

TECHNICAL
GUIDE

HORTICULTURE

Versys[®]

Insecticide



**A major win
for vegetable
growers**

 **BASF**

We create chemistry

A major win for vegetable growers

Versys[®] Insecticide gives vegetable, ornamental and cotton growers an important and advanced management option for aphids and silverleaf whitefly that will strengthen the whole IPM program.

Versys provides a very efficient mode of action from a new subgroup that delivers control at low use rates with minimal impact on beneficial insects and pollinators.

Adding Versys to the rotation will deliver superior insect control while also helping to maintain the effectiveness of other insecticides.

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Product profile

Mode of action	Group 9D – Pyropenes
Formulation	DC – Dispersion Concentrate
Adjuvant	Versys contains a built-in adjuvant and can be mixed with an additional surfactant to maximise control of silverleaf whitefly.
Compatibility	Versys is compatible with a range of crop protection products. See page 7.
Rainfastness	Versys is rainfast within 1 hour of application.
IPM	Versys is highly compatible with a range of IPM systems and pollinator insects.
Pack size	1L, 5L

Target pests

Control of	Green peach aphid Cabbage aphid Citrus mealybug Long-tailed mealybug Currant lettuce aphid Cotton / Melon aphid Rose aphid Corn aphid Greenhouse whitefly	<i>Myzus persicae</i> <i>Brevicoryne brassicae</i> <i>Planococcus</i> spp. <i>Pseudococcus</i> spp. <i>Nasonovia ribisnigri</i> <i>Aphis gossypii</i> <i>Machrosiphum rosae</i> <i>Rhopalosiphum maydis</i> <i>Trialeurodes</i> spp.
Suppression:	Silverleaf whitefly (SLWF)* <i>*Control for ornamentals</i>	<i>Bemisia tabaci</i> Biotype B

Crops

Sweetcorn, rhubarb, artichokes

Brassicas, including broccoli, broccolini, Brussels sprouts, cabbages, cauliflower and kohlrabi

Leafy brassicas, including bok choy, Chinese cabbage, choy sum, gai lan, kale, leafy mustard, pak choy and rocket

Celery

Cucurbits, including melons, zucchinis, cucumbers, pumpkins and squash (field and protected)

Fruiting vegetables, including capsicum, chillies, eggplants, okra and tomatoes (field and protected)

Strawberries (field and protected)

Leafy vegetables, including chard (silver beet), cress and spinach

Lettuces, both head and leafy

Parsley

Cotton

Potatoes

Sweet potatoes

Ginger

Ornamentals (field and protected)

(Broadacre crops have additional pests and crops listed. Please consult the label.)

Rates

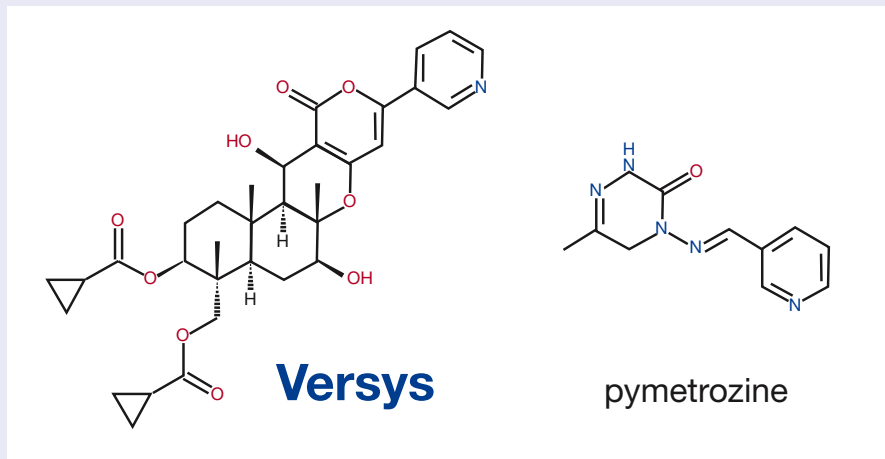
Aphids	100 mL/ha
Silverleaf whitefly	350 mL/ha + 0.2% v/v Hasten
Greenhouse whitefly (<i>Trialeurodes</i> spp.) and Long-tailed mealybug (<i>Pseudococcus</i> spp.)	35-50 mL/100L
Application	In a minimum of 200 L water/ha

Mode of action

Versys has been classified by the Insecticide Resistance Action Committee (IRAC) as the only representative of the subgroup 9D.

The classification is based on Versys having:

- **A very different molecular structure** compared to other Group 9 insecticides.



- **A unique binding site** compared to other Group 9 insecticides.
- **Proven efficacy against pests with resistance to pymetrozine**, which has a Group 9B mode of action.

Versys acts as a chordotonal organ TRPV channel modulator. Chordotonal organs are stretch sensors that insects rely on for their senses of hearing and balance and which are critical for coordinated movement.

When Versys selectively binds to TRPV channels, it causes the sensors to send continuous chordotonal nerve signals independent of joint movement. The result is that target pests stop feeding in as little as 15 minutes as they become deaf, disoriented and unable to control their legs and antennae. The resulting jittery movements can then create the appearance of 'dancing'.

