

AVO RESEARCH

FOCUSED RESEARCH • GLOBAL COLLABORATION • MAXIMUM YIELDS



RECOGNIZING AVOCADO LACE BUG • WINTER 2005

Gary S. Bender¹ and Guy W. Whitney²

¹Farm Advisor, U.C. Cooperative Extension, San Diego County

²Director of Industry Affairs, California Avocado Commission

Avocado Lace Bug, *Pseudacysta perseae* (Heidemann) was identified on backyard avocado trees in the Chula Vista and National City areas south of the City of San Diego in September 2004. This pest was first described in Florida in 1908 and has since been reported in Puerto Rico, the Dominican Republic and Mexico. Avocado lace bug is a true bug with sucking mouth parts in the insect order Hemiptera; family Tingidae. In recent years avocado lace bugs have become an economic problem in Florida and the Dominican Republic, with occasional severe infestations causing tree defoliation.

Description and Life Cycle. Adult avocado lace bugs are small winged insects about 2 mm in length (slightly longer than 1/16 in) with black bodies, yellow legs and antennae, and are visible to the naked eye. The insects live in colonies on the lower surfaces of leaves, often with adults, eggs and nymphs together (Fig. A). Eggs are laid in an irregular pattern, sometimes in loose rows, stuck to the lower leaf surface and are covered with irregular globules of a black, sticky tar-like substance excreted by adults. To the naked eye, eggs will appear like grains of black pepper. The eggs hatch into wingless young called nymphs. There are no distinct nymphal stages. Rather the nymphs go through a gradual metamorphosis shedding their exoskeleton several times as they grow in size, finally developing wings and becoming flying adults. The nymphs are dark red-brown to black and covered with spines. They feed for approximately two to three weeks before maturing into the winged adults which lay eggs, starting the cycle over (Fig. B).

Feeding Injury. Lace bugs feed on the undersides of leaves, inserting their needle-like mouthparts into leaf tissue cells to extract cell



Photo: Guy Whitney

Figure A. Avocado lace bug colony on the underside of leaf with winged adults, globular black eggs and reddish-brown nymphs at various stages of metamorphosis.



Photo: Guy Whitney

Figure B. Adult avocado lace bugs laying eggs on the underside of an avocado leaf to start a new colony adjacent to damage caused by previous feeding (brown leaf area on the left of the photograph). Adult avocado lace bugs seldom fly from the surface of the leaf even when disturbed.



contents. Feeding initially causes small white or yellow spots on the surface of the leaves as individual cells dry out (Fig. C). As colonies grow, brown necrotic (dead) areas develop where there has been heavy feeding damage. These necrotic areas look like tip-burn caused by excessive salts, but in this case the necrotic areas are islands of dead tissue in the interior of the leaf surrounded by living tissue (Fig. C). Heavy feeding can cause striking leaf discoloration and early leaf drop (Fig. D). Other signs of lace bugs are dark, varnish-like excrement and shed nymphal skins on the undersides of leaves. They do not appear to feed on fruit, but will likely have a detrimental effect on yield resulting from the loss of photosynthetic capacity in damaged leaves.

Hosts. Avocado lace bugs have only been reported on avocado, red bay and camphor, all members of the Lauraceae family.

Biological Control. The most important biological agents reported in Florida are two egg parasitoids including *Oligosita sp.* (a Trichogrammatid wasp) and an unidentified mymarid wasp. Green lace wings and other generalist predators are also thought to be important natural enemies. A predatory thrips is reported to be the most important natural enemy of the avocado lace bug in the Dominican Republic.

Chemical Control. Insecticides treatments for other sucking pests currently registered for use on avocado in California will likely provide control of avocado lace bugs. In a trial reported in 1998, J. E. Peña, University of Florida, showed that citrus oil, M-Pede (soap), and Mycotrol (a *Beuvaria* fungal species) all controlled lace bug, but it was not indicated how long the effect lasted.



Photo: Guy Whitney

Figure C. Feeding by avocado lace bug initially causes stippling and bleaching of the leaf because the insect removes contents from individual cells. Feeding damage is visible from the upper leaf surface. Eventually this damage results in islands of completely dead (necrotic) leaf tissue.



Photo: Guy Whitney

Figure D. Heavy feeding by avocado lace bug will eventually cause striking discoloration of the entire tree and heavy leaf drop (defoliation).

