



COOPERATIVE EXTENSION

UNIVERSITY OF HAWAII AT MĀNOA  
COLLEGE OF TROPICAL AGRICULTURE AND HUMAN RESOURCES

# AVOCADO LACE BUG

*(Pseudacysta perseae)*

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# What are avocado lace bugs (ALB)?

- Hemiptera class; Tingidae family
- Winged (adult) insects
- Similar lace bugs on Thai orchid soursop and rhododendron
- Adults are  $\sim 1/16^{\text{th}}$  inch or 2 mm
- Egg, nymph to adult takes  $\sim 3$  weeks

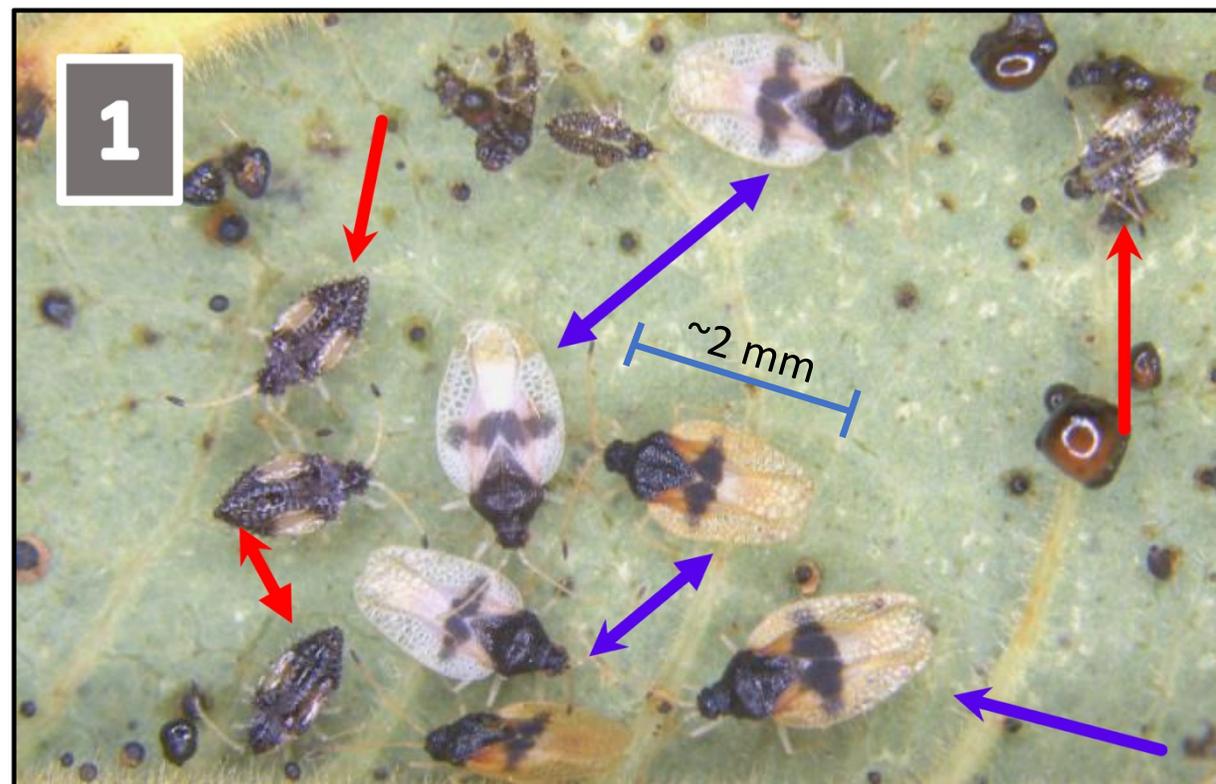


Fig. 1. Adult avocado lace bugs (blue arrows) and immature nymphs (red arrows). Credit: [Matsunaga and Silva, 2020](#)

# Where are ALBs from and found?

- Florida origin in the early 1900s.
- Found in the Caribbean, Mexico, Guatemala, Venezuela, French Guyana and Portugal.
- Found in California, Florida, Georgia and Texas.
- In Hawaii, found on Oahu (Dec. 2019), Maui (infested plants intercepted by HDOA and destroyed), and East and West Hawaii.

# Why are ALBs important?



- Adult and immature ALB feed on the leaf sap of (primarily) avocado though other Lauraceae family hosts include red bay and camphor. Feeding does not occur on avocado fruit.
- Feeding damage causes the death of leaf cells and this damage can invite diseases such as anthracnose (*Colletotrichum* sp.) and powdery mildew (*Oidium* sp) into the leaf.
- Low ALB populations do not damage trees; however, heavy feeding can lead to severe leaf drop which can cause sunburn on fruit and branches as well as the decline of young trees.
- Tree stress from continuous defoliation can reduce subsequent fruit yields.

# What are the signs and symptoms of ALB?

- Stippling advancing to chlorotic (yellowing) and necrotic (browning) blotch(es) on the upper leaf surface that resembles sunburn and typically away from the leaf margin or edge.