Location of chordotonal organs

Antennae

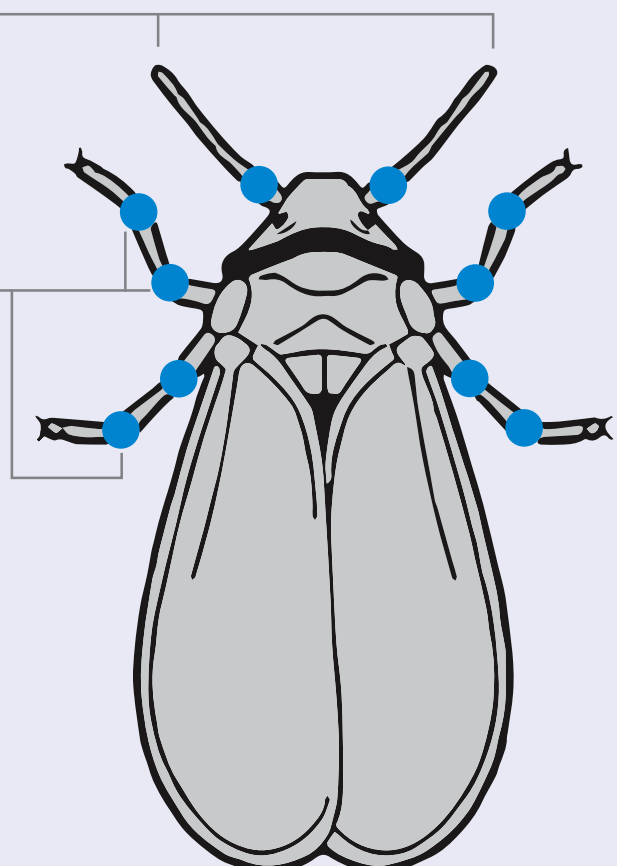
React to:

- Air motion
- Gravity
- Sound

Joints

React to:

- Muscle contraction
- Movement

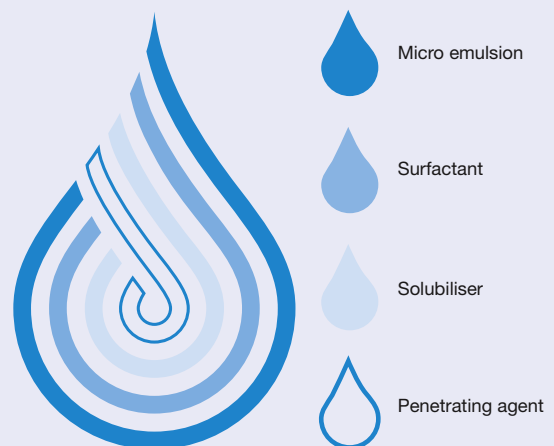


New formulation technology

Versys uses patented BASF polymer chemistry combined with unconventional microemulsion technology to enhance uptake efficiency.

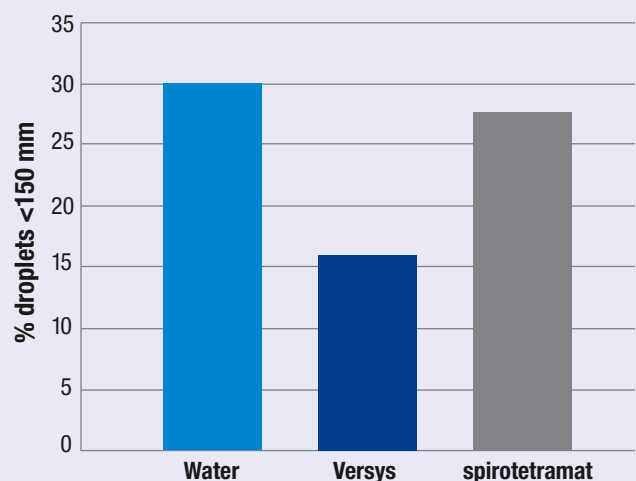
That combination means high levels of control can be achieved despite the application of very low levels of active ingredient.

The formulation is an interdependent combination of four components that creates larger droplets with excellent penetration of the leaf surface.



Reduced spray drift and wastage

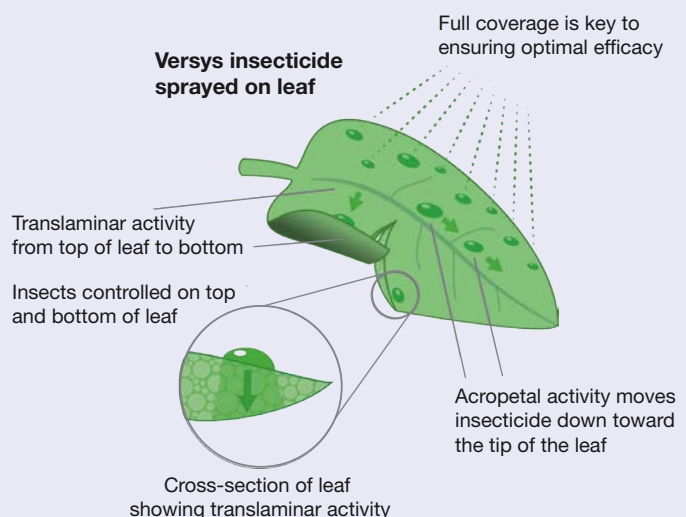
An exceptionally low percentage of very small droplets due to the Versys formulation helps ensure that a higher proportion of the sprayed volume hits the target to minimise wastage and further reduce its environmental impact compared to alternative choices.



Translaminar and acropetal mobility

Versys has translaminar movement that can help control insects sheltering on the underside of the leaf. It also moves acropetally towards the leaf tip in plants provided:

- The water volume is high enough to ensure thorough coverage.
- Adjuvants are used when appropriate to improve penetration – especially of waxy leaves.



Versys and IPM

Versys has exceptionally low impact on beneficial insects, including pollinators.

