

**Introduction:** While considered a minor pest in its native range, cotton seed bug has emerged as a major global pest of cotton in other regions. Cotton seed bug is potentially a significant pest of cotton production in California, especially for seed. Cotton seed bug is readily transported on cut flowers, fruits, and occasionally plants for propagation, and it has also been intercepted in baggage and cargo shipments.

**Distribution:** Cotton Seed Bug is native to Africa, where it occurs throughout much of the continent. It has since expanded its range into Asia, Europe, the Middle East, South America, and the Caribbean. The pest was detected in Puerto Rico, the U.S. Virgin Islands, and Florida in 2010 but was declared eradicated from Florida in 2014. It was first found in urban areas of southern California in 2019 and has since been found in several counties.

**Description:** Eggs are very small (measuring about 0.28 by 0.95 millimeters), long, slender, and oval in shape. They begin pale yellow and turn orange or pink as they develop. Immature nymphs pass through five stages over 14 to 22 days, depending on temperature. They hatch orange-red and later develop a darker body with a reddish abdomen with a greenish tint. Adults are small (3.8 to 5 millimeters), with males slightly smaller than females. They are generally brownish-black with whitish translucent wings, and males possess a rounded abdominal tip while females are truncate. The second antennal segment is partially yellowish.

**Biology:** Cotton seed bug only feeds on seeds, usually requiring seeds from plants in the family Malvaceae (and relatives) to complete development and reproduce. Females deposit eggs—singly or in groups of 2 to 4 eggs—in the seed capsules of host plants (e.g., cotton boll), and a single female may lay up to 110 eggs over her lifetime. The complete life cycle takes 3 to 4 weeks, with 4 to 7 generations per year depending on temperature and host availability. Adults usually enter diapause in the winter when conditions are unfavorable, often hiding under leaves, pods, or in other sheltered places until hosts become available again.



Cotton seed bug (*Oxycarenus hyalinipennis*) adult.



Cotton seed bug (*Oxycarenus hyalinipennis*) adults in seed pod.

**Economic importance:** The preferred hosts of cotton seed bug are members of the family Malvaceae, especially cotton (*Gossypium* spp.), hibiscus (*Hibiscus* spp.), and okra (*Abelmoschus* spp.). Other malvaceous hosts include kenaf, roselle, jute, and numerous ornamental mallows. CSB has also been reported feeding opportunistically on plants in other families such as fig, date, avocado, persimmon, grape, and corn, although reproduction has not been confirmed on these hosts. The feeding activity of the cotton seed bug causes multiple types of economic loss. Cottonseed weight may be reduced by as much as 15%, seed germination may decline by up to 88%, and oil content and seed quality are also negatively affected. In addition, crushed insect bodies can stain cotton lint pink or red during cotton processing, lowering fiber quality and market value. Beyond cotton, infestations on fruits such as figs and dates may cause greasy feeding spots, discoloration, and unpleasant odors, further broadening the pest's potential impact.



Cotton seed bug (*Oxycarenus hyalinipennis*) adults under leaf.



Cotton seed bug (*Oxycarenus hyalinipennis*) nymph in seed pod.

### References:

Dueñas-López, M. A. 2022. *Oxycarenus hyalinipennis* (cotton seed bug). CABI Compendium 38170.

Kirkpatrick, T. W. 1923. The Egyptian cottonseed bug (*Oxycarenus hyalinipennis* (Costa)). Its bionomics, damage, and suggestions for remedial measures. *Bulletin Ministries of Agriculture Egypt Technology Science Service*, 35,144.

USDA APHIS PPQ. 2021. Technical Bulletin- *Oxycarenus hyalinipennis* (Costa) (Hemiptera: Oxycarenidae) Cotton seed bug.

Zilnik, G., et al. 2025. Screening of insecticides for management of the invasive *Oxycarenus hyalinipennis* Costa (Hemiptera: Oxycarenidae) population sourced from urban southern California. *Journal of Economic Entomology*, 118(2), 692–699.