# Updates on the South American Palm Weevil and a Potential New Pest, Spotted Lantern Fly





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Males have a "beard" on rostrum. Females lack this



Pupal period is 11 – 45 days

#### Adult weevil can live 2-3 months



Life cycle can take 45 – 139 days

Pupal cocoons made from chewed palm fibers





Females can lay 58-531 eggs; hatch in 1-6 days



3-9 larval instars take

25-105 days to develop



## **Red Ring Nematode**

- Adult weevils can spread a nematode that causes red ring disease in palms
- Adults are infected with nematodes and spread them when they defecate or lay eggs
- Nematode infections can kill palms
  - 35-80% palms may be killed in coconut or palm plantations
  - Serious pest of tropical palms
  - 6-20 weeks post infection palms die
  - Little leaf disease symptoms of incipient RRN infection
- Kill off with weevil infestation with insecticides, nematode infection may kill palm in the absence of weevils
- Nematode not recorded from the USA
  - CDFA dissections of 111 weevils failed to detect the nematode





http://entnemdept.ufl.edu/creatures/ne matode/red\_ring\_nematode.htm

#### Guadalupe Palms: Brahea edulis





Adult and larval SAPW collected from palms after removal at Balboa Park (Greg Johansen, SD Parks & Rec.) Senegal palm, Phoenix reclinata Sabal bermudana

Parajubaea torallyi var. torallyi

Photo courtesy of Magen Shaw

Photo courtesy of Magen Shaw

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Photo courtesy of Christy Powell





Photos courtesy of Ricardo Aguilar, APC

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#### How Far Can SAPW Fly?

- Average flying distance for males and females
  - ~40 km (~25 miles) in 24 hr
  - Fly for about 4-5 hr on flight mill
  - Lose ~ 20% of body weight





#### Urban Palm Surveillance of 519 Palms







#### Palm Recovery is Possible!











#### Feb 2020



#### Aug 2020

# Don't Give Up!





#### Updates & Report Infested Palms http://cisr.ucr.edu/palmarum.html

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Survey requested help southern California scientists collect data on this new cent and document it's affects on local calification Report Interfact Painty Helps



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#### Scan This QR Code to Access Website



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## Spotted Lantern Fly is Coming to California!





### Taxonomy and Biology

- Spotted lanternfly (SLF)
  - Lycorma delicatula (Hemiptera: Fulgoridae)
  - Not a fly it's a true bug!
  - Early biologists thought that the "lantern" emitted light (Asia)
  - Peanut headed lantern fly (Central and Sth America)

#### • SLF is a sap sucking bug

- Eggs laid as an egg mass
  - Overwintering stage
- Four nymphal stages, instars
- Nymphs and adults are sap (phloem) feeders
  - Produce a lot of honeydew sugary waste that is excreted as droplets
- One generation per year









https://nysipm.cornell.edu/environment/invasive-species-exotic-pests/spotted-lanternfly/spotted-lanternfly-ipm/biology-life-cycle-identification-and-dispersion/

#### **Invasion History**

- SLF native to parts of China, India, and Vietnam
  - 2006 invaded South Korea
  - 2008 invaded/expanded (?) range in Japan
- USA
  - 2014 PA (from China, Beijing area)
  - 2017 NY & DE
  - 2018 NJ, MD, & VA
  - CA not established, yet!
    - Adults (dead) intercepted in aircraft several times in SoCal in 2019
    - Establishment likely through accidental introduction of egg masses from NE USA



Lawrence Barringer, PA Dept. of Agriculture





Tree of Heaven (*Ailanthus altissima*), native to China and invasive in the US, is a highly preferred host for SLF



## Crops at Risk from SLF

- More than 70 host plants recorded
  - Forest trees, black walnut, Chinese mahogany, pine (Christmas tree imports?)
  - South Korea grapes and walnuts attacked
  - NE USA grapes and apples attacked
  - USDA lists the following crops of concern
    - Hops
    - Peaches, plums, cherries, apricots (*Prunus* spp.)
    - Pears
  - California probable crops at risk
    - Grapes
    - Nuts (walnuts, almonds, pistachios)
    - Apples and pears
    - Apricots, plums, cherries, peaches





#### **SLF Parasitoids**





#### Dryinus browni