Beneficial insects

Versys has been tested and found to have low impact on:

Predatory mites	<i>Amblyseius swirskii</i> <i>Euseius tularensis</i> <i>Phytoseiulus persimilis</i>
Parasitic wasps	<i>Aphidius colemani</i>
Green lacewings	<i>Chrysoperla carnea</i>
Brown lacewings	<i>Micromus tasmaniae</i>
Ladybird beetles	<i>Coccinella septempunctata</i>



Versys has been shown to exhibit low negative impact on bee populations, including colony health and development, and has been found to be compatible for use in the presence of many common beneficial arthropods, including predatory mites and parasitic wasps.



Resistance management

BASF Versys trials have shown no cross-resistance to other insecticides from Group 1 (carbamates and organophosphates), Group 2 (synthetic pyrethroids), Group 4A (neonicotinoids) and Group 9B (pymetrozine) where resistance is present.

Like all other insecticides, Versys should be used in rotation with insecticides with other modes of action and should not be used more than 4 times – and not more than 2 times at the higher rate (350 mL/ha).

Compatibility

Versys is compatible with a wide range of crop protection solutions. The listed products have been tested and shown to have physical compatibility with Versys.

Physical compatibility only.

Not compatible

Aero®
 Filan®
 Pristine®
 Zampro®
 Zorvec* Enicade*^

^phyto

For specific advice about other products, please contact a BASF representative.

Fungicides

Acrobat® SC
 Belanty®
 Cabrio®
 Colliss®
 Danisaraba®
 Polyram® DF
 Vivando®
 Bravo* Weather Stik*
 Switch*
 Dithane* Rainshield*
 Amistar* Xtra
 Tri-Base Blue*

Insecticides

Fastac* Duo
 Talstar* 250 EC
 Durivo*
 Intrepid 360 SC
 Lorsban* 750 WG
 Proclaim*
 Belt* 480 EC
 Steward* EC
 Karate Zeon*
 Success* Neo Jemvelva* active
 Delegate* WG
 Movento* 240 SC
 Actara*
 Champ* DP (requires agitation)
 Altacor*
 Coragen*
 Velifer®

* Registered trademarks.



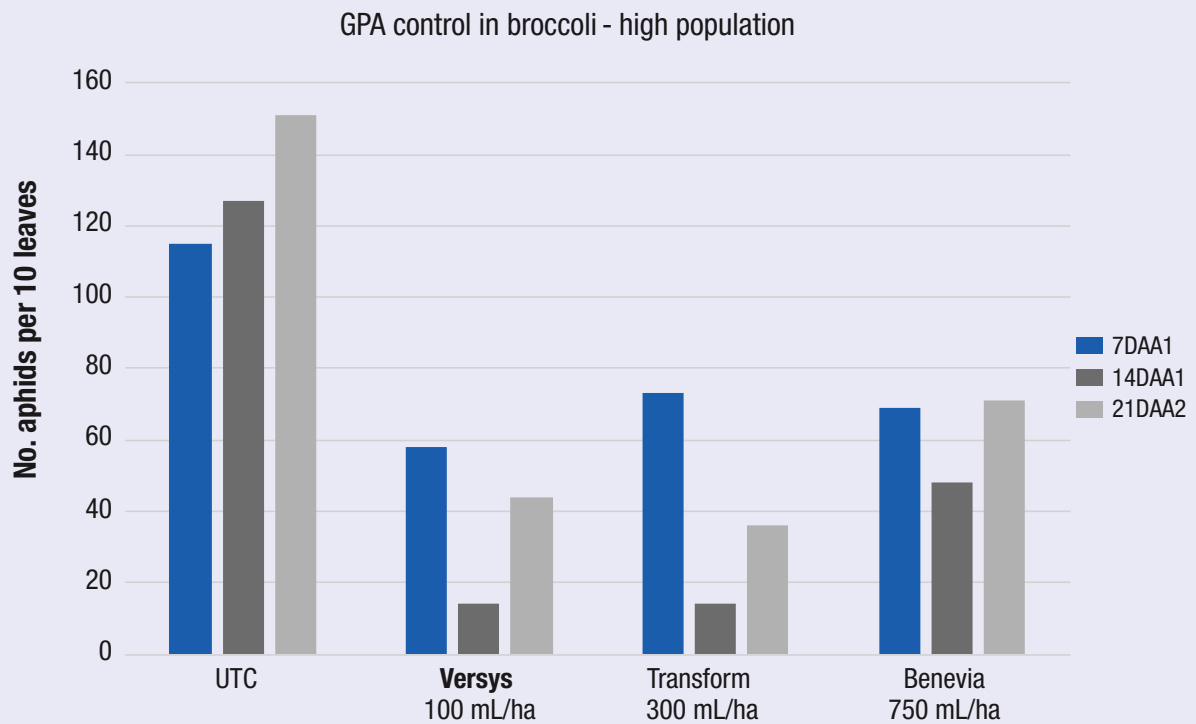
Short withholding periods

1 day	7 days
Brassicas	Cotton
Leafy brassicas	Potatoes
Other leafy vegetables	Sweet potatoes
Lettuces	Ginger
Celery	Sweet corn
Cucurbits	Rhubarb
Fruiting vegetables	Artichoke
Strawberries	
Parsley	

There is no WHP for ornamentals.

Versys green peach aphid control in broccoli

As this trial shows, Versys provides excellent early control against heavy green peach aphid pressure and continued to keep numbers down for 3 weeks following a second application.

