

Can you tell the difference between  
the good, the bad and the ugly?  
PROCLAIM® can.



syngenta.



### Benefits of PROCLAIM

#### Naturally derived

Developed from a soil micro-organism,  
*Streptomyces avermitilis*

#### Reliable performance

Performs under pressure against  
Lightbrown Apple Moth and Grapevine Moth

#### Flexible application

Can be applied up to pre-bunch closure  
(E&L 31) growth stage

#### Ovi-larvicidal activity

Larvae can be controlled as they hatch and  
before they feed on the leaf

#### Fast, robust performance

Active on all feeding larval stages

#### Translaminar movement

Moves through the leaf to protect the underside

#### Quick absorption

Any remaining residue on the outside of the leaf is  
quickly degraded

#### Low disruption of beneficials

Ideal for Integrated Pest Management programs

#### Botrytis control

Applied with SWITCH® at pre bunch closure for  
premium integrated control

cont. overleaf

®

# Independent research confirms PROCLAIM is soft on key beneficial insects

There are several species of beneficial insects that are of interest to grape growers in terms of managing some key pests in vineyards.

***Mallada signatus*** is one of the most common Green Lacewings which are active in grapevines from late spring to autumn. Green Lacewings are considered as one of the most important wide ranging predators in grapevines. Green Lacewings will attack and eat almost any small insects or eggs, the juveniles prey on aphids, mites, scales, mealybugs, small caterpillars and moth eggs.

***Trichogramma carverae*** or ***Trichogramma wasp*** are minute wasps which lay their eggs into the eggs of various lepidoptera pests, the favoured host eggs of ***Trichogramma carverae*** in grapevines are those of LBAM and ***Heliothis Helicoperva***. Once the wasp eggs have hatched they begin to feed on the developing moth eggs.

***Hippodamia variegata*** is a predatory ladybird which was established in Australia in early 2000 and is now common in a large variety of crops. Both the adults and juveniles are predators of aphids, small caterpillars and moth eggs.

***Stethorus sp*** are mite-eating ladybirds that are black and less than 2mm in length. ***Stethorus sp*** ladybirds prey on Two-Spotted Mites and European Red Mites. Both the adults and juveniles are predatory.

On going Australian research assessing the impact that PROCLAIM has on beneficial insects that commonly occur in grapevines has just been concluded by a leading independent IPM research facility.

Laboratory bioassays were performed to determine the effects of direct spraying (acute toxicity) and the effects of the insecticides on fecundity (reproduction) of various beneficial insects. In order to be confident that an insecticide is truly harmless to a beneficial species, it is important to also consider the effects of the insecticide on reproduction of the species.

These tests compared simulated application rates of PROCLAIM (44 g/kg Emamectin) at 0.15 g/L, Success\* (120 g/L Spinosad) at 0.4 mL/L and Avatar\* (400 g/kg Indoxacarb) at 0.7 g/L.

## Acute toxicity (direct spray) bioassay results

Table 1. Mortality (%) of species exposed to direct sprays of insecticides.

Species	Control (water)	Insecticide		
		PPROCLAIM (44 g/kg emamectin)	Spinosad (120 g/L)	Indoxacarb (400 g/kg)
<b><i>Hippodamia variegata</i></b>	7.5	7.2	17.3	80.6*
<b><i>Stethorus sp</i></b>	2.5	11.9	100*	80.8*
<b><i>Mallada signatus</i></b>	3.1	5.9	9.4	69.5*
<b><i>Trichogramma carverae</i></b> (adults)	8.7	100*	100*	90.8*
<b><i>Trichogramma carverae</i></b> (juveniles)	6.7	9.4	93.5*	3.5

\* Mortality figures followed by an asterisk (\*) are significantly higher than corresponding control mortality (P<0.05).

## Fecundity (reproduction) bioassay results

Table 2. Fecundity of ***M. signatus*** following exposure to PROCLAIM.

Test	Control Water	PROCLAIM (44 g/kg emamectin)
Number of eggs per female	184	192
Fertility of eggs (%)	70.4	66.6

Table 3. Fecundity of ***H. variegata*** following exposure to PROCLAIM.

Test	Control Water	PROCLAIM (44 g/kg emamectin)
Number of eggs per female	72.2	74.6
Fertility of eggs (%)	97.4	98.1

No significant differences (P<0.05) observed between treatments and corresponding controls.

**Reference:** Effects of PROCLAIM (44 g/kg emamectin) and other insecticides on beneficial insects and mites which inhabit grapevine crops 2005.

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