New Pest Response Guidelines
Red Palm Weevil
*Rhynchophorus ferrugineus*

Christie Bertone, Entomologist, USDA–APHIS–PPQ–Center for Plant Health Science and Technology (CPHST)
Patricia S. Michalak, Writer/Editor, USDA–APHIS–PPQ–EDP
Amy Roda, Entomologist, USDA–APHIS–PPQ–CPHST

Kathy Kamminga, NCSU, March 7, 2011
Red Palm Weevil NPRG

1. Introduction
2. Pest information
3. Identification
4. Survey Procedures
5. Regulatory Procedures
6. Control Procedures
7. Environmental Compliance
8. Pathways
Historical Information

The red palm weevil, a serious pest of palms, is native to Southeast Asia and has spread through the Arabian Gulf. Among palm weevil species, the red palm weevil has spread to the greatest number of countries, probably due to its association with the date palm (*Phoenix dactylifera*), which is propagated by offshoots.

It was detected in Orange County, California in October, 2010.
Economic Impact

Economic pest of coconut, date, oil, and sago palms

**Palm sales, 2007**

Puerto Rico: $7.1 million

United States: $203 million for almost 8000 acres
  - Florida: $127 million
  - California: $70 million
  - Texas: $3 million
Red palm weevil damage
Red Palm Weevil Distribution

Sources: Al-Hudaib, 2009; Baldecchi, 2007; Bloem pers. comm., 2011; Borchert, 2009; Bozbuga and Hazir, 2008; CABI, 2009; EPPO, 2007; Murphy and Biscoe, 1999; Pelin, 2009; Ren, 2011; Soroker et al., 2009
Created By: G. Fowler and K. Karninga
USDA-APHIS-PPQ-CPHST-PERAL
WGS 1984
February 25, 2011
Potential Distribution of Red Palm Weevil
**Eggs:** Eggs are light yellow, approximately 2.5 mm long and are oviposited in palm tissue. Hatch in about 3 days.

**Adult:** Red and blackish brown and about 35 mm long. Adults live up to 3 months feeding on palm trees.

**Larvae:** Whitish-yellow and feed on surrounding palm tissue, moving toward the interior of the palm upon hatching (2-6 months).

**Pupae:** Mature larvae pupate in damaged tree tissue. The pupal stage requires about 3 weeks.
Palmetto Weevil Adult

Thomas, M. 2010. Pest Alert, Giant Palm Weevils of the Genus *Rhynchophorus* (Coleoptera: Curculionidae) and Their Threat to Florida Palms. FDACS, Division of Plant Industry. DACS-P-01682.

Red Palm Weevil Adult

Joshua S. Rose

Amy Roda
Identification for *Rhynchophorus*

1. *R. ferrugineus*;
2. *R. cruentatus*, red and black form
3. *R. cruentatus*, black form
4. *R. palmarum*

1. Pronotum strongly lobed posteriorly (Fig. 4); color black........... *R. palmarum*
   — Pronotum evenly curved posteriorly (Fig. 3); color red, red and black, or black

2. Pronotum gradually narrowed anteriorly (Fig. 1).................... *R. ferrugineus*
   — Pronotum abruptly narrowed anteriorly (Fig. 2).............. *R. cruentatus*
Survey

- Pheromone traps
  - Pheromone lure
  - Food source
  - Liquid trap
  - Placed in or near hosts
- Olfaction: Trained dogs detect red palm weevil odor
- Acoustics: Gnawing sound from larval feeding
Bucket traps

- **Outside**
  - Rough texture
  - Loop on lid
  - Or buried in the ground
  - Large hole (3cm)

- **Inside**
  - Propylene glycol/water mixture to cover the food baits
  - Pheromone lure

ChemTica International http://www.chemtica.com
Control

- Sanitation
  - Shredding
  - Burning
- Insecticides
  - Preventive
  - Curative
- Mass Trapping
- Biological Control
  - Bacteria
  - Parasitoids
  - Nematodes
Pathways

- Natural
- Commerce
  - Cut flowers
  - Plant materials (Palm plants)
<table>
<thead>
<tr>
<th>Research Needs</th>
<th>NPRG Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eradication</td>
<td>Control methods</td>
</tr>
<tr>
<td>Control methods</td>
<td>Research</td>
</tr>
<tr>
<td>Detection</td>
<td>Language</td>
</tr>
<tr>
<td>Education</td>
<td>Manual updates</td>
</tr>
</tbody>
</table>
Questions?