Bundaberg canegrub
(Lepidiota crinita)

Introduction

Bundaberg canegrub is confined to the Bundaberg-Isis area, usually in forest loam and light clay-loam, and some sandy soils. It is often associated with other species (mostly with negatoria and Childers canegrubs, and to a lesser extent with southern one-year canegrub).

Description

Adults of Bundaberg canegrubs are bright red-brown with uniform puncturing across the upper surface. Each puncture has an elongated white scale about as long as the puncture. The antennae have only a small club.

Adults of southern one-year canegrubs are a similar colour but these do not have punctures or scales on their upper surface, and have large antennal clubs.

Bundaberg canegrubs have a raster with two single parallel rows of about 15 short hairs, with no clear gap between rows; it appears ‘zip-like’.

Biology

Bundaberg canegrub has a 2-year lifecycle (Figure 1). Rainfall triggers adult emergence in November-December. The adults do not feed. Females lay eggs into moist soil. First and second instars are initially distributed throughout the root zone, feeding on organic matter and living roots. Towards late summer and autumn they concentrate about the stool.

Up to 50 per cent of larvae can moult into third instar by May in their first year. Larvae cease feeding during cooler winter months and burrow into the subsoil, forming chambers where they over-winter.

By spring, all larvae have moulted to third instars, and resume feeding on cane roots. Initially they remove deeper roots, then move towards the surface. Feeding slows or ceases from March to May in the second year, as fully developed grubs burrow to the subsoil to pupate.

Adults remain in their underground chambers until triggered to emerge by suitable rainfall and temperatures.

Figure 1: 2-year life cycle of Bundaberg canegrubs.

Photo 1 (above): Adult of Bundaberg canegrub.

Photo 2 (left): Raster of Bundaberg canegrub.
Damage

Feeding larvae prune sugarcane roots. By the first autumn stools may become loose in the soil. Crop damage becomes most evident in spring and early summer. Crop losses are mostly due to reduced water and nutrient uptake (Photo 3) through the impaired root systems (Photo 4) and, in severe infestations, stool death. Severe weed invasion accentuates loss. Stool-tipping may occur in autumn, in semi-mature or mature cane (Photo 5).

Photo 3: Yellowing and poor growth in young ratoons caused by 2-year canegrubs. Healthier, non-infested cane is visible on the right.

Photo 4: Pruned root mass from third-instar canegrubs.

Photo 5: Stool tipping in mature cane due to reduced root mass.

Management

Blocks at risk of infestation should be monitored in autumn so that a decision whether to treat blocks in the next spring can be made early.

Second- or early third-instar Bundaberg canegrubs, or of other 2-year canegrubs, found during monitoring in autumn will be the same larvae causing damage in the next spring, after harvest.

Generally, treatment in the next spring is warranted at the following thresholds:

- If 2 or more ratoons are expected, then an average of more than 1 canegrub (any species) per stool.
- If 1 more ratoon is expected, then an average of 3 or more second instar Bundaberg canegrubs.

susCon Blue is the only insecticide registered for Bundaberg canegrubs, and gives 3 year control at a rate of 315 g/100 m of row.

However, control of Bundaberg canegrub is achieved when treating for Childers or negatoria canegrub on forest loams and sandy soil types. Registered insecticides for control of Childers canegrub are listed below. Only suSCon® Maxi is registered for use in dual rows, but trial results indicate that Confidor® Guard at 17 mL per 100 m of dual-row bed would be effective for 1-year control in plant crops and ratoons.

Information Sheet IS13037: Canegrub management in the Bundaberg and Maryborough districts – survey in autumn: plan to manage canegrubs in spring, provides information on monitoring and grub thresholds.
Product labels describe the correct methods of application.

**Registered controls and rates for control of Childers canegrub**

<table>
<thead>
<tr>
<th>Product (active constituent)</th>
<th>Dual row, 1.8 m or greater row spacing</th>
<th>Single row – all row spacings</th>
<th>Length of control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plant</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>suSCon® Maxi (imidacloprid)</td>
<td>225 g/100 m of bed</td>
<td>150 g/100 m of row</td>
<td>3 years</td>
</tr>
<tr>
<td>Confidor® Guard (imidacloprid)</td>
<td></td>
<td>11-16 mL/100 m of row</td>
<td>1 year</td>
</tr>
<tr>
<td>Senator® 700WG Nuprid®700 WG (imidacloprid)</td>
<td>5.5-8 g/100 m of row</td>
<td>1 year</td>
<td></td>
</tr>
<tr>
<td>Rugby® (cadusafos)</td>
<td>300-375 g/100 m of row</td>
<td>One crop for knock-down of grubs present</td>
<td></td>
</tr>
<tr>
<td>suSCon® Blue (chlorpyrifos)</td>
<td>315 g/100 m of row</td>
<td></td>
<td>3 years</td>
</tr>
<tr>
<td><strong>Ratoons</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confidor® Guard (imidacloprid)</td>
<td>11-16 mL/100 m of row</td>
<td></td>
<td>1 year</td>
</tr>
<tr>
<td>Senator® 350 SC Nuprid®350 SC (imidacloprid)</td>
<td>11-16 mL/100 m of row</td>
<td>1 year</td>
<td></td>
</tr>
<tr>
<td>Senator® 700WG Nuprid®700 WG (imidacloprid)</td>
<td>5.5-8 g/100 m of row</td>
<td>1 year</td>
<td></td>
</tr>
<tr>
<td>Impress 350 &amp; other generic products</td>
<td>11-16 mL/100 m of row</td>
<td>1 year</td>
<td></td>
</tr>
<tr>
<td>Rugby® (cadusafos)</td>
<td>300-375 g/100 m of row</td>
<td>One crop for knock-down of grubs present</td>
<td></td>
</tr>
</tbody>
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suSCon® Maxi and Confidor® Guard have largely replaced the use of suSCon® Blue and Rugby® for the control of canegrubs.

**Additional useful information**


Information Sheet IS13035CG. Childers canegrub. SRA.

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

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

Information Sheet IS13103CG. French’s canegrub, negatoria canegrub. SRA.