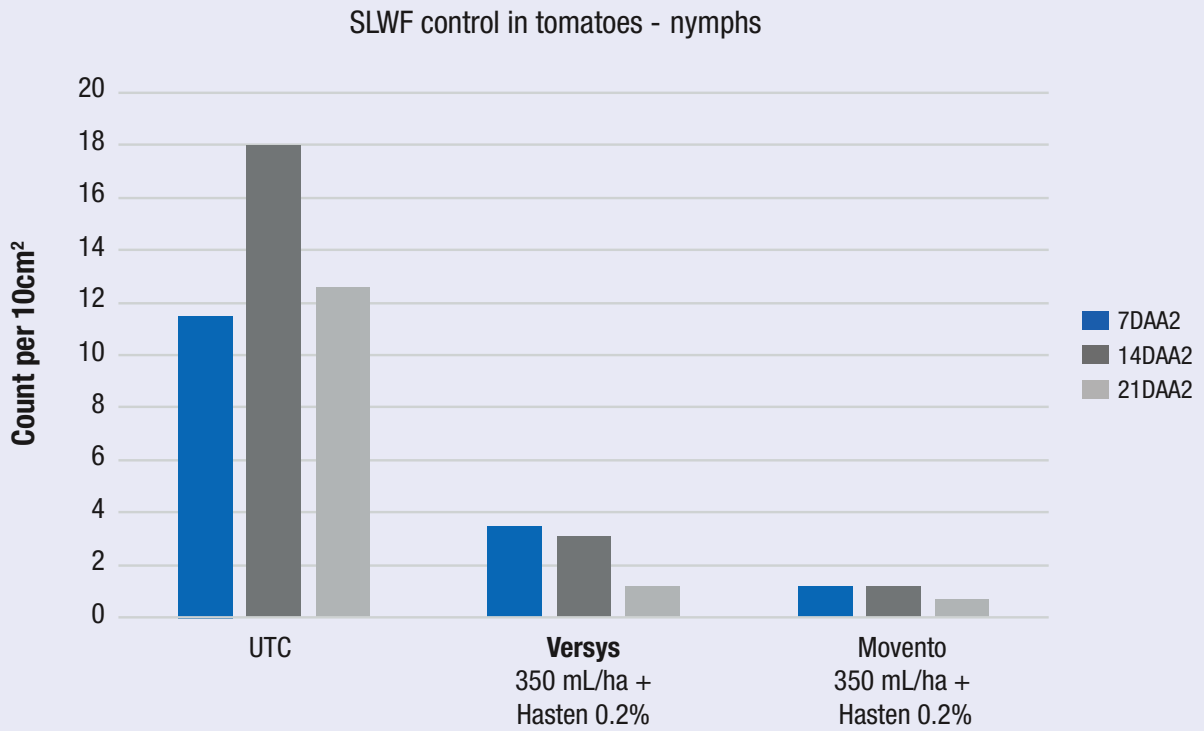


Cesar Horticulture Australia trial Bowen, QLD 2015.



Versys silverleaf whitefly (Biotype B) suppression in tomatoes

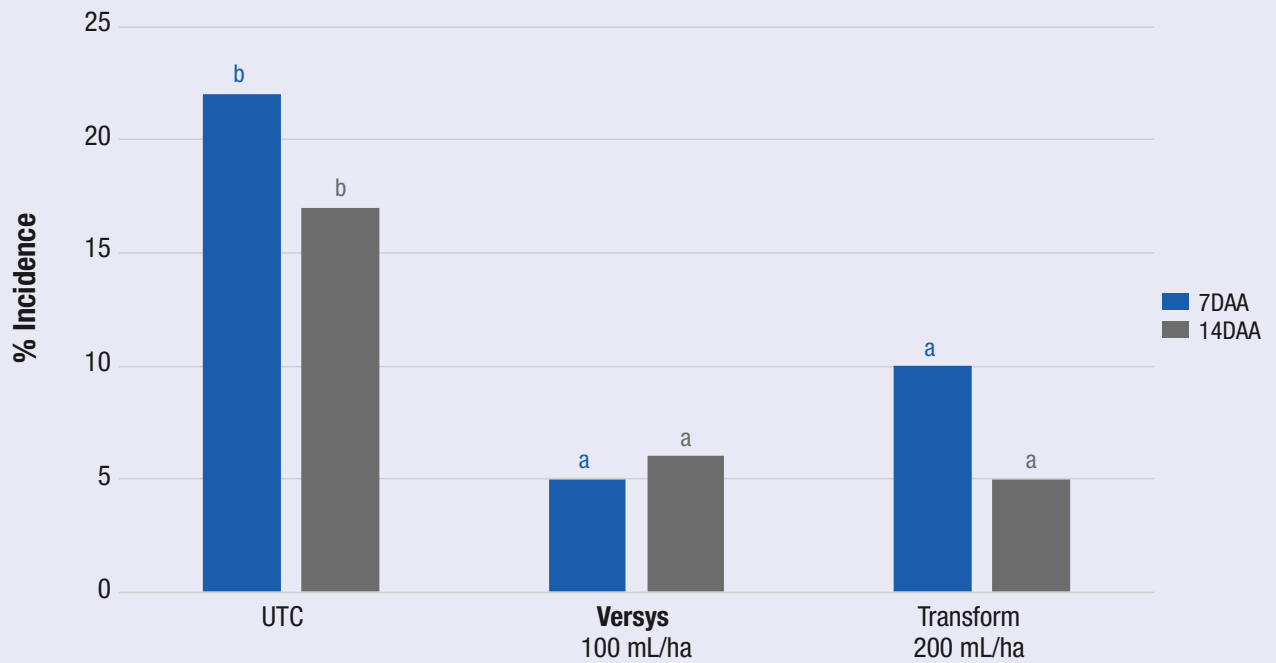
Versys can play an important role in the total management program for SLWF. Versys will reduce SLWF numbers while easing resistance pressure on other products and significantly reducing the total chemical load on each crop.



