

Trichoderma

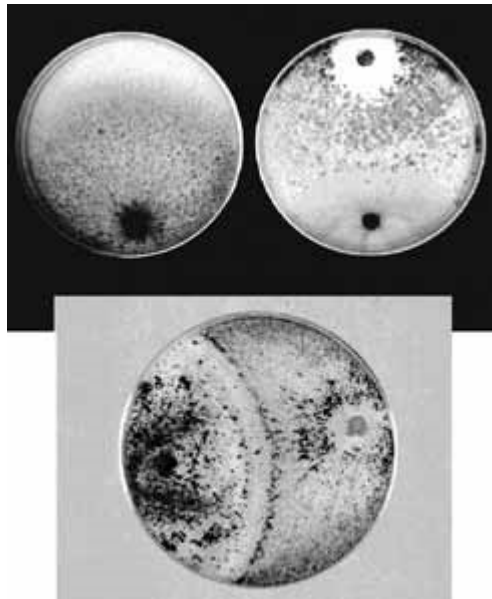
Eutypa Foe?

by [Mick Winter](#)

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Eutypa Dieback is recognized as an ongoing problem in most wine regions of the world. As an article [*Eutypa Dieback - The Next Grapevine Threat is Already Here*] in the July issue of Wine Business Monthly suggests, the Eutypa threat to California vineyards could greatly increase throughout this decade as replanted and recently planted vineyards reach the level of maturity where they begin to be susceptible to Eutypa, which can happen when vines are 2-3 years old--although symptoms seldom appear until they are 6-8 years old.

Eutypa dieback is caused by the fungus *Eutypa lata* and some researchers have been studying another fungus--Trichoderma --which appears to serve as a bio-control for Eutypa.



Top Left: *Botryosphaeria stevensii*, control plate
Top Right: *Trichoderma viride*, antagonism plate right with Trichoderma inoculum top. Note the Trichoderma extending 2/3 down the plate confining Botryosphaeria to the bottom 1/3 of the plate.
Bottom: *Trichoderma viride*, right antagonism of Eutypa left.

Field trials using Trichoderma to inhibit *Eutypa lata* have been conducted in New Zealand, Australia, California, South Africa and Italy. One company that has been spearheading this research is **Agrimm Technologies Ltd.** of Christchurch, New Zealand. It is currently the only commercial source of registered Trichoderma products for control of degenerative grapevine diseases such as Eutypa dieback and black dead arm (*Botryosphaeria stevensii*).

Agrimm founder John Hunt says his company's goal is "to develop safe natural products that enable growers to produce bigger, better, healthier plants and crops with no chemical or toxic side effects."

Trichoderma is a naturally occurring soil fungus with a wide range of properties that have been shown to enhance plant health, growth and vigor. Over a decade of research, Agrimm has selected superior strains of natural Trichoderma and formulated a range of "Trichoprotection" products. When applied to plants and soils, these product formulations ensure that Trichoderma will actively colonize and grow. They also include nutrients to promote growth and enable the Trichoderma to thrive and dominate in a wide range of

environments. Once established in a host plant, Trichoderma has been shown to co-exist for up to five years.

Hunt has found that plant benefits correlate with increased populations of Trichoderma. In other words, the more the better, whether it's larger doses or more frequent applications--or both.

A Variety of Methods

Agrimm's products for grapevines include:

- A wood dowel (25 mm x 6 mm) that is inserted into a predrilled hole in the trunk. This delivers a sustained release of Trichoderma and provides protection for up to five years.
- A liquid applied by injection into a predrilled hole in the trunk. It is designed as a curative treatment.
- A pruning wound dressing which, when brushed on, delivers Trichoderma and nutrients to support colonization of woody vessels.
- A spray for pruning wounds similar to the brushed-on liquid, designed for hand-sprayer application to small fresh wounds.

Other products are introduced into the root zone. They aid nutritional uptake to the plant while also providing a barrier of Trichoderma to combat disease-causing fungi. With these products, the Trichoderma does not enter the plant roots but resides around the root structures.

These include coarse powders for mixing with all growing media at propagation, growing-on and potting-up stages, and finer powders for dispersal in water for spray or drench application. Others include pellets for applications under plant roots at planting time, and a mixture to add to compost and mulches.

The wide range of formulations available allows the vineyardist to pick and choose the most appropriate product for the needs of the vineyard and the desired methods of application. Agrimm works with growers to determine the optimum crop protection program, which will likely include the use of different formulations at different stages of the growth cycle.

A general program using Agrimm's Trichoderma products would include application of pellets to the root zones of new plantings, liquid delivery through irrigation two or three times per growing season, insertion of dowels every five years, and annual application of sealant and spray to all pruning wounds.