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PESTS OF COCONUT PALM

THE BLACK PALM WEEVIL

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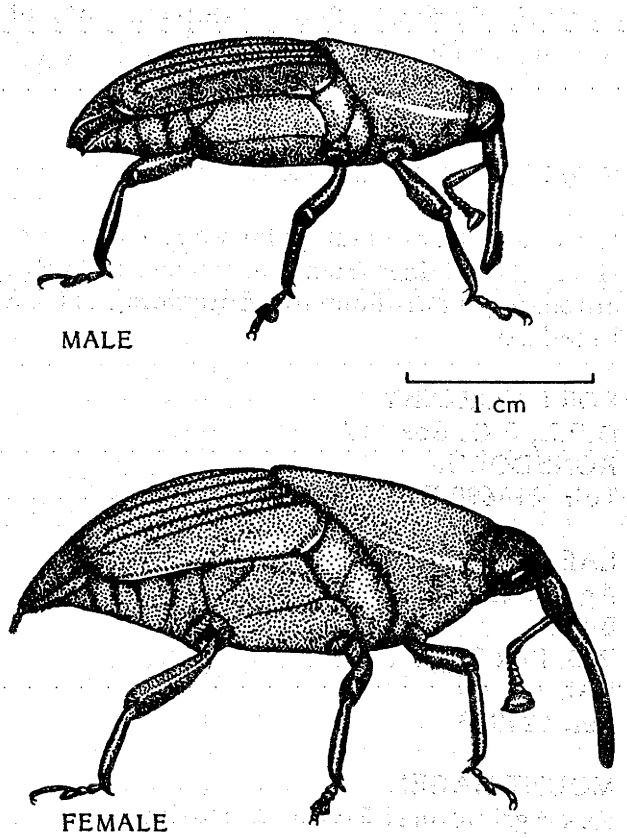
INTRODUCTION

The black palm weevil, *Rhyncophorus bilineatus* is a very damaging pest of coconut palms in Papua New Guinea. It occurs in all areas of the country where coconut palms are grown. The weevil is a secondary pest and will only attack coconut palms if they have already been damaged through knives, slasher or roller cuts and rhinoceros beetle damage. Although this weevil is a serious pest of coconut palms, very little is known about it.



Adult black palm weevils, about 2.5 times natural size. Top: male; bottom: female.

DESCRIPTION

Adult black palm weevils are dark brown to black, depending on age. They vary in length from 24 to 38 mm. They have a long rostrum (snout), and the elytra (hard fore wings) do not completely cover the abdomen. On the elytra, there are longitudinal lines. The males have brush type hairs at the tip of the rostrum and are usually smaller than the females.

BIOLOGY

The adult weevils are attracted to fresh wounds on palms. Both the adults and the larvae feed on fresh palm tissues. Females lay eggs on the fresh wound and the life cycle is completed on the wounded live palm.

The larvae (grubs) are creamy-white in colour, C-shaped, without legs and are normally found in wounds of live palms. The life cycle of the weevil is as follows:

Egg	- 3 days
Larva	- 3 months
Pupa	- 3 weeks
Adult	- 3 months

The larvae pupate (enter the resting stage) in pupal cases made out of coconut tissue fibres. The larvae and the adults are responsible for the destruction of palms.

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ECONOMIC IMPORTANCE

Damage by black palm weevils is often an economic problem and large stands of palms can be lost. The weevils enter palms through primary damage (knife cuts, slasher or roller cuts and rhinoceros beetle feeding channels) on the palms. The weevils can also enter palms beneath the exposed apron. Bacterial rot develops around the feeding channels and palms die from damage to the heart of the palm.

The weevils also attack sago palm (*Metroxylon* spp). In some areas of Papua New Guinea the weevil grubs are farmed, harvested and eaten as a source of protein in villages. This is dangerous for coconut growers in these areas.

CONTROL METHODS

An acceptable level of control can be achieved by a combination of several methods.

Biological control

No effective biological control agent has been found as yet. A fungus disease called the green muscardine fungus has been found but its effectiveness is limited. The fungus is present in the field, but at a very low level. This level can be increased by growing the fungus in the laboratory and distributing it on coconut palms. Some control can be achieved but the spread of fungus is limited.

Cultural control

If no damage is done to the palms through knife cuts, slasher or roller cuts, and if rhinoceros beetle damage is prevented, the black palm weevils can be controlled. Any damage that does occur to the palms should be plugged or covered with a creosote-based preservative to stop the entry of the weevils. The exposed apron of the palms should be covered with soil.

Chemical control

The Department of Primary Industry recommends chlordane for the control of weevils attacking the bases of palms. Every 3 months spray 2% chlordane around the base of the palms, at a rate of 0.5 litres per palm. There is no waiting period if the insecticide is used as recommended; that is, harvesting can be carried out at any time.

FURTHER READING

Arura, M. and Prior, C. (1980). Preliminary report of a laboratory study on the susceptibility of *Oryctes rhinoceros* L., *Scapanes australis* Boisd. and *Rhyncophorus bilineatus* Montr. to two strains of an entomophagus fungus *Metarhizium anisopliae* (Metsch.) Sor. South Pacific Commission 3rd Regional Meeting on Plant Protection, Port Moresby, 28 April - 2 May 1980. Information Paper No. 5.

Prior, C. and Arura, M. (1982). Preliminary work in Papua New Guinea on the infection of some insect pests of coconuts with *Metarhizium anisopliae*. In *Proc. Invertebrate Pathology and Microbial Control*. Brighton, U.K. (Abstract).

Thistleton, B.M. (Ed). (1983). Recommendations for the control of pests. *Technical Report 83/4.* Department of Primary Industry, Konedobu.

FURTHER INFORMATION

If damage from black palm weevil is occurring, get advice from your nearest D.P.I. entomologist or didiman. Entomologists are based at:

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