Crop(s): **Banana**

Insect(s): **Banana weevil borer (*Cosmopolites sordidus*) and Rust Thrips (*Chaetanaphothrips signipennis*)**

Comments on the Strategy:

1. Use only clean planting material.
2. If re-planting into an old banana block, allow at least 6 months fallow after old banana material has rotted down.
3. Remove weeds and trash around banana stools to allow maximum effectiveness of insecticides and to reduce sheltering sites for weevils. Application of insecticide to trash may lead to reduced control of banana weevil borer.
4. Cut up fallen and harvested pseudostems to reduce weevil breeding sites.
5. Monitor regularly for banana weevil borer activity by trapping (when adult weevils are active) or conduct corm damage ratings.
6. Only use insecticides when populations reach or exceed accepted threshold levels. Refer to local Department of Agriculture guidelines.
7. Only use insecticides at the registered rate of application and apply at times when the particular product will have the maximum impact, i.e. use contact insecticides only when weevil borer adults are active.
8. Use insecticides only in the years indicated in the following diagrams.
9. Consider the impact of the use of other pesticides for other insects or nematodes on banana weevil borers.
10. For rust thrips control, a combination of control methods such as butt/band sprays, stem injection or spray and bunch sprays may be required.

The following two diagrams are alternative Resistance Management Strategies depending on which product(s) are chosen for banana weevil borer and rust thrips control.

CropLife Australia

croplife.org.au

Strategy A: Where products other than controlled release formulations of imidacloprid are being used to control insects in bananas

Group*	Chemical sub-group	Example chemical	Year 1 Use	Year 2 Use	Year 3 Use	Year 4 Use	Year 5 Use	Year 6 Use
1A or 1B	Carbamates Organophosphates	oxamyl[1] or acephate[2] cadusafos[1] chlorpyrifos[3] diazinon[3] prothiofos[1] terbufos[1]	YES	NO	YES	NO	YES	NO
2B	Phenylpyrazoles (Fiproles)	fipronil[3]	YES	NO	YES	NO	YES	NO
3A	Synthetic pyrethroids	bifenthrin[3]	NO	YES	NO	YES	NO	YES
4A	Neonicotinoids	clothianidin[3] imidacloprid[3]	NO	YES	NO	YES	NO	YES
5	Spinosyns	spinetoram[2]	NO	YES	NO	YES	NO	YES

**Refer: CropLife Australia Expert Committee on Insecticide Resistance Mode of Action Classification for Insecticides*

[1]*Products registered for banana weevil borer control*

[2]*Product registered for rust thrips control as bunch sprays only*

[3]*Products registered for banana weevil borer and rust thrips control*

Guidelines:

1. The resistance management strategy may start at any point in the product group rotation and planting may occur in any year of the strategy.
2. The product(s) used in any one year **should not be** followed by product(s) from the same insecticide group in the following year.
3. Only products from the **YES** insecticide groups shown in the diagram above **should be** applied for banana weevil borer control and/or rust thrips control in the same year.
4. If products from **Group 1A** or **1B** (oxamyl, cadusafos or terbufos) are being used for nematode control in a block of bananas, then products from these groups **should not be** used for banana weevil borer control in the following year.

5. Where there is evidence of banana weevil borer or rust thrips resistance to a product or group of products, these should not be used again for banana weevil borer or rust thrips control until there has been use of products from other Insecticide Mode of Action groups for a period of at least 2 years.

Strategy B: Where products <u>including</u> controlled release formulations of imidacloprid are being used to control insects in bananas

Group*	Chemical sub-group	Example chemical	Year 1 Use	Year 2 Use	Year 3 Use	Year 4 Use	Year 5 Use	Year 6 Use
1A or 1B	Carbamates Organophosphates	oxamyl[1] or acephate[2] cadusafos[1] chlorpyrifos[3] diazinon[3] prothiofos[1] terbufos[1]	NO	YES	NO	YES	NO	YES
2B	Phenylpyrazoles (Fiproles)	fipronil[3]	YES	NO	YES	NO	YES	NO
3A	Synthetic pyrethroids	bifenthrin[3]	NO	YES	NO	YES	NO	YES
4A	Neonicotinoids	CR imidacloprid[3]	YES	YES	YES	NO	NO	NO
5	Spinosyns	spinetoram[2]	YES	NO	YES	NO	YES	NO

**Refer: CropLife Australia Insecticide Resistance Management Review Group Mode of Action Classification for Insecticides*
[1]Products registered for banana weevil borer control
[2]Product registered for rust thrips control as bunch sprays only
[3]Products registered for banana weevil borer and rust thrips control

Guidelines:

1. The resistance management strategy may start at year 1 or year 4 in the product group rotation.
2. Controlled release imidacloprid provides 3 years control of banana weevil borer with one

application at planting, so after the 3rd year, insecticide products from other Groups are to be used in rotation for at least 3 years for banana weevil borer and rust thrips control in a given block of bananas.

3. Alternative product groups are provided in these 3 years for control of rust thrips as soil or stem treatments or bunch sprays.
4. Only products from the **YES** insecticide groups shown in the diagram above **should be** applied for banana weevil borer control and/or rust thrips control in the same year.
5. If products from Group 1A or 1B (oxamyl, cadusafos or terbufos) are being used for nematode control in a block of bananas, then products from these groups **should not be** used for banana weevil borer control in the following year.
6. Where there is evidence of banana weevil borer or rust thrips resistance to a product or group of products, these should not be used again for banana weevil borer control until there has been use of products from other Insecticide Mode of Action groups for a period of at least 2 years.

Notes regarding the application of insecticides:

1. To ensure the most effective control of the pest:
    a. Product labels should at all times be carefully read and adhered to;
    b. Full recommended rates of registered insecticides should always be used; and
    c. Ensure good coverage of the target area to maximise contact.