Banana weevil borer

Cosmopolites sordidus

(Control options)

Management guidelines

Cultural

The use of clean (banana weevil borer-free) planting material and maintenance of trash and weed free areas near plants are two important factors in reducing the impact of this pest in bananas. Ideally planting material should be tissue culture plantlets from an accredited QBAN nursery (Figure 1). If you are unable to use tissue culture the next best option is to use planting material from your own farm sourced from a block that is free from pest and disease.

Figure 1 Banana planting material from clean sources, such as accredited plant nurseries, ensures that no banana weevil borers are present.

When planting into old banana land, allow at least six months of fallow after all the old banana material has rotted down. This will help prevent a carryover of weevil borer adults. Glyphosate injection for crop removal is encouraged to ensure adequate plant destruction to reduce weevil population levels.

Biological

A large range of general predators including flatworms, ants, beetles and cane toads assist in reducing banana weevil borer numbers. Research is being undertaken to determine the effectiveness of insect parasitic nematodes, which could prove suitable as biological control agents for banana weevil borer control.

Some international research, and research in NSW have shown some success using laboratory assays of entomopathogenic nematodes, *Steinernema* spp & *Heterorhabditis* spp. However, to date, Queensland-based research has been unable to replicate positive results in the field, instead showing no difference between treated plants and untreated (control) plants, indicating that more in-field research is still needed.

Figure 2 Dead adult banana weevil borer infected with the fungus *Beauveria bassiana.*

Initial research in Australia shows that some insect diseases (entomopathogens) such as the fungus, *Beauveria bassiana*, have the capacity to reduce banana weevil borer populations (Figure 2), but more research is still needed.

This information is adapted from: Pinese, B., Piper, R 1994, *Bananas insect and mite management*, Department of Primary Industries Queensland and Treverrow, N., Pearley D., and Ireland, G 1992. Banana weevil borer : a pest management handbook for banana growers. : NSW Agriculture, North Coast Region; NSW Banana Industry Committee; Horticultural Research & Development Corporation.

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Chemical

If the average banana weevil borer counts from bait trapping are more than two per trap (subtropics) or more than four per trap (tropics), registered chemical treatments should be applied according to label directions. If average counts are less than these, treatment is not considered necessary.

When choosing a chemical, it is essential to consider the life stage and behaviour of the banana weevil borer. The adults typically move around corms during spring and autumn to feed and lay eggs. To achieve optimal control of adult weevils, it is recommended to apply chemicals during these peak periods, using banded or butt spray applications to apply insecticides adjacent and/or onto the plants. By comparison, injection treatments aimed to control larvae within the corm, and therefore may have more flexibility in when they can be applied. However, some of these chemicals should not be applied during the dry season, as they may increase the incidence of mite flares. Always check the product label for guidance.

Chemical options are generally older chemistries that are disruptive to integrated pest management and/or other insects present throughout the block. Insecticide resistance is a threat with current options available, so chemical choices and modes of action should be rotated to reduce the risk of resistance. Always check the APVMA website for current chemical registrations before use. All chemical applications should be made according to the directions on the label. Some products are not registered for use in certain states and territories, always check the product label.

Table 1: *Pesticides currently registered for control of banana weevil borer (Cosmopolites sordidus) in banana crops. Pesticides listed from soft to hard options in terms of the effect on other beneficial insects, based on the Cotton Pest Management Guide 2022-23. Options are correct as of September 2023, see specific product labels and the APVMA portal for details.*

Some products are not registered for use in certain states and territories. Check individual labels for details.

Active ingredient	Trade name*	Chemical group	Application Method
Imidacloprid	Confidor Guard SuSCon Maxi Intel	4A	Stem Injection Slow-release banded granular (pre-plant)
Clothianidin	Shield	4A	Stem Injection Stem spray
Chlorpyrifos	Lorsban	1B	Butt Spray
Bifenthrin	Talstar	3A	Butt spray Banded spray
Fipronil	Regent	2B	Butt Spray
Tetraniliprole	Vayego Forte	28	Stem injection
Diazinon	Diazol	1B	Stem spray
Terbufos	Counter	1B	Banded Granular Granular stem circle
Cadusafos	Rugby	1B	Banded Granular Granular stem circle
Prothiofos	Tokuthion	1B	Butt spray Residual plant injection (NSW only)
Oxamyl	Vydate L Insecticide	1A	Butt spray
Spirotetramat & imidacloprid	Movento energy	23 & 4A	Stem injection

Impacts on beneficials: Very Low Low Medium High Very High

*: Trade names are used as an example only, other products may exist, and one name is chosen for simplicity.

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