

FOR KIWIFRUIT

bio**start**

PREVENT SOOTY MOULD



BioStart TripleX® is the only ACVM registered, bio-fungicide for the prevention of sooty mould in kiwifruit.

When insects like passionvine hopper (PVH) feed on the sap of the kiwifruit plant they deposit honeydew on to the fruit. Sooty mould appears when dark fungal mycelium grows on the honeydew. When sooty mould staining occurs the fruit is rejected causing grower losses.

The active ingredient in TripleX is the *Bacillus amyloliquefaciens* Bs1b microbe. It works by colonizing the foliage, flowers and fruit to protect against the development of sooty mould-causing fungi.

TripleX should be used as a preventative agent for sooty mould infections. Apply TripleX prior to PVH or cicadas becoming active in the orchard in order to establish a population of Bs1b microbe on the leaves and fruit of the kiwifruit vines.

Regularly reapply TripleX during peak infection periods, from late December/early January to March, to ensure adequate coverage of the developing fruit is maintained.



TripleX

- Prevents sooty mould
- Certified Organic
- Registered pursuant to the ACVM act 1997 No. P8137.
- Is on the Zespri Crop Protection Standard
- 2 day withholding period
- Independently tested free of amino alcohols and quaternary ammonium compounds (DDAC)
- Can be applied with most cover and nutritional sprays. For a compatibility list call 0800 116 229.

| Crop | Crop Timing | Application rate |
|---|---|---|
| Kiwifruit Prevention of sooty mould | When passionvine hoppers and cicadas are active (early January to late March) | Spray 2-3 weekly intervals on to fruit and foliage. Apply a minimum of 3 L/ha diluted in 1,000 L (300 mL/100 L of water). A good spreader should be used to ensure thorough fruit and stem coverage as this is where most sooty mould infections are located. Organic growers need to ensure they use a Zespri-approved, certified-organic spreader. |

Best use guidelines for TripleX

- Regularly monitor PVH nymphs in nearby hedges during December prior to the adults emerging in late December/early January
- Use TripleX in conjunction with approved insecticidal sprays to reduce numbers of PVH and cicadas in the orchard and boundary areas.
- Apply TripleX at 2-3-weekly intervals in response to weather events, at a minimum of 3 L/ha (300 mL/100 L)
- Apply TripleX with a spreader or super-wetter for best all-over fruit coverage
- Apply TripleX from late December/early January until the PVH and cicada population numbers decrease when the weather cools at the end of March
- Use clean water at a neutral pH in a clean tank. Apply mixed spray within 8 hours.

Storage instruction: Store below 25°C. Store out of direct sunlight

Pack sizes available: 5 and 20 litre

TripleX™

BIO-FUNGICIDE



Available from leading horticultural & rural suppliers. Call NZ 0800 116 229, or visit www.biostart.co.nz

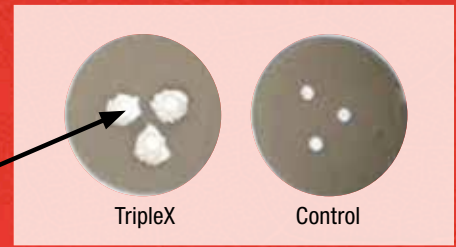
How TripleX Works

TripleX inhibits sooty mould spore germination & mycelium growth

Laboratory tests show :

- TripleX reduced sooty mould-causing fungi spore germination by 92%
- TripleX Bs1b microbe inhibited sooty mould mycelium growth

Zone of inhibition for diluted TripleX after 5 days. The cleared zone is due to the activity of the bacteria *B. amyloliquifaciens* Bs1b the active ingredient in TripleX



TripleX reduces sooty mould incidence in the orchard

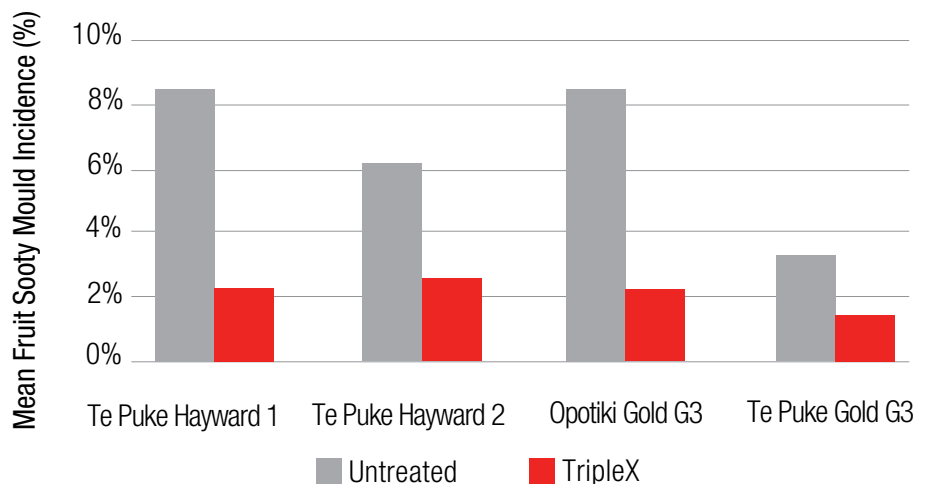
2016 Bay of Plenty Trial Results

TripleX was applied at 3 L/ha between January and March 2016;
 Hayward sites - 6 applications;
 Te Puke Gold - 4 applications and;
 Opotiki Gold - 2 applications.

TripleX reduced the incidence of sooty mould;

- in green (Hayward) and gold (G3) kiwifruit crops
- in Te Puke and Opotiki kiwifruit growing areas.

Effect of TripleX on Sooty Mould Incidence Four Trial Sites, Bay of Plenty 2016



Use TripleX as a preventative: Apply at the first sign of adult passionvine hopper

Passionvine hopper is the main cause of sooty mould. TripleX should be applied at the first sign of adult PVH.

- Watch for
- PVH nymphs in nearby hedges in December prior to the adults emerging.
 - Adult PVH from early January until population numbers decrease due to colder weather conditions at the end of March.



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