



Tri-Soil®

Biocontrol

Biofungicide against vegetable soil
borne diseases
AMM (FRANCE) : N°2160686



Tri-Soil® is a biofungicide based on *Trichoderma atroviride* strain I-1237 spores. This antagonistic fungus has been selected for its broad spectrum action against several fungal pathogens present on vegetable (Carrot, Salads) as "Cavity spot" on Carrot (*Pythium* spp.) and "Brown Patch" on Salads (*Rhizoctonia* spp.).

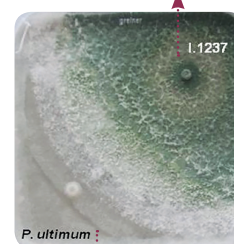
Product identity

- Composition: 100 millions (10⁸) CFU of ***Trichoderma atroviride* I-1237** per gram of product
- Formulation: wettable powder (**WP**)
- Product classification: **not classified**
- Application: before sowing or planting (or immediately after)
- Mode of application: **by spraying** on moist soil
- Maximum Residue Levels (MRLs): **MRL exempted**
- **Tri-Soil®** can be **used in organic farming** according to EC regulation n°834/2007 and NOP regulation (National Organic Program)

Mode of action

Tri-Soil® works, mainly through spatial and nutritive competition (antagonism) but also via antibiosis and mycoparasitism. These mechanisms allow a good control of fungal pathogens present in the soil.

Tri-Soil® (*Trichoderma atroviride* I-1237)



Pythium on carrot (*P. ultimum*).

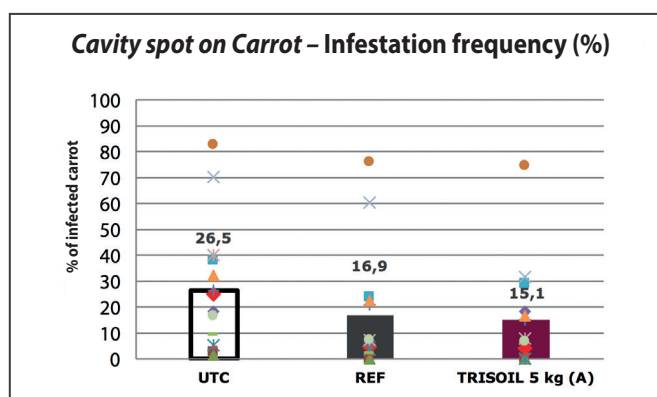
Technical characteristics of *Trichoderma atroviride* I-1237

- **Fast growth**: high ability of sporulation and mycelial growth providing a fast development within the soil.
- **Adaptation to various soil pH**: no influence on spore germination and mycelial growth for soil pH between 3 and 8.5.
- **Development at low temperature**: good capability to grow in cold conditions (5 °C), 3 to 6 times faster than other *Trichoderma* strains.
- **Brings back microbial balance in the soil** through adverse on pathogens



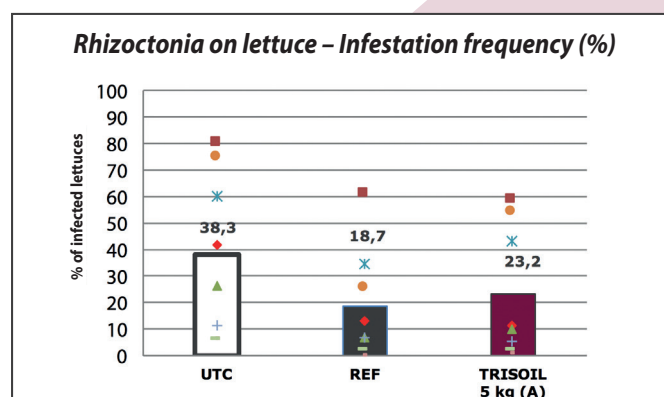
Results on *Pythium* on Carrot

- Synthesis of 14 GEP field trials (2007-2015)
- Locations : France, Germany, Netherlands
- Modalities : **Tri-Soil**® - 1 soil spraying application at 5 kg/ha, 1 to 3 days before sowing ; Reference (Metalaxyl-M) – 1 application at 0.5 L/ha.



Results on *Rhizoctonia* on lettuce

- Synthesis of 8 GEP field trials (2007-2015)
- Locations : France, Italy, Germany
- Modalities : **Tri-Soil**® - 1 soil spraying application at 5 kg/ha, 1 to 2 days before planting ; Reference : Pencycuron, Propamocarb, Pyraclostrobin + Boscalid



→ **Good efficacy of Tri-Soil®** used alone on Carrot and Lettuce, **results comparable to the chemical references.**

→ **Tri-Soil® improves marketable yield** and maintains vegetable quality.

Recommendations for application

- Apply by spraying on moist soil, preferably with a light mechanical incorporation before sowing or planting.
- It is recommended to follow immediately by an overhead irrigation.
- For long cycle crops, as winter carrots (ware carrots), a second application before the conservation in the field is necessary.
- After application, clean and rinse well the spraying equipment.

Packaging

- Aluminium bags : 1 kg and 2.5 kg packed in 10 x 1 kg or 2 x 2.5 kg cardboard.
- Shelf life : 6 month at room temperature (20°C).



Use and dose rates

Crops	Uses	Type of treatment	Authorized Dose rates	Possible dose split	Recommendations	PHI	Application stades
Carrot¹	<i>Pythium</i> spp Cavity spot	Ground spray	5 kg/ha	During sowing	Ground spray before or after sowing. Mechanical incorporation in the soil or through irrigation	/	BBCH 00
		Aerial part treatment	10 kg/ha	2.5 to 5 kg/ha per application	During crop establishment on fresh soil	3 days	Until BBCH 45
Lettuce² and other leafy greens	Brown patch (<i>Rhizoctonia</i> spp.)	Treatment Aerial part treatment (also allowed in greenhouse)	5 kg/ha	2.5 to 5 kg/ha per application	During crop establishment on fresh soil	3 days	Until BBCH 15
	Fungus (except from Pythiaceae)	Ground spray (also allowed in greenhouse)	5 kg/ha	During sowing	Ground spray before or after sowing. Mechanical incorporation in the soil or through irrigation	/	BBCH 00

Carrot¹: Celery, Salsifies, Parsnips, Horseradish, Jerusalem artichoke, Parsley root, Chervil, Chinese artichoke.

Lettuce²: Escaroles chicory, Curl-leaved, Lamb's lettuce, Rocket and other leafy greens.

Re-entry time: N/A for field. 8 hours in greenhouse.

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**PRODUCTS FOR PROFESSIONAL : USE CROP PROTECTION PRODUCTS WITH CAUTION.
BEFORE USE, READ THE LABEL AND PRODUCT INFORMATION.**