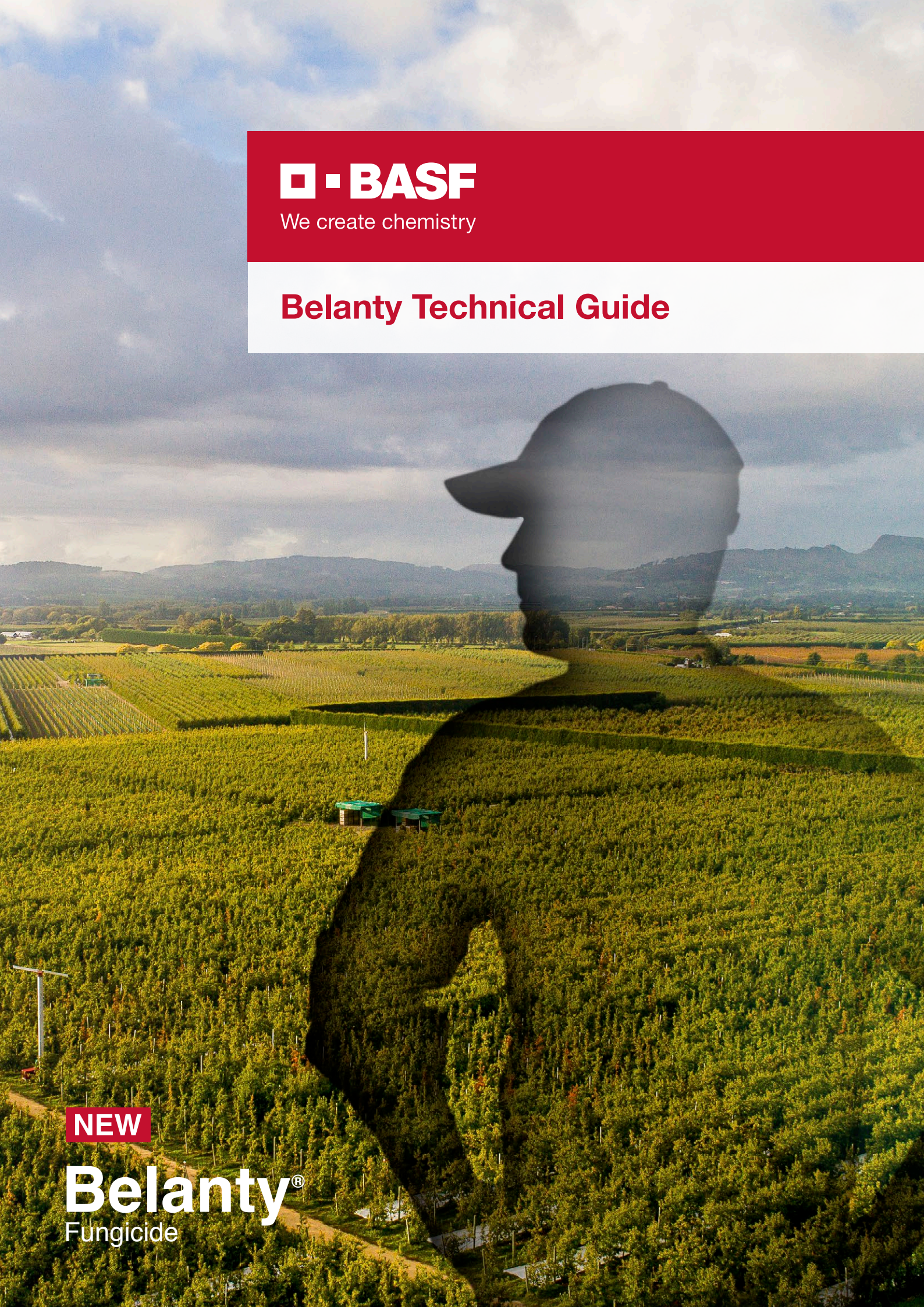
BASF

We create chemistry

Belanty Technical Guide



Outstanding curative and protectant performance

Belanty takes the demethylation inhibitors (DMI) class of fungicide chemistry growers already know and trust to the next level, setting a new benchmark for flexible control of powdery mildew in grapes, black spot and powdery mildew in apples and black spot in pears.

