

PEST ALERT

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Florida Department of Agriculture and Consumer Services Division of Plant Industry

Cotton Seed Bug, *Oxycarenus hyalinipennis* (Costa): A serious pest of cotton that has become established in the Caribbean Basin

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INTRODUCTION

The cotton seed bug, *Oxycarenus hyalinipennis* (Costa), is a serious pest of cotton and other Malvaceous plants. Although native to Africa, it has been established in the Caribbean Basin for several decades (Baranowski and Slater, 2005; Slater and Baranowski, 1994). In 2010, a small infestation of cotton seed bugs was detected in Stock Island, Monroe County, Florida but was eradicated by 2014 (Inserra *et al.*, 2023). Currently in the USA, cotton seed bugs are known to occur only in residential areas of four southern California counties (Arakelian, 2020; Hoddle, 2024). The first reported find in California was in 2019. Since 2000, the cotton seed bug has been intercepted more than 800 times on numerous commodities from Africa, Asia, Europe, the Middle East, Central America, South America, and the Caribbean. A detailed risk analysis, reviewing much of the relevant literature, was written by the Plant Epidemiology and Risk Analysis Laboratory, Center for Plant Health Science and Technology, APHIS/Plant Protection and Quarantine, Raleigh, NC (2006).

DESCRIPTION

As the name suggests, this is a bug with transparent wings. The body is dark, giving the bug a contrasting black and white appearance. The head is pointed and shaped like the head of a rat (Fig. 1). The bugs are 4-5 mm long. Nymphs can be reddish (Sweet, 2000). There are about 55 valid described species of *Oxycarenus*, several of which are known pests (Sweet, 2000). Microscopic examination generally is required to determine the identity of the bugs with confidence.

These bugs are primarily seed feeders. For practical purposes, if large numbers of small bugs are found feeding on cotton seeds (inside open bolls) or seeds of other malvaceous plants, for example, okra (*Abelmoschus esculentus*) or *Hibiscus* spp., it should be considered a suspect colony, and samples should be sent immediately to FDACS-DPI Entomology.

BIOLOGY

It is estimated that cotton seed bugs could complete 4-7 generations per year in Florida. The bugs are seed feeders and must have seeds to complete their development. Normally, cotton seed bugs do not damage the seeds until pods or bolls open, but if caterpillars chew holes into cotton bolls or okra pods, the cotton seed bugs are able to enter and feed on developing seeds. Cotton seed bugs may attack other seeds or even fruits, causing significant damage, if malvaceous plants are not available; however, malvaceous seeds probably are required for completing nymphal development. The bugs are gregarious, sometimes occurring in very high, concentrated populations. Hammad *et al.* (1972/3) found that for laboratory-raised populations, cotton fiber and seeds were required for oviposition. A piece of saturated cotton was required as a water and humidity source. Under these conditions, mated females laid 15–26 eggs. Generation times varied from 22–136 days, depending on conditions.

HOSTS

Seeds of Malvaceae probably are required for complete development, but bugs will feed on a wide variety of plants, sometimes causing damage. Goyal (1974) reported heavy injury to sunflower seeds in India. In Israel, the bugs did damage to dates, figs, avocado and persimmon “by contaminating them with a stinking odor” (Nakache and Klein, 1992).



ECONOMIC IMPORTANCE

Cotton seed bugs are serious pests of cotton seeds. Sometimes, the bugs are crushed in the ginning process, staining the lint. Greater damage is done to the seeds by reducing quality, germination and oil content (Sweet, 2000). Adult cotton seed bugs may feed on fruits and seeds of non-malvaceous plants, causing significant damage. Nakache and Klein (1992) state the bugs congregate on walls of buildings without feeding; however, these aggregations do emit an unpleasant odor. The article also states they are attracted to light and harass people at night in lighted areas. Thus, there could be an urban nuisance component to this pest as well as agricultural damage.

NATURAL ENEMIES

Few, if any, effective natural enemies are known. Generalist predators such as reduviids and lizards have been reported (Sweet, 2000).

DISTRIBUTION

Africa, Asia, Europe, Middle East, South America, Central America, North America (California), and the Caribbean Basin.

REFERENCES

- Arakelian, G. (2020).** Cotton seed bug (*Oxycarenus hyalinipennis*). Los Angeles County Department of Agriculture Weights and Measures. [1102013_Cottonseedbug.pdf \(lacounty.gov\)](#). Last accessed 4 March 2024.
- Baranowski, R.M. and Slater, J.A. (2005).** The Lygaeidae of the West Indies. University of Florida IFAS Bulletin 402. 266 pp.
- Goyal, N.P. (1974).** Heavy population of dusky cotton bug on sunflower. Indian Bee Journal 36: 21.
- Hammad, S.M., Armanius, N.E. and El-Deeb, A.A. (1973).** Some biological aspects of *Oxycarenus hyalinipennis* Costa. Bulletin de la Societe Entomologique D'Egypte (R.A.E.) 56: 33-38. (Note: dated 1972 in article, but published in 1973 according to the cover).
- Hodde, C.D. (2024).** Cotton seed bug. UC Riverside, Applied Biological Control Research. [Cotton Seed Bug Applied Biological Control Research \(ucr.edu\)](#). Last accessed 4 March 2024.
- Insera, R.N., Stanley, J., Steck, G., Anderson, P.J. and Smith, T.R. (2023).** Phytosanitary measures and certification programs implemented in Florida. Bollettino Accademia Gioenia do Scienze Naturali Catania 56 (386): 42-69.
- Nakache, Y. and Klein, M. (1992).** The cotton seed bug, *Oxycarenus* [sic] *hyalinipennis*, attacked various crops in Israel in 1991. Hassadeh 72: 773-775.
- Plant Epidemiology and Risk Analysis Laboratory, Center for Plant Health Science and Technology, Plant Protection and Quarantine, USDA/APHIS. (2006).** Qualitative analysis of potential consequences associated with the introduction of the cottonseed bug (*Oxycarenus hyalinipennis*) into the United States. 41p.
- Slater, J.A. and Baranowski, R.M. (1994).** The occurrence of *Oxycarenus hyalinipennis* (Costa) (Hemiptera: Lygaeidae) in the West Indies and new Lygaeidae records for the Turks and Caicos Islands of Providenciales and North Caicos. Florida Entomologist 77: 495-497.
- Sweet, M.H. II. (2000).** Seed and chinch bugs. Pages 143-264 in C.W. Schaefer and A.R. Panizzi, Heteroptera of Economic Importance. CRC, Boca Raton. Pages 197-205.



Fig 1. *Oxycarenus hyalinipennis*, the cotton seed bug. Photo by Michael C. Thomas, FDACS-DPI