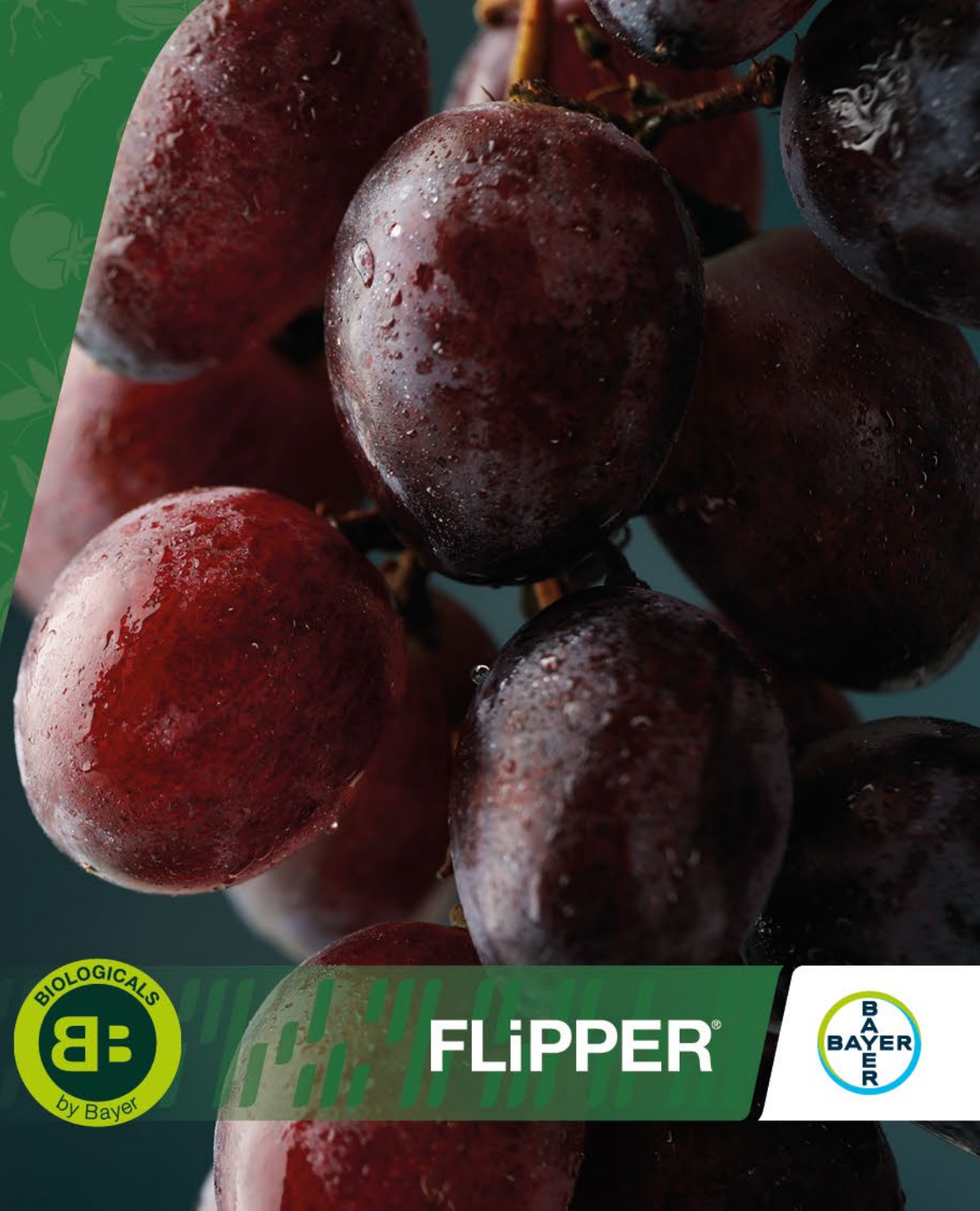
FLiPPER®



What is FLiPPER®?



/// A biological insecticide.

/// Active substance derived from extra-virgin olive oil production.

/// Gentle on pollinators and beneficial insects.

/// Exempt from EU MRLs.

/// ECOCERT attestation obtained for the EU; *South African attestation in progress*

/// An ideal partner for integrated spray programmes with conventional crop protection products.

/// Suitable for use in resistance management strategies.

/// Shelf life – 2 years, no refrigeration needed.

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What is FLiPPER®?



Active ingredient:
Fatty Acids (C14-C20) Potassium salt 480 g/ℓ



Primarily composed of unsaturated carboxylic acids, specifically long-chain fatty acids with carbon chain lengths ranging from C14 to C20. These compounds are derived from the production process of extra virgin olive oil, making them a natural by-product.



Formulation:
An emulsion, oil-in-water insecticide



Citrus: 10L/ha **FLiPPER®**
Table grapes: 1% **FLiPPER®**
Blueberries: 1% **FLiPPER®**

Do not exceed 10 ℓ **FLiPPER®** *per ha.*



Mode of action:
FLiPPER® acts as a contact insecticide, requiring direct contact to be effective. Its lipophilic carbon chains penetrate the insect's outer layers, disrupting metabolism and feeding, causing rapid death in all life stages: eggs, nymphs, and adults.



Registration:

Citrus:
Citrus Thrips: *Scirtothrips aurantii*

Table grapes:
Western Flower Thrips: *Frankliniella occidentalis*
(Suppression of adults and nymphs only)
Citrus Thrips: *Scirtothrips aurantii*
(Suppression of adults and nymphs only)

Blueberries:
Citrus Thrips: *Scirtothrips aurantia*
(Suppression of adults and nymphs only)
Cotton Aphid: (*Aphis gossypii*)
(Suppression of adults and nymphs only)

