The Kudzu Bug: The Newest Overwintering Pest in the U.S.

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Initial Discovery: October 2009
Nine Georgia counties

DeKalb, Gwinnett, Hall, Jackson, Barrow, Clarke, Oconee, and Oglethorpe.
*Megacopta* now confirmed in 8 states: Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee, Virginia.

Area Infested by Year:
- 2010: 91,766 km² (14x increase)
- 2011: 188,577 km² (41x inc)
- 2012: 122,144 km² (58x inc)
- Total: 409,144 km²

75% of additional area reported in 2011 was in a northeasterly direction; likely affected by weather (La Niña).

2012 reports from Mississippi likely due to hitchhiking.

What impact will tropical depressions have?
## Reported Host Plants in Expanded Range

<table>
<thead>
<tr>
<th>Legumes</th>
<th>Non-Legumes</th>
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<tbody>
<tr>
<td><strong>Kudzu</strong></td>
<td>Alligatorweed</td>
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<tr>
<td><strong>Soybean</strong></td>
<td>Cocklebur</td>
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<tr>
<td>Lima Bean</td>
<td>Cotton</td>
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<tr>
<td>Pole/String/Green Bean</td>
<td>Fig</td>
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<td>Lablab Bean</td>
<td>Pine Trees</td>
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<tr>
<td>American Wisteria</td>
<td>Wheat</td>
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<td>Chinese Wisteria</td>
<td>Loquat</td>
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<tr>
<td>Japanese Wisteria</td>
<td>Wild Blackberry</td>
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<tr>
<td>American Yellowwood</td>
<td>Satsuma mandarin</td>
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<td>Lespedeza</td>
<td>Black Willow</td>
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<td>Peanut</td>
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<td>Crimson Clover</td>
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<td>Clover</td>
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<td>Alfalfa</td>
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<td>Sicklepod</td>
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<td>Black Locust</td>
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</table>

Images courtesy of Center for Invasive Species and Ecosystem Health, UGA
www.insectimages.org
Impacts

Kudzu Biomass Reduced (33% in one year’s growth).

Soybean Yield reduced an average of 18% over 19 tests conducted in GA and SC.

Edible Bean Yield?

Nuisance Pest in urban areas – abundance and activity of adults, staining, odor.

Localized Skin Reactions for some individuals.

International Trade/Commerce
"...I am a homeowner in Smyrna, GA... is there anything that can be done to remove the huge Kudzu vines going up the trees behind my house.... I am concerned that in the spring these vines will come back to life and once again attract a ton of Kudzu bugs. Any help that you can provide is greatly appreciated."

Email received by D. Suiter
February 2011
In the Fall Kudzu Bugs Fly from Kudzu to Homes in Search of Overwintering Sites
Kudzu Bug Activity
Last Week of February 2012

Kyle Jordan, BASF Corp., Atlanta, GA
“Keith there have been large #’s of kudzu bugs (like gray lady bugs) that get in the cooling towers on the roof of Blgd.111. They eventually clog the strainers of the pumps causing extra maintenance. Let me know your ideas. Thx.”
Steve _________
Buildings Coordinator
CDC Chamblee (September 2012)
International Trade and Commercial Air Travel Assures New Pest Introductions
Acknowledgments

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Visit our website
http://www.kudzubug.org
Visit and Use Our Website

Our website was developed and is maintained by the University of Georgia Center for Invasive Species and Ecosystem Health

http://www.kudzubug.org

New detections can be submitted via your smartphone with the free app SEEDN – Southeast Early Detection Network.
Megacopta cribraria in Home Gardens and in Beans Grown by Organic Farmers
The Insect

*Megacopta cribraria*

Hemiptera: Plataspidae

Development time from egg to adult = 24 to 56 days.

Numbers of eggs produced per female = 26 to 274 with 15 eggs per egg mass.

Eggs usually deposited in 2-3 parallel rows stuck in black substance deposited by female.

5 nymphal instars.

Adult longevity = 23 to 77 days.

Overwinter as adults in groups usually under debris or under bark.

2 to 2.5 overlapping generations observed in Georgia; maybe 3 in 2012.
Exporting *Megacopta*

11 February 2012: Honduras inspectors discover 7 dead *Megacopta* adults in the bottom of a shipping container of poultry meat products from Georgia. Inspectors had previously found 2 dead adults in a container shipment of fertile chicken eggs from same Georgia facility.

27 February 2012: Honduran Servicio de Proteccion Agropecuaria (SEPA; Agricultural Protection Service) halted all agricultural imports from Georgia, Alabama, and South Carolina citing 11 February discovery.

29 February 2012: North Carolina agricultural exports were added to the ban by the Honduran SEPA.

01 March 2012: Honduran officials ease restrictions to begin inspecting and unloading individual containers (primarily cotton) to support local industries.

**Commercial Air Passenger/Cargo under Scrutiny**
Native predators in expanded range have little impact (generalists).

No native parasitoids known.

Exotic enemies from native range of pest best option.

Egg parasitoid *Paratelenomus saccharalis* ideally suited for importation: wide distribution, strong knowledge base, high specificity.

Currently in quarantine in Stoneville (USDA ARS).

Release permit application in development.

*Paratelenomus saccharalis* (Hymenoptera: Ichneumonidae)
Native Range: Southeast Asia, China, Japan, India, northern Australian, Malaysia, etc.

Genetic analyses (mtDNA) show that insects in expanded range are from SINGLE FEMALE ANCESTOR (GA1).

Genetic comparisons indicate source of origin is Japan.

Likely will NEVER know mode of introduction.
Megacopta cribraria as a Nuisance Pest

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