# What are the signs and symptoms of ALB?

- ALB egg, nymph and adult colonies are found on the underside of the leaves.
- ALB eggs are covered with black excrement and blend in with black feces.
- Young and mature leaves can be infested and affected.



Fig. 2. Underside of avocado leaf showing colony of feeding adult and immature lace bugs alongside excrement, eggs, and nymphal cast skins.

Credit: [Matsunaga and Silva, 2020](#)

# What should I be doing about ALB now?

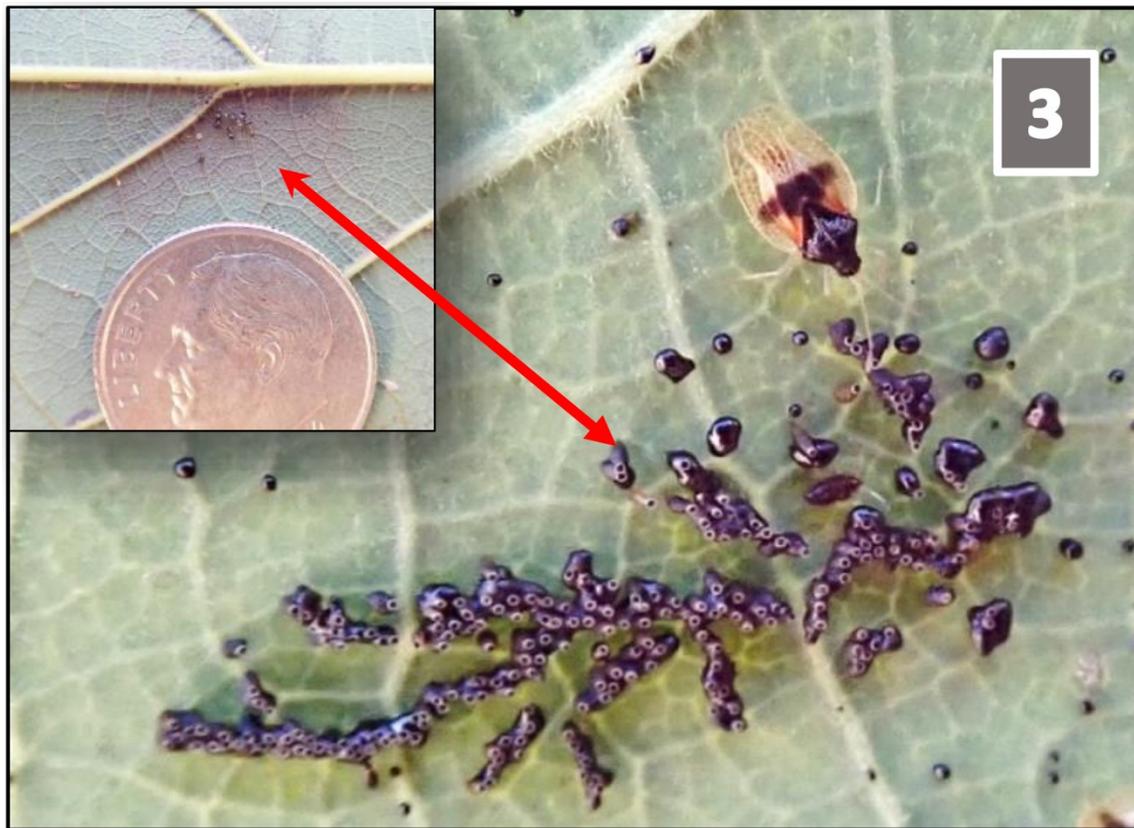


Fig. 3. (Inset) Eggs next to a dime; Close up of adult next to eggs covered in excrement. Credit: [Matsunaga and Silva, 2020](#)

- Scout your avocado orchard to find ALB infestations early when damage is minimal.
- Send clear photos of the top and undersides of suspect leaves to help with ID.
- Contact HDOA at 808-643-PEST or [HDOA.PPC@hawaii.gov](mailto:HDOA.PPC@hawaii.gov) or your [local Extension office](#) to report new findings and for recommendations.

# How do I prevent the spread of ALB?

- Avoid transporting avocado trees and other plant materials that could harbor ALB. Propagative avocado (and other plant) materials should be inspected and approved by HDOA's PQB before interisland shipment.
- Park vehicles away from avocado trees and check for avocado leaves and branches in truck beds. Discard prior to leaving the farm.
- A blower or mild soapy water can be used to dislodge adult ALB from equipment, tools, etc.
- Change to clean clothing, hat, footwear, etc. before entering a location free of ALB. Contain and wash in detergent.

