

PEST ALERT

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Brachyplatys subaeneus (Westwood), black bean bug, detected in South Florida

Susan E. Halbert, Ph.D., Joseph E. Eger, Ph.D., and Jade S. Allen, DPM; Bureau of Entomology, Nematology and Plant Pathology
Cory Penca, USDA-APHIS-PPQ
DPIHelpline@FDACS.gov or 1-888-397-1517

INTRODUCTION

IFAS scientists Adam Pitcher, DPM graduate student, and Dr. Amanda Hodges noticed an unusual post on iNaturalist in September 2020 (<https://www.inaturalist.org/observations/57059868>) and suspected a new plataspid bug in Florida. The bugs were on seagrape (*Coccoloba uvifera* (L.)L.) near the North Miami Beach boardwalk. Follow-up by Florida Department of Agriculture and Consumer Services, Division of Plant Industry (DPI) Cooperative Agricultural Pest Survey (CAPS) inspector Phellicia Perez revealed *Brachyplatys subaeneus* (Westwood) (Plataspidae), known as the black bean bug.

This species is reported from much of Asia, from India in the west to Japan and Southeast Asia in the east (Rédei 2016). It is known to be a minor pest, particularly in legume crops, but infests a wide range of plant species (Rédei 2018, Añino et al. 2018, Añino et al. 2020.). Black bean bugs were found for the first time in the Western Hemisphere in Panama in 2012 (Aiello et al. 2016); however, the bug was misidentified. Rédei (2018) corrected the identification, provided illustrations and taxonomic information and discussed biology of the new pest. There are verified reports now from Panama (Aiello et al. 2016, Añino et al. 2018), Costa Rica (Carmona-Rios 2019), Dominican Republic (Perez-Gelabert et al. 2019) and Ecuador (Añino et al. 2020).

DESCRIPTION AND FIELD SCREENING

Black bean bugs are almost entirely shiny black, with yellow markings on the face and pronotum (Fig. 1). They have a wavy yellow line that forms a broad letter W on the anterior part of the pronotum. The patterns on the ventral (under) side of the bug are diagnostic but differ between males and females (Fig. 2). Adult bugs are about 5 mm long. Typically, they feed in groups on petioles or stems (Fig. 3), similar to the kudzu bug (*Megacopta cribraria* (Fabricius)), Florida's only other plataspid. Kudzu bugs are mottled brown, not black, so the two plataspids will not be confused. Black bean bugs might be confused with bugs in the family Thyreocoridae, which also are shiny black. Thyreocorids never have the diagnostic yellow W on the pronotum that is always present on black bean bugs; however, thyreocorids may have white, yellow or orange lateral markings. The head of a black bean bug is at least twice as wide as it is long and has some yellow markings. Thyreocorids never have a head that wide and usually do not have yellow markings on the head. Black bean bugs also resemble some beetles; however, black bean bugs have sucking mouthparts, and beetles never do. If you suspect you have this bug, please submit a sample to DPI for identification. Members of the public can send a photo to the DPI Helpline (number listed above) for initial screening that could eliminate unnecessary shipping expenses. For samples, please complete the form on our website and include it with the insect sample www.FDACS.gov/DPIsamples.

BIOLOGY AND HOSTS

Like all plant-feeding Hemiptera, black bean bugs suck nutrients from plants. Females produce 300–400 eggs, laid over a period of several months, deposited in cryptic places on or near the plants. Nymphs and adults tend to aggregate on stems or on petioles under leaves (Rédei 2018) (Fig. 3).

Black bean bugs show a clear preference for Fabaceae (legumes), but they also are reported to damage plants in several other plant families (Table 1). Important legume crop species known to be infested include common beans (*Phaseolus* spp.), cowpeas (*Vigna* spp.), soybean (*Glycine max* (L.) and gandules, also known as pigeon peas (*Cajanus cajan* (L.)). Damage to *C. cajan* is reported in all the countries where black bean bug has been found in the Western Hemisphere (Aiello et al 2016, Perez-Gelabert et al 2019, Carmona-Rios 2019, Añino et al. 2018, 2020).