BAS11317#1. Bowen QLD. Trellis tomato var. Pinnacle. 2x applications

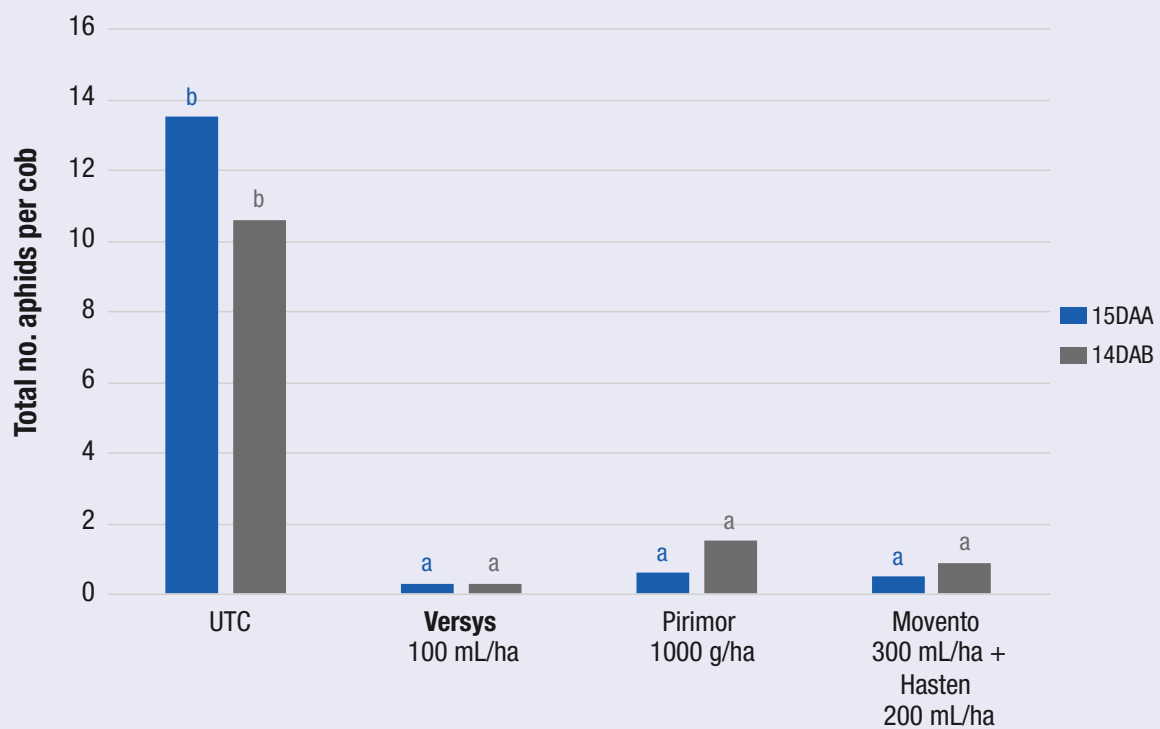


Melon Aphid control in Strawberries - Adults



S16-07444-05-HIA-ST16006. Caboolture QLD. Strawberry var. Red Rhapsody. 1x application at 254 L/ha.

Corn Aphid control in Sweetcorn

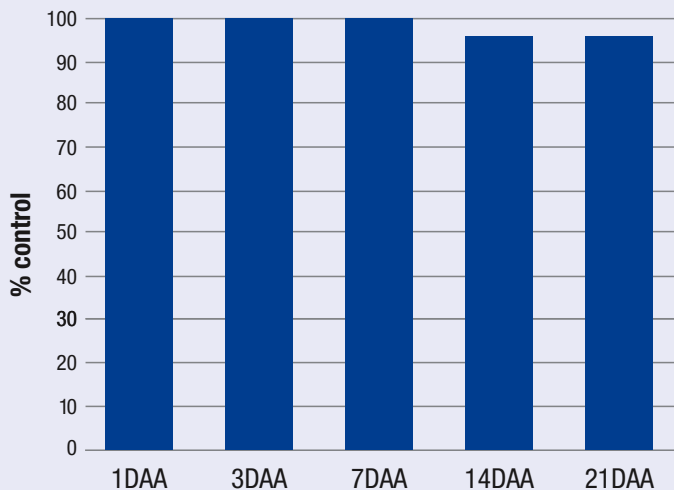


S18-04648-01-HIA-ST17000. Richmond NSW. Sweetcorn var. Goldensweet. 2x applications at BBCH71 and 83.

Long residual activity

Green peach aphids were introduced to treated leaves 1, 3, 7, 14 and 21 days after Versys application at 100 mL/ha in 300 L water to show residual activity.

Residual control can be expected to last from 14 to 21 days, depending on the level of insect pressure.



BASF ATAC Laboratory trial, North Carolina USA

Reduced virus transmission

Aphids and SLWF are vectors of damaging viral diseases. Trials have shown that treatment with Versys reduces acquisition of the virus and the insects' ability to infect plants.