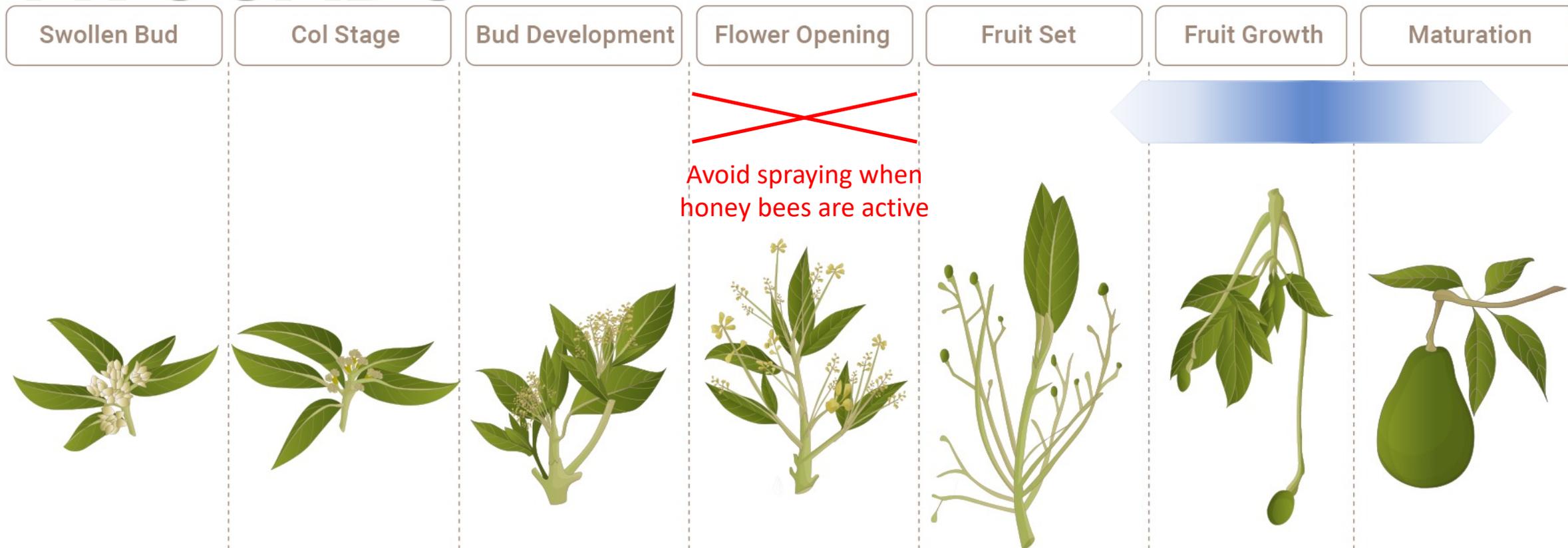
# How do I manage ALB in my orchard?

- Keep your trees and soil healthy with a proper fertilization schedule, good soil drainage and mulching.
- Prune to maintain tree height, encourage new growth, and reduce pest and disease pressure with adequate airflow through the canopy.
- If necessary, spray every two weeks with approved pesticides until control is achieved. Direct spray to underside of leaves.



# If I need to spray for ALB, when should I?

## -AVOCADO



# What pesticides are approved for avocado?

- Oils (Tritek\*, Purespray Green, BioCover MLT, Ultra Pure Oil HIMF\*, etc.)
- Imidacloprid (Admire Pro, Admire 2 Flowable, etc.)
- Biopesticides (BotaniGard ES, Mycotrol ESO\*, Venerate XC\*, etc.)
- Pyrethrins (Evergreen CP EC 60-6, Pyronyl Crop Spray, Pyganic CP EC 1.4 II\*, etc.)
- IGRs (Molt-X\*, Applaud IGR, etc.)
- Other insecticides (M-Pede IMF\*, Kopa IS\*, Movento, Malathion 8 Aquamul, etc., Entrust SC NIC\*)

\*Cert. organic. Always consult with your certifying agent before using new products.

Rotate or alternate pesticides in different FRAC groups to avoid pesticide resistance.

Avoid spraying during bloom to protect pollinators.

Read and follow all label directions. The label is the law.

# Are there any biocontrols?

- In Florida are two egg parasitoids, *Oligosita* sp. (a trichogrammatid wasp) and *Erythmelus klopomor* (a mymarid fairywasp).
- Predators that attack ALB nymphs and adults include, mirids, larvae of cecidomyiid flies and green lacewings (photos to the right).
- A predatory thrips, *Franklinothrips vespiformis*, has been observed in high numbers feeding on avocado lace bugs on 'Hass' avocados in the Dominican Republic and Guatemala.
- In Florida, *Beauveria bassiana* provided some control of ALB.



# General ALB references

- <http://ipm.ucanr.edu/PMG/PESTNOTES/pn74134.html>
- <https://cistr.ucr.edu/invasive-species/avocado-lace-bug>
- <https://biocontrol.ucr.edu/avocado-lace-bug>
- <https://edis.ifas.ufl.edu/pdf%5CIN%5CIN16600.pdf>
- <https://hdoa.hawaii.gov/pi/files/2020/04/Avocado-lace-bug-NPA-3-31-20-FINAL.pdf>
- <https://www.ctahr.hawaii.edu/oc/freepubs/pdf/IP-50.pdf>



# Thank you!

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