Crop(s)	**Banana**
Insect(s)	**Banana weevil borer (*Cosmopolites sordidus*) and Banana rust thrips (*Chaetanaphothrips signipennis*)**

Guidelines

1. Use only clean planting material, such as tissue culture plants or bits/suckers from a clean nursery block.
2. If re-planting into an old banana block, allow at least 6 months fallow after the 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 insecticides to trash may lead to reduced control of banana weevil borer.
4. Cut up fallen and harvested pseudo-stems 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. Dying water suckers can also be an indication of banana weevil borer populations.
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 banana weevil borer adults are active.
8. Insecticides should only be used in the years indicated in the following diagrams.
9. When applying insecticides for the control of banana weevil borer and banana rust thrips consider the impact of these products on other insects and nematodes, and vice versa.
10. For banana rust thrips control, a combination of control methods such as butt or band sprays, stem injection, bell injection and/or bunch sprays may be required.

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

MoA Group*	Chemical subgroup	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**
4A/23	Neonicotinoid + tetramic acid	(imidacloprid + spirotetramat)[3]	**NO**	**YES**	**NO**	**YES**	**NO**	**YES**
5	Spinosyns	spinetoram[2] spinosad[2]	**NO**	**YES**	**NO**	**YES**	**NO**	**YES**
28	Diamides	tetraniliprole[1]	**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 banana rust thrips control as bunch sprays only*

[3]*Products registered for banana weevil borer and banana 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 Mode of Action (MOA) group in the following year.
3. Only products from the **YES** insecticide MOA groups shown in the diagram above **should be** applied for banana weevil borer control and/or banana rust thrips control in the same year. Where activity is specific to either banana weevil borer **or** banana rust thrips for an insecticide MOA group, then products from across these YES insecticide MOA groups may be applied in alternating years for their designated pest, but rotation of MOA groups between years for each pest should be maintained.
4. If products from **Group 1A** or **1B** are being used for nematode control in a block of bananas, then products from these groups **should not be** used for banana weevil borer and/or banana rust thrips control in the following year.

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

STRATEGY B: Where products *including* controlled release (CR) formulations of imidacloprid are being used to control insects in bananas

MoA Group*	Chemical subgroup	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] spinosad[2]	YES	NO	YES	NO	YES	NO
28	Diamides	tetraniliprole[1]	NO	YES	NO	YES	NO	YES

**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 Mode of Action (MOA) groups are to be used in rotation for at least 3 years for banana weevil borer and banana rust thrips control in a given block of bananas.
3. Alternative MOA groups are provided in these 3 years for control of banana rust thrips as soil or stem treatments or bunch sprays.
4. Only products from the **YES** Insecticide MOA Groups shown in the diagram above **should be** applied for banana weevil borer control and/or banana rust thrips control in the same year. Where activity is specific to either banana weevil borer **or** banana rust thrips for an insecticide

MOA group, then products from across these YES insecticide MOA groups may be applied in alternating years for their designated pest, but rotation of MOA groups between years for each pest should be maintained.

5. If products from Group 1A or 1B are being used for nematode control in a block of bananas, then products from these groups **should not be** used for banana weevil borer and/or banana rust thrips control in the following year.
6. Where there is evidence of banana weevil borer or banana rust thrips resistance to a product or group of products, these should not be used again for banana weevil borer and/or banana 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.

Notes

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.