

**ALOHA ARBORIST ASSOCIATION**  
**MEETING MINUTES – 11/16/2016 – ADOPTED**  
**Lyon Arboretum, 3860 Manoa Rd, Honolulu, HI 96822**

Members in Attendance: Andrew Kendall, Steve Nimz, Kevin Eckert, J Zambo, Carol Kwan, Angela Liu,  
Dudley Hulbert, Sergio Vasquez  
Guests: Dr. Andy Kaufman, Ilana Nimz, Diane Eckert

- 1) Call to Order & Approval of Minutes – The meeting was called to order by President J Zambo at 6:45pm. Quorum was not established, and approval of the 10/19/16 Minutes was tabled until January.
- 2) Guest Speaker – Dr. Andy Kaufman, University of Hawaii, College of Tropical Agriculture and Human Resources – Update on Research Projects.
  - a) Psychophysiological Responses to Images of Good Versus Bad Tree Form – Dr. Kaufman presented the basis, methodology and findings of his research into how humans respond to images of tree canopies exhibiting good form/structure, versus how they responded to images of topped tree canopies. For this research, subjects were connected to highly sensitive monitoring devices using electrodes. Each subject’s physiological responses were recorded while he or she viewed various images of the trees. Measurements were recorded for heart rate, brain waves, facial muscular impulses, and other unconscious (pre-cognitive) physical responses. Dr. Kaufman found measurable differences in subjects’ reactions - negative readings in response to images of topped tree canopies and branches, and positive readings for images of intact tree canopies and branches. He is planning to use these physiology-based findings to develop educational tools about good pruning practices, and to influence public policy and promote public awareness. There also was a short discussion about challenges to getting this message disseminated.
  - b) Comparison of the Effect of Street Tree Installation Designs on Tree Roots, Using Shower Tree and Kou Tree (*Cassia x nealiae* and *Cordia subcordata*) – This multi-agency study combined the support and input from Hawaii’s Department of Transportation, Aloha Arborist Association, City and County of Honolulu, University of Hawaii among others. Based on a review of existing literature, and analysis of factors affecting tree root growth, Dr. Kaufman with the help of his research team designed, installed, and is now monitoring the growth of about fifty shower trees and kou trees planted under a variety of simulated street tree conditions. Variables included planting pit (tree well) sizes, use of root paths and Silva cells, use of encircling root barriers, and installation of concrete slabs next to tree pits. The trees were planted and tree growth data has been collected for one year. There is not enough data yet to draw any conclusions. Phase 2 of this study will include installation of simulated asphalt roadways next to the trees. Additional funding will be necessary and is currently being sought.
- 3) Old Business
  - a) Research Committee (Chair: Dudley Hulbert) – See Dr. Kaufman’s presentation above.
  - b) LICH Conference 2016 (Steve Nimz) – Tabled.
  - c) Hawaii Tree Jamboree, February 25 2017, Location TBA (Chair: Andrew Kendall) – Andrew Kendall, Steve Nimz, J Zambo, and Dudley Hulbert met to discuss the event formerly titled “Hawaii Tree Climbing Championship”. There was consensus that the event would be more successful if it attracted a broader audience, so the focus of the entire event was shifted toward fun activities for a more general audience, while retaining the most popular competitive tree climbing events.
    - The event will feature work climb, speed climb, and throw ball competitions. Other very popular activities that have been reintroduced include crosscut sawing, tug of war, coconut raking, and wheelbarrow races. For young visitors, there will be kid’s climbing and other children’s games.
    - Kualoa Ranch is being proposed for the event location.
    - This will be a BYO Food event; alcoholic beverages will not be permitted.