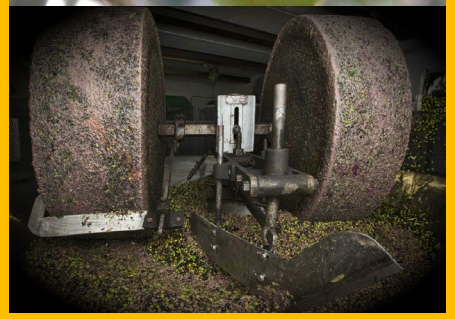
FLiPPER®

Unsaturated Carboxylic Acids

Formulation & Manufacturing Process

Active Ingredient
Potassium Salt Fatty Acids





Extra virgin olive oil production process by-product: Olive Acid Oils

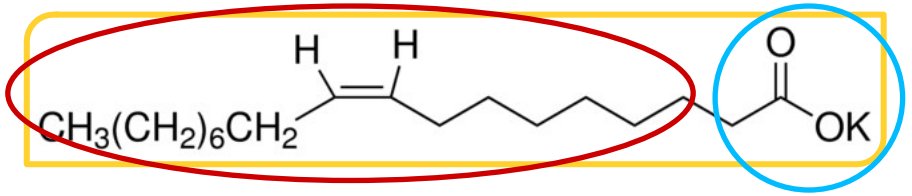


FLiPPER®'s active ingredient processes through 7 stages of purification, including: separation, distillation and fractionation in a Government Authorised Factory, ISO certified.

A purely physical-chemical process without the addition of any synthetic substance.



/// Evaluated by EU as Food Grade Material
/// MRL Testing Exempted
/// Low Risk Substance (EU)



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Mode of Action

FLiPPER® is a contact insecticide with no translaminar or systemic activity!

Lipophilic carbon chains penetrate the outer layer (cuticle) of the target pest

Disrupts fluidity and permeability of cell membranes – cellular contents "leak out"

Feeding behavior is disrupted

Pest eventually dies from desiccation or "drying out".



Myzus persicae
UTC control
24 h post-water treatment





Myzus persicae
1% FLiPPER®
24 h post application

There is evidence that it may also block pharynx of the pest, affecting respiration as well

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alphabiocontrol
BIO-INSPIRED CROP PROTECTION

FLIPPER application at 10 ml/l.
Aphids (*Aphis gossypii*)
Adult feeding

FLiPPER®
Insecticide/Acaracide

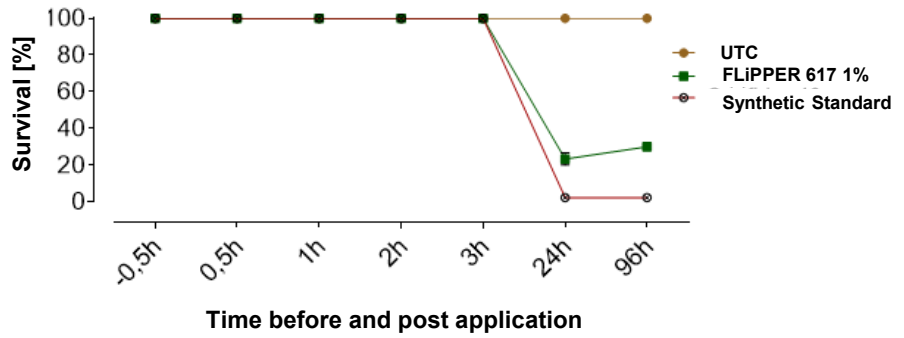
FLiPPER®: Effect on Aphids & Thrips

How it Works: FLiPPER® Speed of Action Comparison

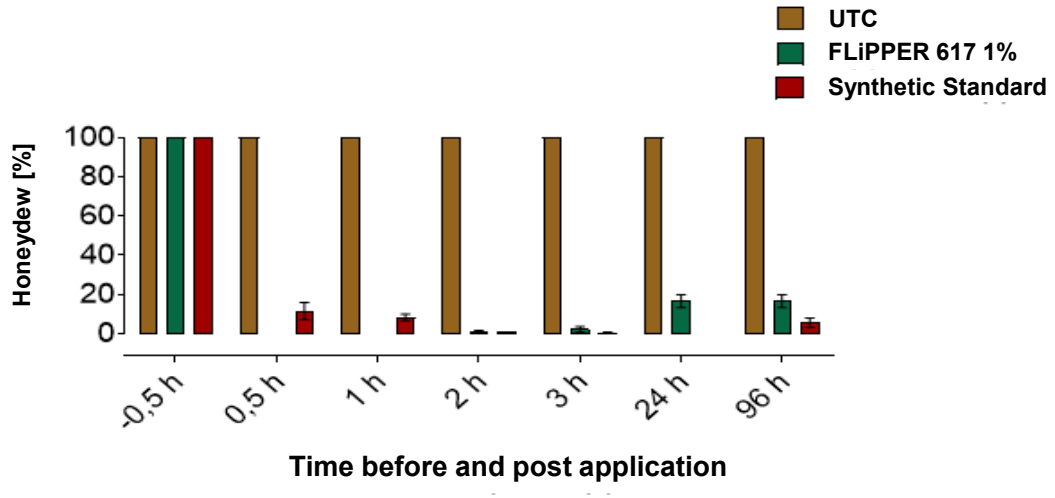
Mortality after 24 hs, Stop feeding fast (30 minutes)

International lab test was done on *Myzus persicae* for illustration purposes.

Time until mortality of aphids (*Myzus persicae*)



Feeding stop of aphids (*Myzus persicae*)



Within 24 hours Thrip dies, similar to synthetic standard

Thrips stops feeding within 30min



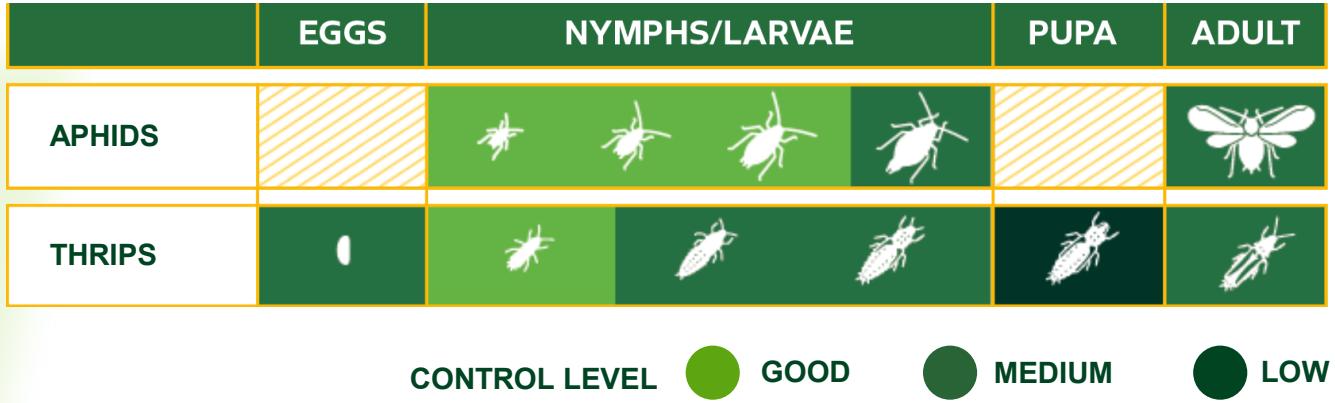
Measurement of honeydew excretion indicates that feeding stops ~30 mins after FLiPPER® treatment.

