Pest Alert: Two spotted leafhopper, *Amrasca biguttula* Ishida (Hemiptera: Cicadellidae)

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There is new leafhopper pest impacting multiple commodities in south Florida. Its scientific name is *Amrasca biguttula*, and it is listed as a National Priority Pest under one of its common names, cotton jassid. It is originally from Asia, and has been established in Florida since 2024 (https://ccmedia.fdacs.gov/content/download/117692/file/two-spot-cotton-leaf-hopper-pest-alert.pdf). It is small green insect with one distinctive spot on the tip of each forewing (Fig 1). There are five nymphal stages, which lack wings (Fig 2). Like all leafhoppers, it feeds on plant phloem, producing a characteristic 'hopper burn' or yellowing and curling of leaf edges. *Amrasca biguttula* has a broad host range, but primarily impacts production of vegetables including okra, eggplant (Fig 3 – 4), chili pepper and beans as well as cotton and ornamentals, especially hibiscus (Fig 5) ([CAPS] 2025).

Presently, most information on the biology and management of *A. biguttula* is from studies conducted in Asia. On okra, at temperatures ranging from 26 to 29 C, the egg and nymphal stages of *A. biguttula* require 6 – 9 days each, adults live 21 – 24 days, and females produce 16 – 18 eggs in their lifetime (Subba et al. 2022). Most chemical control information for management of *A. biguttula* in Asia is derived from cotton and okra, where carbamate, neonicotinoid, organophosphate and pyrethroid insecticides are routinely used. The development of resistance to these insecticide groups is common, particularly in cotton (Sagar and Balikai 2024). *Amrasca biguttula* is impacting cotton production in Alabama. Afidopyropen, buprofezin, dicrotophos, flupyradifurone, sulfoxaflor, and thiamethoxam have demonstrated some degree of efficacy, while bifenthrin was ineffective (https://www.aces.edu/blog/topics/crop-production/alabama-cotton-jassid-update/).

Varietal tolerance to *A. biguttula* has been identified in eggplant (Bindra and Mahal 1981), cotton (Sharma 1983) and okra (Sandi et al. 2017), with tolerance primarily associated with increased length and density of leaf hairs. Microscopic wasps that parasitize leafhopper eggs have been identified as attacking *A. biguttula* eggs in Asia (Adachi-Hagimor et al. 2020), however information on parasitoids of *A. biguttula* in the US is lacking.

The Smith lab at GCREC is conducting laboratory screenings of field collected populations to determine susceptibility to commonly used insecticides. Figure 6 shows the results of screening a population collected from okra in Hillsborough county. Most insecticides were highly or moderately effective, except for the one pyrethroid that was tested. For additional information, please contact Hugh Smith, hughasmith@ufl.edu; 813 419 6588.

Fig. 1. Two spotted leafhopper adult. Photo Ryan Batts UF IFAS

Fig. 2. Two spotted leafhopper nymph. Photo Ryan Batts UF IFAS

Fig. 3. Two spotted leafhopper on eggplant. Photo Mariana Monteiro UF IFAS

Fig. 4. Two spotted leafhopper damage to eggplant. Photo Mariana Monteiro UF IFAS

