

Velifer®
Biological Insecticide

Technical guide



Totally
[Biological]
by **BASF**

BASF
We create chemistry

Velifer®

Biological Insecticide

A whole new game plan for effective insect control

Velifer® Biological Insecticide will provide the growers of protected crops with a new level of support: pest management based on a beneficial fungus.

Velifer plays a complementary role which means its positive impact on the overall crop protection program goes well beyond the effect of each application. Introducing such an innovative, flexible, environmentally friendly solution will reduce reliance on traditional chemicals and help support the use of beneficial predatory insects.

With no maximum residue limit or withholding period, Velifer can be used to complement pest control right up to harvest.

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Product profile

Active ingredient	<i>Beauveria bassiana</i> strain PPRI 5339 (min 8 x 10 ⁹ cfu/ml)
Mode of action	Fungal contact insecticide
Formulation	Oil dispersion (OD)
Adjuvants	There is no label adjuvant recommendation, but some adjuvants may increase efficacy
Compatibility	Velifer is compatible with many commonly used fungicides and insecticides, but some fungicides are incompatible. (See page 5.)
Withholding period	None
IPM status	Highly compatible with a range of IPM systems, with minimal impact on beneficial species, including pollinator insects
Pack size	5 L

Use profile

Target pests

Suppression:

Onion thrips
Western flower thrips

Greenhouse whiteflies
Silverleaf whiteflies
Sweet potato whiteflies

Chrysanthemum aphids
Green peach aphids
Rose aphids

Two-spotted mites

Crop registration

All vegetables and ornamentals in protective structures

Rates

Thrips and whiteflies: 50 mL/100 L

Aphids and mites: 90 mL/100 L



Infected whitefly



Infected mite

MODES OF ACTION

Velifer is derived from a naturally occurring fungus. Its unclassified mode of action is so complex that there is little likelihood of pest populations developing resistance to Velifer.

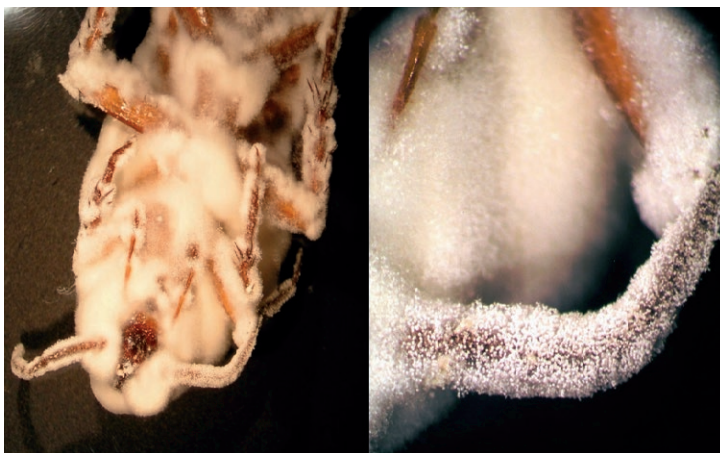
Each mL of Velifer contains about 8 billion fungal spores.

Adhesion of the spores to the host insect takes 0–6 hours. On contact with the insect, the spores germinate within 6–12 hours. As they germinate, they secrete enzymes that weaken the insect cuticle.

The fungus then invades the host and continues to grow, with the bacteria blastospores weakening the insect’s immune system.

The weakened immune system, along with dehydration through the puncture holes, leads to insect death. Death will usually occur within 24–48 hours.

Effective against all insect pest life stages, with best performance at low numbers.



BASF internal image

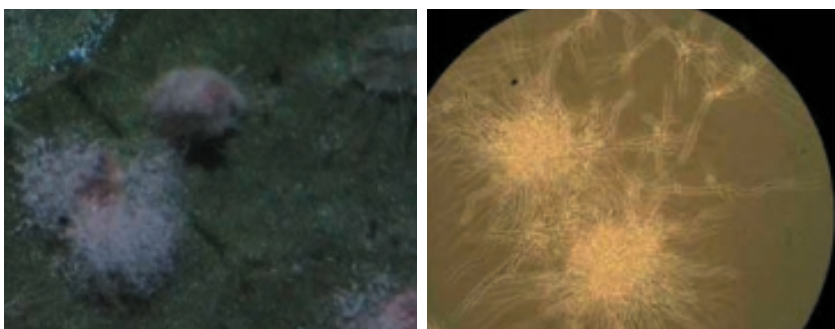
Fungal sporulation will begin to create an ‘icing sugar’ effect on the insect body 72–96 hours after application.

