

**SACOA**  
**BIOPEST®**  
PARAFFINIC OIL

## THE ONE-PASS SOLUTION FOR SUSTAINABLE CANOLA & CEREAL PRODUCTION

### What Is It?

BIOPEST® is a high-grade paraffinic oil developed and formulated specifically to be safe to apply to leaf surfaces whilst still maintaining insecticidal & fungicidal properties. Over the last five years, BIOPEST has been extensively field tested in a range of Australian winter crops and has proven to be extremely effective:

As an IPM friendly alternative and/or tank mix partner to traditional insecticides for:

- Green Peach & Cabbage/Turnip aphid management in canola
- Aphids in cereals including Russian Wheat aphid
- DBM in canola

As an effective tank mix partner to improve fungicide effectiveness on a range of diseases including:

- Canola diseases such as blackleg & sclerotinia
- Cereal disease including powdery mildew, net blotch & yellow spot

As an effective tank mix partner to improve the effectiveness of a range of herbicides for:

- TT, RR & IT Canola
- Grass and Broadleaf herbicides in cereals

### How does it work?

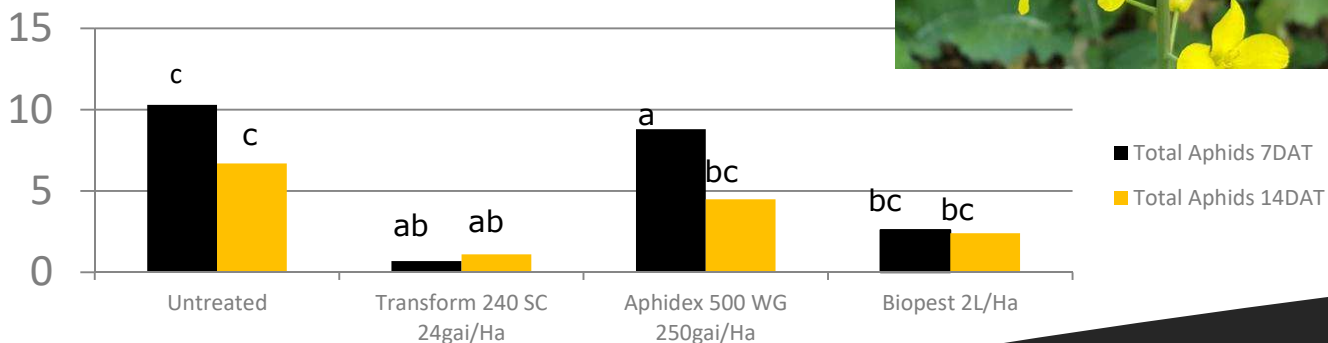
#### On Insects

On low level populations, BIOPEST works by physically smothering & suffocating as well as affecting the nervous system of insects, such as aphids and other relatively immobile pests. When used preventatively, prior to insect numbers building, BIOPEST creates a leaf surface coating which deters insects from colonising and egg laying.

Beneficial insects such as predatory wasps, lady birds and bees are generally not impacted as they are relatively mobile and not contacted during application. In addition, the physical mode of action means there is little to no chance of resistance developing in insect populations.

In managing insects – BIOPEST works in three ways

- Controls existing populations by physically smothering and affecting the nervous system
- Deters populations building by reducing the attractiveness of leaf surfaces for colonising and egg laying
- Allows beneficial insects such as predatory wasps to survive and provide control in their own right, leaving affected pests as a food source for predators.