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FLiPPER®: Active at Different Stages of the Pest Life Cycle

Pest Spectrum

FLiPPER 1% – efficacy on different targets/stages during indoor cultivation. Application in first phase of population development, effectiveness affected by spray quality and accessbility of target



FLiPPER® is active following contact with the pest body.

It is active against most stages of insect life cycles.



CitrusThrips:
Scirtothrips aurantii



Western Flower Thrips:
Frankliniella occidentalis

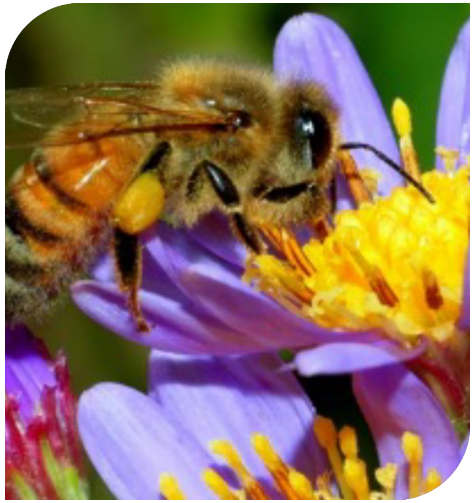


Cotton Aphids:
Aphis gossypii

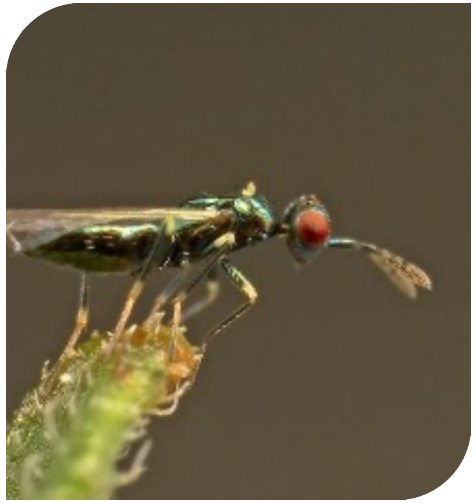
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Beneficials' and Pollinators' Profile

FLiPPER® is soft on pollinators and beneficials



HONEY BEES



BENEFICIAL INSECTS



BENEFICIAL MITES

The use of FLiPPER presents a minimal risk to beneficials or pollinators when applied according to the label

/// After application of FLiPPER, once the spray-film has dried, beneficial organisms and pollinators can be introduced without any risk to the population.

/// When an established population of beneficial organisms is already present at the time of application, FLiPPER applied at standard rates does not cause an unacceptable reduction to beneficial populations.

/// In this case, many beneficials evade spray treatment thanks to their behaviour and mobility but those exposed to FLiPPER also survive in large numbers.

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FLiPPER®: Selectivity on Beneficial Arthropods

Study at IPM Impact Nederhespen, Belgium 2014







PEST GROUP	PEST SPECIES	IOBC rating
Predatory mites	*Amblyseius swirskii*	1
	Amblyseius cucumeris	1
	Macrolophus caliginosus	2
	Encarsia formosa (hatched pupae) – untreated	1
	Encarsia formosa (hatched pupae) – treated	2
	Phytoseilus persimilis	2
Predatory bugs	*Orius levigatus*	1
	Therodiplosis persicae	1
	Cryptolaemus montrouzieri	2
	Delphastus catalinae	2
	Diglyphus isaea	1
Parasitic wasps	*Amblyseius californicus – eggs*	2
	Amblyseius californicus – nymphs	1
	Amblyseius californicus – adults	1
	Aphidius colemani – mummies	2
	Aphidius colemani – hatched mummies	1

IOBC Rating

1 = Harmless or only slightly harmful < 25% mortality

2 = Moderately harmful 25-50% mortality

Impact on Beneficial Insects and Pollinators

- www.koppert.com
- www.biobee.com

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Tips for Application

Recommended rate 1 ℓ FLiPPER® per 100 ℓ water = 1% v/v

/// **FLiPPER®** is a contact insecticide with no translaminar or systemic activity.

/// Achieving complete coverage of the upper and lower leaf surfaces is essential for satisfactory efficacy, avoiding runoff.

/// Apply at the first signs of pest infestation.

/// Apply the product as a foliar spray with a sufficient quantity of water to achieve the wetting of all the target pest and host crop.

/// Assess the efficacy not earlier than 3 days (72 hours) after spraying.

/// Apply **FLiPPER** in blocks of two applications at a time (7 days apart).

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Dosage and water volumes

Grapes: 1% v/v = 1 ℓ FLiPPER® per 100 ℓ water

Blueberries: 1% v/v = 1 ℓ FLiPPER® per 100 ℓ water

Citrus: 10 ℓ/ha, irrespective of water volume used

The recommended spray volumes

/// **Citrus:** 800 – 4000 ℓ /ha
/// **Grapes:** 500 – 1000 ℓ/ha
/// **Blueberries:** 200 – 1000 ℓ/ha

Do not exceed 10 ℓ* FLiPPER® *per ha.

/// Apply at the first signs of pest infestation.

/// Assess the efficacy after 3 days after spraying, repeating application no less than 7 days later.

/// Apply **FLiPPER** in blocks of two applications at a time.

