



Pest Alert

Cotton Seed Bug (*Oxycarenus hyalinipennis*)

The cotton seed bug is a pest of cotton and other plants in the Malvaceae family, including hibiscus, kenaf, okra, and roselle. It causes economic damage, particularly when it feeds on cotton seeds, reducing seed weight, germination, and oil content. Additional losses may occur if the cotton seed bugs are crushed during ginning because they can stain the cotton lint and lower its quality.

The cotton seed bug is found in countries worldwide, except for most of North America. Present in the West Indies since the early 1990s, the pest's first U.S. detection occurred in Puerto Rico in January 2010. Later that year, the cotton seed bug appeared in the Florida Keys and U.S. Virgin Islands. The population in the Florida Keys was successfully eradicated by 2014. Since 2019, detections have occurred in urban and residential landscapes in several counties in southern California.

The U.S. Department of Agriculture (USDA) is working closely with stakeholders to survey for the cotton seed bug as part of national early detection and delimiting efforts.

Description

Adult cotton seed bugs are brown to black with translucent white wings. They measure from 3.5 to 5 mm in length. Eggs are oval, less than 1 mm long, and range in color from yellow to orange or pink. Developmentally, the cotton seed bug goes through five nymphal stages, or instars, during which it grows from approximately 1.2 to 3.7 mm. The nymphs are wingless with red abdomens.



Adult cotton seed bug, USDA photo by Julieta Brambila.



Adult cotton seed bug resting on a person's thumb (left), photo courtesy of California Department of Food and Agriculture. Life stages on cotton boll (right), USDA photo by Karolynne Griffiths.

Lifecycle

Cotton seed bugs begin feeding, mating, and laying eggs when the seeds of host plants become available. Resting adults leave their shelters and move to young cotton plants, for example, waiting for the ripening bolls to open. Each female lays about 20 eggs in the lint of opened bolls and, less often, at or near the base of green bolls. The nymphs pass through their 5 instars in 2 or more weeks. A generation from egg to adult can be completed within a month. The pest typically undergoes three to seven generations per year, depending on temperature and host availability. The last generation enters an

inactive, dormant phase (aestivation), and no feeding or mating occurs until host food is available again.

Where to Look

During feeding and mating season, cotton seed bugs swarm conspicuously on open cotton bolls, along with the mature seed pods of other host plants in the Malvaceae family, which includes several common weeds. It does not pierce closed cotton bolls, but it can take advantage of an entryway created by another pest to infiltrate a green boll and begin feeding on the seeds inside.

At a quick glance, infested bolls may appear to be covered with fleas. When not actively feeding, cotton seed bugs will rest hidden for months in the following places:

- In plant litter
- On the underside of live or dead leaves, including those of nearby non-host plants
- Among the crevices in tree bark
- In used sacks
- On available manmade structures, such as cracks in wooden fenceposts, telephone poles, or walls

Pathways

Although adult cotton seed bugs have wings, they are not naturally strong fliers. Prevailing winds can increase the distance they travel in flight, but long-range movement of the cotton seed bug occurs mainly through inadvertent assistance from humans. The pest moves easily in trade. It is a known hitchhiker on plants, fruits, vegetables, and cut flowers, of both host and non-host crops. It can also hitchhike on plant litter, un-ginned cotton, used field sacks and crates, and miscellaneous cargo. USDA expects that the cotton seed bug could survive, and possibly establish, in plant hardiness zones 8 through 11.

Survey and Detection

Cotton growers and processors, nursery owners, other host plant producers, and seed companies should monitor for cotton seed bugs and report any suspicious findings to their State Plant Regulatory Official or county extension office. Growers should consider establishing sentinel survey sites—fixed sites with host plants that are visited repeatedly to inspect for a target pest—to watch for the cotton seed bug. Areas with large populations of easily accessible host plants, like the edges and corners of fields where cotton and okra are planted, make optimal sentinel survey sites.



Nymphs in a primrose tree seedpod (left), photo courtesy of Orange County, CA, Agricultural/Standards Inspector Shannon Clafford. Adult cotton seed bug on a cotton boll (right) USDA photo by Julio A. Navarro.



To detect the cotton seed bug, growers should visually examine host plants at sentinel sites on a routine basis, particularly when the plants are in seed. In cotton, this pest is most visible when the plants have freshly matured bolls with dry seeds. Growers may also periodically sift through leaf litter below host plants to look for the cotton seed bug, especially during non-seed-producing periods, though this method of survey is not as efficient. Companies that handle host seed should remain on the lookout, as should those who process or store un-ginned cotton.

For more information about what to look for when surveying for this pest, consult the *Field Screening Aid for the Cotton Seed Bug* developed by USDA's Cooperative Agricultural Pest Survey program.

Scan the QR code to download a copy.



Report Your Findings

Proper identification of the cotton seed bug is important. It can be easily confused for several lookalikes, some of which have similar hosts. **If you find an insect that you think is the cotton seed bug, please contact your local extension office, State Plant Regulatory Official, or local USDA office to have the specimen identified by an expert.**

To locate an extension specialist near you, go to USDA's National Institute of Food and Agriculture website at: **www.nifa.usda.gov/land-grant-colleges-and-universities-partner-website-directory**. A directory of State Plant Regulatory Officials is available on the National Plant Board's website at: **www.nationalplantboard.org/members.html**. For local USDA offices, visit **www.aphis.usda.gov/planthealth/sphd**.