THE VELIFER ACTIVE

Beauveria bassiana is:

- A naturally occurring, soil-borne fungus
- An ascomycete fungus in the family Clavicipitaceae (the same family as the *Metarhizium* species)
- A parasite of various arthropod species

Scientific classification	
Kingdom:	Fungi
Division:	Ascomycota
Class:	Sordariomycetes
Order:	Hypocreales
Family:	Clavicipitaceae
Genus:	<i>Beauveria</i>
Species:	<i>B.bassiana</i>



IPM FIT

Velifer is an ideal product for IPM programs as it is soft on beneficial insects.

Velifer has no effect on ladybirds and is non-toxic to both honeybees and bumblebees.

Velifer is harmless to predatory mites, parasitoids and predatory bugs used in IPM products.

TANK-MIX COMPATIBILITY

Velifer is compatible with a range of fungicides and conventional insecticides, but – as shown below – is adversely affected by some other products. Compatibility testing is ongoing.

Compatible products

Non toxic to spores

alpha-cypermethrin	mancozeb	Sercadis [®]
Amistar* (low)	Moncut*	Sumisclex*
Applaud*	Movento*	Teldor*
Benevia*	Natrasoap*	Thiovit* Jet
Chorus*	Pristine [®] (low)	Torque*
copper	PyBo*	Transform*
Filan [®]	Revus*	Vivando [®]
Fontelis*	Rovral*	Wetcit*
Hy-Mal*	Scala*	Zampro*

Moderately toxic

Do not tank-mix. Wait 2 days

Aero [®] (high)
Amistar (high)
Cabrio [®] (high)
carbendazim
Flint*
Luna* Experience
Luna Privilege
Luna Sensation
Pristine [®] (high)

Toxic

Do not tank-mix. Wait 4 days

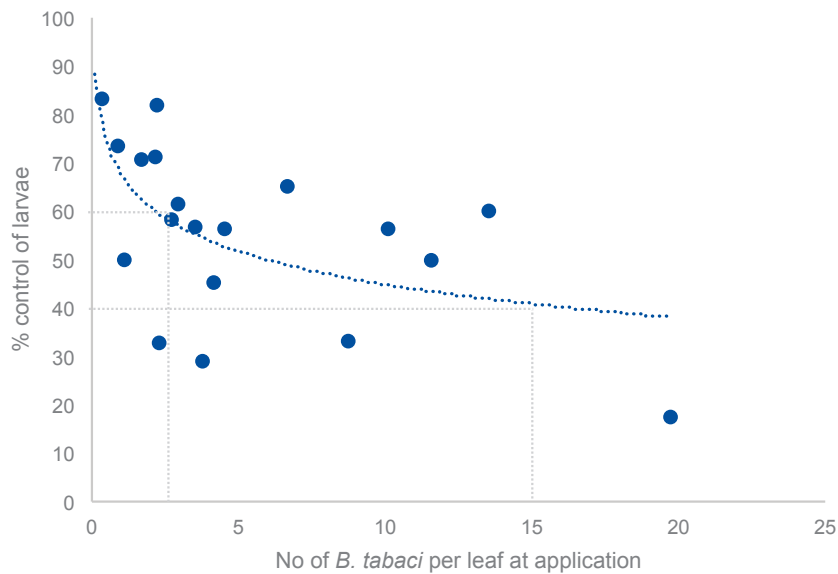
Acrobat [®]
Collis [®]
difenconazole
epoxiconazole
Kumulus [®]
Ridomil* Gold MZ
Score*
Switch*

* Registered trademark.

TRIAL RESULTS

Velifer offers complementary suppression of a range of common pests and a resistance management option to ease resistance pressure on conventional insecticides. Pest numbers at application have an enormous impact on Velifer's effectiveness.

