



Trichoderma harzianum (Td81b) 10¹¹ cfu/gram

Antagonizer - BERRIES

A natural predator of *Botrytis cinerea* (Grey mould)



Above: *Botrytis cinerea* spores erupt from the surface of a berry



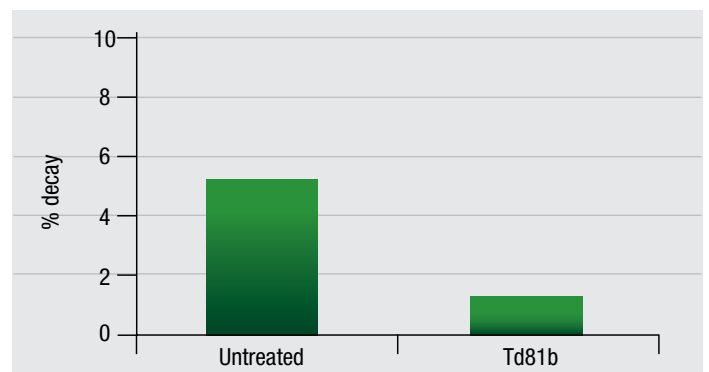
Above: *Botrytis cinerea* infecting grape berries.

Antagonizer is a naturally occurring fungus *Trichoderma harzianum* (Td81b) that was isolated from a bunch of grapes in an organic vineyard in Tasmania, (Australia). It was selected for its ability to colonise bunches and act as a natural barrier against *Botrytis cinerea* (Bunch rot) close to harvest.

Botrytis infects the flower and lays dormant until the crop matures, this is known as a latent infection and **Antagonizer's** sister product, **Colonizer**[®] is effective against this infection pathway. However, *Botrytis* can also infect berries very late in the season from splashing of spores from the ground and from surrounding infections. *Botrytis* infection can be a very serious problem if the berries have been injured by insect, bird or hail damage close to harvest. There are very few alternatives for the management of *Botrytis* close to harvest due to residue concerns and fungicide resistance problems. **Antagonizer** offers a new biological alternative for late season *Botrytis* infection.

Active formulation:

Antagonizer is produced to have a spore count of min. 100 billion colony forming units / gram of product making it the most concentrated *Trichoderma* on the Australian market. The fact that it was isolated from grape berries also means that there is no need for "priming" or "brewing-up" numbers to be more potent or viable. Just add to the spray tank, agitate and go!!



Above: The effects of a single spray of **Antagonizer** four weeks prior to harvest of Riesling grapes on *Botrytis* compared to untreated control. Lsd0.05=2.96

Manufacturer:

Dr Dean Metcalf, Biocontrol Australia PL,
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Further Information:

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DIRECTIONS FOR USE

General Information

Antagonizer contains a fungus native to Tasmanian vineyards known as *Trichoderma harzianum*. *T. harzianum* naturally grows on grape skin and when present in high enough concentration acts as a barrier to *Botrytis* infection of berries.

Handling Safety

Trichoderma spores are very light and upon opening may become airborne. It is recommended to open the package within the sprayer tank to prevent loss of spores and reduce exposure. There is no evidence that **Antagonizer** is harmful, however good agricultural practice and on-farm OH&S procedures dictate that an operator must take appropriate precautions when handling and mixing agricultural sprays including:

- Wear goggles and gloves to avoid contact with eyes and skin.
- Wear a dust mask to avoid inhaling the spores.
- Do not allow spray mist to contact the operator, or other people.
- Allow the droplets time to dry before working within the canopy.

Mixing

The powder will initially float on the surface of the water. After about one minute it will disperse into the spray solution with agitation. Take care to avoid inhaling the spore

dust, as some may rise from the surface as you mix. DO NOT TANK MIX WITH CHEMICAL FUNGICIDES. Mix immediately before use (more than 1hr in water may reduce viability). A compatibility chart is available from www.ocp.com.au or contact your local Rep for further advice.

Nozzles & Filters

Antagonizer has been sieved through a 75 micron screen which should allow it to pass through most commercial nozzles. We are very interested to receive feedback on any problems with nozzles or filters.

Rate of application

Application is recommended at 100g per hectare. In grapes apply to the bunch zone in a quantity of water that will fully cover the bunch zone, but without water running-off the canopy. **The addition of Synertril Horti Oil may assist with sticking and spreading.**

Pressure

Antagonizer has not been tested under high pressure but its sister product **Colonizer**® will survive applications up to 800 kpa. Low pressure spraying is recommended where possible.

Storage

Store under refrigeration where possible. Do not leave in heated space such as car boot, dash board or tractor cab. **Antagonizer** is best applied within 8 mths of manufacture if stored under refrigerated conditions.

Colonizer® & Antagonizer Program

COLONIZER®		CRITICAL COMMENTS	ANTAGONIZER	
		Apply at a rate of 100g/ha. One spray at 80% capfall may be all that is required if conditions are dry during flowering. Late season applications will be needed if extended periods of precipitation are predicted. Apply every 10-14 days during high pressure close to harvest.		
20% capfall	80% capfall		Veraison	Up to harvest

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