Source: Peracto SAC00114 – Moora Oct 2014



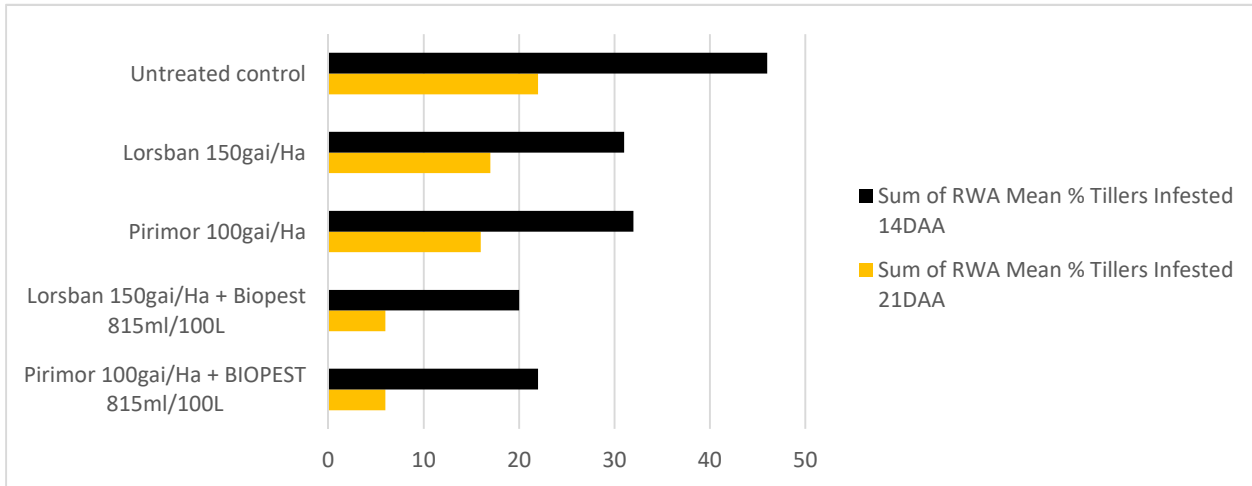
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## SACOA **BIOPEST** PARAFFINIC OIL

BIOPEST has been extensively trialled for insect control in canola and cereals over the last four years, with results indicating that it is as effective as traditional insecticides, with none of the downsides such as resistance development, impacting on beneficial populations and low user safety.



Source: AgXtra – Murray Bridge February 2017

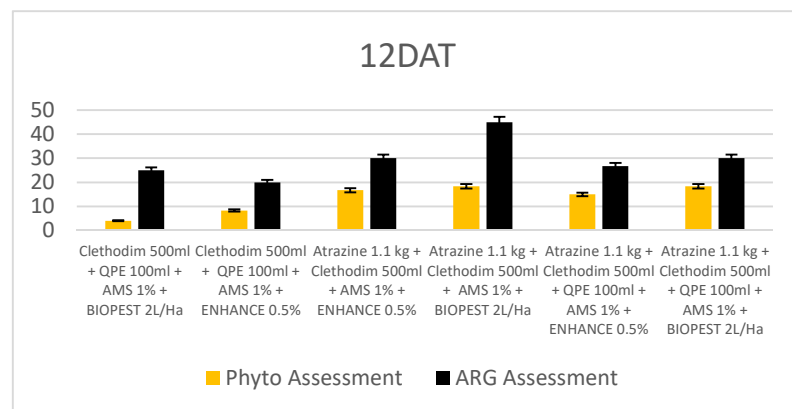
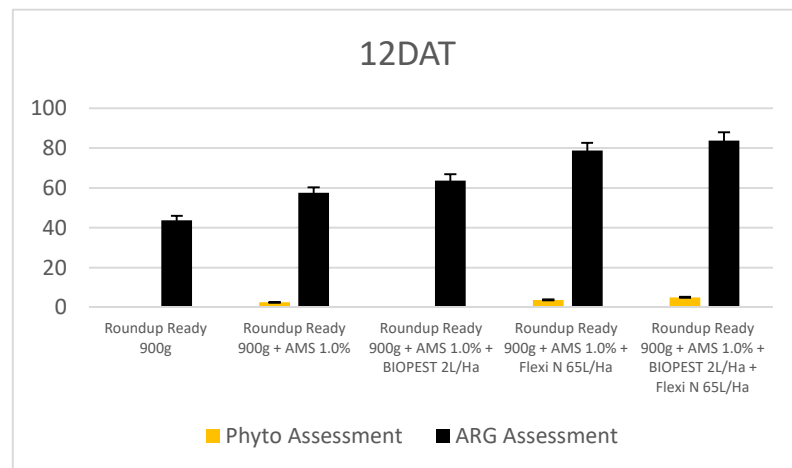
### On weeds

To simplify the use of BIOPEST, SACOA have invested heavily in evaluating the incorporation of BIOPEST into existing agronomic practices, as an adjuvant replacement with a range of herbicide actives and cropping systems.

Incorporating BIOPEST into an early post-emergence herbicide application enables insect populations to be suppressed prior to numbers building, provides an anti-feed effect, provides some protection from low levels of early disease and is no less effective than a standard adjuvant in controlling weeds, with a range of commonly used herbicide actives.

