

“Bark beetles”

Asian ambrosia beetle (*Xylosandrus crassiusculus*)



This royal poinciana tree was attacked by Asian ambrosia beetle in Golden Gate Estates in 2001. Note the characteristic frass strings. *Photo by Doug Caldwell*

Asian ambrosia beetle (AAB) has been reported to attack more than 124 species of trees, shrubs and vines worldwide. Some of the reported hosts include: crapemyrtle, mango, royal poinciana, mahogany, papaya, seagrape, willow oak and sweetgum.

The adults chew round (1 to 2 mm.) entrance holes into the main stem or branches. The dead give-away for identifying this little beetle from other little bark beetle species are the tightly packed frass strings which protrude from entrance holes. If undisturbed by wind or rain, these accumulate and resemble toothpicks or a long cigarette ash. Branches and stems are usually attacked low, about 1 to 3 feet above the soil line.

Symptoms of beetle activity are wilting of foliage and eventually death of the plant due to the severed and fungal-clogged water pipelines (xylem). Last week, a local nursery had to destroy more than 200 mahogany trees because they were so severely attacked by the AAB. Adult beetles are small (2 to 3 mm.) and are reddish-brown. Eggs are laid in a mass in tunneled areas in the center of the stem. Larvae are cream-colored, legless grubs with brown heads.

Many bark beetle species typically tunnel and deposit eggs directly underneath the bark. However, this species tunnels straight into the center of the stem.



This cross-section of the twig shows the tunnel and the dark ambrosia fungus. *Photo by Doug Caldwell*

AAB is also unusual in that it does not consume plant tissue. The female transports spores of a blue to black staining fungus (the ambrosia) into the core of the stem. This "ambrosia" grows as a food source for the larvae which emerge from the eggs she has deposited.

The adult beetle consumes as well as feeds the fungus ambrosia to the larvae and stays with them until they mature. Insects that exhibit maternal behavior are rather uncommon. In sub-tropical climates, the life cycle may be completed in 5-7 weeks and there are several generations per year.

In the continental United States, AAB was first reported from South Carolina in 1974. Since then, infestations have become established in the southeast from Tennessee to Florida and Texas. Even though AAB has been reported to attack healthy plants, maintaining proper cultural practices (mulching, irrigating, appropriate soil type and fertilizer as needed) may deter infestations or at least help plants recover more rapidly. Infested branches or plants should be cut and burned or removed from the site in order to prevent reinfestation. An application of a residual insecticide just prior to female flights in the spring may prevent new infestations. Additional applications 6-8 weeks apart in the growing season may be needed with heavy infestations.

Standard borer and bark beetle products such as Dursban (or lindane have been shown to be ineffective (Dr. R. Mizell, University of Florida). The product that worked best was a permethrin based insecticide called Astro (and it needs to be applied before adults bore into the tree.)

How to monitor when the adults are flying? Beetles are attracted to ethanol so what to do with that leftover Margaretta mix? Set a trap with a little glass and bring/send the beetles into the local extension entomologist or the University of Florida insect identification laboratory (UFIsectID@mail.ifas.ufl.edu). Web sites of interest: <http://www.bugwood.org/factsheets/99-010.html>

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