

4. Trapping the Vector:

- Reducing the palm weevil (vector) population is critical in reducing the spread of red ring disease.
- Adult palm weevils are attracted to chemical compounds from the coconut plant and also attracted to the male aggregation pheromone.
- Male weevils release these pheromones to attract both male and female palm weevils to an area for food.
- Installing artificial traps can incorporate both a food source and the pheromone.



Bucket Funnel Trap



Trap with live weevils

See Brochure: " Trapping of the South American Palm Weevil".

Conclusion:

- Diseased trees are the Focal Point for the management of both the vector and the disease.
- Both the vector and the pathogenic nematodes are in one location and can be controlled by combining field sanitation and trapping.



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Integrated Pest Management for *Rhynchophorus palmarum* L South American Palm Weevil (SAPW)

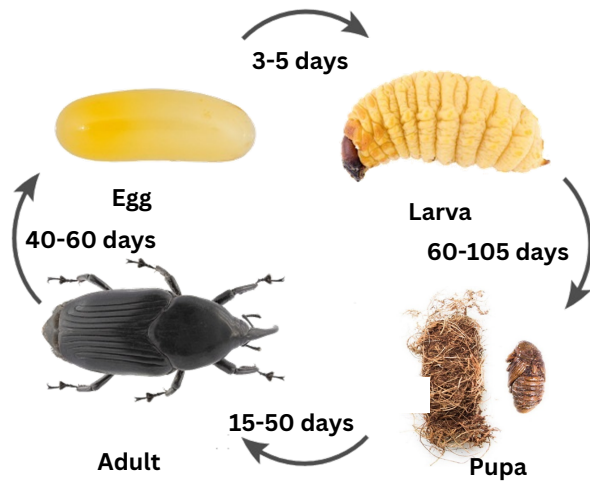
A Vector for Red Ring Disease of Palms



What is it?

- The South American Palm Weevil or Coconut Palm Weevil is an insect belonging to the family Curculionidae which affects 35 plant species from 12 different families but is found predominantly in palms.
- Adult weevils are active vectors - carriers of the nematode *Bursaphelenchus cocophilus* (a microscopic round worm) which causes Red Ring Disease in Coconut Palms.
- It is a major pest of coconuts in T&T.

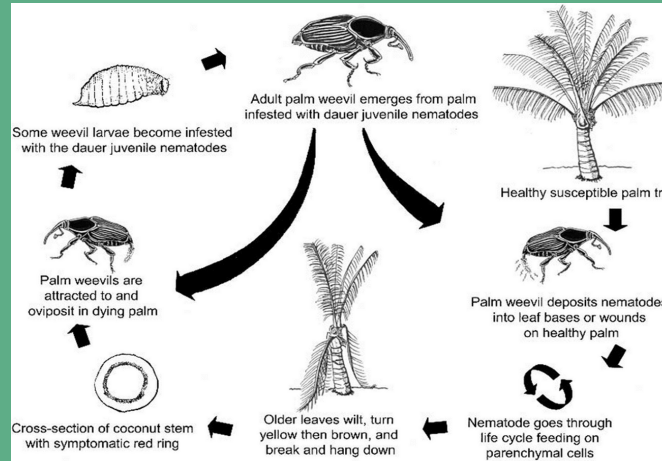
Life Cycle of *Rhynchophorus palmarum*



Biology of Pest:

- Adults are active during morning and late afternoon, and can travel up to 1.6 km in 24 hrs.
- The female weevil uses its rostrum (snout) to make holes in the stem region of the trunk close to the crown of the palms and lays its eggs (500 – 700 eggs), during a 20-40 day period.
- Eggs hatch into larvae that cause damage by feeding on the soft tissue of the palm tree (stem and crown region). They tunnel extensively inside of the tree and weaken the tree.
- The nematodes for Red Ring disease are deposited at the same time when the eggs are laid.
- The nematodes multiply and feed on the tissues of the tree.
- The nematodes enter the larva while it feeds making it a carrier for the red ring disease.
- The males produce an aggregation pheromone, which attracts other weevils to the host tree.
- Adults are also attracted to the distinctive rotting smell of the decaying tree.

HOW RED RING DISEASE IS TRANSMITTED



Symptoms of Red Ring Disease:

- Trees show progressive yellowing and bronzing from the tips of the leaflets to the base and from older leaves to younger ones.
- Necrosis (rotting) of flowers.
- Premature nut fall.
- Holes in the stems.
- Foul odour (smell)
- Cross-sectioned of the lower stems show an internal orange to reddish-brown ring of discoloration.



INTEGRATED PEST MANAGEMENT (IPM) FOR RED RING DISEASE

1. Field Sanitation:

- Early detection and destruction of infected palms.
- Infected trees should be cut down, chopped into small pieces, heaped together.

2. Insecticide Application:

- Infected material should be treated with an insecticide (fipronil or imidacloprid)

3. Disposal of Material:

- Once the material is dry enough, it can then be burnt.

