Current industry LW survey update and control strategy

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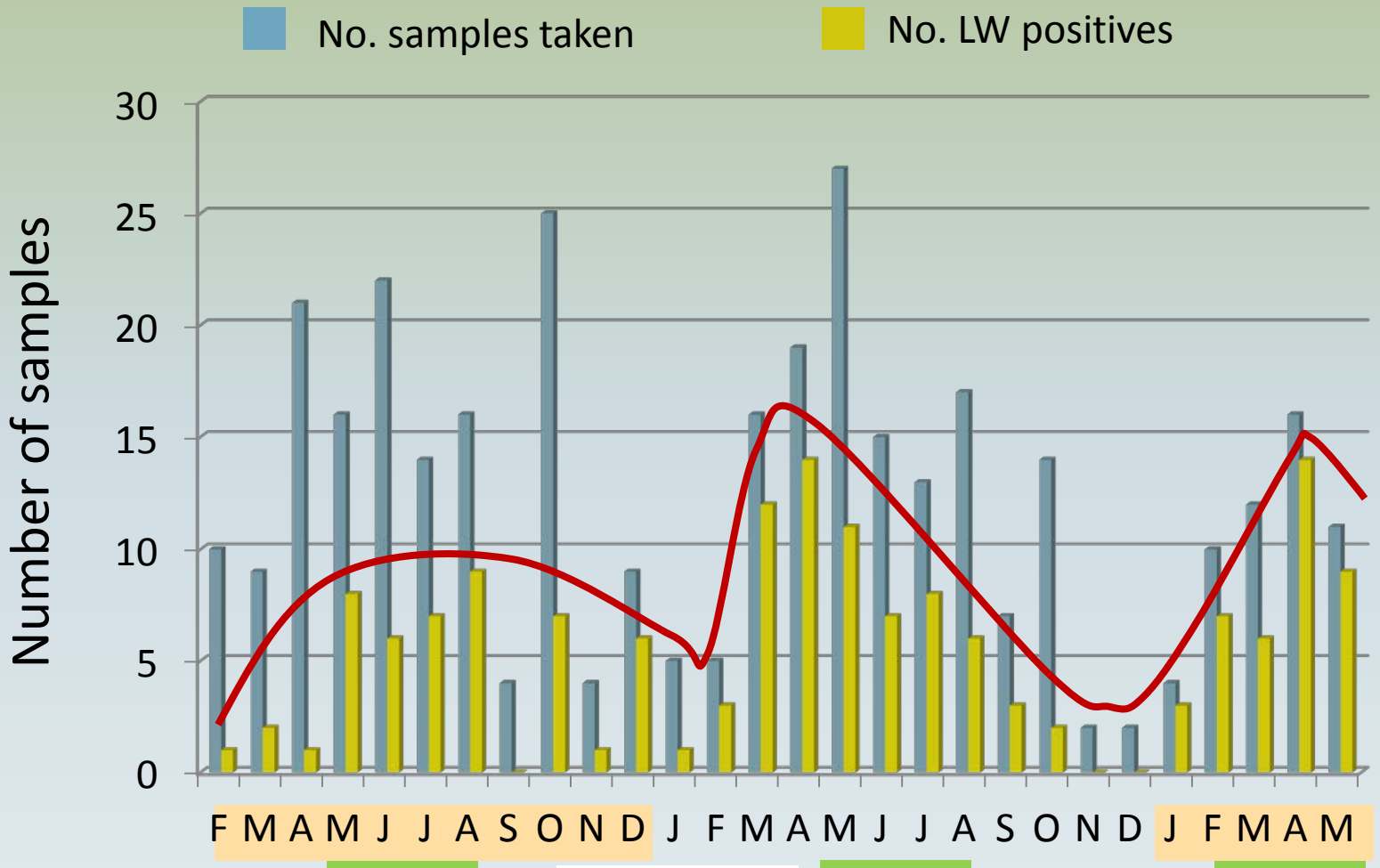
Aerial survey October 2013 – April 2014

Date	Quadrant	No. suspect trees
Oct. 7	NE*	64
Oct. 8	SW*	5
Oct. 10	NW	5
Oct. 11	SE	3
Nov. 19	NE	37
Nov. 20	NW	15
Nov. 21	SW	6
Dec. 5	SE	2
*, Spectral survey		