Table 1. Recorded host plants of black bean bug outside of Fabaceae

Plant family	Genus and species, Author	Common name	Notes, Source
Araliaceae	<i>Schefflera actinophylla</i> (Endl.) Harms	schefflera	Western Hemisphere record (Aiello et al. 2016)
Arecaceae	<i>Bactris gasipaes</i> Kunth	peach palm	Western Hemisphere record (Aiello et al. 2016)
Asteraceae	<i>Mikania micrantha</i> Kunth	mile-a-minute vine, climbing hempweed	Asia (Añino et al. 2020)
Cannabaceae	<i>Cannabis sativa</i> L.	hemp	Asia (Añino et al. 2020)
Convolvulaceae	<i>Ipomoea batatas</i> (L.)	sweet potato	Asia (Añino et al. 2020)
Malvaceae	<i>Corchorus capsularis</i> L.	white jute, jute	Asia (Añino et al. 2020)
Poaceae	<i>Oryza sativa</i> L.	rice	Asia (Añino et al. 2020)
Poaceae	<i>Saccharum officinarum</i> L.	sugarcane	Asia (Añino et al. 2020)
Poaceae	<i>Zea mays</i> L.	corn	Western Hemisphere record (Añino et al. 2020)
Polygonaceae	<i>Coccoloba uvifera</i> (L.) L.	sea grape	Reported here
Solanaceae	<i>Solanum tuberosum</i> L.	potato	Asia (Añino et al. 2020)

POTENTIAL ECONOMIC IMPACT

Black bean bugs can be damaging to crops and ornamental plants, especially legumes. Florida also produces corn, hemp, sweet potato, potato, sugarcane and rice, which are reported hosts (see above).

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Figure 1. *Brachyplatys subaeneus*, black bean bug, showing characteristic markings on the head and pronotum.
Photos by Jade S. Allen, FDACS-DPI.

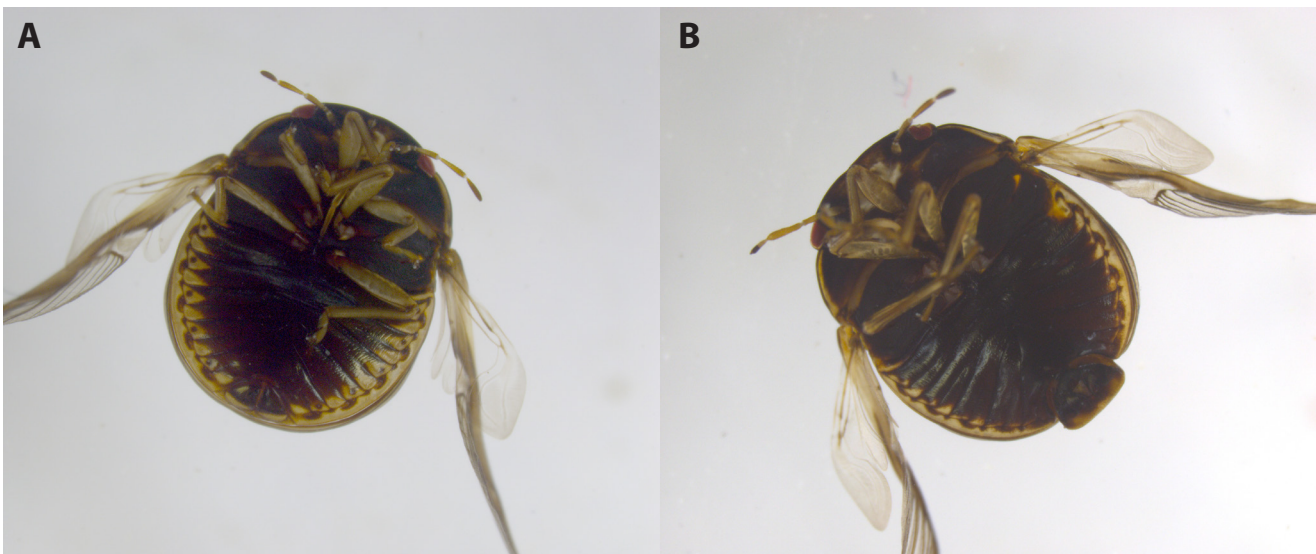


Figure 2. *Brachyplatys subaeneus*, black bean bug, showing markings on the ventral side. Note the females (A) and males (B) are different.
Photos by Jade S. Allen, FDACS-DPI.



Figure 3. *Brachyplatys subaeneus*, black bean bug colony on *Canavalia rosea* in Miami.
Photo by Cory Penca, USDA.