

Potato Update



Issue 5

Protecting beneficial insects in potato crops

Introduction

Tasmanian lacewings, hoverflies and eleven-spotted ladybirds are all predators of the tomato potato psyllid (TPP) and they will eat all life stages of this pest, being adults, nymphs and eggs, although this latter life stage is less preferred. If given a chance, these beneficial insects will get into potato crops and attack pests 24/7. Research in the SFF 11/058 programme has shown that there are selective products that will help control the psyllid but cause little or no short-term mortality to the key beneficial insects in New Zealand potato crops.

To keep beneficial insects working in your crops for longer:

- Minimise insecticide use if possible
- Use selective products, especially early season when beneficial insects are most likely to make an impact on TPP populations
- Save other products for use later in the season

The following is a summary of non-target impacts of selected insecticides and oil-based products on key New Zealand beneficial insects, based on short-term laboratory assays conducted for SFF 11/058 (2012–14). Note that field impacts on beneficial insects may be less severe because the amount of exposure will differ. Assay results are indicated by two triangles, the first summarising direct spray assays, the second summarising residue assays. Symbols follow the IOBC (International Organisation for Biological Control) non-target impacts classification for laboratory trials: ▲ = <30% mortality (harmless or slightly harmful), ► = 30–79% mortality (moderately harmful), ▼ = >79% mortality (harmful). NA indicates that a species/product combination was not tested.

Key points

- Lacewings, hoverflies and ladybirds are all predators of tomato potato psyllid.
- Selective insecticides can help control tomato potato psyllid but cause little damage to beneficial insects.

Active ingredient (product and adjuvant actually tested)	IRAC ¹ group (sub-group or exemplifying active ingredient)	HSNO environmental hazard classifications:	New Zealand beneficial insect species		
			Tasmanian lacewing larvae (<i>Micromus tasmaniae</i>)	Small hoverfly larvae (<i>Melanstoma fasciatum</i>)	11-spotted ladybird adults (<i>Coccinella undecimpunctata</i>)
methamidophos (Taron®) ²	1 (organo-phosphates)	Taron: 9.1A,9.2B,9.3A,9.4A	▼▼	▼▼	▼▼
spinetoram (Sparta™ plus Bond®Xtra)	5 (spinosyns)	Sparta: 9.1A,9.4A	▲▼	►►	NA
abamectin (Avid® plus Eco-Oil®)	6 (avermectins)	Avid: 9.1A,9.2C,9.3B,9.4A	▲▲	▲►	NA
spirotetramat (Movento®)	23 (tetrone and tetramic acid derivatives)	Movento: 9.1B	▲▲	▲▲	NA
cyantraniliprole (Benevia® plus Actiwett®)	28 (diamides)	Benevia: 9.1A,9.4B	▲▲	▲► ³	NA
paraffinic mineral oil (JMS Organic Stylet Oil®)	-	Organic.JMS Stylet Oil: 9.1B	►▲	▲▲	▲►
paraffinic mineral oil (Excel® Oil)	-	Excel Oil: 9.1D	►▲	▲▲	▲►

¹ IRAC stands for Insecticide Resistance Action Committee, see <http://www.irc-online.org/> for more information.

² Please note that Taron is no longer commercially available.

³ Mean mortality < 30% but some surviving larvae unable to move normally and unlikely to complete development.

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For further information

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