Fig. 5. Two spotted leafhopper damage to hibiscus. Photo Hugh Smith UF IFAS

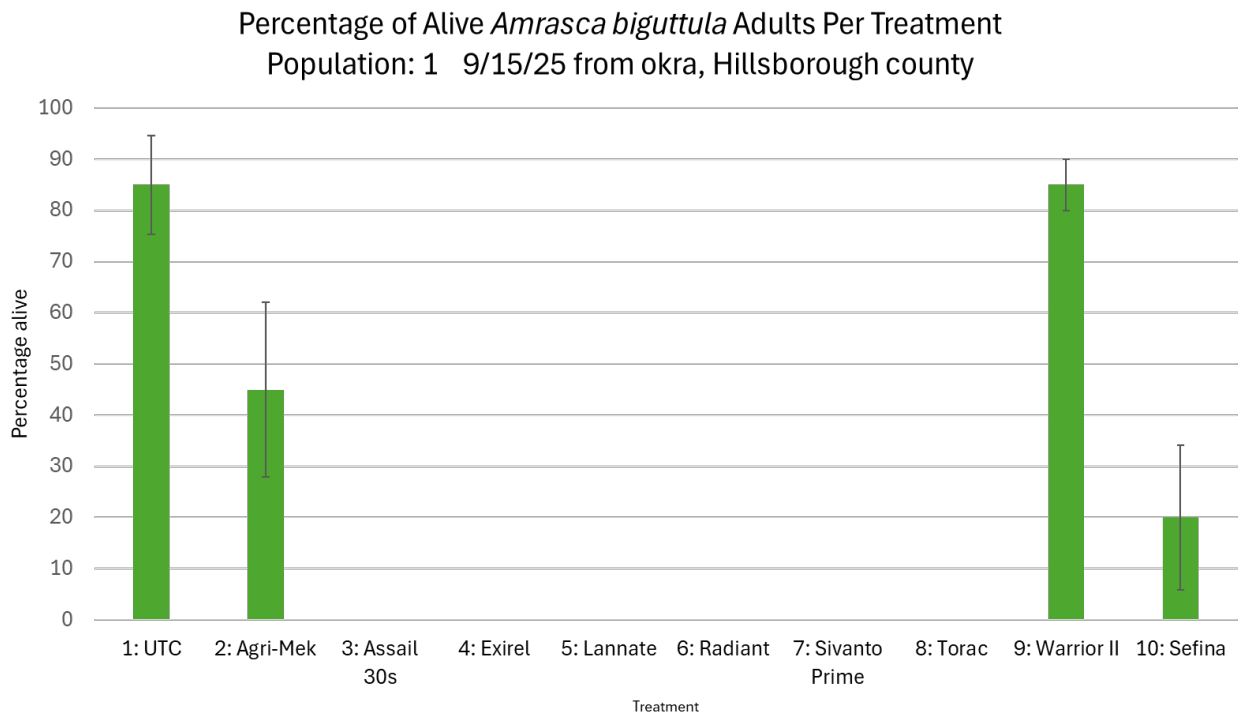

Fig. 6. Percentage survival of adult two spotted leafhopper subjected to maximum dose insecticide bioassay at GCREC

References Cited

Adachi-Hagimori, T., S. V. Triapitsyn, T. Uesato. 2020.
Egg parasitoids (Hymenoptera: Mymaridae) of *Amrasca biguttula* (Ishida)
(Hemiptera: Cicadellidae) on Okinawa Island, a pest of okra in Japan. Journal of Asia-Pacific Entomology https://doi.org/10.1016/j.aspen.2020.07.008

Bindra, O. S., and M. S. Mahal. 1981. Varietal resistance in eggplant to the cotton jassid. Phytoparasitica 9: 119 – 131.

CAPS [Cooperative Agricultural Pest Survey] 2025. *Amrasca biguttula* data sheet. https://caps.ceris.purdue.edu/wp-content/uploads/2025/07/Amrasca-biguttula-CAPS-Datasheet-for-PDF.pdf.

Sagar, D., and R. A. Balikai. 2014. Insecticide resistance in cotton leafhopper *Amrasca biguttula* – a review. Biochemical cellular Archives 14: 283 – 294.

Sandi, R. K., S. K. Sidhu, A. Sharma, N. Chawla and M. Pathak. 2017. Morphological and biochemical basis of resistance in okra to cotton jassid. Phytoparasitica 45: 381 – 394.

Sharma, H. C. 1983. Role of some chemical components and leaf hairs in varietal resistance in cotton to jassid, *Amrasca biguttula biguttula* Ishida.
Journal of Entomological Research. 7:145-149.

Subba, B., N. Chaudhuri and S. K. Senatpati. 2022. Growth and development of *Amrasca biguttula* during different seasons on okra. Entomon 47: 477 – 482.