Belanty is powered by a unique, shape-shifting molecule – the first of its type – that provides rapid uptake and delivers lasting residual protection. Reduced risk of residues has become a high priority in horticultural crop production and Belanty will help growers maintain the use of DMI chemistry without compromising control.

A favourable residue profile is reflected in the setting of withholding periods that allow New Zealand growers to export Belanty-treated fruit and wine to all markets around the world.

What you need to know

About Belanty	
Mode of action	Group 3 – DMIs (Demethylation inhibitors) New 'isopropanol-azole' molecule type
Active ingredient	Mefentrifluconazole
Formulation	Suspension Concentrate (SC)
Adjuvant	Not required
Compatibility	Belanty is compatible with most commonly used fungicides, insecticides and growth regulators used on apple, pear and grape crops.
Rainfastness	Once dry on crop
IPM fit	Belanty has good fit with IPM programs and beneficial arthropods
Pack size	10 L

Use patterns

Apples and Pears	
Disease	Black spot (apples and pears) and powdery mildew (apples only)
Rate	80 mL/100 L maximum 1.6 L/ha per application
WHP	80% petal fall

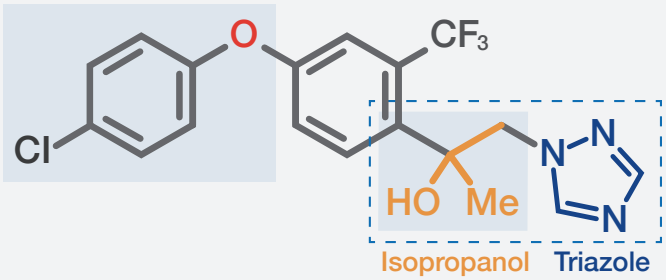
Grapes	
Disease	Powdery mildew
Rate	80 mL/100 L maximum 800 mL/ha per application
WHP	Pre-bunch closure

How it works

Molecular structure

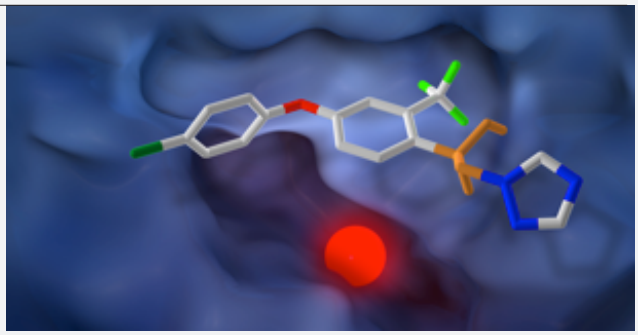
Although Belanty is classified as a Group 3 fungicide, its hybrid ‘isopropanol-azole’ molecule is the first of its type and unique among DMIs.

The triazole ‘head’ of the molecule sits on the ‘neck’ of a slim isopropanol unit.

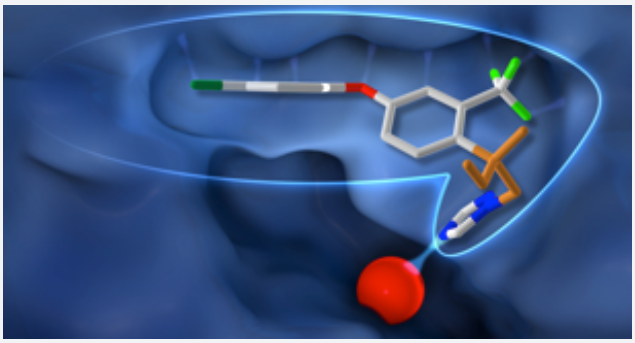


Molecular flexibility

The neck gives the Belanty molecule flexibility to assume different conformations, allowing it to adapt to variations in the shape of the target site. The adaptability of the Belanty molecule enables it to bind much more strongly than other triazoles to the target enzyme: C14-demethylase.