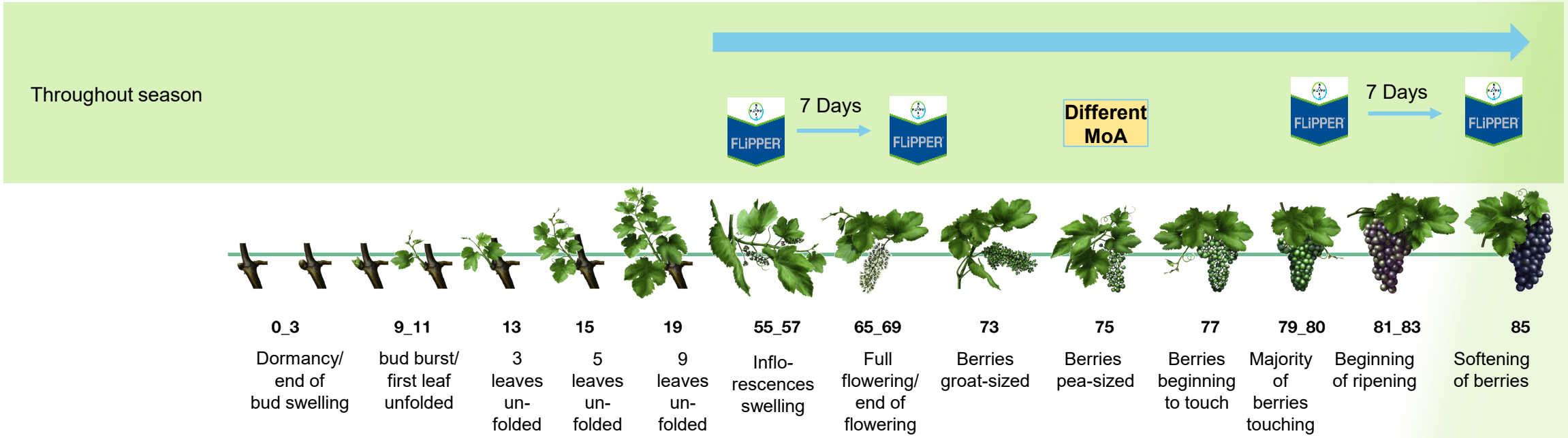
/// Apply a maximum of 4 applications per season

Apply as a foliar spray at the first signs of infestation. Repeated applications at a minimum of 7 days interval may be required, depending on pest pressure, respecting the maximum rate per application, with maximum 3 subsequent applications.

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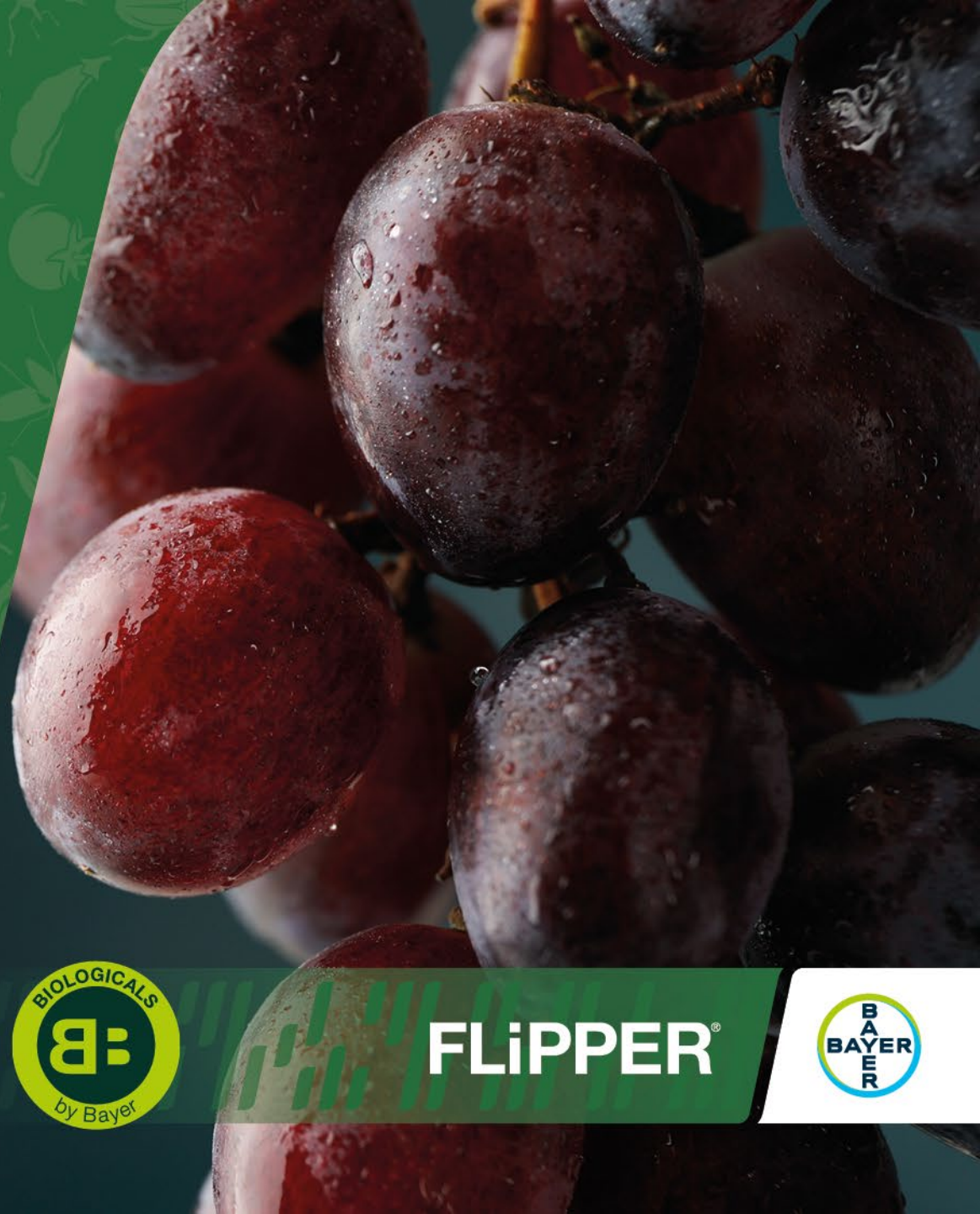
Table Grapes Positioning Example

