

Canegrub management in the Bundaberg and Maryborough districts

Survey in Autumn: Plan to manage canegrubs in spring

Autumn is the time to plan grub management for the next crop. Monitor it now so that you can cost-effectively combine grub-management plans with other crop routines in spring.

Do you want value-for-money from water, fertiliser, and weed-control inputs without unexpected hindrance by canegrubs? Do you want to **limit** the costs for canegrub control to only the 'at risk' fields? Would you prefer maximum control by treating early in the spring, rather than treating late in spring after most of the damage is already done? Do you want to plan your harvesting and other operations and prepare for the most suitable cropping option, for example a soybean rotation, rather than ratooning grub-infested cane?

If so, by monitoring for canegrubs during autumn you can make **informed** decisions. Rather than guessing, you can **plan** canegrub management at the ideal time in spring.

For those who want to 'have a go' at monitoring, the steps outlined here may be easier and quicker than you think. It is recommended that you talk to SRA and/or your Productivity Services staff for some simple tips and coaching.

Monitoring canegrubs and risk of damage

Assess risk of damage to a crop (plus its next ratoon) primarily from grub numbers in the field **and/or** in adjacent fields during autumn. Be aware that beetles can move to new fields nearby, especially if you plough out their original home at the end of the year.

One-year cycle canegrub numbers and damage in autumn usually increases for the next crop. With two-year cycle canegrubs, those developing in autumn will damage in spring the same year; but matured canegrubs will become beetles by spring and start another larger generation, to damage young ratoons in the next crop.

How do I go about monitoring?

Dig out sugarcane plants and create holes 40 cm x 40 cm x approximately 40 cm deep. Shake most of the soil off the roots and from between stalks, and collect the 'grubs'.

(Replant stool as deep as possible and pack the soil). The chart will help you identify true canegrubs – those with a pattern of darker hairs underneath at the rear end – from organic-feeder and Christmas grubs with no pattern. A 3-5 X-power hand-lens will help. Write down the number of canegrubs **for each stool**.

How many holes (per 2-4 ha bed or field)?

Dig 5 holes – for example, 1 near each corner and the middle.

- If 4 of 5 holes have one or more canegrubs (total = 7 or more), the infestation may require action in spring. Cease digging.
- If nil canegrubs in 5 holes, there is little immediate risk. Cease digging.
- If few or scattered canegrubs (1-3 holes with one or more, total less than 7), dig at least 5 more holes around the field. If concentrated in one location (for example, soil type?), then dig 4-5 more holes in that section.

How many canegrubs cause damage?

Calculate canegrubs/stool for the field or section. Population averages and risk thresholds where treatment with a liquid imidacloprid product next spring **may be** justifiable are:

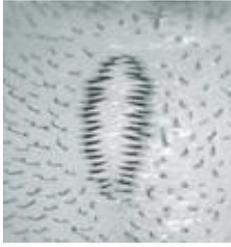
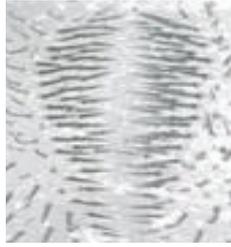
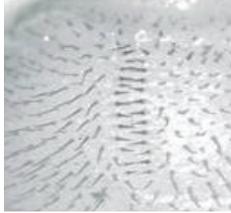
Southern one-year canegrubs | Populations 1-1.5/stool or more usually become damaging (more than 3/stool) next year.

Developing two-year canegrubs | About 3 Childers or Bundaberg, or 1.5 negatoria canegrubs per stool, will noticeably damage the ratoon next spring.

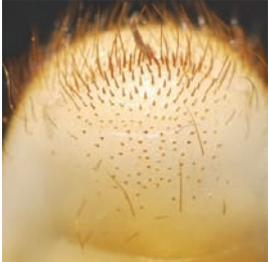
Fully developed two-year canegrubs | Around 1-2 mature canegrubs in autumn (= pupae = beetles in spring) usually pre-empt damage in 15-18 months; which can also be prevented by treating with a liquid imidacloprid product next spring.

Remember: In deciding strategy for 'at risk' fields, always check nearby 'risk' fields (for example, old infested? ratoons) also; sample the same way as above.

Common canegrubs: Bundaberg-Maryborough

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| <p style="text-align: center;">Southern one-year canegrub Sandy forest soils</p> <div style="display: flex; justify-content: space-around;">   </div> <p>Pattern of two curved single rows of 19-31 thick hairs each side</p> <p>No scales on back, slight pattern of dimples</p> | <p style="text-align: center;">Canegrub head</p>  <p>Smooth, tan coloured, no wrinkles or stipples</p> | <p style="text-align: center;">Negatoria canegrub Forest loam, light clay soils</p> <div style="display: flex; justify-content: space-around;">   </div> <p>Pattern pear-shaped, about 50 long hairs each side</p> <p>Round white scales on back. Bands on belly</p> |
| <p style="text-align: center;">Bundaberg canegrub Sandy soils, red volcanic soils and forest loam</p> <div style="display: flex; justify-content: space-around;">   </div> <p>Pattern of two close parallel rows of about 15 short hairs each side</p> <p>Small elongate white scales on back</p> | <p style="text-align: center;">Canegrub rear-end</p>  <p>Pattern of hairs in hair-field in front of anus</p> | <p style="text-align: center;">Childers canegrub Red volcanic soil</p> <div style="display: flex; justify-content: space-around;">   </div> <p>Pattern oval-shaped, about 35 long hairs each side</p> <p>Glossy 2-tone back. No scales</p> |

Non canegrub species

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| <p style="text-align: center;">Christmas grub and adult beetle</p> <div style="display: flex; justify-content: space-around;">   </div> <p>No pattern in hair-field</p> <p>Stippled, crinkled gold/light tan head</p>  <p>Golden, iridescent</p> | <p style="text-align: center;">Red headed grub and adult black beetle</p> <div style="display: flex; justify-content: space-around;">   </div> <p>Cherry red or black stippled head</p> <p>No pattern in hair-field</p> <p>Lines of pits on back. Glossy brown or black. Males with 'horn' ></p>  |
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Need help to identify canegrubs and decide options?

Drop some or all of the grubs into a container of water with a squirt of detergent. Later, rinse out the dirty water and refill with 60-70% methylated spirit. Take specimens to your Productivity Service to confirm their identity, and to discuss your options, treatments, fallow or rotation-crop. Remember, bring numbers for individual stools.