



Information Sheet

8. PESTS

8.5 Soil pests

WHITE GRUB

Introduction

There are at least seven species of white grub associated with cane: *Hypopholis sommeri*, *Schizonycha affinis*, *Adoretus fuscus*, *Astinopholis* sp, *Anomola* sp, *Heteronychus licas*, *Maladera* sp.

Recent surveys (1997) showed that no one species is common to all regions of the industry, and some have restricted distribution. For example, *Schizonycha affinis* and *Hypopholis* species were most often found in the Midland regions, whereas *Astinopholis* species and *Heteronychus licas* were found most frequently in the northern coastal regions.

Biology

All species follow a similar general life cycle. Eggs are laid in the first few centimeters of the soil at the base of cane plants, over the period December to February. These hatch and the grubs develop over the period February to September. Typically, most grubs can be found within the first 30 cm of soil under or close to the cane stool.

The grubs have three developmental stages and grow larger at each stage (Figure 1). The grubs that do the most damage tend to be more prevalent from June onwards. The grubs pupate around September, descending below 30 cm in the soil to do so. Adults emerge from about October to December. There is only one generation per year.

Damage

In all species the grubs feed on the roots of the sugarcane plant, reducing growth and crop yield. However, in the species *Heteronychus licas*, damage is caused by both the grub and the adult. The grub feeds at the base of young shoots, causing a typical dead heart symptom. The beetles bore into the shoot just below the soil surface, but seldom penetrate more than 5 or 6 mm. Nevertheless, if

the shoots are less than 0.75 m high they will be killed, and this can lead to ratoon failure.

Control

No insecticide is registered for use against white grub, and control by natural enemies is not sufficient to prevent serious crop loss in parts of the industry.

Deep ploughing when a crop is to be ploughed out can expose the grubs to predation and desiccation. If conducted around mid-winter many of the large grubs would be killed, so reducing the subsequent adult population.

In the northern irrigated areas, where *H. licas* may be a problem, it is suggested that cane not be planted from August to January (over the period of adult activity). Slow germinating varieties should be cut early in the season, as ratoons are also susceptible to *H. licas* damage.

LESSER SOIL PESTS

Termites ('white ants')

In South Africa, termites (colloquially termed 'white ants') do not normally harm growing cane, although



Figure 1. Larval, pupal and adult beetle stages of typical white grub.

they may use it as a source of moisture during dry periods. Seedcane setts are occasionally attacked and germination impeded.

Cane planted near termite mounds grows more vigorously than does the surrounding cane, which suggests that the soil improvement brought about by termites may outweigh any harm that they do to sugarcane.

Identification

Termites are small, soft bodied, creamy coloured insects that resemble ants (Figure 2).

Biology

Termites are social insects and, like ants, they inhabit subterranean nests from which they forage. It is in the course of their foraging that they may attack cane at soil level, sometimes causing the stalks to collapse.

Control

It is usually difficult to identify and destroy the nest. Dipping setts in insecticide (as for eldana control) will protect the seed material.

No insecticide is registered for termite control in sugarcane.

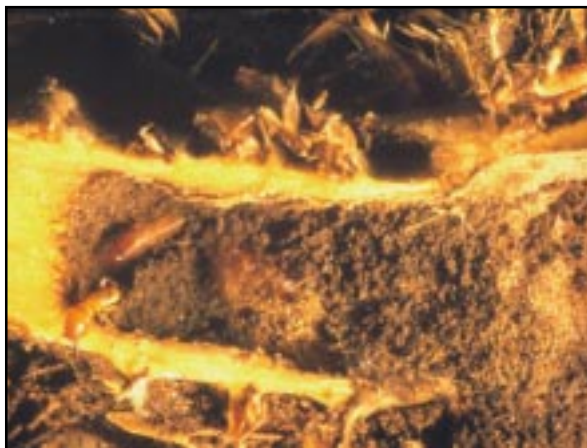


Figure 2. Base of sugarcane stalk damaged by termites.

NITIDULID BEETLES

Identification

These beetles are shiny black or dark brown in colour. They are 3 to 4 mm long, with distinctly clubbed antennae (Figure 3). Their wing covers (elytra) are truncated, leaving the hind end of the abdomen exposed. The larvae are slender, creamy white grubs that reach a length of about 6 mm.

Biology

Both larvae and adults are frequently found in cane setts which have failed to germinate. They may be attracted there by fungal growth or by fermenting vegetable matter. They are essentially secondary insects and are not necessarily a cause of germination failure.



Figure 3. Nitidulid beetle (not to scale).

Control

Pre-plant dipping of setts in an insecticide (as for Eldana control) will control these beetles. No insecticide is registered for their control in sugarcane.

MARGARODES SCALE ('EARTH PEARLS')

In South Africa, Margarodes scale is not considered an important cane pest. It deserves mention because, when present in large numbers, it often attracts attention.

Identification

It is commonly known as 'earth pearl' and is noticed usually when land is prepared for replanting. The scale may occur in very large numbers as small, glistening spheres on the soil surface, and may be mistaken for insect eggs (Figure 4).

Biology

The 'pearls' are the encysted larvae of a sucking insect which feeds on roots. In Australia it can be sufficiently damaging to warrant insecticidal control.

Control

In South Africa, control measures are not considered necessary.



Figure 4. Golden coloured cysts of Margarodes scale.

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