As an herbicide adjuvant alternative, BIOPEST, being formulated from a paraffinic base oil, has a number of properties which make it effective at increasing herbicide performance including:

- Controls existing populations by coating and physically smothering
- Increasing droplet size to improve coverage & droplet survival
- Penetrant properties to assist herbicide actives into leaves, which is particularly important for Group A herbicides
- Safe emulsifier package which will not result in an increase in crop phytotoxicity with common herbicides and/or UAN mixtures.



Source: Avon Valley, SACOA May 2016



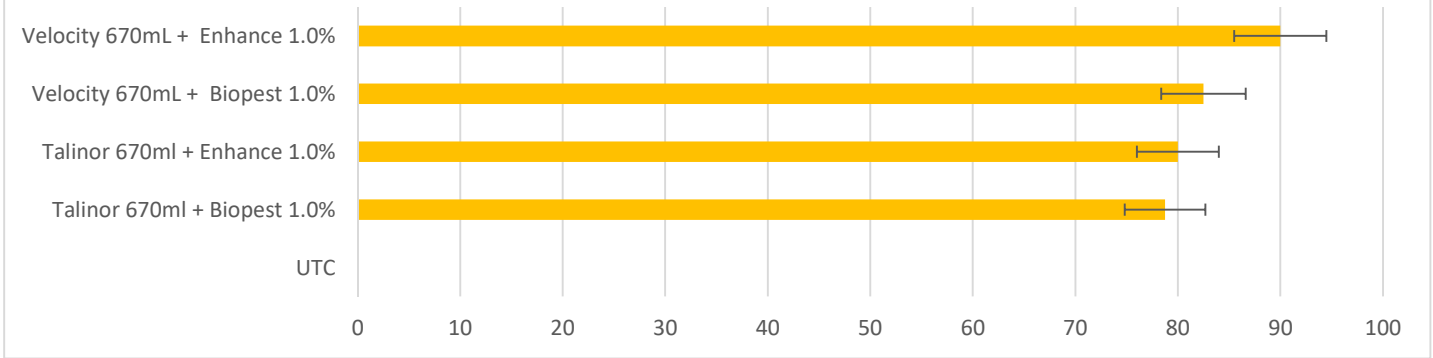
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Source: – Doodenanning - SACOA June 2016

### On Disease

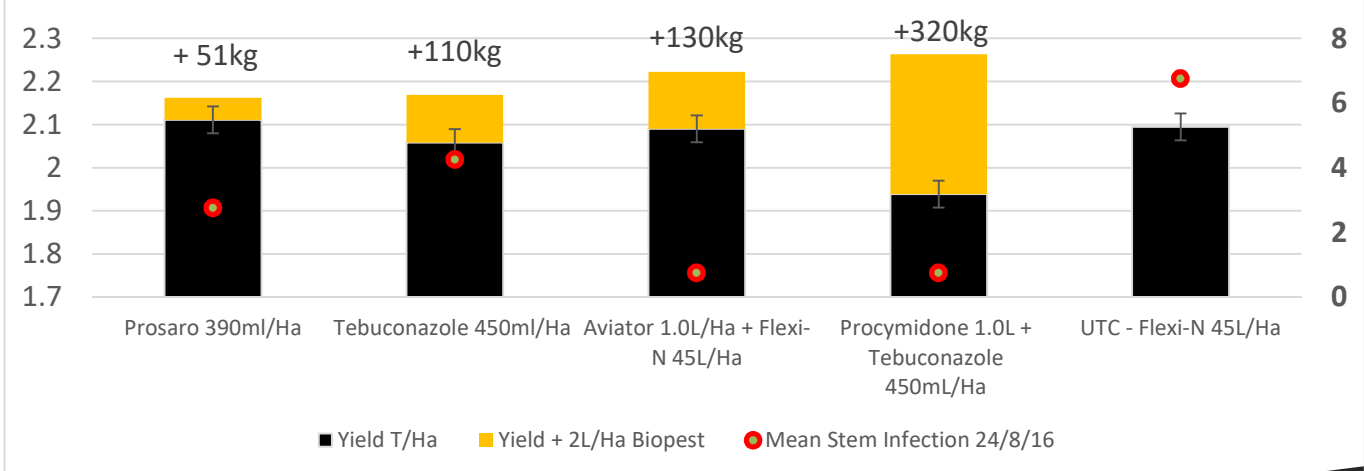
Blackleg and Sclerotinia in canola can be devastating for yield but can also result in the buildup of sclerotes in the soil affecting later crops. Given BIOPEST's proven fungicidal effects in a range of other crops, including Bananas & Pulses, BIOPEST has been rigorously tested over the last four years with a range of fully replicated independent and internal trials, as a carrier for common canola and cereal fungicides. In this work BIOPEST has been proven to double the

effectiveness of some fungicides resulting in yield increases of up to 350kg/Ha in canola.