As the Belanty molecule approaches the target enzyme…

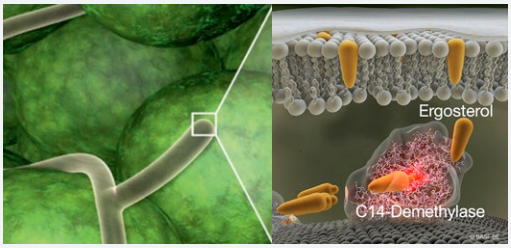


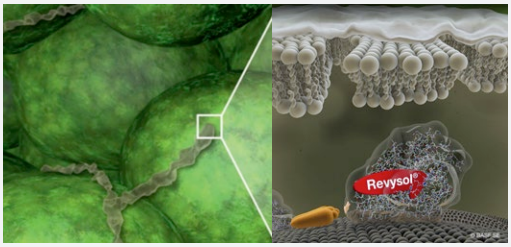
…it folds into a hook to ‘catch’ the enzyme and bind strongly to it.

Mode of action

Belanty inhibits the C14-demethylase enzyme, which plays a role in ergosterol production inside the fungal cell. Ergosterol is essential for the development of functional cell walls.

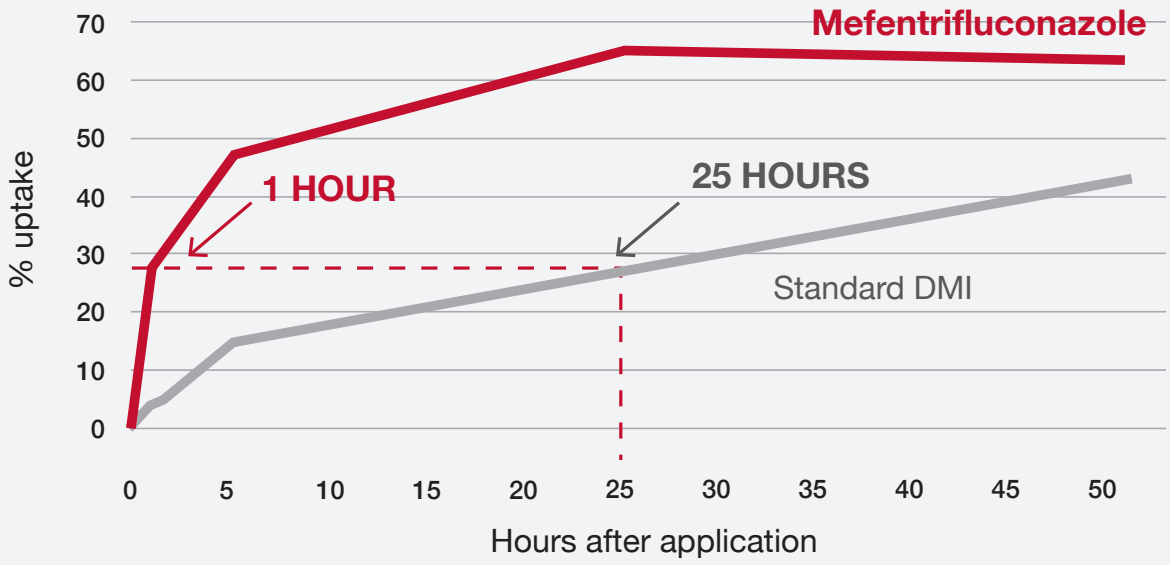
Belanty blocks ergosterol biosynthesis extremely effectively. Without ergosterol, cell walls are structurally incomplete and permeable leading to cell leakage and death.





