



Rizoderma
Biological seed treatment

Revolutions start
from the ground.

From the seed.

 **RIZOBACTER**

Welcome to the biological revolution.

Rizoderma

Biological seed treatment

Rizoderma is a powerful biological synthesis seed treatment/fungicide that protects crops from the start. It increases the spectrum of pathogen control, while providing vigor and a growth promoting effect.

Rizoderma is based on the *Trichoderma harzianum 2* (Th2) strain, a fungus that develops, infects the crop and protects it from diseases, from implantation to harvest



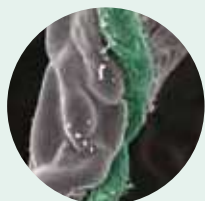
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MECHANISMS OF ACTION



1. COMPETITION

When *Trichoderma harzianum 2* (Th2) strains are applied on the seeds, the result is rapid growth, along with radicular development of the treated seedlings. Th2 compete with phytopathogenic fungi for nutrients and space in the rhizosphere.



2. MYCOPARASITISM

Trichoderma harzianum 2 (Th2) develops around the pathogen and penetrates it from its surface, by the action of lytic enzymes (chitinase and β -1,3-glucanase). It degrades the cell wall of the pathogen and causes its death.



3. ANTIBIOSIS

Trichoderma harzianum 2 (Th2) reduces a large amount of volatile and non-volatile antibiotics that inhibit and delay the growth of pathogenic fungi (pyrones, peptaibols, glyotoxins and sesquiterpenes, among others).



4. DEFENSE INDUCER

Trichoderma harzianum 2 (Th2) causes and promotes the secretion of compounds that activate physiological and biochemical defense mechanisms in the plant Induced Systemic Resistance (ISR).



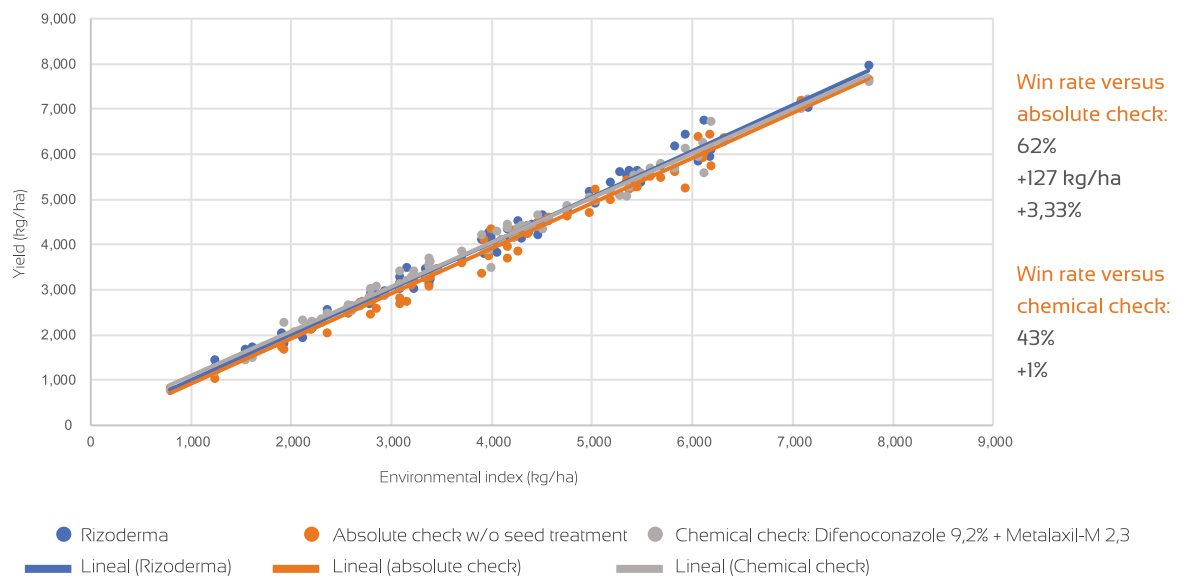
It is a one hundred percent liquid product for direct on-seed application that allows for 120-day pre-treatment and expires after 18 months; additionally, it is compatible with other products (even of synthetic origin).

