



SIVANTO[®]

prime

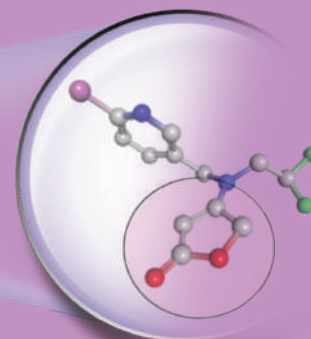
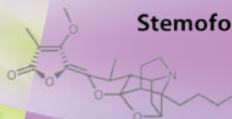
Growing in unison

SIVANTO[®] prime – Inspired by nature

- // SIVANTO[®] prime contains Flupyradifurone, inspired by the natural product stemofoline – a derivate from the Asian plant *Stemona japonica*. Stemofoline is an alkaloid with insecticidal properties.
- // SIVANTO[®] prime belongs to the butenolide group which targets the nicotinic acetylcholine receptor (nAChR) in targeted pests. Due to its unique binding structure it is clearly distinct from other products in IRAC group 4 such as the neonicotinoid insecticides and sulfoxaflor.



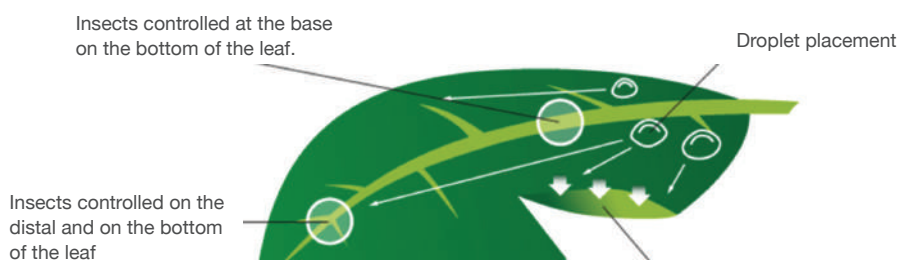
Stemofoline



Innovative pest control derived from nature for gentle usage in unison with the environment and sustainable agriculture.

Translaminar & Systemic movement

- // SIVANTO[®] prime's active ingredient is taken up into the leaves and stems with spray application.
- // SIVANTO[®] prime's systemic translocation properties distributes the active substance rapidly throughout the leaves to reach even hidden pests.



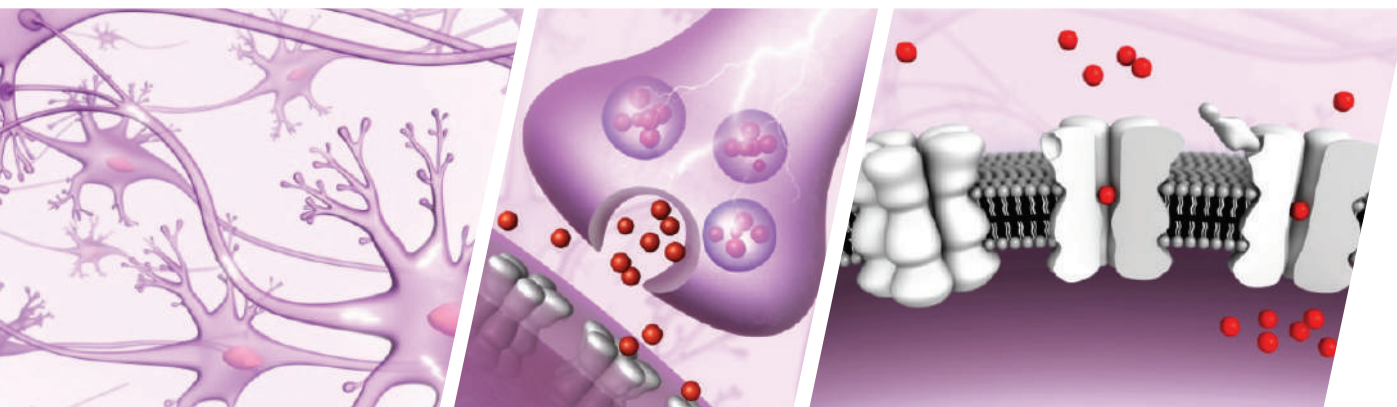
Leaf cross-section: Translaminar distribution throughout the leaf.

Flupyradifurone is not a Neonicotinoid

Mode of action – graphical illustration

// Flupyradifurone is an agonist that mimics the natural neurotransmitter Acetylcholine (nAChR).

// Due to its unique binding system flupyradifurone is clearly chemically distinct from neonicotinoid insecticides and sulfoxaflor.



