

Crops(s) **Nursery e.g., vegetable seedlings, trees, ornamentals**

Disease(s) **Various**

Guidelines:

1. Monitor regularly for insect activity. Where relevant consider the use of light, insect traps or other monitoring tools.
2. Only use insecticides when insect populations reach accepted threshold levels.
3. Always read and follow product labels and use the full recommended label rates of application. Some products place a limit on the number of times they can be applied per crop and when they can be applied.
4. Ensure the spray equipment is properly calibrated and achieving good coverage with appropriately sized spray droplets.
5. In the case of soil applied insecticides, apply only once prior to transplanting. Apply using sufficient water that does not result in any drop point from the soil medium containing the seedling or plant. If watering is required between applications and planting, it should be done sparingly, only as required. **Avoid** water to run-through from the cells, bags etc.
6. When transplanting soil-treated seedlings or plants, ensure that the growing medium is fully transferred to the field with each seedling or plant.
7. **Rotate** between registered insecticides that have different modes of action.
8. Where possible **avoid applying consecutive applications** of insecticides that have the same mode of action within and between seasons or exceed the recommended maximum number of applications in a crop.
9. **Do not** follow a seed, seedling or soil treatment with a foliar application from the same mode of action group.
10. Time the foliar applications to the most susceptible life stage of the target pest.
11. **Do not** re-treat a spray failure with a product from the same mode of action group.
12. Avoid using insecticide tank-mixes where both active ingredients control the same insect pests as this strategy is generally not considered best practice for resistance management.

Please note:

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13. Practice good crop hygiene to reduce insect pressure e.g., removing severely infested seedling trays, plants or host weeds.
 14. Nurseries supplying treated plants to commercial operations should clearly identify insecticides that have been applied, supply paperwork to the recipient accompanying the plant that indicates the rates and date. For treated seedlings the time of application should also be included, particularly if applied just prior to transplant in the field.

Notes regarding the application of insecticides:

1. Refer to the CropLife Australia Expert Committee on Insecticide Resistance Mode of Action Classification for Insecticides.
2. There is known cross-resistance between some chemical groups e.g., **Groups 1A and 1B**.
3. Seek advice from the manufacturers or government advisory services to determine local resistance levels for particular mode of action groups.
4. **Do not** exceed the maximum number of applications permitted on the insecticide label.
5. When using insecticides to control other pests consider the chemical group in relation to contributing to the resistance development of other insect pests.
6. When using insecticides to control insect pests consider the effect on beneficial insects and the potential to flare insect populations.

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