Caudata canegrub
Consobrina canegrub
Froggatt’s canegrub
(Lepidiota caudata)
(Lepidiota consobrina)
(Lepidiota froggatti)

Introduction

Caudata, consobrina and Froggatt’s canegrubs occur in Far North Queensland. They occur in ex-rainforest soils as the adults’ preferred feeding trees are rainforest species. Consobrina canegrub can be a significant pest whereas Froggatt’s and caudata are minor pests.

Each species tends to favour particular soil types and this behaviour and geographic location can also be used to help in identification:

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<th>Canegrub species</th>
<th>Main distribution</th>
<th>Preferred soil types</th>
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<tr>
<td>Caudata</td>
<td>Tully to Mossman, Atherton Tableland</td>
<td>Red volcanic and alluvial clay loams</td>
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<tr>
<td>Froggatt’s</td>
<td>Innisfail</td>
<td>Red volcanic clay loam</td>
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<tr>
<td>Consobrina</td>
<td>Gordonvale to Mossman</td>
<td>Sandy loams</td>
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Froggatt’s and caudata canegrubs frequently occur together in the Innisfail region.

Description

These 3 species differ both as adults (Photo 1) and as larvae. Adults of caudata canegrubs are shiny brown, with small and inconspicuous scales and a patch without scales in the middle of the abdomen. Beetles range from 21-34 mm long.

Adults of consobrina canegrubs are dark brown with oval white scales distributed evenly across the wing covers, and range from 25-29 mm in length.

Adults of Froggatt’s canegrubs are a dull felted brown colour due to a covering of yellow-brown hairs and are the largest of the three species, ranging from 30-38 mm in length. All three adult forms are about the same size as greyback but are generally larger than French’s.

Photo 1: Adults of caudata (left), consobrina (middle), Froggatt’s (right) canegrubs.

Adults of consobrina canegrubs may easily be mistaken for French’s canegrubs. Adults of Consobrina canegrubs lack scales on more than half the length of each body segment on the underside of the abdomen, resulting in relatively broad bands devoid of scales. French’s canegrubs have a greater covering of scales on the underside of their abdomen, resulting in narrow bands less than half the length of each body segment (Photo 2).

Photo 2: Adults of consobrina canegrubs (left) have much wider bands on the underside of the abdomen, than do French’s (right).
Caudata larvae have a pear-shaped hair pattern (raster) on the rear under-surface, with 32-40 short hairs on either side. The hairs meet at the rear end of the raster (Photo 3).

Photo 3: Raster patterns of larvae - caudata (left), consobrina (middle), Froggatt’s (right). Note: Consobrina’s raster pattern tapers into 2 distinct rows towards the bottom end.

Consobrina larvae also have a pear shaped raster, but with about 50 hairs arranged in 4 or more indistinct rows on each side. There is a clear path between each side of the raster, until it tapers to a distinct point at the rear end. At the taper there are 2 single rows of about 6 hairs extending towards the rear. Consobrina larvae may be mistaken for French’s canegrub, but can be distinguished from it as the latter’s raster does not taper to a point (Photo 4).

Photo 4:
Raster of French’s canegrub. Note that it differs from consobrina’s in that it does not taper to a point.

Froggatt’s larvae have 2 single rows of hairs which diverge away from each other at the rear end. A second inner row of 12-23 stout hairs occurs within the diverging main rows at the rear end of the raster. Froggatt’s larvae are usually noticeably larger than other canegrub species.

Biology

Consobrina canegrubs may have either a 1-year or a 2-year life cycle (Figures 1 and 2). The one-year variant is most common from Mossman to Cairns, whilst the 2-year variant occurs sporadically between Cairns and Gordonvale. In this area it frequently occurs along with French’s canegrub.

1-year variant of consobrina has a similar lifecycle to greyback canegrubs (Figure 1). Beetles emerge from October to January after suitable rainfall. Beetle flights occur after dusk to feeding trees. After mating the females return to the soil for egg-laying. Larvae develop through 3 instars with third-instar feeding extensively on cane roots from April to May. Fully fed third-instar grubs then burrow deeper into the soil during June and stop feeding. The grubs pupate from about July and beetles usually develop by September but remain in their sub-soil chambers and emerge after rainfall, usually by November.

Consobrina 2-year variant and Froggatt’s canegrubs have a 2-year lifecycle (Figure 2). These canegrubs have 2 distinct feeding periods separated by a non-feeding period from May to August. Grubs develop to the second-instar stage before burrowing deeper into the soil from April-May. In spring they return to the root zone, re-commence feeding and develop into third-instar grubs. Extensive feeding on cane roots may continue from August to April in the second year. Once enough fat reserves are accumulated the third-instar grubs burrow deeper into the soil and begin pupating. Beetles remain in their sub-soil chambers until triggered to emerge by rainfall, usually by November.

Caudata is unusual in that it normally has a 2-year lifecycle, but third-instar larvae develop by about March in the first year and continue to feed to about February in the second year. Feeding activity decreases over the June-August period of the first year, but the larvae remain in the root zone, unlike other species. Larvae pupate by July of the second year, and are ready to emerge as beetles by August. There is some evidence that a small percentage of caudata complete their lifecycle in 1 year. Caudata beetles generally begin their flights earlier than other species.

Warning Our tests, inspections and recommendations should not be relied upon without further, independent inquiries. They may not be accurate, complete or applicable for your particular needs for many reasons, including (for example) SRA being unaware of other matters relevant to individual crops, the analysis of unrepresentative samples or the influence of environmental, managerial or other factors on production.

Canegrub 1-year life cycle

Eggs Early instars Late instars Larvae go deep Adults fly
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov - Dec
Pupation

Figure 1: 1-year life cycle of consobrina canegrub (1-year variant).
Damage

Crop symptoms of 1-year consobrina coincide with their main feeding period from April-May; in semi-mature or mature cane. Damage is similar to that of greyback canegrub, with stool tipping and lodging, and stool death occurring when grub pressure is high. Evidence of stool death may be seen as gaps in young ratoons following harvest.

Crop symptoms of 2-year consobrina and Froggatt’s canegrubs are usually apparent in young ratoons; as newly moulted third – instars begin their main feeding period. Symptoms usually include yellowing of cane leaves and poor growth of the stool.

Caudata canegrub symptoms are a combination of that seen in both 1-year and 2-year lifecycle canegrubs. However, damage is most obvious in the April-May period in semi-mature or mature cane, similar to typical 1-year symptoms. Some 2-year type symptoms are visible in young ratoons from October.

Management

These three canegrub species overlap in their distribution with greyback canegrub and as such control is usually achieved whilst managing greyback.

suSCon® Blue (active constituent – chlorpyrifos) is registered specifically for consobrina canegrub control:

However the use of suSCon® Blue has largely been replaced by suSCon® Maxi or Confidor® Guard, (active constituent – imidaclorpid), for managing greyback and negatoria canegrubs, in north Queensland.

Additional useful information:


Information Sheet IS13039CG. Greyback canegrub. SRA.