- Carol reported that in order for the Jamboree to be covered by ISA's insurance, the event will need to follow a specified format that includes an "Ask an Arborist" booth, public participation, a training activity, and other additional requirements. Steve Nimz said that rather than complying with ISA's requirements, AAA's Jamboree would instead be insured under LICH.
  - A Save the Date announcement will be sent out shortly.
  - The Jamboree committee members will coordinate event logistics, including contacting tree care companies to gauge levels of interest and involvement, and to solicit input.
- d) Chainsaw Workshop, Beginner Level – Tabled.
- e) WCISA / AAA 2017 Hawaii Regional Workshop with John Ball (Angela Liu) – Tabled.
- f) WCISA Annual Conference 2019 (Carol Kwan) – Tabled.
- 4) New Business
- a) Pest of the Month – Ficus Leaf-Rolling Psyllid (aka FLRP, *Trioza brevigeneae*)
- i) Description: Psyllid pest causing a distinctive, tight, complete rolling of individual leaves of *Ficus microcarpa*.
  - ii) Distribution: Discovery of the pest in six counties in southern California constitutes a new record in the Western Hemisphere. Native to northern India. This pest is not currently in Hawaii.
  - iii) Hosts: This pest is known to infest *Ficus microcarpa*, it has not been found on any other hosts.
  - iv) Symptoms and Damage: FLRP targets young leaves, rolling them tightly and completely into narrow cylinders. Rolled leaves remain green, but infestation by other pests such as leaf gall wasp can cause other deformation and discoloration. FLRP leaf rolling has a different appearance compared to leaf rolling by Cuban laurel thrips, which cause discoloration and fold the leaf blades along the rachis (midrib). FLRP nymphs conceal themselves inside the rolled leaves; adults are about 2.6-2.8mm long, green and brown with protruding red eyes, and are generally observed outside the rolled leaves.
  - v) Control: Management protocols for FLRP have yet to be developed. Frequent periodic pruning may result in the removal of this and many other pests of *F. microcarpa*. Avoid excessive irrigation and fertilization, which stimulate new growth to which these psyllids are attracted.
  - vi) Reference:  
 "The Ficus Leaf-Rolling Psyllid – A New Pest of *Ficus microcarpa*," *UC IPM Green Bulletin* (Vol.6 No.2 August 2016), p.3-4.  
<http://blogs.cdfa.ca.gov/Section3162/?cat=5>
- b) Possible Julian Dunster Workshop – Julian Dunster had inquired with WCISA as to whether there might be interest in Hawaii for a program on either documenting evidence, or advanced tree risk assessment, the latter of which could emphasize biomechanics. Carol had suggested that February/March would be a good time of year for him to come. Steve Nimz had previously committed to working with Frank Rinn to organize a workshop with a similar topic in 2017. There was general agreement that there would not be enough demand to successfully hold two similar workshops in the same calendar year.
- c) Alternative Workday Event – Dudley Hulbert agreed to review options and logistics with his contacts at Bellows Air Force Base.
- 5) Announcements
- a) Donald Hodel is on Oahu working on his research regarding Ficus trees.

b) ***There will be NO MEETING in December. Please join us for our next meeting on:***

*January 18<sup>th</sup>, 2017, 6:30pm, Location TBD.*

6) Adjournment – The meeting adjourned at 8:08pm.

Respectfully submitted,  
Angela Liu

Attachments:

“The Ficus Leaf-Rolling Psyllid – A New Pest of *Ficus microcarpa*,” *UC IPM Green Bulletin* (Vol.6 No.2 August 2016), p.3-4.

# The Ficus Leaf-Rolling Psyllid

## A New Pest of *Ficus microcarpa*

**A** new psyllid pest that causes a distinctive, tight, typically complete rolling of leaves (Figure 1), has been found on *Ficus microcarpa* (Chinese banyan, Indian laurel fig) in Los Angeles, Orange, San Bernardino, Ventura, San Diego, and Riverside counties. This species of *Ficus* is one of our most common, useful, and widespread ornamental landscape trees. Incidentally, it has also long been a target for numerous exotic pests.

The psyllid, identified as *Trioza breviganae* and tentatively named the Ficus Leaf-Rolling Psyllid (FLRP), was discovered in February 2016 south of Los Angeles in Carson, California and appears to have spread rapidly among the six counties listed above. It has only been observed on *Ficus microcarpa* (sometimes incorrectly called *F. nitida* or *F. retusa*).

### Damage

The FLRP appears to be almost exclusively attracted to the newest developing leaves, which are softer, more pliable, and easier to roll. Damage is fairly obvious and conspicuous on heavily infested trees. Leaves at the branch and twig tips are typically rolled tightly and completely into narrow cylinders (Figures 1 and 2), sometimes eventually compressed to only about 3–5 mm in diameter (Figure 3).

Rolled leaves, though brittle, remain green throughout, although other pests, such as *Josephiella microcarpae* (the leaf gall wasp) and various mealybug species, might be present and may discolor or further deform them.

The rolled leaves could be mistaken initially for damage from *Gynaikothrips ficorum* (the Cuban laurel thrips), which creates a gall by folding the leaf blade adaxially (upper surface) along the rachis. However, careful observation will quickly show the distinct difference between the rolled leaf (caused by the FLRP) and folded leaf (caused by Cuban laurel thrips).

Also, the folded leaf gall from the Cuban laurel thrips typically has dark or purplish flecking or stippling on the abaxial (lower) leaf surface.

### Description and Identification

Peeling back the rolled leaf blades typically reveals various developmental stages of FLRP nymphs (Figure 4). Early instars are 1–2.5 mm long, oblong, dark grayish-tan initially, changing to brownish and then brownish-green.

Advanced nymphal instars have skirts of long, white, waxy filaments at cranial and caudal parts of their bodies (Figure 5). Wing pads are typically visible in later developmental stages.

Cast skins of the final instar FLRP nymphs from which the adults have emerged are often seen attached to the leaves. Also, small, oval, mostly orange-colored nymphs embedded in leaf tissue on the outside of the roll and observable to the naked eye are likely very early instars of the FLRP, although we have not confirmed this possibility.