Nerve connections in the central nervous system of insects

Neurotransmitter release from pre-synaptic vesicles and their binding to post-synaptic nAChRs

Flupyradifurone lacks neonicotinoid cross metabolic resistance due to its unique structure. This is different to that of the neonicotinoids and sulfoxaflor



SIVANTO® prime is a unique Butenolide which differs from other IRAC group 4 products

NEONICOTINOIDS		SULFOXIMINES	BUTENOLIDES
<p>N-Nitroguanidines</p> <p>Imidacloprid Thiamethoxam Clothianidin Dinotefuran</p>	<p>Nitromethylenes</p> <p>Nitenpyram</p>	<p>Sulfoxaflor</p>	<p>Flupyradifurone</p>
<p>N-Cyanoamidines</p> <p>Thiacloprid (E = SCH2CH2) Acetamiprid (E = CH3)</p>			
IRAC group 4A		IRAC group 4C	IRAC group 4D

Efficacy

CEREALS

// Withholding Period:

/ Wheat - 65 days

/ Barley - 54 days

// Registered at 200 ml/ha against

/ Russian aphid (*Diuraphis noxia*)

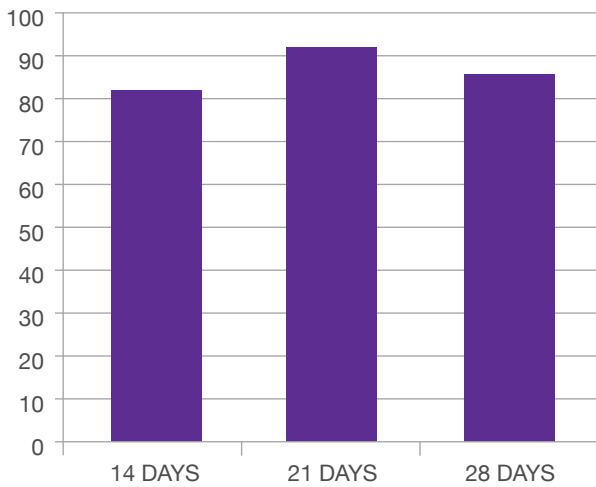
/ Oat aphid (*Rhopalosiphum padi*)

/ Aphid spp.



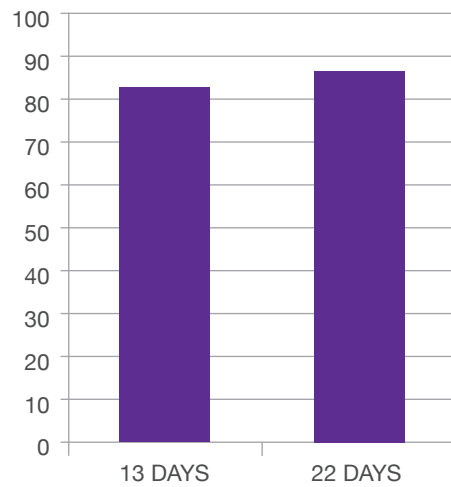
SIVANTO® prime 200 SL

@ 0.2 L/ha ground application - Barley



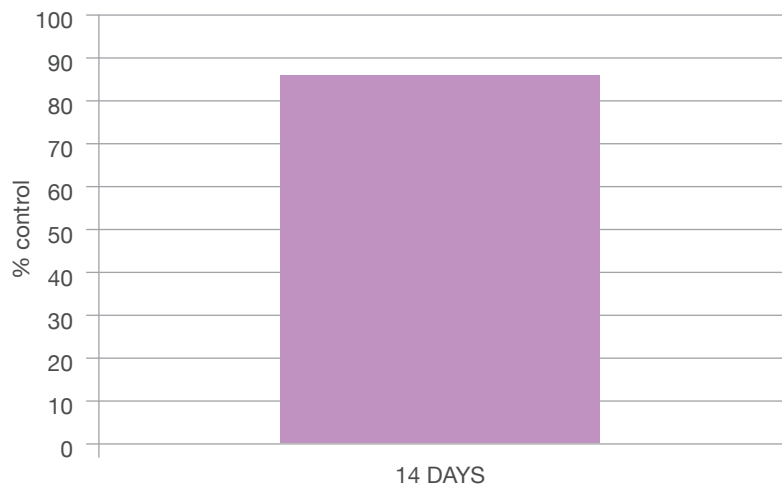
SIVANTO® prime 200 SL

@ 0.2 L/ha ground application - Wheat



SIVANTO® prime 200 SL

Control of Oat Aphids - Wheat



■ SIVANTO® prime 200 SL (Ground application)

