

## Insecticide Resistance Management Strategies Developed by the CropLife Australia Insecticide Resistance Management Review Group Valid as at 27 June 2013

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|---------|----------|---|--------|
| Cronic  | • 1      | - | Ranana |
| Ci Up(a | <b>,</b> | - | Danana |

| Insect( | s) | : | Banana Weevi | I Borer |
|---------|----|---|--------------|---------|
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## Components of the strategy:

- 1. Use only clean planting material.
- 2. If replanting into an old banana block allow at least 6 months fallow after old banana material has rotted down.
- Remove weeds and trash around banana stools to allow maximum effectiveness of insecticides and reduce sheltering sites for weevils application of insecticide to trash may lead 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 DPI 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.

The following diagram is an alternative Resistance Management Strategies depending on which product(s) is chosen for banana weevil borer control.

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Crop(s) : Banana (cont.)

## Insect(s) : Banana Weevil Borer (cont.)

## STRATEGY

| Group*                | Chemical Sub-<br>Group         | Chemical Example   | Year<br>1<br>Use | Year 2<br>Use | Year 3<br>Use | Year 4<br>Use | Year 5<br>Use | Year 6<br>Use |
|-----------------------|--------------------------------|--|------------------|---------------|---------------|---------------|---------------|---------------|
| 1A<br><u>or</u><br>1B | Carbamates<br>Organophosphates | Oxamyl<br>or<br>Cadusafos,<br>chlorpyrifos,prothiofos,<br>terbufos | YES              | NO            | YES           | NO            | YES           | NO            |
| 2B                    | Phenylpyrazole<br>(Fiproles)   | Fipronil   | YES              | NO            | YES           | NO            | YES           | NO            |
| 3A                    | Synthetic<br>pyrethroids       | Bifenthrin   | NO               | YES           | NO            | YES           | NO            | YES           |
| 4A                    | Neo-nicotinoids                | Clothianidin,<br>imidacloprid                                      | NO               | YES           | NO            | YES           | NO            | YES           |

\*Refer: CropLife Australia Insecticide Resistance Management Review Group Mode of Action Classification for Insecticides

- 1. The resistance management strategy may start at any point in the product group rotation.
- 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. Products from different insecticide groups other than those shown in the diagram above <u>should not</u> be applied for banana weevil borer 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 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.
- 6. Soil applications of bifenthrin or fipronil or stem injections of clothianadin or imidacloprid for rust thrips control should be considered as applications for banana weevil borer control in terms of the resistance management strategy. Do not follow the use of the these products for rust thrips control in one year with the same product(s) or product group(s) for control of banana weevil borer in the following year.

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