Life Cycle

- Adults are usually active at day time. A female may lay up to 700 eggs (usually 250) in its lifetime (hatches in 3-5 days).
- Larval period completed in 7-8 weeks.
- Pre-pupal stage lasts for 4-17 days.
- Pupal stage lasts for 1-3 weeks.
- Adult males live for 6-8 weeks and females live for 5-7 weeks.
- Weevil populations can be reduced by using traps baited with rotted plant materials, such as palm tissue, pineapple and sugarcane treated with an insecticide or synthetic aggregation pheromones (Rhynchophorol).
- Sugarcane and pineapple attractants should be replaced after 2 weeks.
- Bait should be safely disposed of and replaced.
- The pheromone can attract weevils within a radius of 1km and its efficacy lasts for 4 weeks.
- Traps are more effective during the dry season when the weevils are most active in the cooler night temperatures.
- Continue trapping year-round to maximize the impact in reducing the population of weevils.

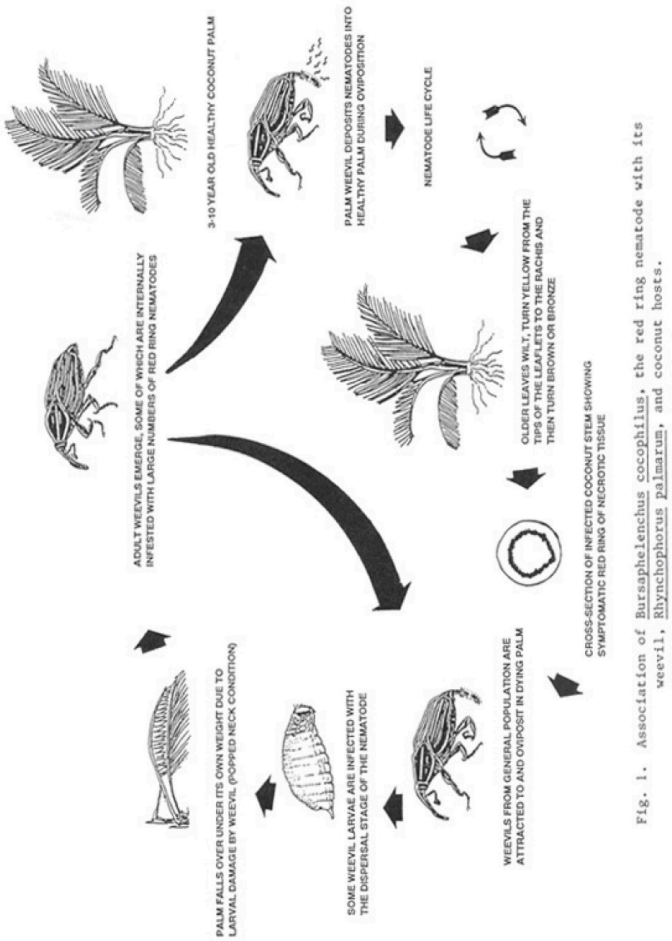

Fig. 1. Association of Bursaphelenchus cocophilus, the red ring nematode with its weevil, Rhynchophorus palmarum, and coconut hosts.

Ministry of Agriculture, Land and Fisheries

The Caribbean Forum of ACP States CARIFORUM

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ALLIANCES FOR ACTION

SOUTH AMERICAN PALM WEEVIL, VECTOR OF RED RING NEMATODE

Rhynchophorus palmarum

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South American Palm weevil (SAP weevil)

- Attacks crown (meristem); spear and young leaves turn yellow and tree may die within a few weeks.
- Bores into trunk leaving trail of holes filled with chewed fibre casts and liquids.
- Fibrous cocoons appear within raches of leaves; these eventually split open, leaving smell of rotting matter.
- Highest populations occur during the dry season.
- About 30 larvae can kill a tree.

Spread of Red Ring nematode (Coconut palm nematode)

- Adult female SAP weevil (***Rhynchophorus palmarum*** L.) is the vector of the Red Ring Disease.
- The weevil internally infested by the red ring nematode ***Bursaphelenchus cocophilus*** emerges from exit holes in an infected tree.
- Females deposit the juvenile nematodes on healthy coconut palms while laying her eggs, usually at the leaf axils.
- Nematodes invade the parenchymatous tissue of the oviposition wounds in a band where the red ring develops, feed and reproduce in the palm tissues.
- Infection results in the death of the trees.

Symptoms

- **Yellowing of tips of young leaves.**
- **Widespread browning of leaf lamina and cessation of growth.**
- **Abnormal premature nut fall.**
- **Withering and rotting of inflorescences.**
- **Orange to red-brown ring of discoloration in cross-sectioned lower stem.**

Management

- Control of the disease is currently limited to efforts to control the South American Palm weevil.

Cultural:

- Avoid the cutting of green leaves. If needed, cut about 120 cm away from the stem in order to prevent successful inward movement of the grubs through the cut end to the crown.

Mechanical:

- Remove and destroy (burn) trees infected with Red Ring Disease or heavily infested with larvae.

Chemical:

- Set up attractant or pheromone trap for SA palm weevil (with insecticide) at 0.6 to 1m height to trap and kill the beetles.
- Insecticide may be applied to affected trees to prevent infection or visiting weevils.
- Contact insecticides are sprayed against adults, eggs and pupae.
- Systemic insecticides, which plants absorb and incorporate in their tissues, can kill concealed larvae.