Date	Quadrant	No. suspect trees
Feb. 17	NE*	3
Feb. 18	NE/SE	5
Feb. 20	NW	23
Feb. 21	SW	4
Apr. 7	NE	20
Apr. 8	NW	23
Apr. 10	SW	2
Apr. 11	SE*	4

Source: Don Pybas, Laurel Wilt Coordinator in collaboration with Alan Flinn, Administrator for the Avocado Administrative Committee

Number of LW detections by month (based on LW molecular sample results)



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Update: number of avocado tree samples taken and number of LW positives (based on molecular testing)

- September of 2011 to May 2014, TREC Diagnostic Clinic – 461 samples submitted; 216 LW positive (47%)
- However, >3,600 trees (~36 acres) have been destroyed and attributed to LW (includes LW positives and symptomatic adjacent trees) (~0.51% of an estimated 700,000 trees)

*, Dr. A. Palmateer, Assoc. Prof., Plant Pathology, TREC Plant Diagnostic Clinic, personal communication

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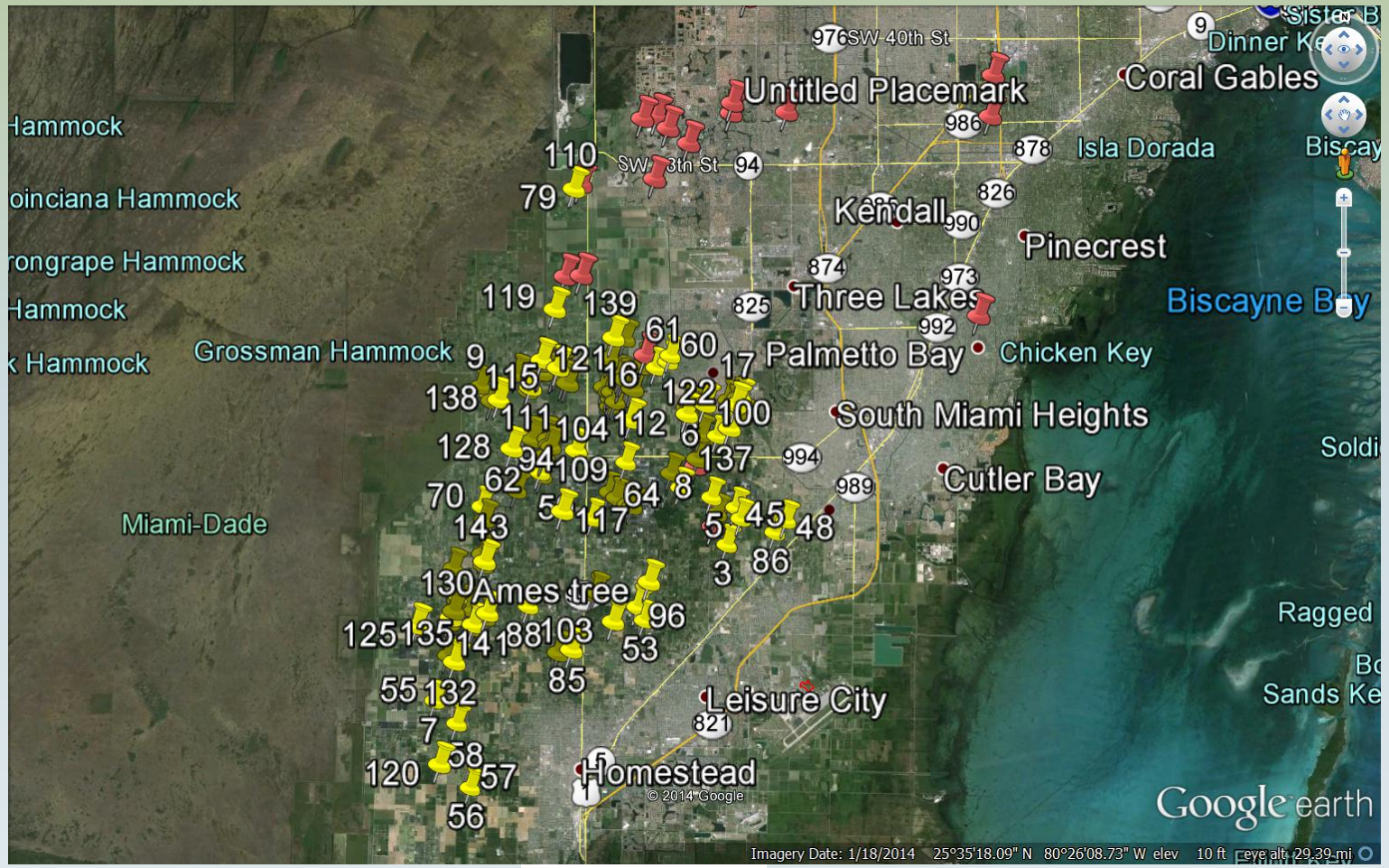
Commercial area laurel wilt positive site map as of May 2014



