

Grata canegrub

Squamulata canegrub

(*Lepidiota grata*)

(*Lepidiota squamulata*)

Introduction

Grata and squamulata canegrubs overlap in their distribution from the Herbert to Isis regions. Grata canegrub also extends northward from the Tully to Mossman regions.

Grata and squamulata canegrubs are minor pests except in the Herbert region where grata canegrubs may cause significant losses.

Both species favour sandy or sandy loam soils. Squamulata canegrub favours fine coastal beach and river sand deposits, while grata canegrub may also be found in loamy silts and granitic loams.

Description

Adults of grata canegrub are relatively small, about 20 mm long, and are dark brown with a uniform covering of round white scales on the wing covers (Photo 1).

Grata canegrubs have a raster with two slightly curved single rows of 18-26 hairs (Photo 2). Grata larvae may be mistaken for small greyback canegrubs, but the greyback raster is less curved and the hairs are thinner and more widely spaced (Photo 3).



Photo 1: Adult of grata canegrub.

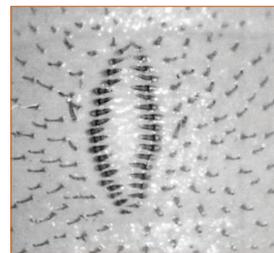


Photo 2: Raster of grata canegrub.



Photo 3: Raster of greyback is less curved and hairs are thinner and more widely spaced.

Adults of squamulata canegrub (Photo 4) are larger, about 22-32 mm long, dark-coloured with oval white scales which are prominent along the sides and underneath the abdomen and thorax.

Squamulata canegrubs have a raster with two straight single rows of 28-40 short, thick hairs (Photo 5). The rows diverge slightly at the front end.

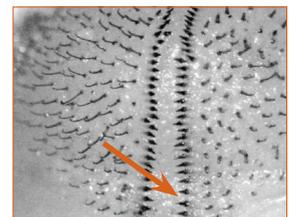


Photo 4 (left): Adult of squamulata canegrub.

Photo 5 (above): Raster of squamulata canegrub; note how the hair lines diverge at the front.

Biology

Grata canegrubs may have either a 1-year or a 2-year lifecycle, depending on climatic conditions. The majority of grata canegrubs (1-year variant), usually about 80%, go through a 1-year lifecycle (Figure 1). Rain triggers beetle emergence in November and December, with subsequent egg-laying. First and second instars feed lightly through to about March and then moult to third instars which feed aggressively through to June. These then burrow deeper into the soil and begin pupating in October. Rainfall then triggers beetle emergence from November and the cycle repeats.

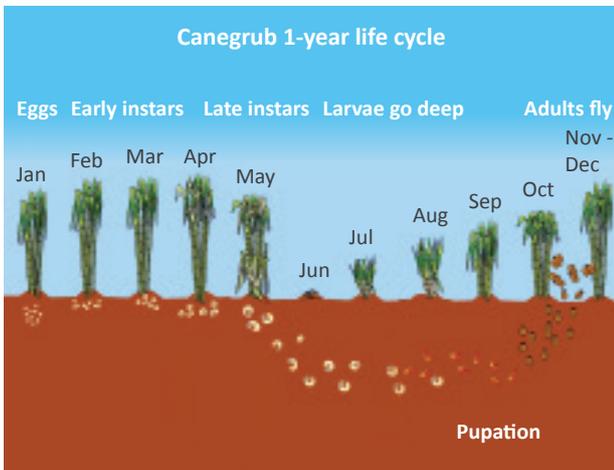


Figure 1: 1-year lifecycle of grata (1-year variant) and squamulata canegrubs.

About 20% of grata canegrubs (2-year variants) have not accumulated enough fat reserves to pupate in the first year, and these continue to feed after an inactive period over winter. Feeding may continue through to May in the second year, after which they pupate and emerge as beetles, usually after suitable rainfall from October in the second year (Figure 2).

