



BUG BIZ

Pest Management and Insect Identification Series



***Bagrada hilaris*, Bagrada Bug** (Hemiptera: Pentatomidae)

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Description

Bagrada bug, *Bagrada hilaris*, also known as painted bug, is an invasive insect species in the U.S. Adult bagrada bugs are about 1/4 of an inch (5 to 7 mm) long, with black, shield-shaped bodies and distinctive white and orange markings. The markings include a broad, irregular white or cream-colored stripe extending the length of the body along the midline and up to nine orange spots distributed symmetrically. Females are larger than males. Immatures in the first of five nymphal stages are red to reddish-brown, while the later stages become darker and develop the characteristic bright orange and white markings. Females lay single eggs that are deposited near each other but not in dense egg masses.

Bagrada bugs can be easily confused with harlequin bugs (*Murgantia histrionica*), another stink bug pest of crucifers. Harlequin bugs are larger and lack the bold, white central band of the bagrada bugs. Bagrada bugs may appear similar to some ladybird beetles, but this is superficial since they are members of two completely different orders of insects (Hemiptera, true bugs versus Coleoptera, beetles).

Life Cycle

The life cycle of bagrada bug is typical for members of the family Pentatomidae (stink bugs) and consists of egg, nymph and adult. Development from egg to adult can be completed in two and one-half to six weeks, depending on temperature, with quicker development at higher temperatures. Nymphs hatch from eggs three or four days after they are laid and undergo five developmental stages (instars). Nymphs in the final instar (fifth) molt into adults. Bagrada bug undergoes multiple overlapping generations during the growing season of cole crops. When temperatures fall below the optimum range, the bugs seek shelter in soil and organic litter. Adults overwinter in weeds such as wild mustards.



Adult bagrada bugs (Gevork Arakelian, Los Angeles County Department of Agriculture, Bugwood.org, Creative Commons 3.0).

Ecological Significance and Pest Status

Bagrada bug is native to Africa and was first reported in the U.S. in California during 2008, and since then has spread to southwestern U.S. Bagrada bug is a serious pest of cruciferous crops, including mustards, cauliflower, broccoli and various cabbages, but will feed on various other plants opportunistically. Outbreaks have occurred in agricultural regions of California, India and Chile, in addition to areas in its native range.

Feeding damage by bagrada bug is caused by the piercing and sucking mouthparts, a characteristic of all stink bugs. Early stages of plant growth are more susceptible to feeding damage. Feeding can result in white patches, wilting

and desiccation. Heavy infestations can result in no head emergence in broccoli, which makes the crop unmarketable.

Bagrada bug has not been detected in the state of Louisiana, but it has been detected as far east as Houston, Texas. The species thrives in subtropical climates. Growers should monitor for its presence so that appropriate early management strategies can be implemented.

Control

Cultural control. Monitoring for bagrada bug is the first step towards management. Cultivation practices such as removal of weeds can reduce population densities. Some crops such as sweet alyssum (*Lobularia maritima*) are attractive to bagrada bug, so removal of these plants can help reduce chances of infestation in nearby crops and gardens. In addition, nursery stock should be carefully monitored for presence of bagrada bug, especially small nymphs that may escape detection.

Mechanical control. Small populations of bagrada bug can be reduced by hand picking the nymphs and adults. Vacuum cleaners can be used in small garden plots if pest density is higher.

Chemical control. Contact foliar insecticides can suppress the pest population if the application is done during young seedling stages. In addition, pyrethroids and neonicotinoids can be used to manage larger infestations.

Biological control. A small parasitic wasp, *Idris elba* (Scelionidae) described from Mexico during 2019, may have potential as a biological control agent against bagrada bug. Some generalist predators such as spiders and predatory stink and assassin bugs may feed on nymphs of bagrada bug.



Nymphs of bagrada bug (Jennifer Carr, University of Florida, Bugwood.org, Creative Commons 3.0).

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