~143 sites, not all active

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Cultivars susceptible (positive) for LW

Brevard/Martin Counties	Homestead	
Brogdon (complex hybrid)	Beta (GxWI)	Nadir (GxWI)
Choquette (GxWI)	Booth 8 (GxWI)	Nesbitt (GxWI)
Day (GxWI)	Brooks Late (GxWI)	Pollock (WI)
Hall (GxWI)	Choquette (GxWI)	Simmonds (WI)
Jim Lappeck (GxWI)	Donnie (WI)	Tonnage (G)
Lula (GxWI)	Hall (GxWI)	Tower 2 (WI)
Marcus Pumpkin (GxWI)	Hardee(WI)	Waldin (WI)
Monroe (GxWI)	Loretta (GxWI)	
Pollock (WI)	Lula (GxWI)	
Russell (WI)	Miguel (GxWI)	
Winter Mexican (GxM)	Monroe (GxWI)	

Current strategy and recommendations

Current strategy for control of RAB-LW

- Visual aerial survey
- Ground truth
  - Molecular testing
- Take action to remove infested/infected trees
  - Removing tree
  - Chipping
  - Burning
- Intensify ground scouting

- RAB control
  - Chip infested wood
  - Spray chips with insecticide + Vaporgard or NuFilm
  - Air-blast insecticide + adjuvant
    - ❖ Insecticides Malathion or Danitol

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Current strategy for control of RAB-LW

- LW control
  - Sanitation: complete removal (all above ground and as much of below ground wood as possible) and destruction of infested/infected trees
  - Spray the infested area for ambrosia beetles
  - Infuse/inject propiconazole in trees adjacent to LW positive trees[yz]

y, some producers have implemented injection of trees

z, under current testing and continued development

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Some key issues

1. Non-RAB ambrosia beetles transmitting LW
   a. Non-RAB are attracted to stressed trees (e.g., lightning, Phytophthora, etc.)
2. In LW positive groves (sites)
   a. Killing ambrosia beetles inside trees and wood
   b. Killing ambrosia beetles trying to bore into trees and wood
   c. Killing ambrosia beetles in the LW positive area
3. Root transmission of LW among avocado trees
4. Rapid identification of LW positive trees
5. Trees not being removed and destroyed promptly
6. Funding avenues to continue the tree removal/ mitigation and research

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Industry needs/future research

- Ambrosia beetle grove trapping (trap/kill system) and surveying
- More rapid identification of trees infested with the LW pathogen and/or RAB
- Continued RAB repellent research
- To what extent non-RAB are infecting avocado with LW
- Continued investigations on entomopathogens
- On-going testing new fungicide formulations for efficacy and cost
- On-going infusion/ injection methodology testing
  - Spot treatments
  - Whole grove treatment

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Extension-Outreach

Jonathan H. Crane, UF/IFAS Tropical Research and Education Center

Denise Feiber, Public Information Director, FDACS, DPI

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Event	Sponsors	Title	No. participants
Field demonstration	Dr. DeEtta Mills, FIU Dr. Jonathan Crane, UF	Potential of UA vehicles for agriculture (e.g., LW, scouting)	53
Workshop	Dr. Jonathan Crane, UF Mr. Jeff Wasielweski, MD Coop. Ext.	Stop LW from spreading with infusion	30
Workshop	Dr. Jonathan Crane, UF Mr. Jeff Wasielweski, MD Coop. Ext.	Update and recommendations for control of AB and LW	23
Workshop	Mr. Jeff Wasielweski, MD. Coop. Ext.	Avocado Pests	65
Infusion hands-on training	Dr. Jonathan Crane, UF	Two commercial growers	5
Post workshop survey response: After this presentation are you more likely to use infusion to control the spread of LW? Yes, 79%-93%			

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Registration of Tilt®

- Worked with FDACS, Syngenta, FFVA, and IR-4 to submit and obtain new Section 18.
- Finished first half of 2014 Tilt residue trial (first trial completed 2013).
- Assisted California and Puerto Rico conduct their Tilt residue trials.

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