

UNLOCK YOUR CROP'S GENETIC POTENTIAL

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## Progress from photo 1 to 3 in less than 2 months



**Background:**

- Phytophthora infection in Sheppard Avocados had started around 2yrs age, when there was a "big rainfall event", March 2017
- Trees had not done well since then. Standard industry programs were used for Phytophthora but trees could not sustain vegetative growth.
- After the 1st application of Sabel-X there was a regeneration of vegetative growth in the 87 affected trees, which has continued. In less than 6wks, the 87 affected trees all had regrown significant leaf and new branches, and have retained them. At time of printing, the trees are retaining fruit and are now at the fruit fill stage.

### Application Rates

Crop	Dosage	Comment
<b>Vegetables</b> (seed treatment)	2.4g/kg seed - small seeds 1.2g/kg seed - large seeds 30g/25kg seed - large seeds	Apply as dry seed treatment prior to planting.
<b>Vegetables</b> (in furrow & irrigation)	500g/ha	Dissolve 500g in 15L non-chlorinated water and add to mixing tank. A calibrated injection pump is recommended for even distribution. Apply directly at planting or within a week of planting.
<b>Potatoes</b>	250g/1tonne seed (seed treatment)	Apply as dry seed treatment prior to planting.
	500g/ha (in-furrow & irrigation)	Dissolve 500g in 15L non-chlorinated water and add to mixing tank. A calibrated injection pump is recommended for even distribution. Apply directly at planting or within a week of planting.
<b>Legumes</b> - all (Seed Treatment)	30g/25kg seed	Apply as a dry seed treatment prior to planting.
<b>Sugarcane</b> (dip)	500g/40,000 billets	Dissolve 500g in 400L non-chlorinated water for dipping. Dip in 40,000 billets.
<b>Tree crops &amp; Vines</b>	<b>At planting:</b> 0.5g/seedling	Dissolve in 15L non-chlorinated water. Apply as a root drench or via the irrigation system.
(Via Irrigation)	<b>&lt; 5 years</b> 1st root flush: 0.5g to 1.0g/tree/vine 2nd root flush: 0.25g - 0.5g/tree/vine	For seedlings, apply at planting. For mature trees, start at first seasonal root flush; repeat in autumn root flush.
	<b>&gt; 5 years</b> 1st root flush: 1.0g/tree/vine 2nd root flush: 0.5g/tree/vine	

“**Avocado Trees - in less than 6 weeks, 87 infected trees had regrown significant leaves and new branches.**”



**Learn more online**

View Trials, Soil Health Calculator, and access the Resource Library.

[sustainablefarming.com.au](http://sustainablefarming.com.au)

4/12/19

# Horticulture

Improve yield with next generation Endophytic Trichoderma



**Exceptional grower feedback .... consistent improvements in establishment, growth & healthy crops leading to improved yield.**

IMMEDIATE ACTION

SWITCHES ON GENE PATHWAYS

TYPICALLY 1 APPLICATION

30+ YEARS IN THE MAKING!

NOT AFFECTED BY FUNGICIDES after establishment

ROBUST MICROBE

### What Endophytic Trichoderma do

Sabel-X Trichoderma quickly enter the plant and once inside, produce metabolites that influence the whole plant (by switching on gene pathways) resulting in a positive effect on:

- |                            |                          |
|----------------------------|--------------------------|
| <b>Germination</b>         | <b>Growth and vigour</b> |
| <b>Photosynthesis</b>      | <b>Root development</b>  |
| <b>Disease resistance</b>  | <b>Stress resistance</b> |
| <b>Yield &amp; Quality</b> | <b>Water utilisation</b> |

The process of switching on gene pathways is a dynamic process and changes depending on the conditions within the plant. New technologies track the "switching on" of these gene pathways.

Endophytic Trichoderma | Live inside the plant, not in the soil

### Trichoderma - 3 types

There are 3 very different types of Trichoderma with different functions:

#### FREE LIVING

Live in the general soil mass. They break down soil organic matter and help build soil health with long term benefits. They are subject to pH, waterlogging, heat etc and need regular applications.