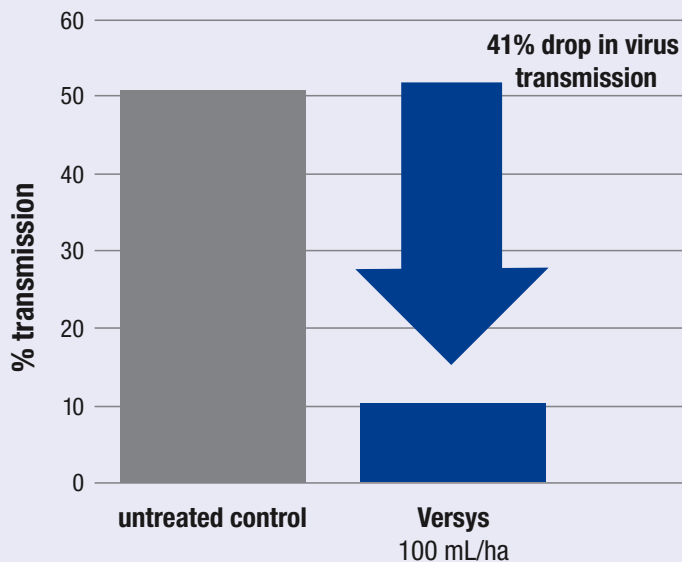
This effect is an additional benefit to the control of feeding damage and honeydew secretion.

Treatment with Versys means there will be far fewer insects present, and those that remain are much less capable of transmitting viruses.



Reduced virus transmission in aphids

This trial showed an 41% reduction in virus transmission by aphids. Virus-free aphids were allowed to feed on treated plants infected with turnip yellow virus for 4 hours. They were then transferred to virus-free plant material to feed for 48 hours. The plant material was assessed 4 weeks later for virus transmission.



Application guidelines

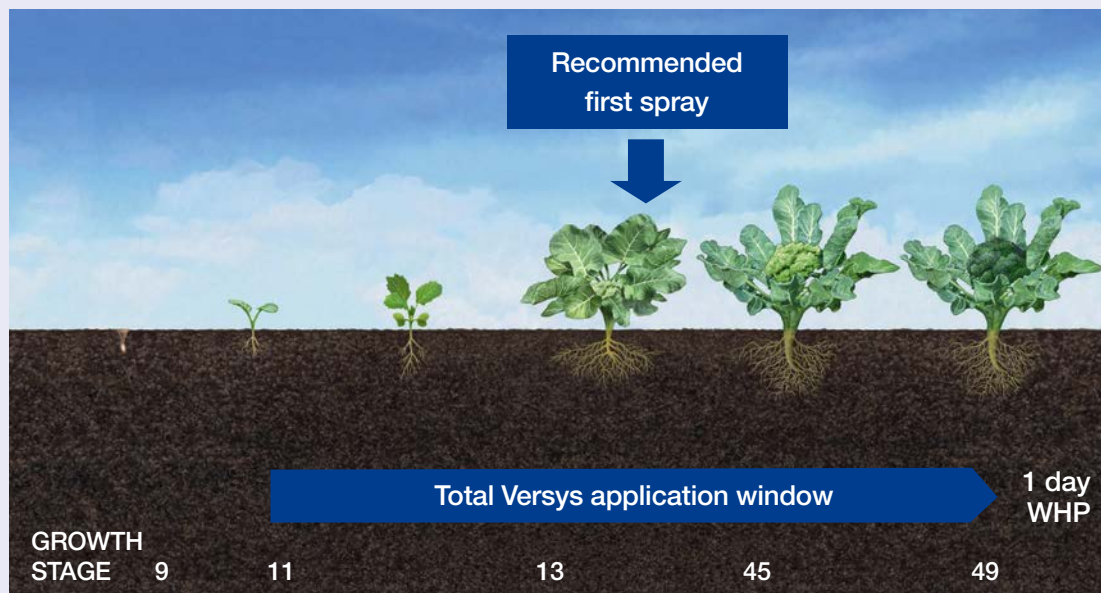
- Versys is ideal for inclusion in IPM programs and fully compatible with the use of beneficial insects.
- Do not apply more than 4 Versys sprays per crop, including a maximum of 2 sprays at the higher rate (350 mL/ha).
- Versys can be used over flowering (where applicable) but is not recommended when bees are foraging.
- Versys should be applied when aphids first establish to limit the transmission of viruses.
- It is important to monitor pest pressure so that Versys can be applied or re-applied as soon as pest thresholds are reached.
- Versys is recommended as the first spray following planting or following seedling treatments or plant drenches for aphid control.
- Versys fits well into existing spray programs, when used:
 - As the first application AFTER the use of Imidacloprid or chlorantraniliprole/ thiamethoxam treated seed and;
 - As well as/or instead of Efficon treatments or plant drenches.Followed by applications of Spirotetramat at head closure in leafy vegetables.
- Versys is also suitable for multiple use in fruiting vegetable crops over flowering through to harvest.



Application guidelines (cont.)