Selectivity to beneficials / IPM fit

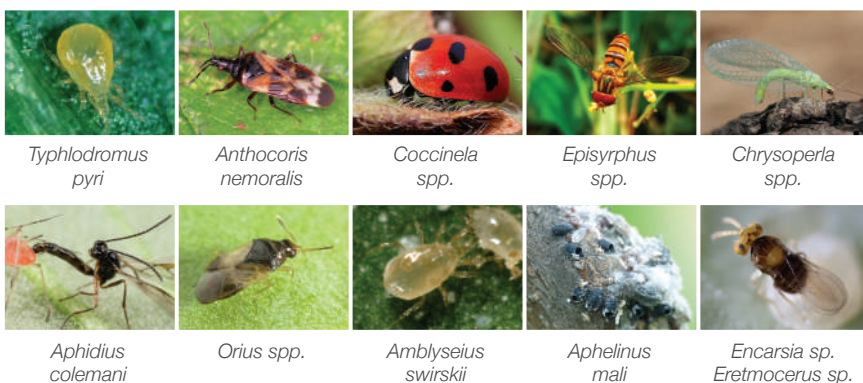
// Based on the results at the recommended field rates of **SIVANTO™ prime** the compound is selective to most beneficials in fruit and vegetable crops.

BENEFICIAL GROUP	SPECIES	STAGE	IMPACT
Predatory mites	<i>Amblyseius swirskii</i>	Motile	2
	<i>Typhlodromus pyri</i>		1
	<i>Kampimodromus aberrans</i>		1
Predatory bugs	<i>Orius laevigatus</i>	Mixed	3
	<i>Anthocoris nemoralis</i>	Mixed	3
Coccinellidae	<i>Coccinella septempunctata</i>	Larvae	1
Hover flies	<i>Episyrphus balteatus</i>	Larvae	1
Lacewing	<i>Chrysoperla spp.</i>	Adult	1 - 2
Parasitoid wasps	<i>Encarsia formosa/ Eretmocerus</i>	Mixed/mummies	1 - 3
	<i>Aphidius colemani</i>	Mixed	1
	<i>Aphelinus mali</i>	Mixed	1 -2

Key : IOBC rating based on Abbott mortality

1: Harmless (<25 % Mortality) 2: Slightly Harmful (25 - 50 % Mortality)
 3: Moderately harmful (50 - 75 % Mortality) 4: Harmful (75 % Mortality)

IOBC rating =
 International Organization on Biological and Integrated Control



Honey bee safety

// **SIVANTO® prime** has been tested in laboratory and extensive semi-field and field studies using highly bee attractive crops.

// Acute and chronic laboratory studies show that **SIVANTO® prime** has a low intrinsic toxicity to adult and immature honey bees.

// When applied at proposed label rates **SIVANTO® prime** confers low risk to honey bees even when applied to flowering crops during bloom.

Studies indicate that SIVANTO® prime has no adverse effects on honey bees, foraging activity, brood and colony development, hive vitality and honey bee health or on over-wintering when used according to proposed label instructions.



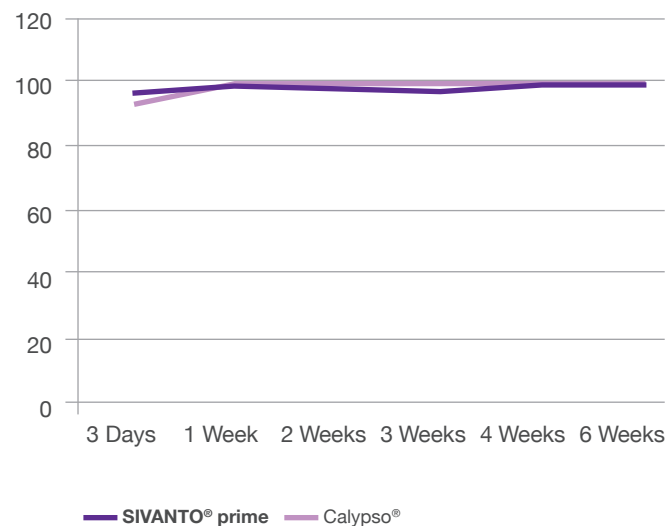


STONE FRUIT

- // Withholding Period: 35 days
- // Registered at 25 ml/100 L water against
/ Peach Aphid (*Myzus persicae*)