- Fungicides kill them
- Require multiple applications

#### RHIZOSPHERE COMPETENT

Live in the rhizosphere with strains selected to outcompete fungal pathogens and colonise the plant root system more aggressively.

- Fungicides kill them.
- Require multiple applications

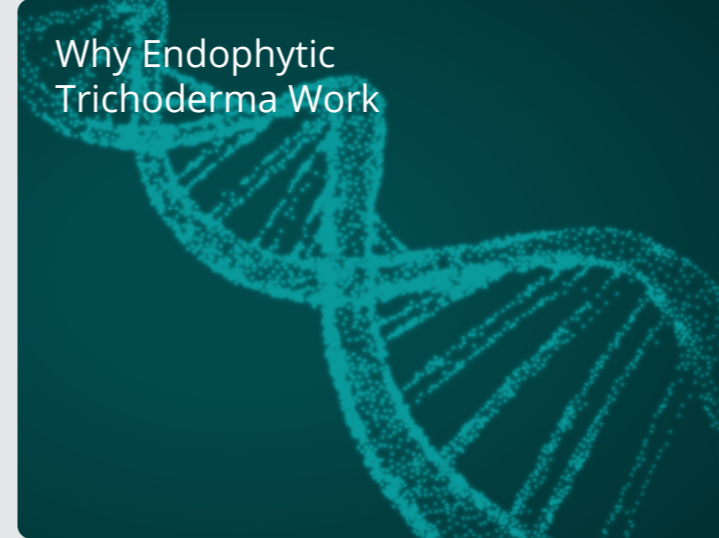
#### ENDOPHYTIC TRICHODERMA

Immediately enter the plant and produce metabolites which then induce different plant responses depending on what the plant needs.

Fungicides do not kill them because Sabel-X Trichoderma live between plant cells.

Typically one application because Sabel-X Trichoderma lives as long as plant does.

### Why Endophytic Trichoderma Work



- Immediate response - inoculates within 16-48 hours and starts producing metabolites.
- Lives between cells within the plant - not affected by fungicides
- Typically one application only - live as long as plant
- Weathers tough conditions - not impacted by soil biology, soil pH and other adverse soil conditions - free living Trichoderma live in the soil and are impacted by soil conditions
- Micro-encapsulated for compatibility and robustness, even with phosphates and contact fungicides.
- Unique - only 12 strains worldwide representing 1% of Trichoderma - 30+ years in the making!

### Soil Health Benefits of Sabel-X Endophytic Trichoderma:

**Rhizosphere Impact - Even though Endophytic Trichoderma do not live in the rhizosphere, they produce metabolites to trigger responses in the rhizosphere.**

- Encourage beneficial fungi and bacteria
- Stimulate root exudates to feed soil microbes
- Accumulate organic matter



Beans - more growth (note less space between plant rows), better establishment. Stem thickness, larger roots.



More roots on treated plants. Also seeing bigger and more substantial seedlings.

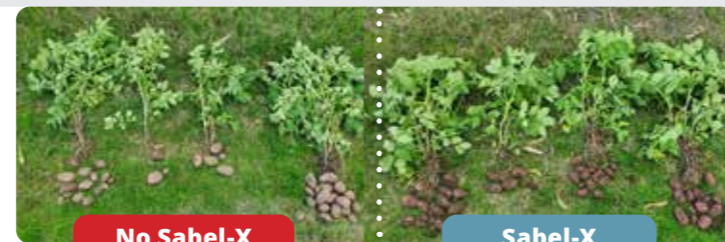


No Sabel-X Sabel-X



No Sabel-X Sabel-X

Improved yield with Sabel-X Hort



Treatment	Plant health score	Root health score	Set	Stems	Kg Tops	Kg Spuds	Kg Total Biomass
Control	3	5	46	13	1.7	2.8	4.5
Sabel-X 1 treatment	5	8	52	13	2.5	3.6	6.1



No Sabel-X Sabel-X

Sabel-X has larger root systems



No Sabel-X Sabel-X

Sabel-X dramatically improves growth

"Lettuce usually cut once. Regrowth allowed an extra cut."

"Sabel-X has helped us with our high intensity production - turning around crop every 23 days."