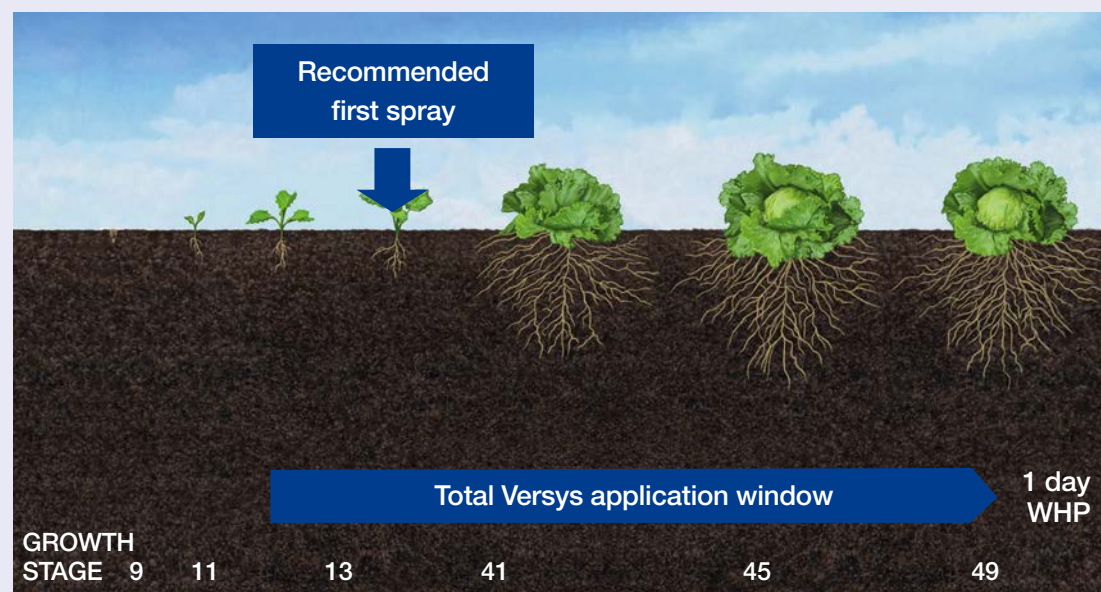
Brassicas

Versys is recommended as the first spray 4–6 weeks after the use of a seed treatment or plant drench, once control has declined. Further sprays can then be used up to 1 day before harvesting.



Leafy vegetables

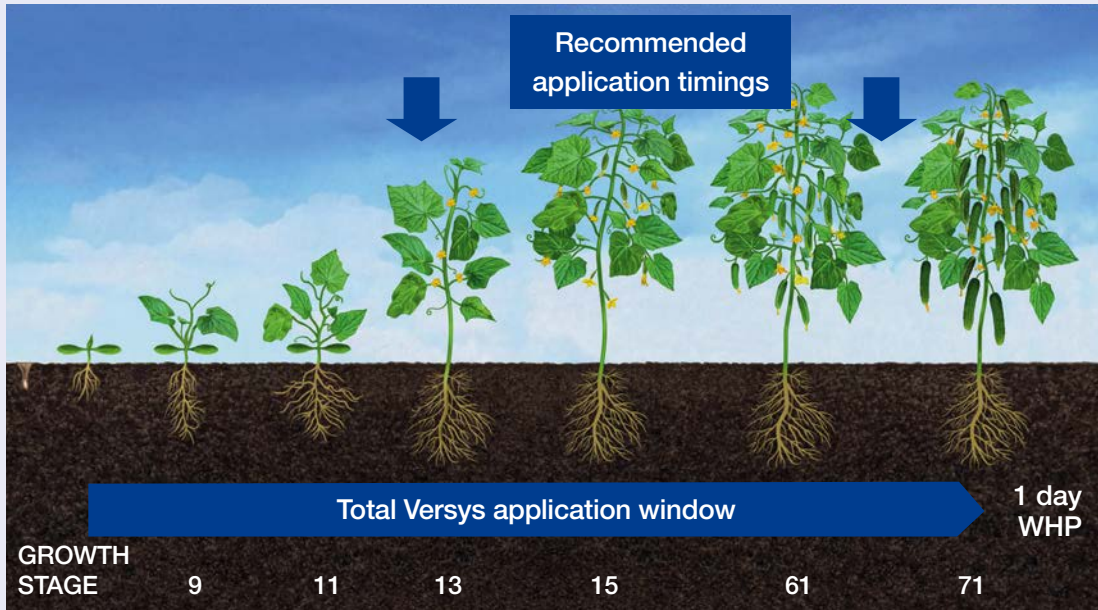
Versys is recommended as the first spray 4–6 weeks after the use of a seed treatment or plant drench, once control has declined. Further sprays can then be used up to 1 day before harvesting.



Application guidelines (cont.)

