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TAKE CONTROL OF BOTRYTIS

TripleX is a world first for BioStart. TripleX is the first commercially released bio-fungicide to use *Bacillus amyloliquefaciens* for the control of *Botrytis cinerea* in grapes, top fruit and vegetables. *Botrytis cinerea* is an aggressive and invasive pathogen affecting many crops causing substantial crop losses.

TripleX is powered by a unique dual mode of action, a combination of fermentation extracts and *Bacillus amyloliquefaciens BS 1b*. The fermentation extracts provide the initial knock down, clearing a pathway for the establishment of the *Bacillus amyloliquefaciens*. The *Bacillus amyloliquefaciens* is an aggressive antagonist towards *Botrytis cinerea*. It produces a number of enzymes and antimicrobial compounds that kill any *Botrytis cinerea* it comes in contact with.

- **Controls *Botrytis cinerea***
- **TripleX has a nil withholding period**
- **Can be used right up to harvest**

TripleX can be applied with most cover and nutritional sprays. Some spreaders may reduce efficacy. For a full compatibility list contact your local BioStart Territory Manager.

Ensure good spray coverage to run-off for optimum disease control. Sprayers should be calibrated before use. For best results spray early morning, early evening or in overcast conditions.

Pack sizes available: 5 and 20 litre

DIRECTIONS FOR USE:

Crop	Timing	Application rate
Kiwifruit *Botrytis cinerea*	From 10% bud break (green tip) onwards	Minimum 1.5lt/ha
	Late Season	Minimum 1.5lt/ha
Kiwifruit bacterial leaf spotting	Green tip (bud break)	Minimum 1.5lt/ha
	Prior to or immediately after infection periods	Minimum 2lt/ha
	Immediately post harvest	Minimum 2lt/ha
	Immediately post pruning	Minimum 1.5lt/ha

TripleX
BIO-FUNGICIDE

signal molecule TECHNOLOGY
MADE IN NEW ZEALAND

AGRECOVERY
Rural Recycling Programme

Available from leading horticultural & rural suppliers. Call NZ **0800 116 229**, AUSTRALIA **+61 26760 7357** or visit **www.biostart.co.nz**

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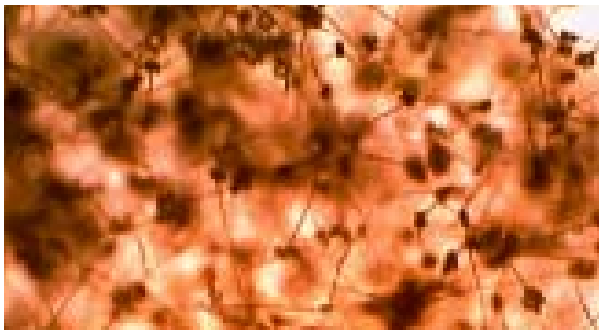
Why TripleX Works

TripleX has a unique dual mode of action. The base fermentation provides the initial knockdown and clears a pathway for the establishment of the *B. amyloliquefaciens.* Once established the *B. amyloliquefaciens* is an aggressive antagonist against *Botrytis. B. amyloliquefaciens* produces alkaline protease and other organic molecules that dissolve the protein bonds within the outer cell walls of the *Botrytis*, causing the fungus to collapse.



Botrytis

Dead *Botrytis* after contact with TripleX

NOTE:
If you need late season control then you should start incorporating TripleX in your spray program early in the growing season: (the following gives you a rough guide), **Grapes:** Pre bunch closure (pea size) **Kiwifruit:** Post flowering, **Black currants:** Post flowering, **Onions:** second leaf, **Lettuces:** Early growth, **Hothouse tomatoes:** After first flower set.

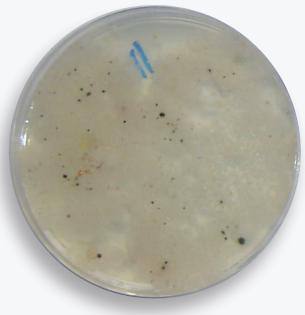
Botrytis inhibition with *Bacillus amyloliquefaciens BS 1b*

Leaf print tests are a simple way of seeing what organisms are populating the leaf. Here the leaves from treated and untreated vines were gently pressed into test plates and incubated. The impression from the treated leaves shows a significant reduction in the population of not only *Botrytis* but a number of pathogens on the leaf. The *Bacillus amyloliquefaciens BS 1b* has inhibited the growth of these organisms by excreting a variety of antimicrobial compounds.

Leaf Print

Photo: 21.10.2008,

7 days after taking leaf prints.



Bacillus amyloliquefaciens BS 1b

Untreated Control