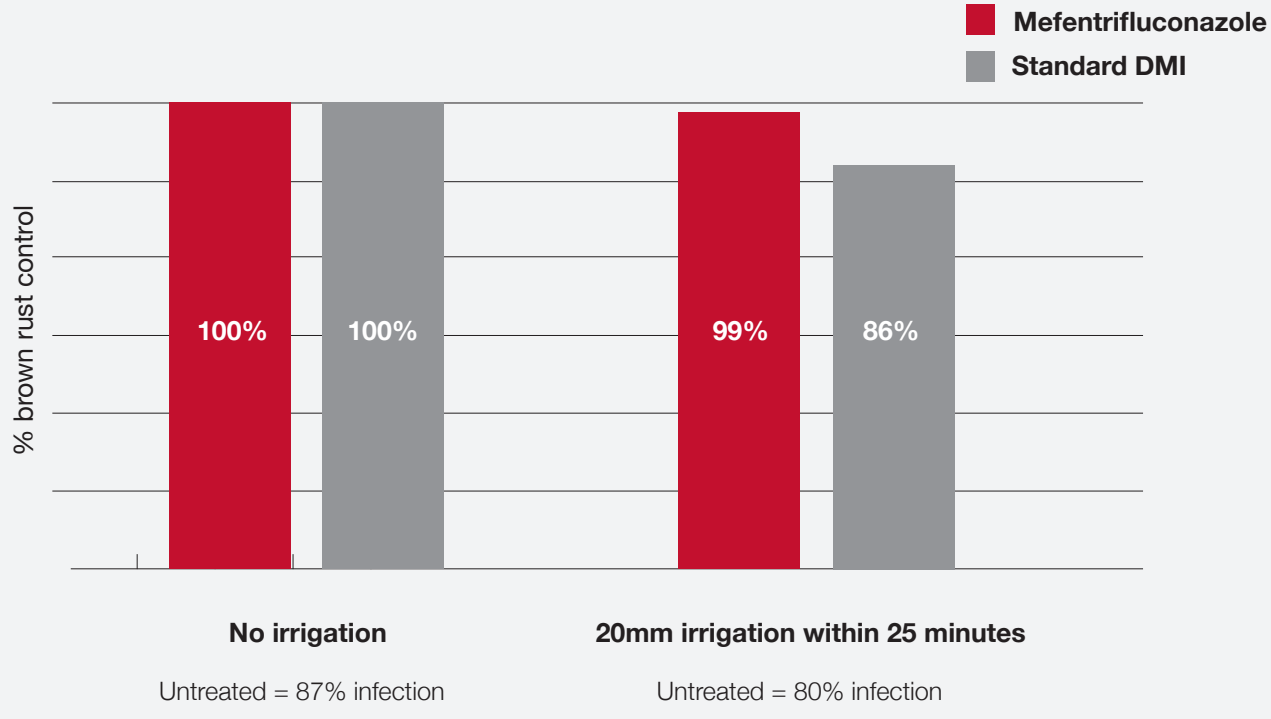
Accelerated uptake and rainfastness

Mefentrifluconazole is taken up into the leaf much quicker than older DMI fungicides, which gives it excellent rainfastness. In this laboratory test, a cereal leaf took up as much mefentrifluconazole in the first hour after application as a leaf treated with another DMI took up in about a day.



Mefentrifluconazole's rapid uptake provides excellent rainfastness

This cereal brown rust test (below) shows one of the benefits of that exceptionally rapid uptake. Mefentrifluconazole was virtually rainfast – with irrigation to mimic heavy rainfall, reducing control by just 1% – only 25 minutes after the spray had dried on the plants.



Glasshouse test, cereal brown rust 2014: 3 days curative. Application 3 days after inoculation with spore suspension. Irrigation of 20 mm within 25 minutes of the spray residue drying.

Belanty and IPM

Belanty is compatible for use in the presence of beneficial arthropods, including pollinators

Regulatory profile

Belanty is benign to mammals. It is not mutagenic, carcinogenic or teratogenic.

Belanty has a favourable environmental profile when used according to the label.

Belanty has low toxicity for most non-target species (birds, mammals, soil organisms, non-target arthropods, non-target plants), but can affect aquatic organisms. Do not spray over, or allow drift over, ponds, waterways or drains. Buffer zones for apples and pears: 5 metres from water bodies (30 metres down wind)

Beneficial arthropods

Belanty has been tested and found to be compatible with:
Green lacewing *Chrysoperla carnea*
Brown lacewing *Micromus tasmaniae*
Ladybird beetle *Coccinella septempunctata*
Aphid parasitoid *Aphidius rhopalosiphi*
European red mite predator *Typhlodromus pyri*