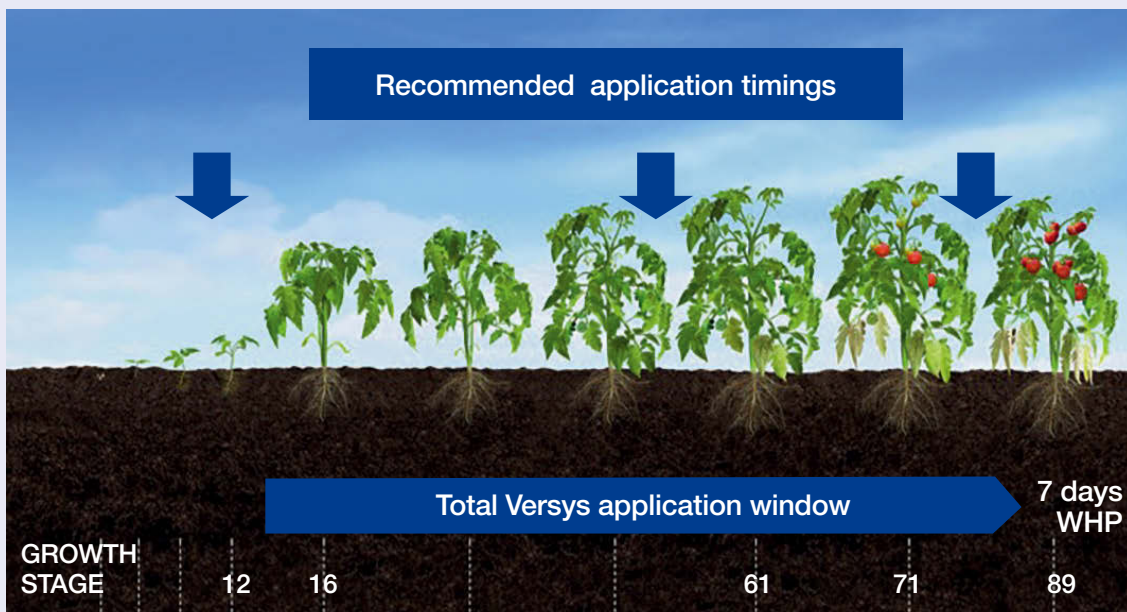
Cucurbits

Versys is recommended as the first spray 4–6 weeks after the use of a seed treatment or plant drenching, once control has declined. When aphids are present, it should be used early to minimise virus transmission. Versys is also recommended for use over flowering – but not when bees are actively foraging – to maximise bee pollination and subsequent fruit set. Its short withholding period makes Versys particularly suitable for use during fruiting in crops with multiple picking times.



Fruiting vegetables

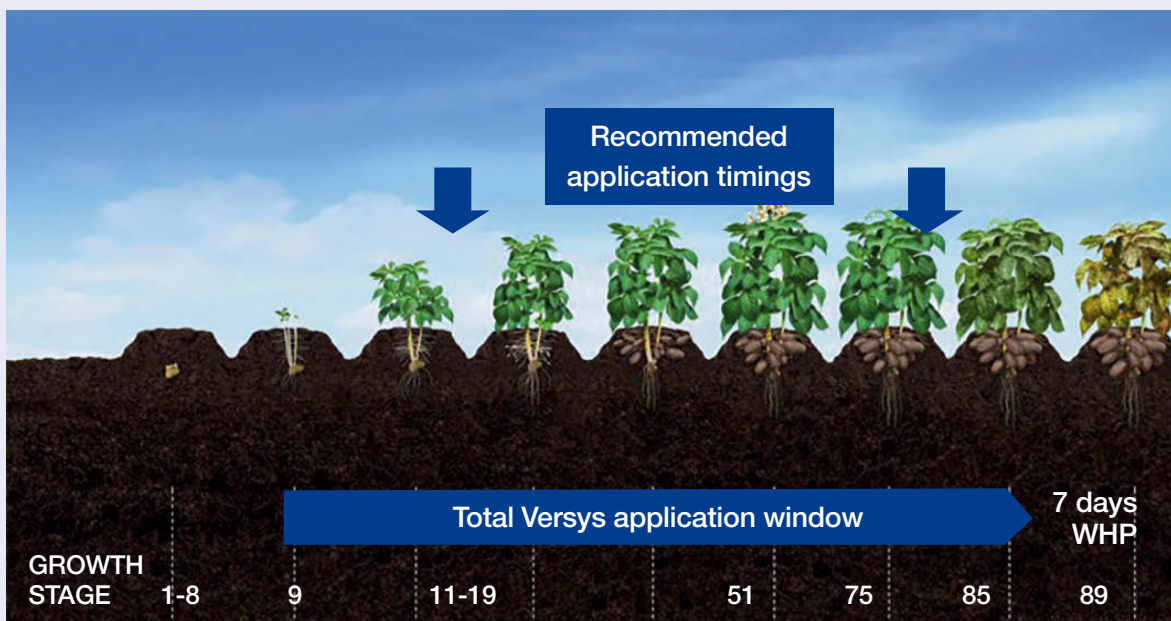
Versys is recommended as the first spray 4–6 weeks after the use of a seed treatment or plant drenching, once control has declined. Versys can also be used over flowering – but not when bees are actively foraging – to maximise bee pollination and subsequent fruit set. Its short withholding period makes Versys particularly suitable for use during fruiting in crops with multiple picking times.



Application guidelines (cont.)

Potatoes

Versys is recommended as the first spray 4–6 weeks after the use of a seed treatment or in-furrow treatment, once control has declined. When aphids are present, it should be used early to minimise virus transmission.



Strawberries

Versys is recommended as the first spray 4–6 weeks after the use of a seed treatment or plant drenching, once control has declined. When local thresholds are reached, apply a single spray before rotating to an alternative insecticide for white fly control. Do not apply more than 2 applications for whitefly control in any one crop. If using for whitefly control, do not apply more than 2 additional applications at the 100mL/ha rate for aphids. Versys Insecticide will provide suppression of both adult and nymph stages of whitefly, however it is recommended to target the nymph stage as better activity is seen against nymphs. A general decline in population will occur over time as nymph numbers are suppressed.



Versys[®]

Insecticide

Key **Versys** advantages

- ✓ **Unique mode of action subcategory** to help manage resistance
- ✓ **Low impact** on beneficial insects and pollinator insects such as bees
- ✓ **Rapid feeding cessation** to minimise virus transmission
- ✓ **Affects all aphid life stages** from eggs to adults
- ✓ **Short WHPs for late control** – 1 day in most vegetable crops, 7 days for potatoes, sweet potatoes, ginger and cotton, and nil for ornamentals
- ✓ **High levels of residual control** for up to 21 days in Aphids

Resistance management

Versys is in a new chemical subclass and has been classified as a Group 9D insecticide for resistance management. No more than 4 Versys sprays – with a maximum of 2 sprays at the higher rate (350 mL/ha rate) – should be applied per crop. Versys should always be used in rotation with insecticides with different modes of action.



For more information on Versys[®] Insecticide, visit crop-solutions.basf.com.au or contact your local BASF representative on **1800 558 399**

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