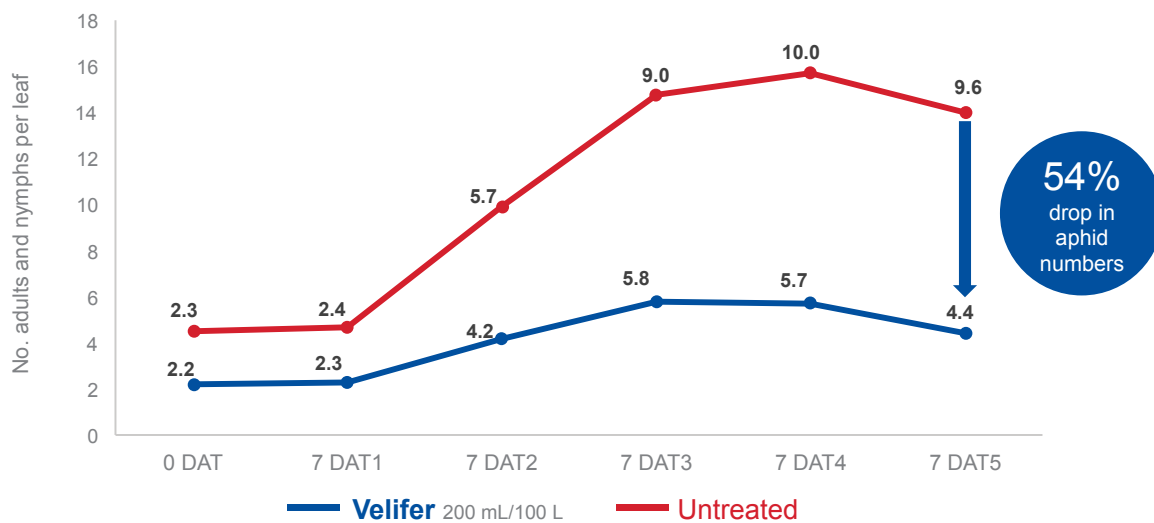
Whitefly control



Control results after 3 applications of Velifer.
BASF internal trial

These results show how important it is to target low pest populations. With 2.5 whiteflies per leaf at application, Velifer achieved 60% control. With 15 whiteflies per leaf, that control dropped to 40%.

Green peach aphid control



Agrisearch trial in greenhouse tomatoes at Raymond Terrace, NSW 2013.

5 Velifer sprays in 610 L/ha water at 7-day intervals to manage green peach aphid adults & nymphs

These results were achieved with Velifer as a standalone treatment however it is most effective when complementing other controls, such as conventional chemistry and integrated pest management systems.

APPLICATION GUIDELINES

Optimal conditions

Use in protected cropping should generally make it simple to apply Velifer in the most suitable conditions:

22–28°C

Temperatures below 16°C and above 32°C will influence spore mortality

>60% humidity

Relatively high humidity is required at the time of application and for a few hours afterwards

Apply late afternoon

Velifer is sensitive to high levels of UV, so avoid application in the middle of the day

Keys to success

▪ High spore counts

Always use viable batches at the full label rate for both initial and repeat applications. Refrigeration will extend shelf-life.

▪ High water rates

Use 500–2500 L/ha water to ensure complete spray coverage, but NOT past the point of run-off.

▪ Keeping the spores in suspension

Shake the pack well before use and maintain agitation throughout the application process.

Application timings

Mid-season:

Alternate Velifer in 3-spray blocks with conventional insecticides to **suppress pest population recovery after knockdown**

- Reduces the number of insecticides applied
- Supports beneficial insects

Late season:

Use Velifer in 3-spray blocks to **suppress pest activity during harvest**

- Manages residues
- Extends protection



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Key **Velifer** advantages

- ✓ Complementary suppression of a range of common pests
- ✓ Effective against all life stages, with best performance at low numbers
- ✓ Increased application flexibility, especially around harvest
- ✓ Innovative resistance management option to ease pressure on conventional insecticides
- ✓ Complementary with the release of beneficial species
- ✓ Simpler compliance with evolving consumer expectations and regulatory standards

For more information on Velifer, visit crop-solutions.basf.com.au or contact your local BASF representative on **1800 558 399**

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