

ARECANUT PESTS AND THEIR MANAGEMENT

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Areca nut is prone to the attack of many insect and non insect pests during different stages of its growth. Interestingly, these insects are found to be infesting the palm from root to inflorescence or nuts. Hence, it is essential to minimize the pest attack in order to restrict yield reduction. The population of pests can be brought under check by practicing the recommended management strategies. Major arthropod pests infesting arecanut and their management are mentioned here under.

1. Root grub (*Leucopholis* spp.)

It is also known as white grubs or chafer beetles. The immature stages of the beetle damage the roots of areca palm. Three species are found associated with arecanut (*L. coneophora*, *L. burmeisteri* and *L. lepidophora*). The grub also damages coconut, banana, cocoa and coffee. It is difficult to identify the infestation in older palms. However, the young palms of less than three years old will show withering in the starting itself if it is infested.

Symptoms: The characteristic symptoms are uniform pale yellowing of leaves, dropping of fronds, decrease in yield, damaged roots, tapering of stem, toppling and sickly appearance of palm (Fig.1). In case of advance infestation the palm can be easily pulled out as most of its roots are damaged by the grubs. The beetle starts emergence during dusk hours

after the pre-monsoon shower (Alagar *et al.*, 2012).

Management:

- Provide adequate drainage facilities in the garden.
- Collection and destruction of adult beetles during their peak period of emergence in the evening hours between 6.30-7.30 PM, usually after 8-10 days of pre-monsoon shower.
- Digging and forking of soil around basin of palm to a depth of 10-15cm during May-June and September-October.
- Application of organic amendments like neem cake @2kg/palm/year is recommended during the onset of south west and north east monsoon. This practice will facilitate regeneration of new roots.
- Drenching of palm basin with 3 liters of chlorpyriphos solution (7ml of Chlorpyriphos 20EC/ liter of water) during May-June and September-October.
- Spray Imidacloprid 17.8 SL @ 2.5ml/liter of water in the interspaces of arecanut palm to ward off early instars of root grub.
- Application of liquid formulation of entomopathogenic nematode (*Steinernemacarpocapsae*) @ 1.5 billion IJs/ ha.



Fig.1. Root grub affected garden



Fig.2. Spindle bug infestation on younger leaves with necrotic linear lesions

- Spray Dimethoate (Rogor 30 EC) @1.5ml/liter of water and repeat the spray at 15-20 days interval if there is pest recurrence. The spray solution should reach innermost leaf axils.

3. Pentatomid bug (*Halyomorpha marmoreal* F.)

This pest causes tender nut drop in arecanut. The incidence is generally occurs during April- July.

Symptoms: The bug pierces tender nuts and suck kernel sap. The typical symptom of attack is premature shedding of nuts with pin-prick like black puncture marks. The infestation also led to blackish discolouration to kernel.

Management:

- Spray Dimethoate (Rogor 30 EC) @1.5ml/liter of water to the developing bunches.
- Spray Neem oil @ 5ml/liter of water is also effective.

4. Scales (*Aonidiella orientalis* and *Ischnaapsis longinostris*)

These sucking insects colonize on leaves, spathe, leaf sheaths and bunch and eventually

2. Spindle bug (*Carvalhoia arecae* Miller)

The bug population is at peak during August-September and generally high during monsoon and post monsoon periods.

Symptoms: The nymph as well as adult will suck sap from the unopened spindle leaves. They found below the spindle leaf on the inner most leaf axils. As a result of feeding, linear dark brown necrotic lesions will develop on spindles or leaves. Later necrotic regions tear off leaving a shot hole symptom. Severely affected spindles fail to open completely.

Management:

- Placement of 2g Thiamethoxam 25 WG in perforated poly-sachet in the innermost two leaf axils at an interval of 3 months. This practice is effective in managing severely infested gardens.



Fig.3. Pentatomid bug infestation

suck plant sap from the infested tissues. Though, the insect is found throughout the year, but copious population is noticed between October and February.

Symptoms: The scale insect sucks sap from leaves, rachillae and nuts. The feeding leads to yellowing of nuts and severe infestation leads to withering and shedding of nuts.

Management:

- Regulate shade in the garden
- Spray Neem oil @5ml/liter of water.
- Ladybird beetles, *Chilocorusnigrita* and *C. circumdatus* are effective against scale insect.



Fig. 4. Scale infested nut

5. Inflorescence caterpillar (*Tirathabamundella* Walker)

This lepidopteran caterpillar feeds on inflorescence mainly tender female flowers and rachillae.

Symptoms: Webbing of rachillae with silken, bore holes on spathe with frass (Fig.5), yellowing of spadices and delayed spathe opening are the associated symptoms of infestation.

Management:

- Cut and burn the infested female flowers and inflorescence.
- Open the spadices and spray Malathion 50 EC @ 2ml/liter of water.

6. Mites

Two mite species are reported from arecanut palm. They are red palm mite (*Raoiellaindica*) and white or jowar mite (*Oligonychusindicus*). Palms grown under the conditions of poor drainage and low organic and mineral matter are vulnerable for mite infestation (Devasahayam and Nair, 1982; Sathiamma, 1996). Ponnuswami (1967) opined that plants cultivated with proper irrigation are less prone to mite attack.



Fig.5. Inflorescence caterpillar damage

Symptoms: Both nymphs and adults colonize on the lower leaf surface and suck sap resulting in the formation of yellow speckles which coalesce to give a bronzed appearance to the leaves. In case of severe infestation, the leaves become yellow and later dry up.

Management:

- Provide proper irrigation
- Cut and remove the dried leaves due to mite attack.
- Conserve predatory mites *Amblyseiuschannabasavanni* which will check the population of phytophagous mites.
- Spray dimethoate @1 .5ml/liter of water application on the lower leaf surface.

7). Precautions to be taken while applying insecticides:

- Insecticides should be sprayed either in the morning or evening hours. Spraying during the hot midday hours should be avoided as strong sunshine may cause decay of the insecticide.
- Do not rely on same insecticides or insecticides with similar mode of action. Alternate the spray with insecticides of different mode of action to delay the development of resistant strains.



Fig.6. Mite infested leaves

→ Recommended dose of insecticides should only be applied. Avoid sub- and supra-lethal doses. Sub-lethal doses may not be effective as well as it facilitates development of resistant strains, while overdose of pesticide would invariably increase the cost, pollute the environment and lead to the undesirable residue problems.

- Wear face mask, goggles and gloves during spray operation to avoid contact with poison.
- Properly dispose the container and left over spray solution after spraying.

References

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