

TripleX

Technical Sheet For botrytis control



How does TripleX work?

TripleX is a biocontrol agent that controls botrytis (*Botrytis cinerea*) in grapes, avocado, top fruit and vegetables.

TripleX contains two methods of control:

- The microbe *Bacillus amyloliquefaciens* BS1b populates the leaf and controls botrytis – it produces a wide range of antimicrobial compounds that kills the botrytis fungus and reduces infection
- Fermentation extracts and other bioactive nutrients that prime the plant leaf biofilm – creating an ideal environment for the establishment of the *B. amyloliquefaciens*.

Like all biocontrol agents, using TripleX as a preventative will give the best results. Apply early so that the protective microbes have time to completely colonise the foliage, flowers and fruit areas where the disease-causing fungi grow. In times of rapid plant growth or fruit development, re-apply TripleX to cover new plant surfaces.

Key features of TripleX:

- TripleX is certified organic
- TripleX is Registered pursuant to the ACVM act 1997 No P8137
- TripleX is tested to be free of amino alcohols and quaternary ammonium compounds (DDAC)
- TripleX leaves no deposits on the crop and there is a one day withholding time on most crops
- TripleX is compatible with many commonly used fungicides and insecticides allowing it to be co-applied with these products.

TripleX is listed on the New Zealand Winegrowers Spray Schedule and the Zespri Crop Protection Standard.

Directions for use

- Ensure good spray coverage for optimum disease control. Sprayers should be calibrated before use. For best results spray early morning, early evening or in overcast conditions. Do not apply if heavy rain is forecast within the next 24 hrs. TripleX has limited efficacy if daytime temperatures do not reach 18°C.
- TripleX can be applied with most cover and nutritional sprays. Some spreaders may reduce efficacy. An extensive chemical compatibility list is available.
- TripleX contains living microbes. The spray tank must be thoroughly cleaned prior to use, to remove any chemical residues that could be toxic to the BS1b microbe. Sanitise spray tank before application to remove any contaminating microbes. Partially fill the spray tank with clean water and start agitation. Maintain a spray solution pH between 5.0 and 7.5 or efficacy may be affected. Add the required amount of TripleX to the tank. Complete filling. Apply diluted product within 8 hours of mixing. Store TripleX below 25°C and out of direct sunlight.
- Integrate TripleX into an overall disease management strategy whenever fungicide use is necessary. Follow practices known to reduce disease development which may include rotating and/or tank-mixing with other products with different modes of action.

For specific crop recommendations contact your local BioStart representative.

Crop	Timing	Application Rate
Grapes Botrytis	Flowering 5 % and 80 % cap fall (E-L 20 and 25)	Spray at bunch line at a dilution rate of 500 mL/100 L water.
	Pre bunch closure (E-L 31 – 32)	Spray at bunch line at a dilution rate of 500 mL/100 L water.
	Late season (E-L 35 – 38)	Spray at bunch line fortnightly at a dilution rate of 500 mL/100 L water.
Stone Fruit, Citrus, Avocado & Persimmon Botrytis	Prior to periods of disease pressure	Spray fortnightly on to fruit and foliage at a dilution rate of 500 mL/100 L water.
Vegetables	Prior to periods of disease pressure	Apply 1.5 L/ha . Spray fortnightly.
Kiwifruit sooty mould prevention	Early January to late March when passion vine hoppers (PVH) and cicadas are active	Spray at 2-3 week intervals on to fruit and foliage at a dilution rate of 300 mL/100 L water. To ensure good fruit coverage, add an approved super wetter at the recommended label rate and adjust application rates accordingly (call 0800 116 229 if uncertain of compatibility).

Other crops - Call NZ 0800 116 229 or visit www.biostart.co.nz

Pack sizes available: 1, 5 and 20 litre