

# Sugarcane top borer (*Scirpophaga excerptalis*)

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## EXOTIC PEST DETECTION & SAMPLING GUIDE



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## Background

Sugarcane top borer is one of the highest exotic pest risks for the Australian sugar industry. This species is a major pest of sugarcane in Asia, but is also known to attack sorghum. Infestation can result in significant yield losses. This species occurs widely across southern Asia, from India across to southern China, and down to Indonesia and Papua New Guinea. It is not present in Australia.

## How would I identify Sugarcane top borer?

### Identification by morphology

Adult Sugarcane top borer moths are bright silvery white in colour with dark, almost black eyes. There may be one small black spot on each wing. The wingspan of males is around 22 to 28 mm. Females are somewhat larger, with a wingspan of around 26 to 35 mm. Females have distinctive orange tufts at the end of their abdomen that usually protrude beyond the folded hind wings when resting. Larval (caterpillar) stages reach up to 35 mm long. They are a creamy off-white colour with a brown head and a brown line running along the back (Figure 1).

### Identification by damage

Unlike other sugarcane borers, larvae of this species do not tunnel into cane stalks and, therefore, do not damage the internodes. Instead, they move towards the growing point. The initial damage they cause is mainly dead hearts and a bunched-top appearance of shoots. Other symptoms of infestation are small parallel rows of 'shot holes' visible on infested stalks, red streaks caused by mining inside the mid-rib of leaves, and the accumulation of frass (faecal pellets) caught in the lower leaves.

### How do I scout for Sugarcane top borer?

Early indications of the presence of moth borers on sugarcane include egg clusters on the upper side of the

leaves near the growing point. The egg clusters are usually around 13 mm long and are covered by brownish-yellow hairs from the anal tuft of the female adult moth.

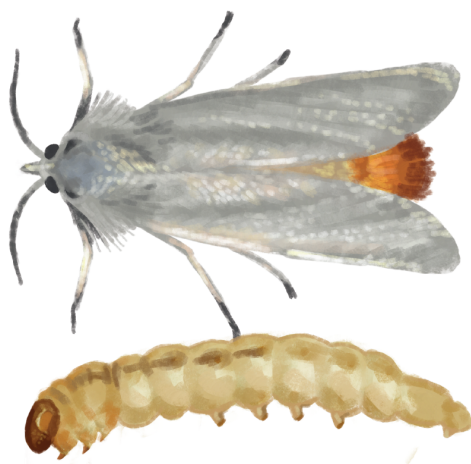
Growers should be on the lookout for any unusual moths within cane plantations and any unusual damage to growing cane plants, including exit holes left by emerging moths. Sugarcane top borer moths, especially females, are quite distinctive in appearance. They are mainly only active at night and are relatively short-lived, but they can be trapped using pheromone lures.

To check for the presence of developing larvae, cane plants can be sampled by slicing stems horizontally and then visually inspected them. Discriminating Sugarcane top borer larvae from those of other pest moth borer species is difficult and expert advice should always be sought.

### Could it be confused with an endemic species?

Sugarcane weevil borers are an established pest in almost all cane-growing areas of Queensland. However, weevils are beetles and the larvae of this pest show morphological differences to that of the Sugarcane top borer caterpillar – most obviously, they lack legs. Damage caused by weevil borers is also quite different, since they tunnel into mature stalks rather than attack the tops of growing cane plants.

Figure 1. Sugarcane top borer (*Scirpophaga excerptalis*) female adult and larvae



This guide covers the **Sugarcane top borer** (*Scirpophaga excerptalis*). Check the additional exotic guides for specific information for the other two possible exotic sugar cane borers.

# What should I do if I suspect Sugarcane top borer?

Sugarcane top borer is a priority plant pest, exotic to Australia. If you find an unusual moth or caterpillar among sugarcane of similar size and appearance to that shown in Figure 1, call the **Exotic Plant Pest hotline on 1800 084 881**. The hotline will divert you to the appropriate state biosecurity agency, which will investigate the suspect detection further. To support an investigation you should take note of:

- The detection location (take a GPS coordinate using your phone);
- The host plant on which the suspect detection has been made;
- Damage symptoms (e.g. bunchy tops, shot holes on stalks); and
- A photo of all life stages observed (taking close-up photos of the same specimen from multiple angles is most useful for identification).

## Taking a sample

Taking a sample will also assist in a biosecurity investigation. Collect infested cane stalks in a ziplock bag – double bagging of specimens is ideal. Label the bag with the date and collection location and keep in the fridge in case a larval sample is needed by the biosecurity agency.

Figure 2. Reporting decision making for Sugarcane top borer (*Scirpophaga excerptalis*)

If you answer yes to EITHER of the following questions, it could be one of three **exotic sugarcane borer moths**. Report it!

**1** Do you see clusters of 10 to 300 eggs on the tops or bottoms of leaves?

**2** When you crack open a stem, do you find white, cream or pink coloured grubs with **visible legs** behind the head and along the body? (you might also see pupae inside stems)

**Yes**

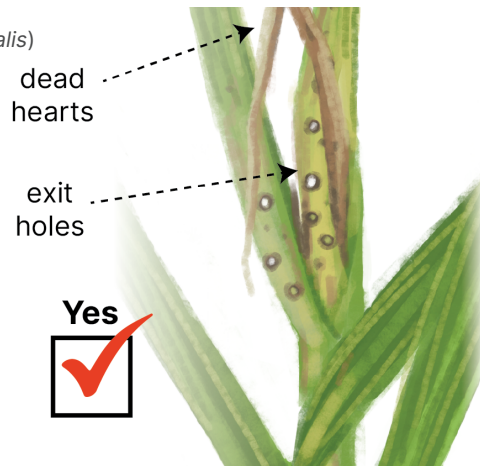
**Yes**

**Additional possible signs**

**3** At night time, you might see white, cream or brown coloured adult moths, 2 to 4 cm long.

*S. excerptalis*      *S. griseocens*      *C. terrenellus*

legs (and prolegs)



But if the grubs have **NO** visible legs, it is likely the already established sugar cane weevil.

But if you see adult beetles, it is likely the already established sugar cane weevil.

<sup>1,2</sup> bugwood.com, Pest and Diseases Image Library, CC BY NC 3.0  
 Figure design and all other illustrated components: Elia Pirtle, eliapirtle.com

### More information

[Sugarcane Research Australia information sheet IS 15001 Exotic Borers \(2015\)](#)

### References

- Anderson, S & Tran-Nguyen, L (2012) Top Shoot Borer (*Scirpophaga excerptalis*) Updated on 11/30/2021 [Available online: PaDIL](#)  
 Sallam, M N & Allsopp, P G (2003) Preparedness for borer incursion. SRDC Final Report SD03014 BSES Limited