AVG Control over 4 Trials

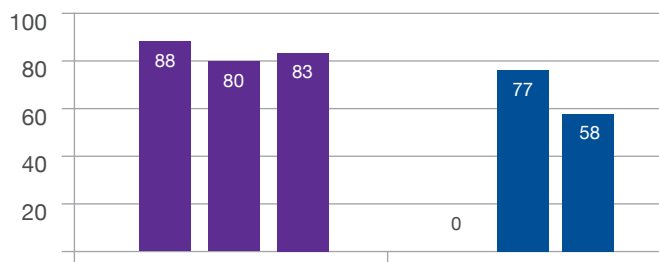


TOMATOES

- // Withholding Period: 3 days
- // Registered at 75 ml/100 L water against
/ Glasshouse Whitefly (*Trialeurodes vaporariorum*)
/ Cotton Whitefly (*Bemisia tabaci*)

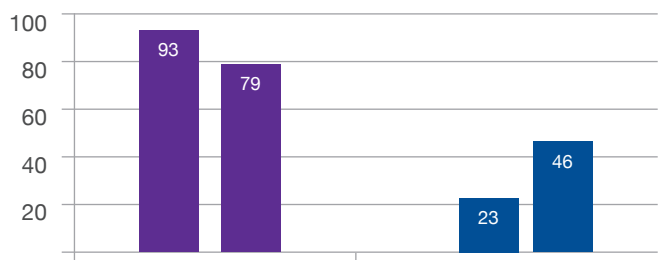
Total White Fly Control (All stages)

Three trials evaluated 7 days after the 3rd application
(T03HS01 T03AB01 T03HS01 T03AB01 T03HS02)



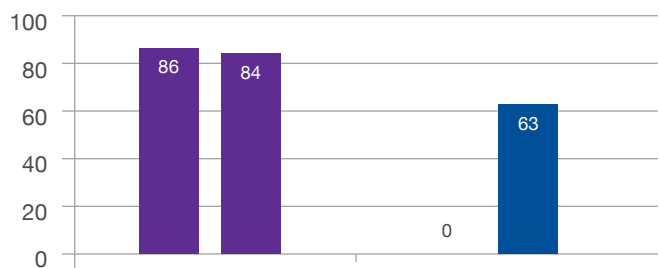
% Control of White Fly Larvae

Two trials @ 7 days after 3rd application (T03HS01 & T003HS02)



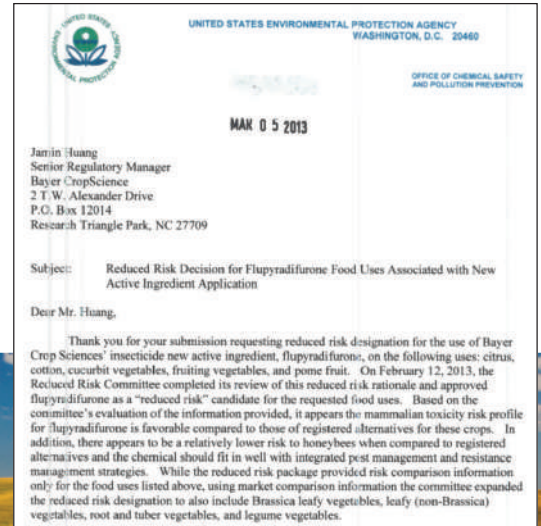
% Control of White Fly Adults

Two trials 7 days after 3rd application (T03HS01 & T003HS02)



Excellent safety profile

- // **Non-hazardous for humans and mammals**
"Favourable mammalian toxicity risk profile"
- // **No adverse effects to honey & bumble bees**
"Honey and bumble bee-friendly profile"
- // **Selectivity to beneficials**
"Fits well with integrated pest management (IPM) systems"
- // **SIVANTO® prime was approved as reduced risk candidate by the U.S. EPA***



Insecticide with special features

// **SIVANTO® prime** provides **excellent speed of action**, quick feeding cessation and, thus effective virus & bacteria vector control.



Efficacy



Compatible with bees

// **SIVANTO® prime** provides a **wide window of application** and treatment during flowering.



Convenience

4D

Uniqueness

// The active ingredient of **SIVANTO® prime**, flupyradifurone, belongs to a unique **chemical class of butenolides**.



Flexibility

// It is a systemic insecticide which is most effective when used as a **foliar application**.



IPM fit

// Its selectivity to most beneficials provides a perfect fit for **IPM programs**.

IRAC
Resistance management

SIVANTO® prime Reg. No. L10776 (Act No. 36 of 1947). **SIVANTO® prime** contains Flupyradifurone (Butenolide) (Caution). **Sivanto® prime** is registered trademark of Bayer AG, Germany. Use strictly according to instructions on label.

| @Bayer4Crops

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