In managing disease BIOPEST works in three ways;

- Modifies the spray droplet spectrum to increase the droplet size and improve coverage
- Improves the longevity of the fungicide on the leaf by increasing weatherability
- Increase the uptake of the fungicide active into the leaf and plant cell – thereby increasing its effectiveness.

Chapman Valley

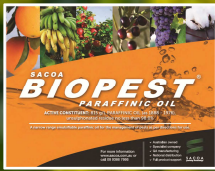


Source: –SACOA November 2016

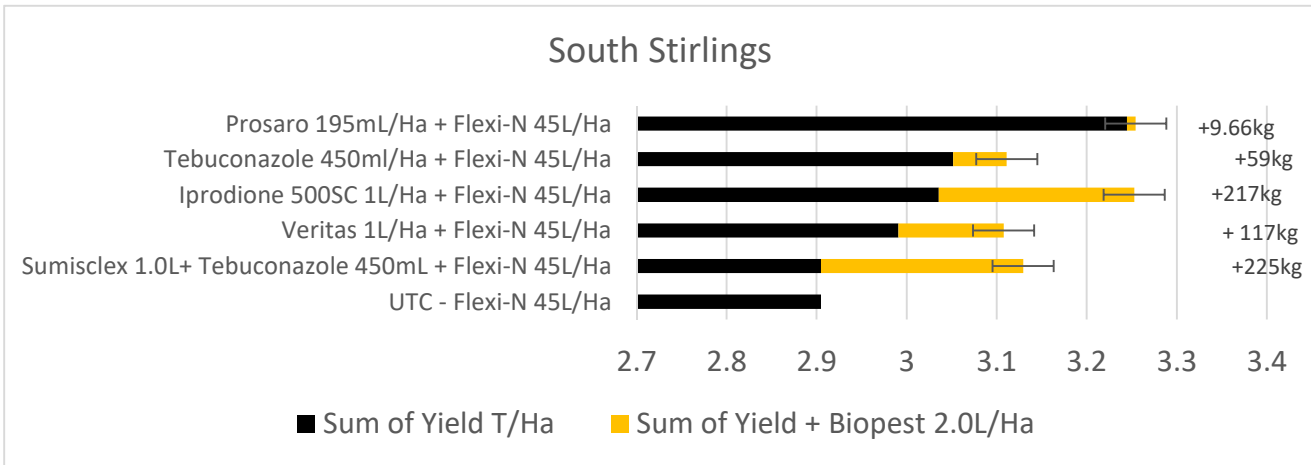


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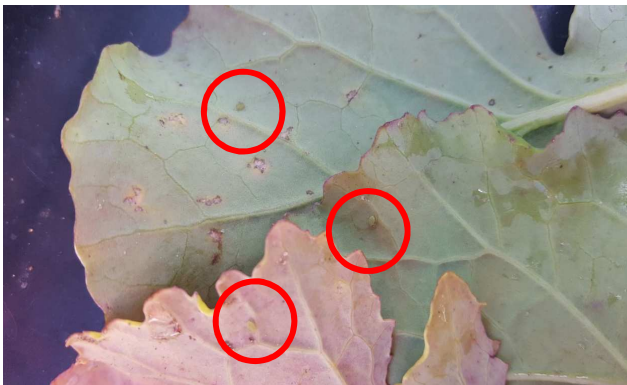
Source: –SACOA November 2016

### Application Tips

Mode of action –

BIOPEST manages insect populations by contact and smothering. It also works as a feeding deterrent by reducing the attractiveness of leaves to pests. Being a physical mode of action – it will not impact beneficial populations which tend to be mobile. Maintenance of beneficial populations, by not using broad spectrum insecticides, is the basis of an IPM strategy when using BIOPEST. It is therefore important to apply early prior to insect populations developing and to ensure thorough coverage of both upper and lower

Coverage is critical – Always use BIOPEST in relatively high water volumes (80-100L/Ha) with medium to coarse droplets to improve canopy penetration. BIOPEST is an effective droplet modifier and will increase the average droplet size. Ensure that the spray solution contacts the part of the plant with the heaviest disease and or insect pressure. This is particularly important for GPA which tend to colonise the underside of leaf surfaces, setting up the boom to create turbulence or applying in a cross wind are effective ways of getting coverage on the underside of leaves.



