

RHINOCEROS BEETLE



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Rhinoceros beetle, *Oryctes rhinoceros* L. is one of the key pests of the coconut palm, which is distributed in almost all the major coconut growing tracts. Adult beetle is the destructive phase of the pest. This beetle also infests palms such as palmyrah, wild date, red oil, areca, date and sago.

Damage

Adult beetle bores through into the unopened fronds. Quite often the unopened inflorescence (spathes) are also infested and damaged. Thus, this pest causes both direct and indirect damage to crop. Infested fronds when opened show the characteristic geometric cuts. The functional leaf area of the palm is considerably reduced. It is estimated that this pest, on an average, causes 10% loss in production of nuts. Further, the injured portions may attract pests such as red palm weevil as well. Repeated infestation to the growing point may even lead to the death of the seedlings.

The pest breeds in decaying organic debris such as farm-yard manure, rubbish heaps, dead coconut logs, coir dust or mulched and buried coconut husks mixed with other decaying materials. The egg to adult stages

of the beetle are completed with in a period of six months. The peak period of incidence of the beetle on the crowns of palms is during the monsoon, June to August.

Control

Spraying the breeding places of the beetle such as, cattle dung, compost and other decaying organic debris with BHC/carbaryl 0.01% is very effective in bringing down the pest incidence on palms. This prevents the multiplication of the pest in the breeding grounds. For treatment of the breeding places thoroughly mix BHC/carbaryl 50% w.p. @ 350g/3/m³ of cowdung/ breeding material. Add sufficient quantity of water depending upon the moisture content of the breeding material. The treatment is to be repeated at 3 months' intervals. By this treatment alone for a period of five years, the pest incidence could be brought down from 40 to 5% and an increase in yield to the tune of 5-6 nuts per palm per year could be achieved.

Fill the innermost 2-3 leaf axils of the palm, at 2-3 months' intervals, with BHC 5% dust + sand in equal proportion (100 g each per palm). This is an effective prophylactic measure against the pest.

Mechanical control by hooking out the beetles from palm crowns during the peak period of infestation in June, July and August helps to reduce the beetle population. The bore holes left by the beetle are to be filled with BHC 5% dust + sand, so as to prevent further entry of the beetle and reinfestation by the dreaded red palm weevil.

Field sanitation by the disposal of dead and decaying organic debris and regulation of moisture content of the breeding material are also beneficial in preventing multiplication of the beetle.

Pest management by the integration of the mechanical, cultural, chemical and sanitational methods of control yields quicker results than that obtained with the individual method of control by the chemical treatment of breeding sites only.

The green muscardine fungus *Metarhizium anisopliae* causes heavy mortality of the grubs during the monsoon period, when the low temperature and high relative humidity prevailed. This fungal pathogen can be used for biological suppression of the pest.

Baculovirus of *Oryctes* is one of the most successful microbial control agents ever employed against an insect pest. Infection by this viral pathogen results in reduction of longevity of beetles by 40% and fecundity by 95-100% in female beetles. This pathogen was successfully introduced to Minicoy, Lakshadweep, which effected drastic decline in pest population and crop damage.

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