

# eco-oil<sup>®</sup>

ORGANIC MITICIDE / INSECTICIDE



**HIPPO  
ENHANCED**

ATTRACTS BENEFICIAL INSECTS INTO YOUR CROP

**NEW** eco-oil HIPPO ENHANCED is a non-toxic botanical oil based miticide/insecticide that controls Two-spotted mite, Aphids, Whitefly, Citrus leafminer and Scale in crops without leaving any potentially harmful residues. eco-oil HIPPO ENHANCED combines the insecticidal properties of natural oils, and unique plant extracts called HIPPOs that attract beneficial insects into your crop.



## eco-oil HIPPO ENHANCED HAS FOUR MODES OF ACTION

1

eco-oil HIPPO ENHANCED penetrates the skin and breathing parts of insects reducing their ability to expel carbon dioxide resulting in carbon dioxide poisoning.

2

The thin protective skin of insects and their eggs are removed by eco-oil HIPPO ENHANCED which causes death by dehydration

3

The HIPPO enhancement actively attracts beneficial predators and parasitoids into the crop ensuring more effective biological control.

4

When dry on leaf surfaces eco-oil HIPPO ENHANCED residues act as a mild insect repellent reducing the chance of egg laying and forms a sticky trap for very small juvenile pests.

## THE BENEFITS OF USING eco-oil HIPPO ENHANCED

- Due to eco-oil HIPPO ENHANCED's physical mode of action there is no potential for spray resistance from overuse. Hence it will help growers control resistance sensitive pests like mites, aphids and whitefly year after year.
- eco-oil HIPPO ENHANCED will attract beneficial insects into treated crops which enhances biological control.
- eco-oil HIPPO ENHANCED is botanical-oil based and therefore has a lower potential to burn plants compared with mineral oils.
- eco-oil HIPPO ENHANCED carries no withholding periods, or re-entry restrictions.
- eco-oil HIPPO ENHANCED can be used within IPM systems in a preventative manner.
- eco-oil HIPPO ENHANCED is Registered organic with AUSTRALIAN ORGANIC Cert no. AI222.

## eco-oil HIPPO ENHANCED COMPATIBILITY WITH IPM

eco-oil HIPPO ENHANCED will attract beneficial insects into crops and is also safe to use within already established populations of beneficials, making it an ideal IPM tool. A residual toxicity study with eco-oil HIPPO ENHANCED demonstrated that it had very little effect on the survival rates of adult Whitefly parasitoids *Encarsia formosa*. Trials on other species of commercial beneficial insects like predatory mites *Phytoseiulus persimilis*, *Amblyseius vitoriensis*, *Neoseiulus cucumeris* and predatory bugs like *Orius armatus* have also demonstrated excellent compatibility of eco-oil HIPPO ENHANCED with these commercial species. Since there is little effect on beneficial insects, eco-oil HIPPO ENHANCED makes an attractive alternative in IPM systems where the variety of miticides/insecticides that can be used is very limited.