Squamulata canegrubs have a 1-year lifecycle (Figure 1) similar to 1-year variants of grata and other 1-year lifecycle canegrubs such as greyback.

Damage

Both species feed on the roots of the sugarcane plant, resulting in reduced growth, lodging, stool tipping and, potentially, stool

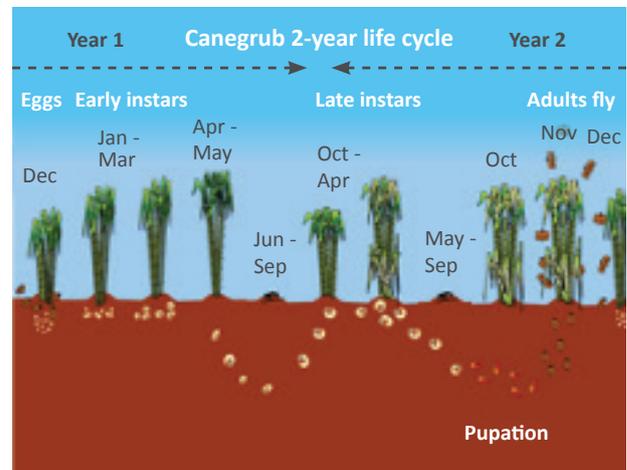


Figure 2: 2-year lifecycle of grata (two-year variant) canegrub.

death. Crop symptoms coincide with the main feeding periods of the grub species. Feeding by squamulata canegrub and 1-year variants of grata canegrub usually results in visual crop damage during the March to May period in semi-mature or mature cane (Photo 6), or gaps in ratoons after harvest (Photo 7). Symptoms of 2-year variants of grata canegrub are usually apparent in young ratoons during early summer (Photo 8).



Photo 6: Stool tipping in mature cane from 1-year canegrubs.



Photo 7: Gaps in young ratoons as a consequence of stool death from 1-year canegrubs.



Photo 8: Yellowing and reduced growth in young ratoons from 2-year canegrubs.

Management

The distribution of squamulata and grata canegrubs overlaps with that of greyback canegrub. Control of these secondary grubs is usually achieved whilst managing greyback in these areas.

On the sandy and sandy loam soils of the Bundaberg and Isis regions (where greyback does not occur), control is usually achieved during management of other southern canegrub species; southern one-year and negatoria canegrubs.

suSCon® Blue (active constituent – chlorpyrifos) has a specific registration for squamulata canegrub in plant cane, at a rate of 315g per 100 m of row. However, the use of suSCon® Blue has

largely been replaced by the use of either granular or liquid formulations of imidacloprid (suSCon® Maxi, Confidor® Guard, Senator®, Nuprid®), for the management of other canegrub species.

Additional useful information

Chandler K, Chapman F. 1989. *Notes on the lifecycle and pest status of Lepidiota squamulata Waterhouse and Lepidiota grata Blackburn (Scarabaeidae: Melolonthinae) in Queensland sugarcane*. Proceedings of the Australian Society of Sugar Cane Technologists 11, 100-105.

Samson, P. Sallam, N. Chandler, K. 2013 *Pests of Australian sugarcane – field guide*. SRA.

Samson, P. Chandler, K. Sallam, N. 2010. *Canegrub management and new farming systems*. Technical Publication MN10005. SRA.

Samson, P, Chandler, K, Sallam, N. 2012. *GrubPlan 2012 – Options for greyback canegrub management*. Technical Publication MN12001, SRA.

Information Sheet IS13037CG. *Canegrub management in the Bundaberg and Maryborough districts – survey in autumn: plan to manage canegrubs in spring*. SRA.

Information Sheet IS13035CG. *Childers canegrub*. SRA.

Information Sheet IS13039CG. *Greyback canegrub*. SRA.

Information Sheet IS13101CG. *Southern one-year canegrub*. SRA.

Information Sheet IS13103CG. *French's canegrub and Negatoria canegrub*. SRA.