A Field Key to the Cucumber Beetle Species Found in California

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Introduction
This key can be used to distinguish between the three common species of cucumber beetle reportedly found in cucurbitaceous crops in California and similar species found east of the Rocky Mountains. The western spotted cucumber beetle (Diabrotica undecimpunctata undecimpunctata), is the predominant species found throughout California and is one of the more common insects on a variety of weedy and cultivated plants. A closely related species, the spotted cucumber beetle or southern corn rootworm (Diabrotica undecimpunctata howardi), is found east of the Rockies from Canada to Mexico. The less common, yet still damaging, western striped cucumber beetle (Acalymma trivittatum) is also found throughout California and is generally somewhat smaller (~15 - 25%) than the western spotted cucumber beetle. A related species, the eastern striped cucumber beetle (Acalymma vittatum) is found east of the Mississippi. Another similarly striped beetle, the western corn rootworm (Diabrotica virgifera), is primarily a pest of corn in the midwest, but is often found in abundance in midwest cucurbits where it can cause minor damage. It is also reportedly established in the Pacific Northwest and has possibly moved into Northern California. The banded cucumber beetle (Diabrotica balteata) is primarily found in southern California. Being able to correctly identify the cucumber beetle species will help in developing an understanding of their behavior in local crops and their preferred overwintering habitat (see UC PMG for cucurbits for more details).

Collection Methods
Adult cucumber beetles are generally difficult to find during the winter, as they secret themselves away in leaf duff accumulated next to trees, shrubbery, fences and other structures. During the spring or mid-summer are the best times to observe and collect adults actively feeding on leaves, stems or fruits in cucurbits. Hand collecting or aspirating is most easily accomplished in the early morning hours with cooler temperatures. Sweep nets can be used right at the canopy top if care is taken not to damage the crop. The most efficient collecting method is the use of cucumber beetle traps and lures produced by Trécé, L.L.C. Yellow sticky panel traps can also be used, but beetle identification is more difficult in the stickem.

General Instructions
It is not necessary to separate males from females for identification as is the case with some insects. General coloration and patterns on the body, elytra (wing covers), and basal segments of the antennae are all that is needed for beetle identification. Size and coloration vary within species and these illustrations are for general guidance only.

See Key and identifying characteristics on back page.
PICTORIAL COMPARISONS AMONG SIX KEY SPECIES

Generally not found in California

**Striped cucumber beetle**
*Acalymma vittatum*

- Yellowish elytra with black stripes
- Abdomen and antennae black with 1st antennal segment pale yellow

**Spotted cucumber beetle**
*Diabrotica undecimpunctata howardi*

- Yellowish elytra with 12 black spots
- Bases of the legs and body (underneath) pale yellow

**Western corn rootworm**
*Diabrotica virgifera*

- Abdomen yellow, central black stripe on yellowish elytra does not extend to the tip of the abdomen
PICTORIAL COMPARISONS AMONG SIX KEY SPECIES

Present in California

Western striped cucumber beetle
_Acalymma trivittatum_

- Yellowish elytra with black stripes
- Abdomen and antennae black with only basal part of 1st antennal segment pale yellow

Western spotted cucumber beetle
_Diabrotica undecimpunctata undecimpunctata_

- Elytra with 12 black spots
- Yellowish elytra, antennae, legs, and body (underside) entirely black

Banded cucumber beetle
_Diabrotica balteata_

- Yellowish elytra with horizontal greenish blue bands and thin green band running down center; greenish blue thorax; with black eyes and orange-red head and antennae
Key

1a. Elytra with horizontal greenish blue bands and thin green band running down center; with greenish blue thorax, black eyes and red head and antennae ...................................................... the banded cucumber beetle, *Diabrotica balteata*.  
1b. Elytra with black stripes ........................................................................................................... 2  
1c. Elytra with 12 black spots ........................................................................................................ 3  

2a. Abdomen and antennae black with only basal part of 1st antennal segment pale yellow ...................................................... western striped cucumber beetle, *Acalymma trivittatum*.  
2b. Abdomen and antennae black with 1st antennal segment pale yellow ........................................ striped cucumber beetle, *Acalymma vitiaum*.  
2c. Abdomen yellow, central black stripe on elytra does not extend to the tip of the abdomen ................................................................. western corn rootworm, *Diabrotica virgifera*.  

3a. Antennae, legs, and body (underside) entirely black ........ western spotted cucumber beetle, *Diabrotica undecimpunctata undecimpunctata*.  
3b. Bases of the legs and body (underneath) pale yellow ........ spotted cucumber beetle, *Diabrotica undecimpunctata howardi*.  

Identifying Morphological Characteristics

Differentiating characteristics to look for:  
- general abdominal coloration  
- patterns on the body  
- elytra (wing covers)  
- basal segments of the antennae