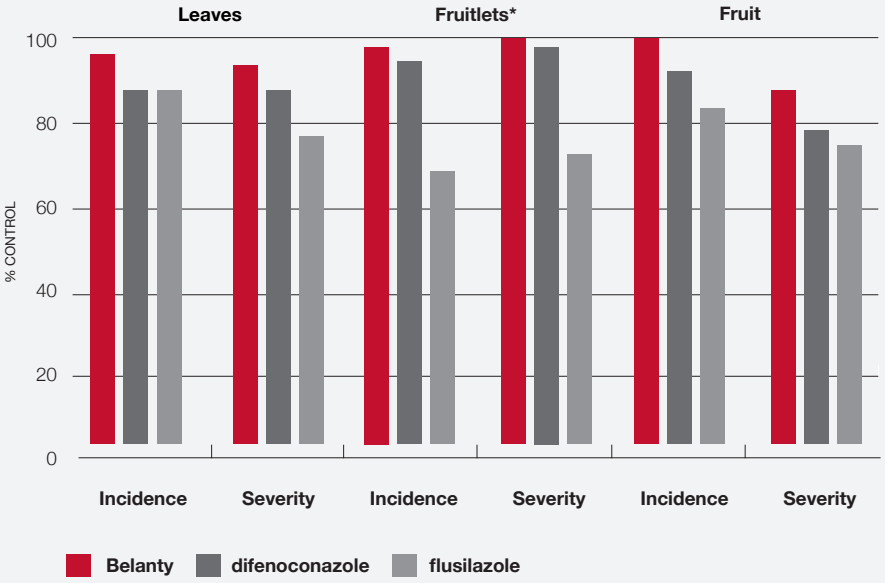
Belanty has been shown to have little affect on bee populations, including colony health and development.

Belanty for apples and pears

Efficacy against black spot (apples and pears) and powdery mildew (apples only)

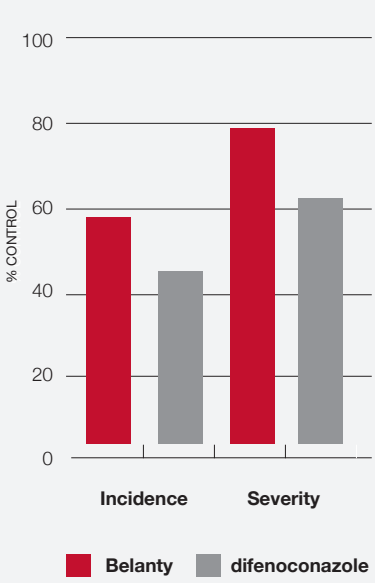
Belanty showed consistently high levels of control in a series of comparative trials over multiple growing seasons and across two key apple growing regions. Belanty was the most effective treatment in the challenging conditions of these trials where there was very high black spot pressure.

Black spot control on apples



Mean of 4 trials (* 2 trials only) on 3 apple varieties over 2 seasons in Hawke's Bay, NZ.

Powdery mildew control on apple leaves

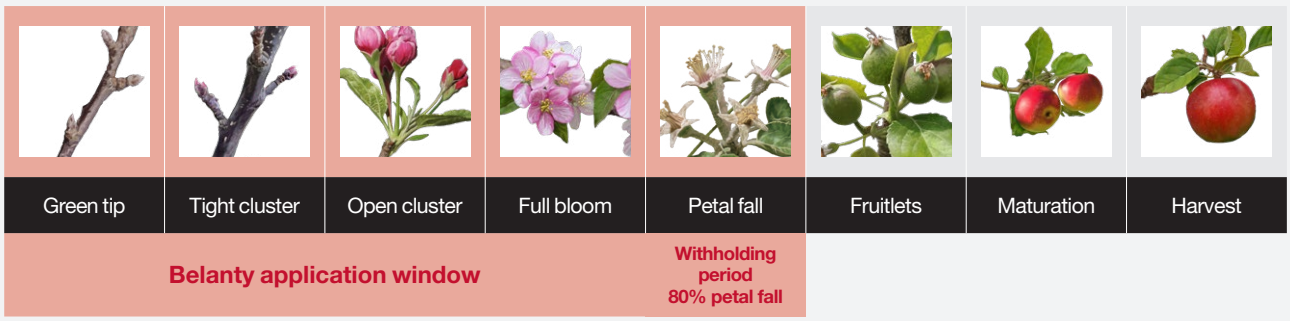


Mean of 10 trials over 5 seasons. Hawke's Bay and Tasman, NZ

Application timing

Belanty is best applied at 7-10 day intervals in a preventative programme from green tip to 80% petal fall, tank mixed with a fungicide from different mode of action group, e.g. Polyram® DF or Delan® WG. Do not make more than 4 applications per season or more than 2 consecutive applications.

For curative activity, apply within 96 hours of the start of a black spot infection event or rainfall starting.