Repeated applications of FLiPPER are essential for sustained pest control. Apply FLiPPER in blocks of two sprays, rotating with an alternative mode of action before resuming FLiPPER



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Table Grape Data



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FLiPPER®

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R&D Trials: Table Grapes: Thrips spp. *Scirtothrips aurantii*

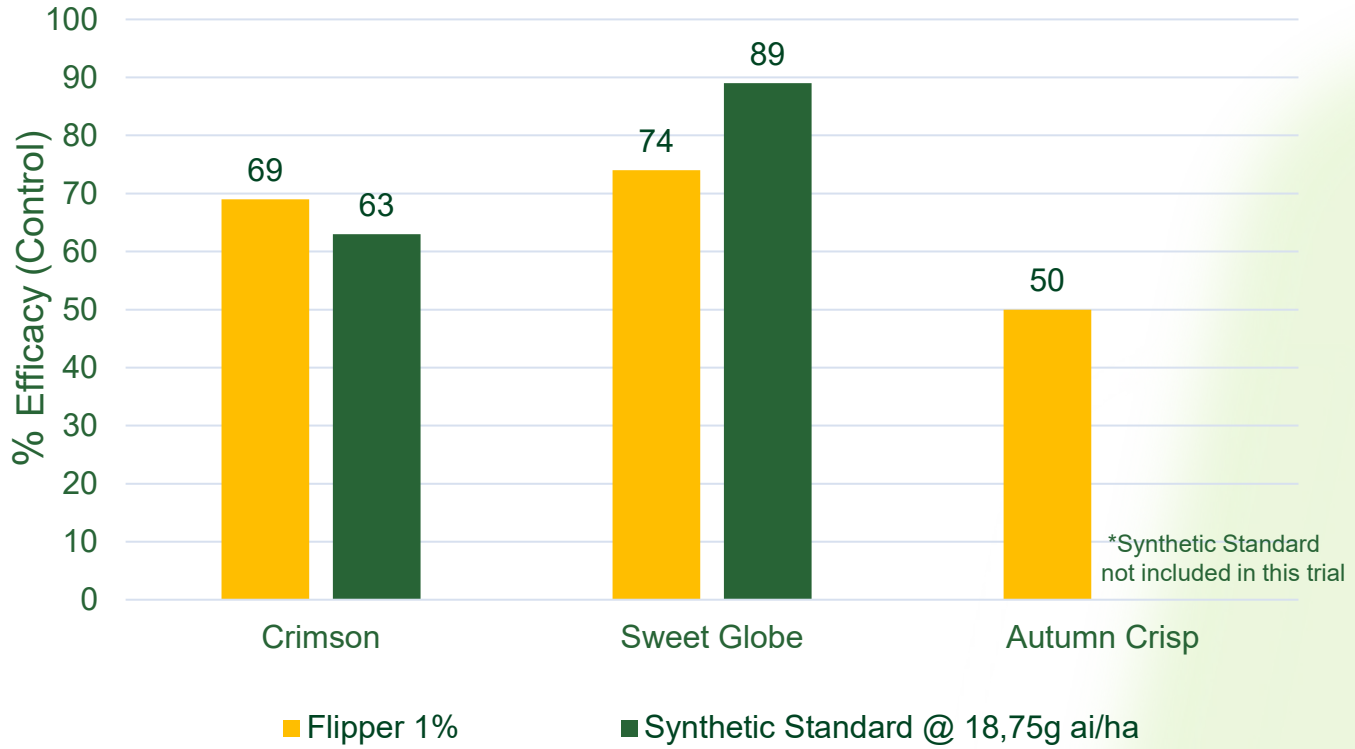
Area: De Doorns

- Applications at berries developing colour
- **FLiPPER®** applied at 1% = 10 ℓ/1000 ℓ water
- 3 cultivars were tested: crimson, sweet Globe & Autumn Crisp
- Assessment timings:
  - Crimson 7DAC,
  - Sweet Globe 7DAB &
  - Autumn Crisp 5DAA
- 10 Shoots per plot were assessed



Scirtothrips aurantii

Untreated control 115, 12, 315 thrips per shoot



Trial 1: Crimson
Trial 2: Sweet Globe
Trail 3: Autumn Crisp

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R&D Trials: Table Grapes: Thrips spp. *Frankliniella occidentalis*