## HOW EFFECTIVE IS **eco-oil** HIPPO ENHANCED AGAINST PESTS?

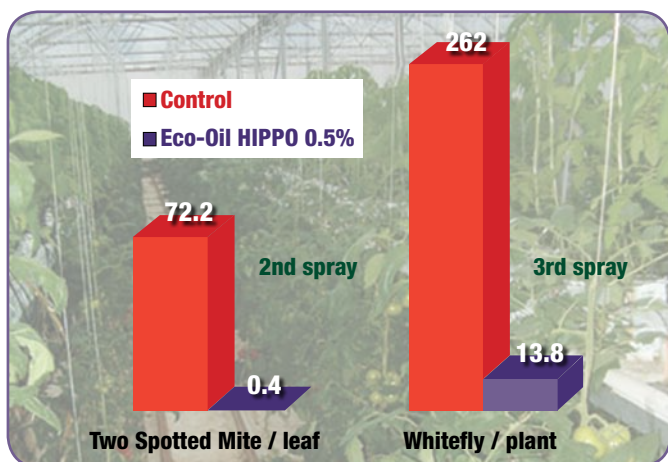


Figure 1: National Centre for Greenhouse Horticulture, Gosford

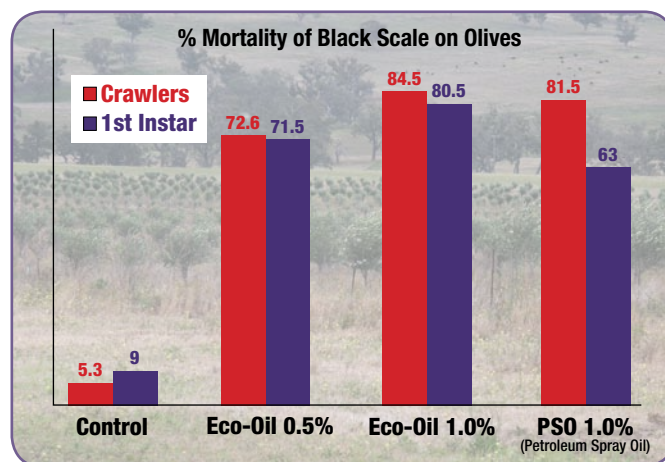


Figure 2: University of Western Sydney, Hawkesbury, 2003

## HOW EFFECTIVE IS **eco-oil** HIPPO ENHANCED AT ATTRACTING GOOD BUGS?

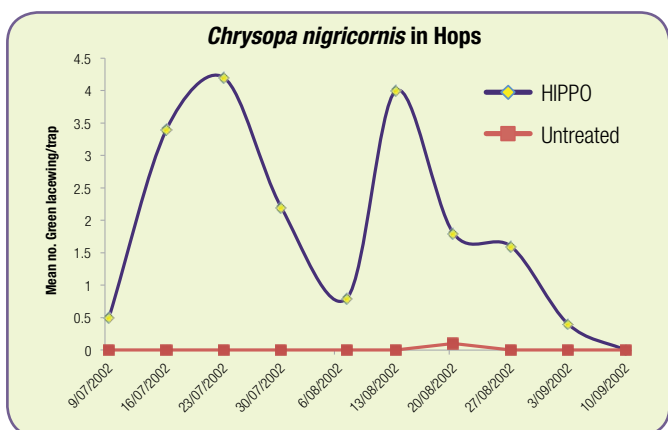


Figure 3: Green lacewing (*Chrysopa nigricornis*) attraction in Hops treated with HIPPO (Dr. David James, Department of Entomology, Washington State University, Irrigated Agriculture Research and Extension Center, 2002)\*

\* Full reports are available on request

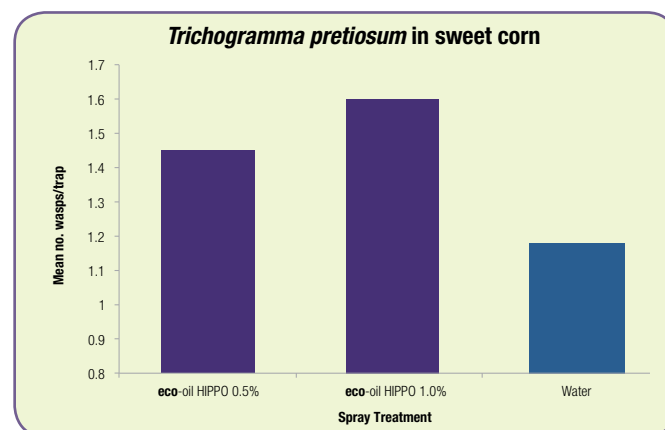


Figure 4: Attraction of parasitoid wasps into Sweet corn sprayed with Eco-oil HIPPO ENHANCED (Dr. Marja Simpson, Charles Sturt University, 2008)\*

## HOW TO APPLY **eco-oil** HIPPO ENHANCED

Crop	Pests	Rate	Critical Comment
Ornamental, floriculture crops, vegetables and <i>Rubus spp.</i> Permit No. 7709	Two-spotted mite ( <i>T. urticae</i> ) Aphids	375-500 mL of product to 100 L of water or 5 mL of product to 1L of water	Regularly monitor plants for two-spotted mite and aphids and apply spray when they first appear. Apply two sprays 3-5 days apart. Use the higher rate when numbers are high. Repeat applications at signs of re-infestation but not within 7 days of last spray. Spray both upper and underside of leaves to run-off. DO NOT apply more than three sprays to a crop within a 4-8 week period.
Nursery and greenhouse grown tomato, cut flower and ornamental crops Permit No. 10311	Greenhouse Whitefly & Silverleaf Whitefly ( <i>Trialeurodes vaporariorum</i> )	500 mL of product to 100 L of water or 50 - 75 mL of product to a 15 L knapsack	Apply spray when pest first appears in the crop. Apply two sprays 3-5 days apart. Repeat applications at sign of re-infestation but not within 7 days of last spray. Complete coverage of the target pest is necessary. Spray both upper and underside of leaves to run-off. DO NOT apply more than three sprays to a crop within a 4-8 week period.
Olive trees	Black scale	1L of product to 100L of water	Apply at early signs of Scale. Apply two sprays at 7 day intervals. Repeat applications at signs of re-infestation. Spray upper and underside of leaves and branches to run-off.
Citrus	Citrus leafminer	1L of product to 100L of water	Begin applying when the new flush growth is about 4 cm long. Apply every 5 to 14 days with presence of new flush growth. Ensure that the new flush leaves are sprayed both upper and underside of leaves to run-off. Do not apply any more than 8 times per season.

**Compatibility:** eco-oil HIPPO ENHANCED is compatible with most commonly used agricultural and horticultural products except: DELAN™, BORDEAUX or Captan. DO NOT APPLY eco-oil HIPPO ENHANCED within 10 days of a EUPAREN™ application.



For more information contact **Organic Crop Protectants** on 1800 634 204  
Available through LANDMARK, RURALCO, ELDERS, AgLink members and other independent outlets.

[www.ocp.com.au](http://www.ocp.com.au)