Green Peach Aphids  
Source: - SACOA

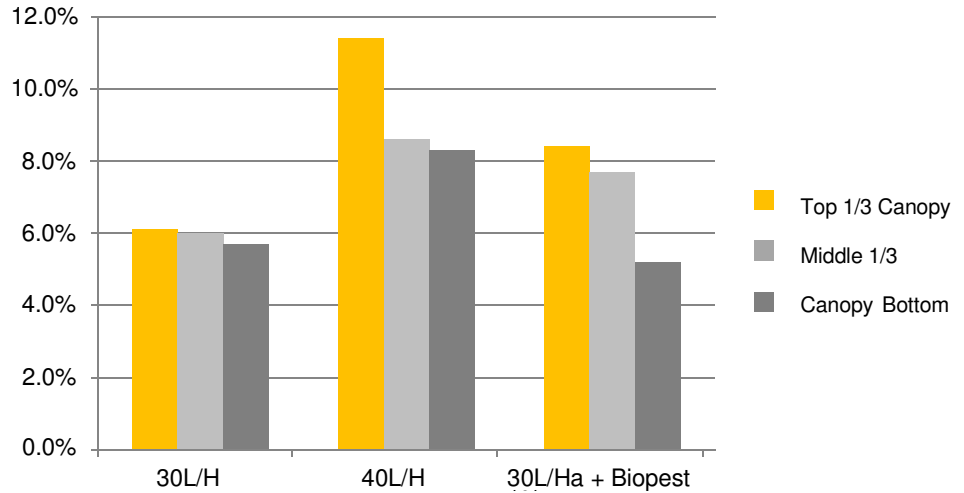
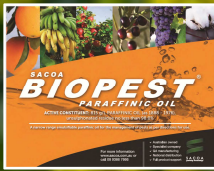


Sclerotinia leaf lesions in Canola  
Source: - SACOA



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Increase in canola leaf surface coverage with the addition of BIOPEST®. Source: Agvivo demonstration trial June 2014

## Table 1 Grains resistance management strategy for the green peach aphid across Australia

Crop type and location	Crop type and location	Post establishment / pre-flowering	Rationale
Canola >50km from commercial horticultural regions	Imidacloprid (4A) or Lambda cyhalothrin + thiamethoxam (3A + 4A)	Sulfoxaflor (4C) or paraffinic oil	Carbamate (e.g. pirimicarb) resistance is commonplace. Its use is not recommended.
Canola <50km from commercial horticultural regions	Sulfoxaflor (4C)	Paraffinic oil*	Carbamate (e.g. pirimicarb) resistance is commonplace. Its use is not recommended. Neonicotinoid (e.g. imidacloprid, thiamethoxam) resistance is probably emerging in horticultural crops. Its use is not recommended.
Pulses >50km from commercial horticultural regions	Imidacloprid (4A)	Dimethoate/omethoate (1B) or paraffinic oil (Note: apply a single treatment of 1B only, do not use repeated applications. Efficacy of 1B may be reduced if insecticides have been applied previously)	Carbamate (e.g. pirimicarb) resistance is commonplace. Its use is not recommended. Organophosphate (e.g. dimethoate, omethoate) resistance is due to amplified E4 esterase, which is caused by prior exposure to organophosphates.

Source: <https://grdc.com.au/>

### Further Research

Throughout 2017, SACOA are continuing to invest in research on the beneficial effects of BIOPEST in a range of crops – specifically targeting the fit in existing agronomic practices and measuring beneficial safety. A major focus of our work will be on aphid control in cereals and how BIOPEST can improve the efficacy of a range of cereal fungicides targeting pyrenophora diseases.

#### Find Out More

Further information is available at [SACOA.com.au](http://SACOA.com.au), on (08) 9386 7666 or by contacting your local SACOA representative;

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