Area: Riebeek-Kasteel & De Doorns

/// Applications at end of flowering

/// **FLiPPER®** applied at 1% = 10 ℓ /1000 ℓ water

/// 3 cultivars were tested: Sugraone, Cotton Candy & Regal

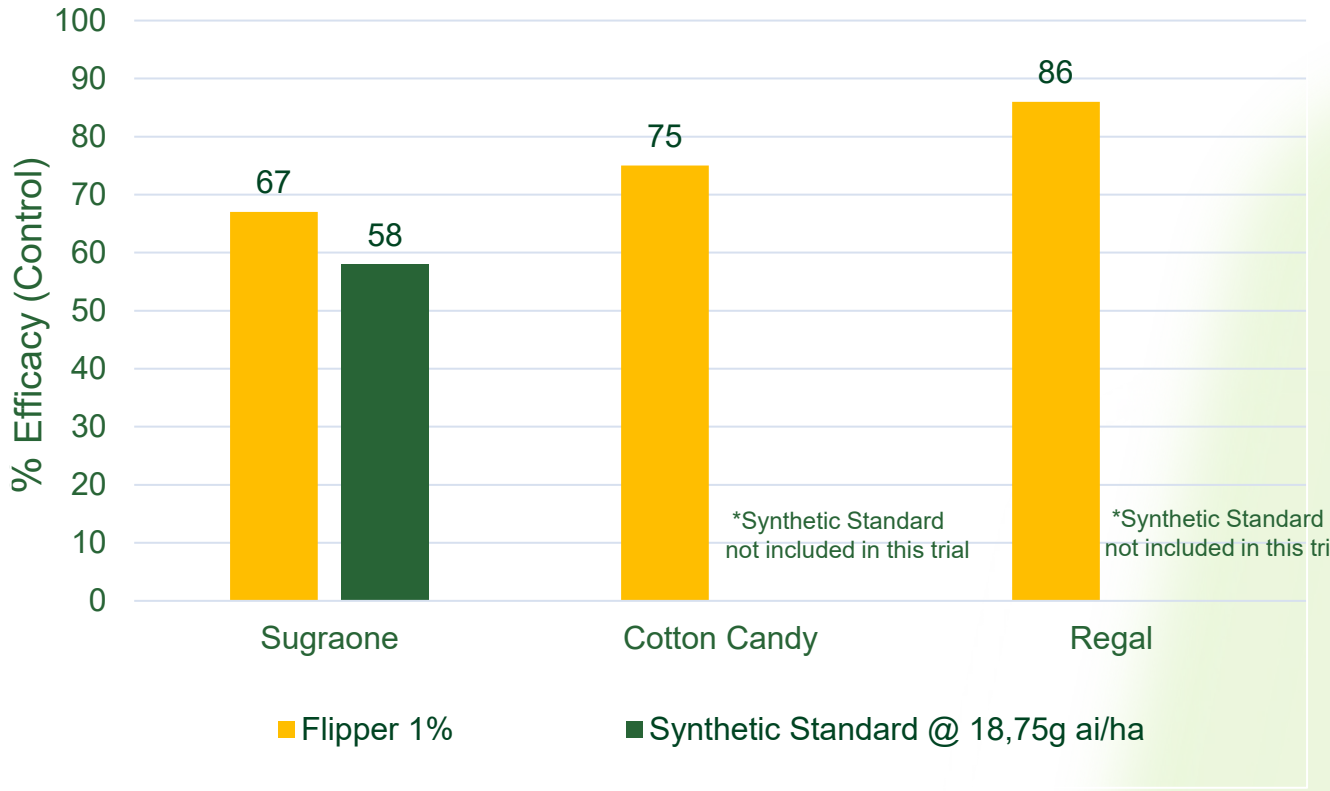
/// Assessment timings: Sugraone 9DAB Cotton Candy 7DAC & Regal 20DAB

