

APPLICATION TIPS FOR CONTROL OF APHIDS IN CANOLA

TECH NOTE SERIES



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Recent outbreaks of aphids in WA Canola has seen an increase in enquiry for alternatives to traditional insecticides which can be harsh on beneficials and rapidly develop resistance.

BIOPEST® has been proven with independently generated replicated field work over the last two years to provide cost effective control of both cabbage & turnip and green peach aphid, without harming beneficial populations.

Here are some tips to maximise the efficacy of BIOPEST® on aphids in canola;

- BIOPEST® kills existing aphids by physical smothering, so good coverage is essential. Keep water volumes as high as possible (80-100L/Ha), with a medium spray quality and BIOPEST® rate at a minimum of 2L/Ha.
- Coating leaf surfaces with BIOPEST® will also prevent populations building by acting as a deterrent to juvenile production, so apply early to developing populations to provide greater control.
- On the flowering parts of larger plants, efficacy on aphids is excellent due to their physical exposure. However, as BIOPEST® has no translaminar or systemic activity, aphids on the underside of leaves on smaller plants can be more difficult to control (see Figure 1), particularly as new unprotected leaves emerge.
- To protect new growth on smaller pre-flowering plants, aphid populations should be monitored and consideration given to follow up applications within 10 days.
- BIOPEST® is extremely soft on beneficials (see Table 1, page 2), particularly mobile insects such as lacewings and predatory wasps. Monitoring and maintenance of these beneficial populations is an important part of any management strategy.
- If beneficial insects aren't a concern and infestation is severe, consider tank mixing with a standard insecticide to provide additional activity and reduce reliance on one mode of action.
- BIOPEST® doesn't require warm conditions for activation and is generally rainfast within a four hour period or when the leaf surface is dry. Unlike other insecticides BIOPEST® will not cause dead aphids to drop from the plant, providing a useful food source for beneficials.
- For single pass disease and insect control, BIOPEST® can be tank mixed with sclerotinia fungicides or liquid UAN to act as a deposition agent and provide an aphid anti-feed effect prior to populations building. More information on the role of BIOPEST® in managing sclerotinia will be published shortly.

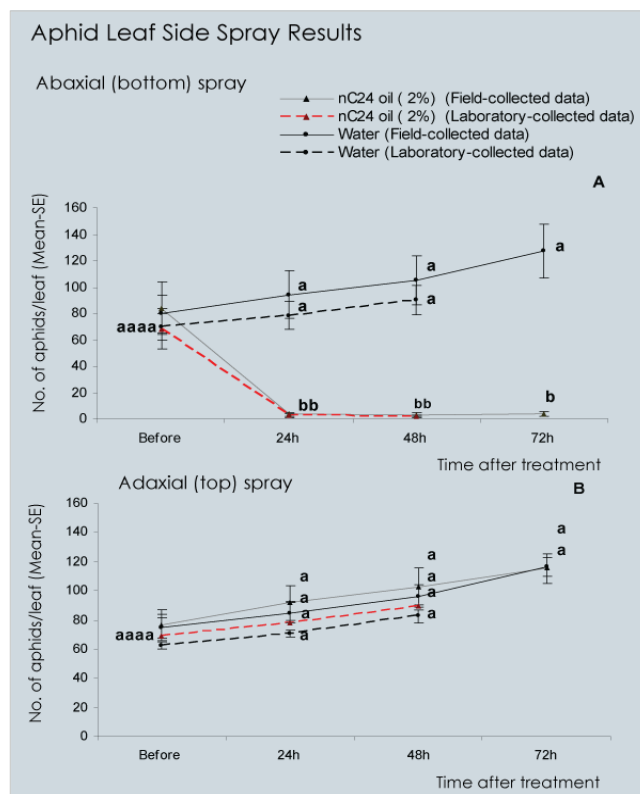


Image 1: Research conducted by SACOA in cotton indicates BIOPEST® is only effective when applied to the leaf surface where aphids are present. (Source: SACOA)

