

Red Palm Weevil — the hidden enemy of the coconut palm



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RED PALM WEEVIL MANAGEMENT AND CONTROL

The Red Palm Weevils *Rhynchophorus ferrugineus* F. is a dreaded pest of the coconut palm. In India, the pest is present in almost all the coconut growing tracts, but as a serious pest only in Kerala, Karnataka, Tamil Nadu, Assam and Maharashtra. The severity of pest damage is confined to certain endemic pockets such as areas having high water table and the associated luxuriant growth of the palm, areas affected by leaf-rot disease found superimposed on the root (with) affected palms and the bud rot disease.

Damage

Normally, palms below the age of 20 to 25 years are more susceptible to weevil infestation. The female weevil scoops out small holes in soft tissues of the cut or damaged parts of the coconut palms and deposits eggs there. The eggs hatch in two to three days' time and grubs start tunnelling to the live tissues of the palm. Feeding by a number of grubs or feeding by a few in the bud region results in the death of the palm. Being an internal feeder exit holes are tunneled only at the time of pupation and the presence of the pest can not be detected at an early stage.

Diagnostic symptoms

The diagnostic symptoms manifested at a late stage of weevil infestation are the presence of holes, oozing out of viscous brown fluid and extrusion of chewed up fibres through the holes, longitudinal splitting of leaf bases and withering of central spindle. In severe and later stages of infestation the sound of gnawing and breaking of fibres could be heard in silent environment. Quite often the infestation would become evident only when the growing point of the palm is damaged and the crown is toppled.

Control

Field sanitation and cultural operations are important components to prevent weevil infestation.

1. Clean the crown of palms periodically to prevent decaying of organic debris in leaf axils.
2. Avoid cuts and injuries.
3. When green leaves are cut, cut them at 120 cm away from the base.
4. Cutting of steps in palms for easy climbing is to be avoided as this provides sites of egg laying for weevil.
5. As palms affected by the leaf rot and bud rot diseases are more prone to weevil infestation, they are to be treated with suitable fungicides, after that application of any insecticide to prevent egg laying by weevil is quite essential.
6. Destroy all dead palms harbouring the pest by cutting and burning.

Curative

The affected palms could be saved by injecting endosulfan 0.1%. Other insecticides effective against the pest include pyrethrins piperonyl butoxide (Pyrocon-E) or carbaryl (Sevin) at 1% concentration. Depending on the intensity of pest infestation about 1000-1500 ml of the insecticide suspension would be required. If the infestation is on the crown remove the affected and damaged portions and apply insecticide suspension. In case of infestation from trunk region, close all the holes with cement or plaster except the topmost one. Insert a funnel in to the hole and apply insecticide. If needed, additional holes may be drilled on different sides and apply insecticide suspension. A prophylactic treatment of filling leaf axils of young palms with 5% BHC dust + sand mixture in April, September and December reduces weevil infestation. Approximately 250 g BHC 5% dust would be required for one palm. Insecticide dilutions are given below:

Endosulfan (35 Ec) 3 ml in 1 litre water = 0.1%

Pyrocon -E $\frac{(2)}{20}$ 10 ml in 1 litre water = 1%

Carbaryl (50 wp) 20 g in 1 litre water = 1%

Trapping and killing of adult weevils help to reduce weevil population. Coconut logs, 50 cm long, split longitudinally and the cut surfaces smeared with fresh toddy fermented with yeast or acetic acid (vinegar), are effective in attracting weevils. Fresh coconut petioles after removing the rind and cut into pieces and kept in pots after applying fermented toddy also serve as a weevil trap. After setting such traps in the garden the traps are checked in the morning and weevils in the traps are collected and killed. Addition of BHC 50% @ 2g/trap will kill the trapped weevil, *in situ*. By this the daily examination of traps for collection and destruction of weevils can be avoided. Fermented toddy is prepared by addition of 5 g yeast or 5 ml acetic acid to 1,000 ml toddy.

Integration of different methods of weevil control alone would yield better results in the management of a tissue borer pest like red palm weevil. It may be noted that adoption of any single method and control operations against the pest by isolated farmers may not be quite effective in controlling this pest.

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