/// 10 Shoots per plot were assessed



Frankliniella occidentalis

Untreated control 15, 3, 4 thrips per shoot

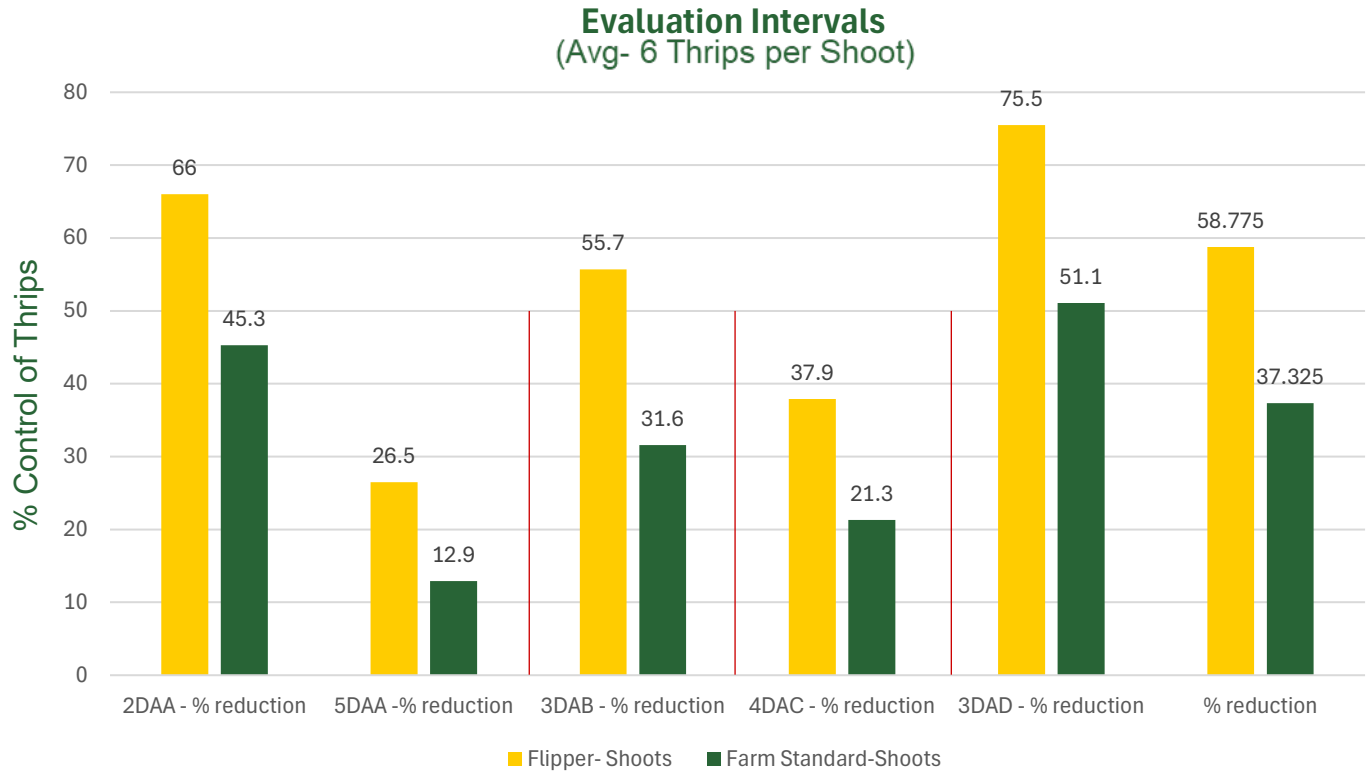


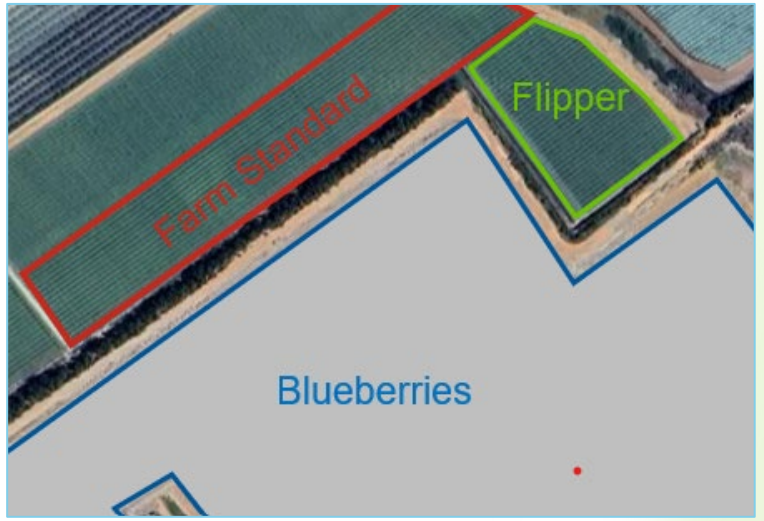
Trial 1: Sugraone
Trial 2: Cotton Candy
Trail 3: Regal

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Commercial Trials: Table Grapes: Thrips spp.

Area: Porterville





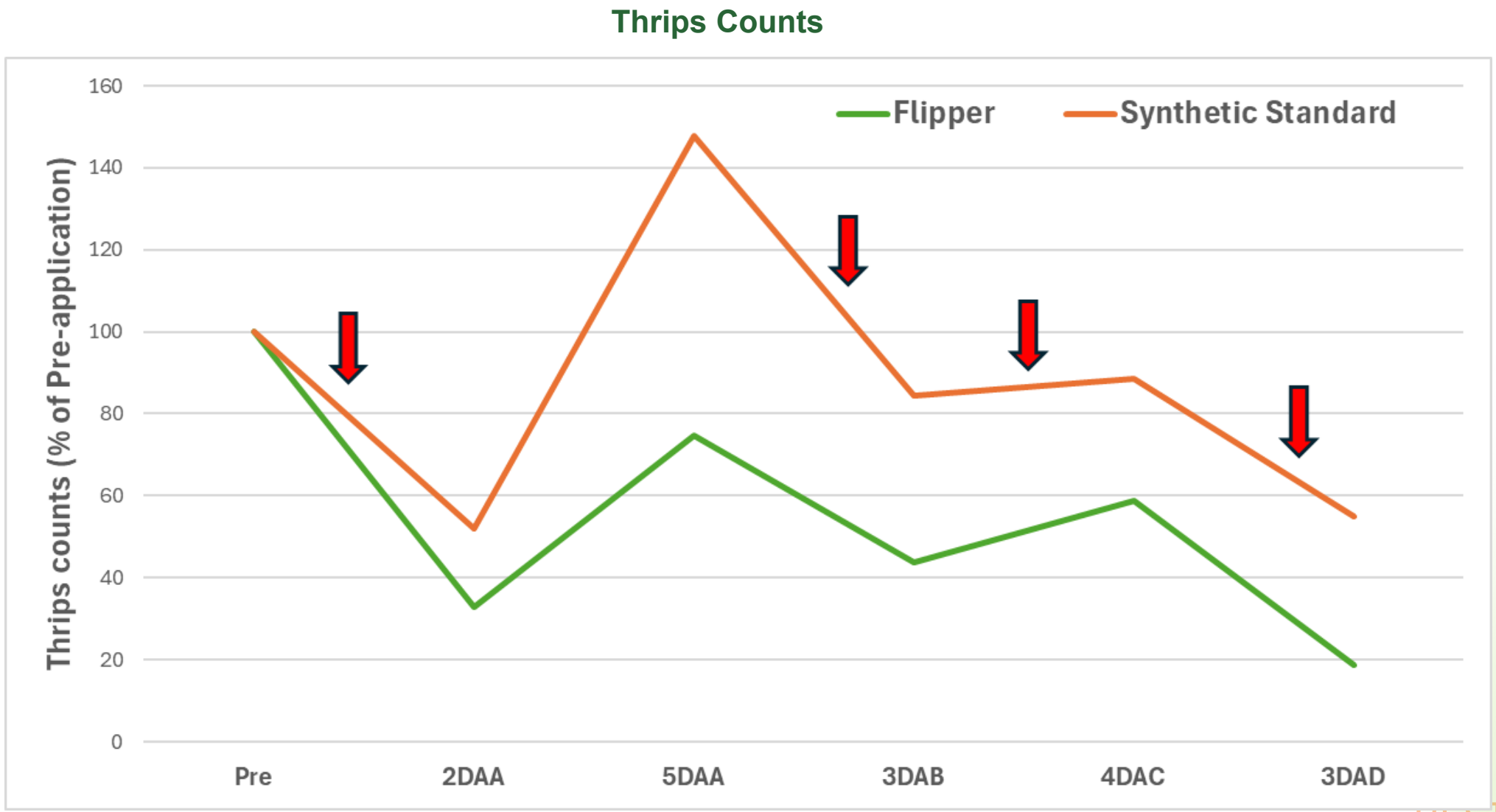
Block 51 – FLiPPER Sweet Globe (on Ramsey) 0.86 Ha

Block 50 – Farm Standard Sweet Globe (on Ramsay) 1.61 Ha

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Commercial Trials: Table Grapes: Thrips spp.