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1. Total predatory beetles – ladybird beetles, red and blue beetles, other predatory beetles
2. Total predatory bugs – big-eyed bugs, minute pirate bugs, brown smudge bugs, glossy shield bug, predatory shield bug, damsel bug, assassin bug, apple dimpling bug
3. Information: Citrus pests and their natural enemies, edited by Dan Smith; University of California Statewide IPM project, Cotton, Selectivity and persistence of key cotton insecticides and miticides.
4. Pyrethroids: alpha-cypermethrin, cypermethrin, beta-cyfluthrin, cyfluthrin, bifenthrin, fenvalerate, esfenvalerate, deltamethrin, lambda-cyhalothrin,
5. Organophosphates: omethoate, monocrotophos, profenofos, chlorpyrifos, chlorpyrifos-methyl, azinophos ethyl, methidathion, parathion-methyl, thiometon
6. Helicoverpa punctigera only.
7. Bifenthrin is registered for mite and silverleaf whitefly control; alpha-cypermethrin, beta-cyfluthrin, bifenthrin, deltamethrin and lambda-cyhalothrin are registered for control of mirids
8. Persistence of pest control: Short, less than 3 days; medium; 3-7 days; long, greater than 10 days.
9. Suppression of mites and aphids only.
10. Impact rating (% reduction in beneficials following application, based on scores for the major beneficial groups); VL (very low), less than 10%; L (low), 10-20%; M (moderate), 20-40%; H (high), 40-60%; VH (very high), > 60%. A '-' indicates no data available for specific local species.
11. Bacillus thuringiensis
12. Pest resurgence is +ve if repeated applications of a particular product are likely to increase the risk of pest outbreaks or resurgence. Similarly sequential applications of products with a high pest resurgence rating will increase the risk of outbreaks or resurgence of the particular pest species.
13. Very high impact on minute two-spotted ladybird beetle and other ladybird beetles for wet spray, moderate impact for dried spray.
14. Data Source: British Crop Protection Council. 2003. The Pesticide Manual: A World Compendium (Thirteenth Edition),. Where LD50 data is not available impacts are based on comments and descriptions. Where LD50 data is available impacts are based on the following scale: very low = LD50 (48h) > 100 ug/bee, low = LD50 (48h) < 100 ug/bee, moderate = LD50 (48h) < 10 ug/bee, high = LD50 (48h) < 1 ug/bee, very high = LD50 (48h) < 0.1 ug/bee. Refer to the Protecting Bees section in this booklet.
15. Wet residue of these products is toxic to bees, however, applying the products in the early evening when bees are not foraging will allow spray to dry, reducing risk to bees the following day.
16. PSO = Petroleum Spray Oil. May reduce survival of ladybird beetle larvae – rating of moderate for this group.
17. May be detrimental to eggs and early stages of many insects, generally low toxicity to adults and later stages.
18. Will not control organophosphate resistant pests (e.g. mites, some cotton aphid (Aphis gossypii) populations
19. Rankings for Eretmocerus based on data from Jamie Hopkinson in semi-laboratory replicated experiments (QDAF) and on ranking for E. mundus (P. De Barro, CSIRO, unpublished) and for E. eremicus (Koppert B.V., The Netherlands (<http://side-effects.koppert.nl/#>))
20. Suppression only
21. Transform is registered for control of greenhouse whitefly at the 96 g ai/ha rate.
22. Effects on thrips are for populations found on leaves. This is relevant to seedling crops, where thrips damage leaves, and to mid-late season when thrips adults and larvae help control mites by feeding on them as well as on leaf tissue. Note that flowers are a protected site, so live adult thrips may be found in flowers even after crops have been treated with products that would control them on leaves.
23. Skope is a mixture of acetamiprid and emamectin benzoate. At the low rate (175 ml/ha) this is 38.2 g ai/ha acetamiprid and 5.7 g ai/ha emamectin benzoate. At the high rate (350 ml/ha) this is 76.3 g ai/ha acetamiprid and 11.4 g ai/ha emamectin benzoate. Skope may flare mite populations where abamectin resistant two spotted mites are present.
24. Voliam Flexi is a mixture of thiamethoxam and chlorantraniliprole. At the 250 g/ha rate this is 40 g ai/ha thiamethoxam and 40 g ai/ha chlorantraniliprole.



REFERENCES

- Cotton Research Compendium 'Leaders in spray oil and adjuvant technology for the cotton industry' 2003-2010
- <http://www.dpi.nsw.gov.au/agriculture/field-crops/fibres/cotton/cotton-pest-management-guide>

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Further information is available at www.sacoa.com.au or by contacting SACOA on 08 9386 7666 or contact your local SACOA representative;

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