

WEEVIL BEETLE PESTS ON OIL PALM IN PAPUA NEW GUINEA

Dr Mark Ero

Introduction

There are three main types (species) of weevils (a type of beetle) commonly found feeding on oil palm. They are all larger than and should not be confused with the important and beneficial oil palm pollinating weevil, *Elaeidobius kamerunicus*. Weevils are less of a threat to oil palm in PNG than the larger rhinoceros beetles. One type of weevil, may be found damaging leaflets of young oil palms; it is a small shiny grey weevil called *Oribius* sp. (Figs. 1 & 2).

The other small weevil, *Diocalandra frumenti* (Fig. 3) is commonly found on cut frond bases, but it is unlikely to become a pest, and it may be confused with *Rhabdoscelus obscurus* (Figs. 4). You can (and should) check on them in the relevant pest display boxes and on the posters that are in all plantation and OPIC offices.

Biology

Weevil beetles from oil palm are very variable in size with the largest found being *Rhynchophorus bilineatus* (Fig. 5). All the weevils are dark, while *R. obscurus* and *D. frumenti* may have russet or red patches on the dorsal (top) surface. *R. bilineatus* is usually entirely black, although some specimens may also show some red patches. Although they usually fly at night, one species may also be active during the day (see below).

Adult weevil beetles may also be found in among palm tissues (e.g. *Sparganobasis subcruciata* (Fig. 6) and *R. bilineatus*) as well as deep down among fronds.

Adult weevils, especially *R. obscurus* and *D. frumenti* are often found during the day on the freshly cut frond bases, where they congregate to feed on sap and to mate. *Rhynchophorus bilineatus* also flies low and fast during the day, although typically they seek out shelter and wait until dark. Recently identified as a localised pest of oil palm, *S. subcruciata* is exclusively nocturnal, and adults and larvae may be found within the trunk tissues, where larval infestations may cause extensive damage by their tunnelling and feeding activity within the trunk (Fig. 7).

Food plants and Damage

Weevils typically attack palms that have already been damaged, either to the main trunk or the fronds themselves. The larvae of one species, (*R. obscurus*) is also a major pest of sugarcane. Adult weevils feed on host sap exudate, and it is the larvae that cause the damage to the palms by boring into the tissues to feed. The relationship between this species and its possible attraction to palms from the odour arising from decay caused by the oil palm fungal pathogen *Ganoderma boninense* is suspected.

Sanitation and Control

Sanitation (keeping the palms and their surroundings clean) along with early planting and management of cover crop in the



Figure 1: *Oribius* sp. Scale bar = 5mm.



Figure 2: Leaflet damage caused by *Oribius* sp. to oil palm.

planting cycle is essential, as this removes potential feeding and shelter sites and it is encouraged as an essential component of the PNGOPRA Integrated Pest Management (IPM) strategy. As with other pests, planting of beneficial (nectar and shelter providing) plants will encourage natural enemies of weevils e.g. Tachinidae (Diptera). Control of weevils is seldom required, however if needed, the current recommendation is "hand-picking". *Oribius* ("Grey weevils" are unlikely to require control, and should be left, even though damage sometimes seems to cause concern with leaflet tissue removal ("skeletonizing") of leaflets (Fig. 2). These insects may be removed during routing young palm sanitation, if desired. The use of the insecticide Furadan (Carbofuran) granules sprinkled into the crown is discouraged, and PNGOPRA is researching alternatives. Fungal pathogens (*Metarhizium*) have not yet been used against weevils, however there are pheromones available

for use in traps for *R. obscurus* and *R. bilineatus* if required.



Figure 3: *Diocalandra frumenti* (mounted specimen). Scale bar = 5mm.



Figure 4. *Rhabdoscelus obscurus* (pair, male on L circled in red). The Sugarcane Weevil. Scale bar = 5mm



Figure 5. *Rhynchophorus bilineatus* male (L) and female (R). The Black Palm Weevil. Scale bar = 5mm

Importance of Regular Surveys and Reporting

Regular surveys for the presence or absence of weevils on palms are essential to enable Managers to know when to request a Pest Visit from PNGOPRA. Populations of the major weevils species may be monitored using synthetic sex attractants (refer to PNGOPRA for advice). During surveys, samples of weevils from palms should be collected and sent to PNGOPRA for confirmation of identity or for any follow up that may be required. Samples collected should **not** be sent in the white pollination bags or plastic bags, but be put into either ventilated plastic containers or tins, as the insects will either break out through the bags or die and rot inside them. A Pest Visit request should be emailed through to PNGOPRA, (the *e-mail* address is given in the contact details).



Figure 6. *Sparganobasis subcruciata*, The palm Base borer, an unsexed pair (dorsal view- pinned). Scale bar = 5mm



Figure 7. Example of damage caused by the larvae of *S. subcruciata* tunnelling a trunk.

Label information required is:

1. Locality where the sample was collected, Plantation, Division, MU, Section or Block?
2. Host plant: from what host plant were samples collected?
3. Date of collection. 4. Who made the collection

Authority to undertake oil palm treatment (TTI)—an important reminder

Plantations or Smallholder treatment team considering to undertake TTI with Methamidophos is reminded that this is not permitted by the PNG Department of Environment and Conservation (DEC) without written authority from PNGOPRA (Head of Entomology). Permission is granted through the possession of a signed Pest Recommendation form. Treatment teams are expected to received regular training in operational and Health and safety procedures.

For further information contact:

HEAD OF ENTOMOLOGY
Papua New Guinea Oil Palm Research Association
Inc.
Dami Research Station
West New Britain
Papua New Guinea.
Tel: +675 985 4015/4009
Fax: +675 985 4040
e-mail: entomology@pngopra.org.pg