumber-beetles-want>