Area: Porterville



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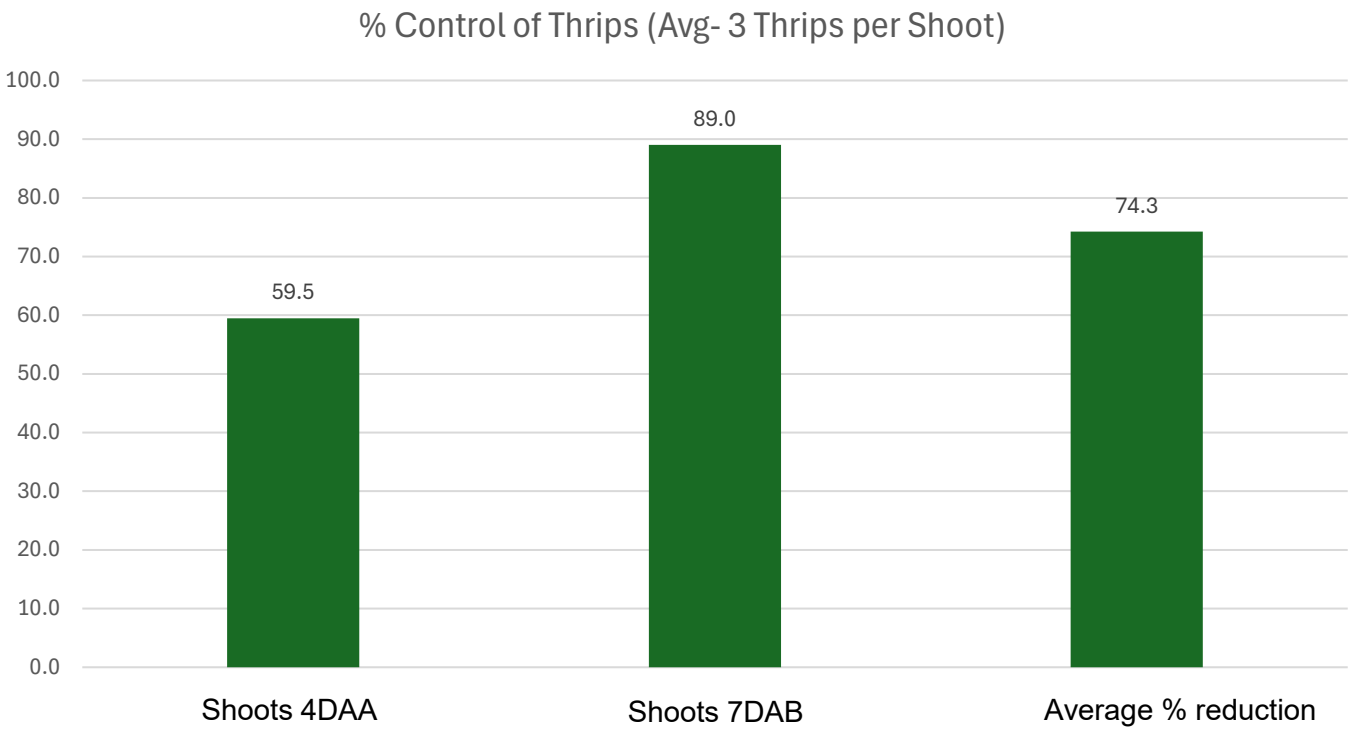
Commercial Trial 2 – Table Grapes

Area: Vredendal

Trial Objectives

/// Assess whether FLiPPER causes any phytotoxicity. Based on Porterville trial, the decision was made to apply FLiPPER twice at a 7-day interval, followed by a two-week break, before applying a third spray at the color break.

/// To assess the knockdown effect of FLiPPER by monitoring thrip counts



Application	Date & Time
A	28/11/2025
B	05/12/2025 6DAA
C	28/12/2025 14DAB

No Phytotoxicity was observed

The importance of 2 applications

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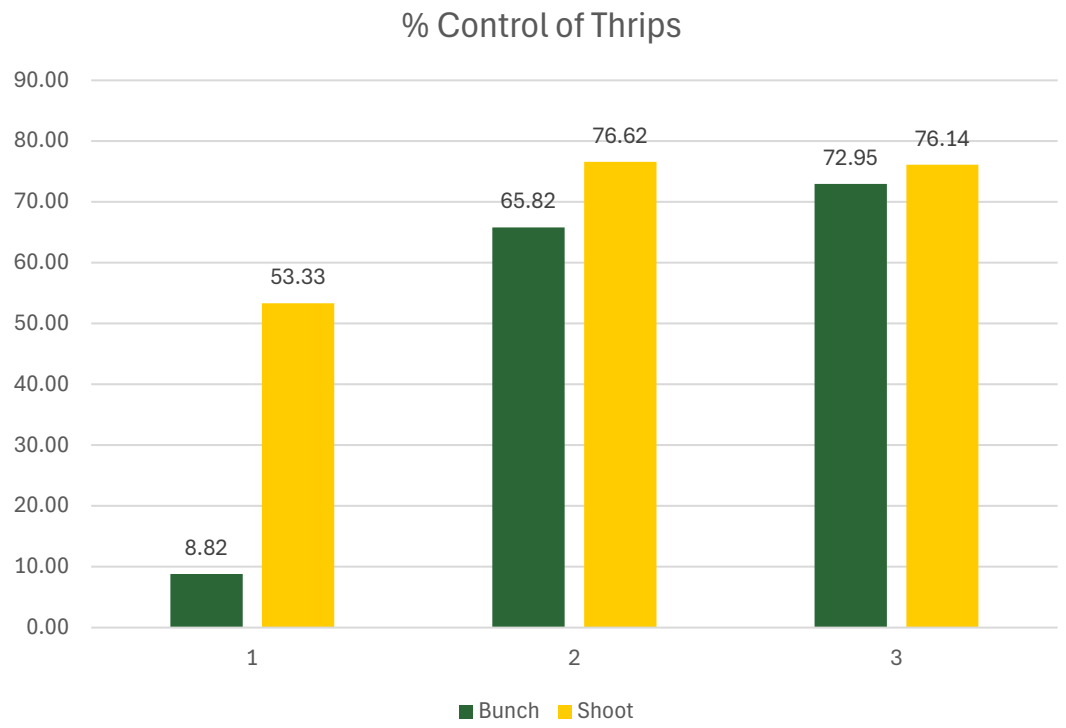
Commercial Trial 3: Table Grapes

Area: Northern Cape

Trial Objectives

/// Assess whether FLiPPER causes any phytotoxicity.

/// To assess the knockdown effect of FLiPPER by monitoring thrip counts.



Appl	Date & Time	Evaluation
A	31/10/2025 (34°C)	3 DAA
B	06/11/2025 7DAA - (31°C)	5 DAB
C	12/11/2025 6DAB - (36°C)	2 DAC



Higher temperatures, no phyto with good efficacy

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THANK YOU

Cropscience.bayer.co.za > Products and Solutions > Flipper

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FLiPPER®

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