

Childers canegrub

(*Antitrogus parvulus*)

Introduction

Childers canegrub is native to southeastern Queensland and is the most damaging pest of sugarcane in this area. It occurs on the heavy clay soils of the Bundaberg, Isis and Bauple areas, especially on the red volcanic soils.

Description

Adults are 18-23 mm long, yellowish brown to almost black (Photo 1). Adults do not have the white scales some other grub beetles have. Males are very large, with seven segmented clubs on the ends of their antennae. Childers canegrub larvae have a pear-shaped patch of hairs on the undersurface of the rear end of the grub. Each side of this patch has about 35 hairs in three to four distinct rows (Photo 2).



Photo 1: Adult Childers canegrub.

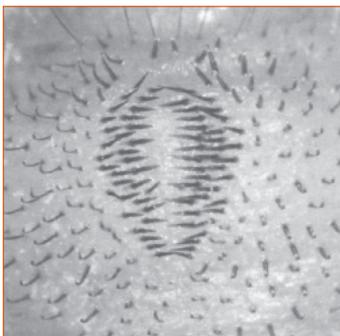


Photo 2:
Pear-shaped patch of hairs on the undersurface of the rear end of the Childers canegrub.

Childers canegrub can be confused with *Negatoria* and French's canegrubs. The main differences are: the Childers canegrub central naked area within the hair pattern is oval as opposed to having straight sides, and it is blocked off by a number of hairs at each end. Larvae also tend to be smaller than the other species.

Biology

Childers canegrubs have a two-year life cycle (Figure 1). Adults emerge after good rains in November to January. Females are poor fliers. They emit a pheromone to attract males, and mate on the soil surface. Only males are attracted to lights.

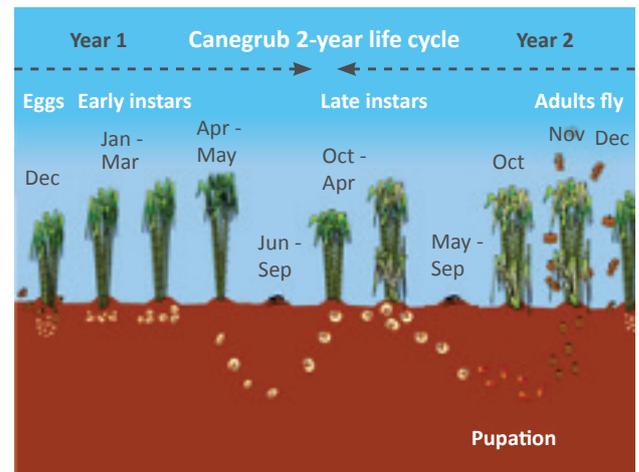


Figure 1: Childers canegrub life cycle.

Eggs hatch after about two weeks, with egg laying usually finished by January. First-stage grubs (first instars) feed mainly on organic matter in the soil for about two months and cause little damage to cane roots. Second-stage grubs (second instars) tend to congregate under the cane stools, and most continue to feed through the first winter of their life. In early spring, the grubs change to the third stage (third instars).

These grubs feed heavily on the roots and stools, and grow rapidly until about January.

This is when most damage and yield loss will occur. Feeding decreases after this, but the grubs do not pupate until the second winter or early spring.

Pupae form deeper in the soil. Beetles develop in about four to six weeks after the pupae form, but remain in a chamber in the soil until suitable weather conditions trigger their emergence. At any one time, there may be two populations of Childers grubs, separated by twelve months of age, in any one field. For example, during February there may be fully-fed third-stage grubs (14-15 months old) and first stage grubs (2-3 months old).

Damage

Feeding Childers canegrub larvae prune roots from newly ratooning sugarcane during spring and early summer. Ratoons grow poorly, leaves turn yellow, and, in severe cases, the stools will die. If the damage is not too severe, plants may recover during later summer and early autumn. An average of about three grubs per stool will cause economic losses. Damage usually occurs in patches within fields.

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.

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.

Second- or early third-instar Childers 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 Childers canegrubs.

Additional useful information

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

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

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

Registered controls and rates for control of Childers cane grub			
Product (active constituent)	Dual row, 1.8 m or greater row spacing	Single row – all row spacings	Length of control
Plant			
suSCon® Maxi (imidacloprid)	225 g/100 m of bed	150 g/100 m of row	3 years
Confidor® Guard (imidacloprid)		11-16 mL/100 m of row	1 year
Senator® 700WG Nuprid®700 WG (imidacloprid)		5.5-8 g/100 m of row	1 year
Rugby® (cadusafos)		300-375 g/100 m of row	One crop (for knock-down of grubs present)
suSCon® Blue (chlorpyrifos)		315 g/100 m of row	3 years
Ratoons			
Confidor® Guard (imidacloprid)		11-16 mL/100 m of row	1 year
Senator® 350 SC Nuprid® 350 SC (imidacloprid)		11-16 mL/100 m of row	1 year
Senator® 700WG Nuprid®700 WG (imidacloprid)		5.5-8 g/100 m of row	1 year
Impress 350 & other generic products (imidacloprid)		11-16 mL/100 m of row	1 year
Rugby® (cadusafos)		300-375 g/100 m of row	One crop (for knock-down of grubs present)