Striped and spotted cucumber beetles as pests of cucurbits in Michigan

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Striped and spotted cucumber beetles attack a variety of cucurbit crops, including winter and summer squash, cucumber, and watermelon. The larvae of cucumber beetles do feed on cucurbit roots, but damage by adult beetles is more economically important.

Appearance:
Striped cucumber beetle adults are roughly 1/5 of an inch (0.5 cm) long. The head is black, the thorax and wing covers are yellow. Three distinct black lines run down the back. The abdomen is black underneath the wing covers (Fig 1A and 1B).

Spotted cucumber beetle adults are nearly the same size or slightly larger. The head is black, and the thorax, wing covers, and abdomen are yellow or yellowish-green. Adults have 12 black spots on the back (Fig 1C).

In both species, larvae are pale with dark heads and a dark-colored abdomen tip. Larvae live in the soil and are rarely seen, and eggs laid at the base of cucurbit plants are inconspicuous.

Striped cucumber beetles may be confused with the western corn rootworm (Fig 1D), but can be distinguished by abdomen color: only striped cucumber beetles have a black abdomen. Additionally, the stripes on the back of the western corn root worm are less distinct and often run together, in contrast to the sharp stripes on the back of the striped cucumber beetle.

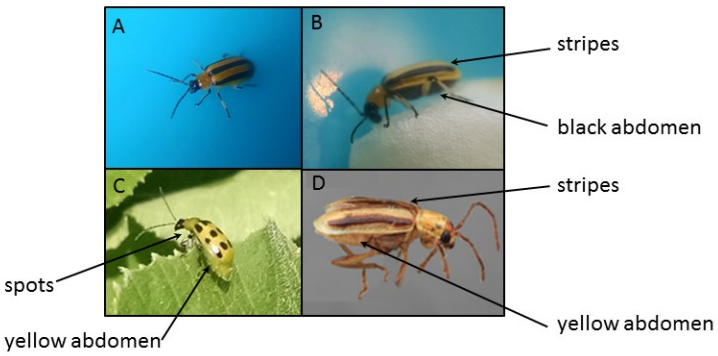

Figure 1. (A, B)Adult striped cucumber beetle (C), spotted cucumber beetle, and (D) western corn rootworm. Photo credit: A.L. Buchanan and W.R. Morrison III

Life cycle: *Striped cucumber beetles* overwinter as adults in field debris or wooded areas, emerging in April to feed and mate. Mated adults lay eggs at the base of cucurbit plants, which hatch after 5-8 days. Larvae feed on crop roots for 2-3 weeks then pupate underground, after which a second generation of adults emerges to feed. Striped cucumber beetles have 2 generations per year in Michigan.

Spotted cucumber beetles do not overwinter in Michigan. Adults migrate from the southern US, arriving in late June. The remainder of the life cycle is similar to that of the striped cucumber beetle.

Damage: Feeding by adult beetles is more economically important than larval root feeding. Adults chew on leaves, flowers, and fruits (Fig 2). Leaf damage defoliates plants, and flower damage decreases pollination. Scars and pock marks on fruit affect market value. Cucumber beetle feeding also spreads bacterial wilt pathogens among plants, even when the population density of beetles is low.

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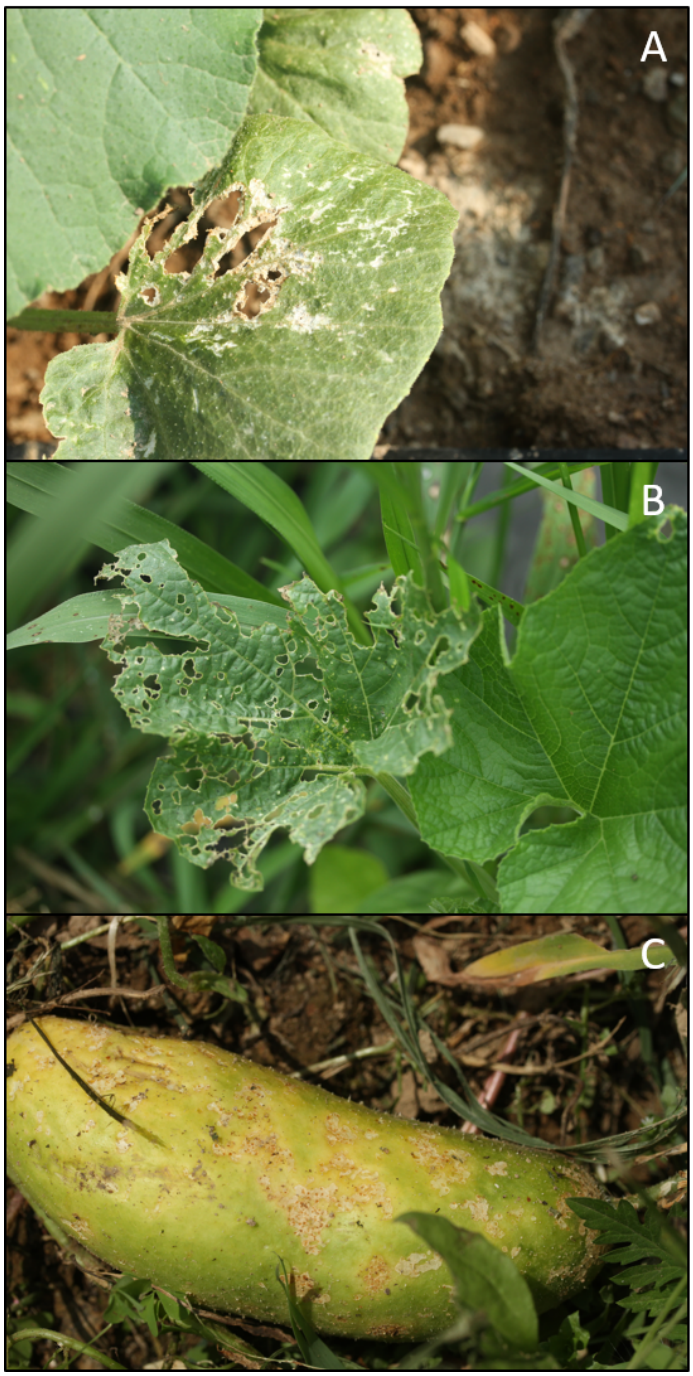

Figure 2. Cucumber beetle damage on (A, B) leaves and (C) fruit.
Photo credit: W.R. Morrison III

Management: The inconspicuous nature of eggs, larvae, and pupae require scouting for adults only. Scouting should be done in June-August, using yellow sticky cards or visual observations. At the cucurbit seedling stage, the threshold for chemical insecticide use is **one adult beetle per** seedling. For mature cucurbits, the threshold for insecticide is **5 adult beetles per plant**.

Cultural controls can help manage pest populations. Removal of field debris after harvest reduces overwintering habitat for striped cucumber beetles. Timing squash planting to avoid exposure of seedlings or fruiting plants to adult populations can reduce foliar damage to young plants or visible damage to fruits.

Other resources

MSU vegetable entomology website:
http://vegetable.ent.msu.edu/

Enviroweather – up to date soil temps and degree days:
http://enviroweather.msu.edu/homeMap.php

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