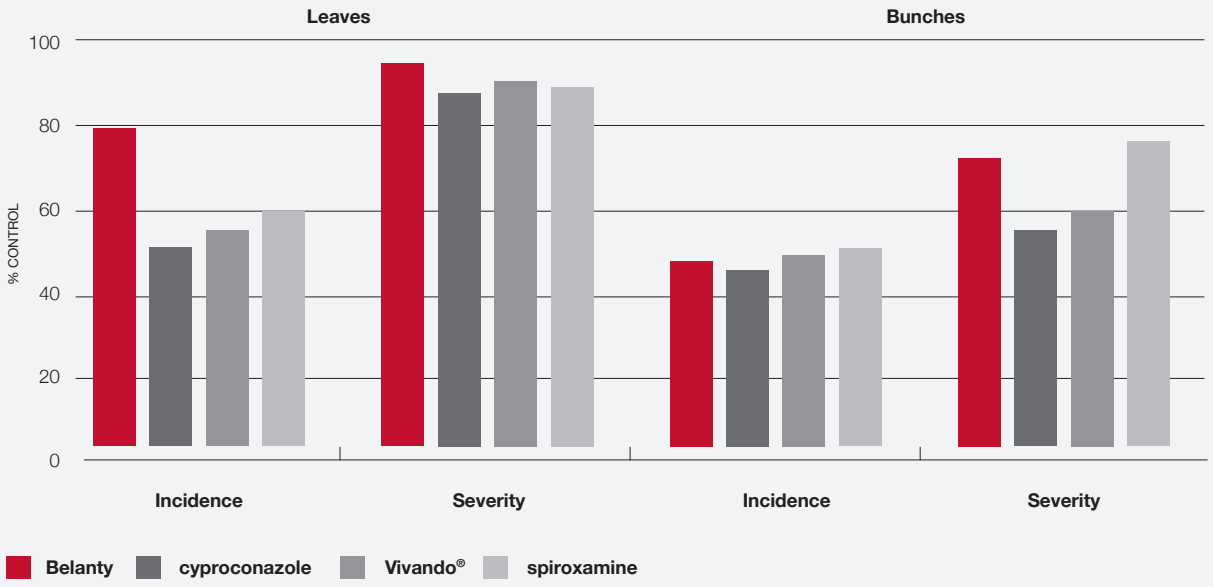
Maximum two consecutive sprays and four in total per season

Belanty for grapes

Efficacy on powdery mildew

Belanty consistently achieved control equal to, or better than, commercial fungicides in a series of comparative trials over two growing seasons and across two grape growing regions.

Powdery mildew control in grapes



Mean of 4 head-to-head trials in Marlborough and Hawke's Bay, NZ

Application timing

Apply Belanty two times in a preventative programme on a 10-21 day schedule. Alternate or tank-mix with fungicides from different mode of action groups, e.g. Vivando® or Kumulus® DF. Use a shorter interval when there is heavy infection pressure.

Check the Sustainable Winegrowing New Zealand spray schedule before use.

Budburst	Leaves separating	Cap fall	Berries pea-size	Pre-bunch closure	Veraison	Harvest

Belanty application window

Withholding period Pre-bunch closure

Maximum two applications per season

Resistance management

BASF Belanty trials have shown no cross resistance to other Group 3 DMI fungicides, where reduced sensitivity is known to be present.

Belanty should be used in a program including fungicides from other mode of action groups. For apples and pears, do not make more than 2 consecutive applications or apply more than 4 times per season and always apply with a fungicide from a different mode of action group. For grapes, do not apply more than 2 times per season, alternating or tank-mixing with fungicides from different mode of action groups.

Compatibility

Agrichemicals tested in NZ trials		
Polyram DF	Gem*	Prodigy*
Delan WG	Prolific*	Proclaim*
Kumulus DF	Serenade* Max	Regalis Xtra
Switch*	Avaunt*	Stopit*
Movento*	Novagib*	

*Registered trademark

No adverse effects were recorded from tank mixes of Belanty with up to three other products.
To determine further product compatibilities, a jar test is recommended.

For more information, visit crop-solutions.basf.co.nz or contact your local BASF representative

ALWAYS READ AND FOLLOW LABEL DIRECTIONS.