BUG BIZ
Pest Management and Insect Identification Series
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Murgantia histrionica, Harlequin Bug

(Hemiptera: Pentatomidae)

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Description

Harlequin bugs, *Murgantia histrionica*, are brightly colored stink bugs.

Adult harlequin bugs are approximately ⅜ inch (10 mm) long with a shield shaped dorsal outline. Adult body color is a combination of glossy black and bright orange. The relative amount of black and orange is highly variable. Immatures (nymphs) are also bright orange and black, with bright white bands indicating the divisions of the abdominal segments. Eggs are barrel-shaped and deposited in clusters of 10 to 15 eggs each, typically on the undersides of host plant leaves. They are boldly ringed in alternating black and white circles.

Harlequin bugs may be confused with bagrada bugs (*Bagrada hilaris*), another invasive stink bug. Harlequin bugs are larger, typically have more orange coloration and lack the bold central white stripe of bagrada bugs.

Life Cycle

Females produce four to 26 egg masses during their life spans, totaling several hundred eggs. First stage nymphs hatch within one to three weeks, depending on temperature. Newly hatched nymphs remain near the eggs for a short period before beginning to feed. Nymphs undergo five growth stages (instars), with the final stage molting into an adult. Feeding is accomplished using piercing sucking mouthparts to consume host plant liquids. Salivary enzymes are injected into the plant tissue to partially predigest the tissue. Main host plants are crucifers such as cauliflower, broccoli and cabbage, but the bugs will feed opportunistically on many other plants. The life cycle requires one to several months to complete from egg to adult, with shorter durations at higher temperatures. Two to four generations per year are possible, with three to four in southern parts of the range, including Louisiana. Adults overwinter in loose soil and organic debris, including crop residue from the previous growing season.

Adult harlequin bug. (Whitney Cranshaw, Colorado State University, Bugwood.org. Creative Commons 3.0)

Ecological Significance and Pest Status

Harlequin bugs are documented in most states in the U.S. and as far south as Central America. They are less common in more northern states, but records exist as far north as North Dakota. The native range of harlequin bugs is Mexico and Central America. Economic entomology accounts from the late 1800s documented the spread of the insect north from Mexico.

Harlequin bug is a serious pest of cabbages, cauliflower, broccoli, turnips, kohlrabi and various other crucifers. Feeding damage includes discoloration at feeding sites, wilting and failure to produce flower heads in the

case of broccoli and cauliflower. Large infestations can result in plant death. The insect will also feed on a number of common weeds such as pigweeds (*Amaranthus* sp.) and lamb's quarters (*Chenopodium* sp.).

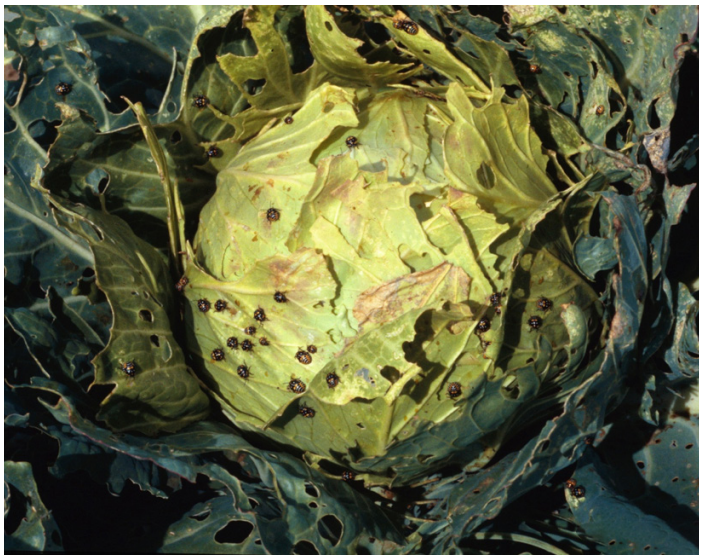
Control

Cultural control. All life stages of harlequin bugs are brightly colored and easy to identify. Thus, hand picking, especially searching and destroying egg masses, can be an effective strategy in reducing infestations. Early season crucifers should be monitored carefully for the first signs of infestation. Removal of overwintering sites, such as previous crop residue, can reduce winter survival of adults and prevent or delay infestations the following spring. This is especially useful in the Deep South, where crucifers tend to be early season crops in vegetable gardens and small farm acreages. Trap crops, such as turnips or kale, can be used to lure bugs before or after harvest, but care must be taken to eliminate bugs lured into them by removing the trap plants or using insecticides on them.

Chemical control. Broad spectrum insecticides such as pyrethroids, acetamiprid and carbamates can control harlequin bug. Soil application of neonicotinoids, such as imidacloprid and thiamethoxam, can also be effective. One of the benefits of soil application is that residual effects of insecticides can be in effect for up to a month. The use of insecticides should be done after consulting pest control professionals and only in accordance with label directions.

Biological control. Adult and nymphal harlequin bugs have few natural enemies, though a few generalist insect predators and some birds will attack them. The eggs are consumed by various egg predators, including minute pirate bugs (Anthocoridae), lacewings (Chrysopidae) and predatory bugs (some Pentatomidae, Nabidae). A few parasitoid wasps in the families Encyrtidae and Scelionidae parasitize the eggs, and these are likely the most effective natural enemies.

Eggs of harlequin bug. (Whitney Cranshaw, Colorado State University, Bugwood.org. Creative Commons 3.0)



Damage to cabbage by Harlequin bug. (Whitney Cranshaw, Colorado State University, Bugwood.org. Creative Commons 3.0)

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