Adult FLRPs are typically found outside and adjacent to rolled leaves (Figure 6); apparently they exit the confines of the rolled leaf immediately upon reaching adulthood. Adults are small (about 2.6–2.8 mm long). The head and thorax are brownish-green. The abdomen is green when young and brown when old. Wings are 3 mm long, transparent, with no color pattern, and extend beyond the posterior end of the abdomen. Eyes are red and protruding (Figure 7). Females are larger than males.

The FLRP exhibits two peculiar behaviors. In one (the more common of the two observed), an individual psyllid sits on a leaf blade or perches on the margin of a rolled leaf, raises its abdomen until it is at about a 45-degree angle (Figure 8), and then moves it from side to side like a dog wagging its tail. In another, it extends one wing until it is at a right angle to the body, then waves it back and forth while walking.



Figure 1. The FLRP causes a distinctive, tight, typically complete leaf rolling on *Ficus microcarpa*.



Figure 2. Leaves infested with the FLRP are tightly and typically completely rolled into a narrow cylinder.



Figure 3. Sometimes the rolled cylinder of leaves reaches only about 5 mm in diameter.



Figure 4. An advanced nymphal instar of FLRP perches on the leaf margin.

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## Ficus Psyllid ...continued from p.3

### Management

Unfortunately, nothing is known about the management of the FLRP, and additional work will likely be needed. The spectrum of natural enemies of FLRP has not been studied, although we have found lacewings, lady beetles, and pirate bugs among the leaves.

One management strategy likely warranting evaluation includes vigilant scouting followed by judicious and immediate removal, bagging, and disposal of shoot tips with infested leaves.

Frequent, periodic pruning, as is done for hedges and topiary, might also be an effective management technique by constantly removing infested leaves. Such regularly pruned *Ficus* specimens have frequently been observed with less damage from foliar pests such as the leaf gall wasp, Indian laurel thrips, and the FLRP. Timing of such pruning, though, might be critical; if possible and practical, time pruning so that resulting new growth appears at a time when FLRP activity is low, typically during the cooler months.

Because the FLRP primarily attacks new, soft, pliable new growth as it unfurls, management techniques that suppress new growth, such as withholding or lowering irrigation and fertilizers, might also be effective techniques for reducing infestations. Indeed, we have observed neglected trees with little or

no irrigation and much reduced new growth that have many fewer pests, including leaf gall wasps, Indian laurel thrips, and the FLRP.

The practices listed above could be combined with insecticidal treatment for noteworthy and valuable tree specimens, although no pesticides have yet been tested specifically for FLRP. In these special cases, soil applications of imidacloprid or similar materials applied to the soil might be beneficial.

—**Donald R. Hodel**, Landscape Horticulture Advisor, UCCE Los Angeles County, [drhodel@ucanr.edu](mailto:drhodel@ucanr.edu); **Gevork Arakelian**, Entomologist, Los Angeles County Agricultural Commissioner/Weights & Measures, [GArakelian@acwm.lacounty.gov](mailto:GArakelian@acwm.lacounty.gov); **Linda M. Ohara**, Biology Sciences Lab Technician, El Camino College, [lohara@elcamino.edu](mailto:lohara@elcamino.edu); **Cheryl Wilen**, Area IPM Advisor, UCCE San Diego, Orange, and Los Angeles counties, [cawilen@ucanr.edu](mailto:cawilen@ucanr.edu); **Surendra K. Dara**, Affiliated IPM Advisor and Strawberry and Vegetable Crops Advisor for UCCE Ventura, Santa Barbara, and San Luis Obispo counties, [skdara@ucanr.edu](mailto:skdara@ucanr.edu)

Read the full article, originally published in the eJournal PalmArbor at [ucanr.edu/sites/HodelPalmsTrees/files/242336.pdf](http://ucanr.edu/sites/HodelPalmsTrees/files/242336.pdf).

## Pest Note Updates

**Lyme Disease in California.** Published in early May, this revised Pest Note has new photos and statistics. Find it online at [ipm.ucanr.edu/PMG/PESTNOTES/pn7485.html](http://ipm.ucanr.edu/PMG/PESTNOTES/pn7485.html).

**Asian Citrus Psyllid & Huanglongbing Disease** has been updated, as the range of the psyllid continues to spread within California. Find it at [ipm.ucanr.edu/PMG/PESTNOTES/pn74155.html](http://ipm.ucanr.edu/PMG/PESTNOTES/pn74155.html).

To access these and more than 165 other titles, visit UC IPM's Pest Notes Web page, [ipm.ucanr.edu/PMG/PESTNOTES](http://ipm.ucanr.edu/PMG/PESTNOTES).



Figure 5. Advanced nymphal instars of FLRP are 1–2.5 mm long, oblong, dark gray initially changing to brownish and then brownish green, with a skirt of white cilia, the cilia longest anterior and posterior.



Figure 6. Adult FLRPs are typically found outside and adjacent to rolled leaves.



Figure 7. Adult FLRPs have transparent wings that extend beyond the abdomen and red, protruding eyes.



Figure 8. Adult FLRPs are frequently observed with raised abdomens, which they move from side to side like a dog wagging its tail.