CROPS	RATE per 100 kg of seed	CONTROLLED DISEASES	
Wheat	200 mL	<i>Fusarium graminearum</i> <i>Drechslera tritici-repentis</i> <i>Bipolaris sorokiniana</i>	<i>Ustilago tritici</i> <i>Tilletia laevis</i> <i>Rhizoctonia solani</i>
Soybean	100 mL	<i>Fusarium spp.</i> <i>Phomopsis spp.</i> <i>Cercospora Kikuchii</i>	<i>Rhizoctonia solani</i> <i>Sclerotinia sclerotiorum</i> <i>Macrophomina phaseolina</i>
Rice	400 - 600 mL	<i>Fusarium spp.</i> <i>Alternaria spp.</i> <i>Bipolaris spp.</i>	<i>Microdochium spp.</i> <i>Penicillium spp.</i> <i>Aspergillus spp.</i>

Proven yields throughout the country

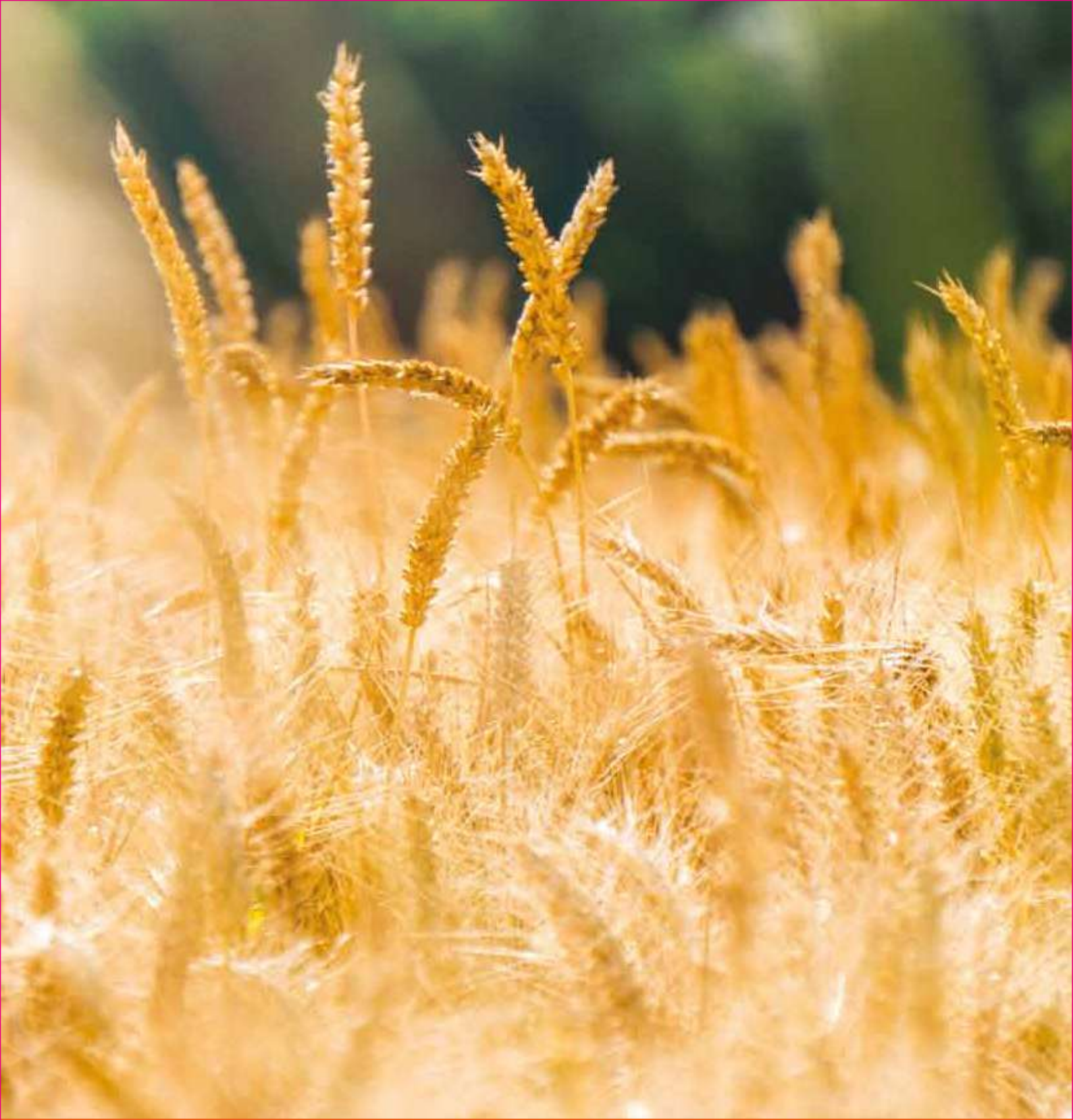
Recognized experts have evaluated Rizoderma for winter cereals in the main trial networks. Ask your local advisor about the performance of this biological technology.

Contact: Rizobacter Technical Service and official institutions
Average of 97 trials - 63 sites - Last seven seasons - Crop: wheat



Benefits of Rizoderma

- **Green band:** Environmentally friendly and operator friendly.
- **Broad-spectrum control:** Unique and efficient pathogen biocontrol.
- **Greater residual power:** Control throughout the crop cycle.
- **Suitable for Integrated Pest Management (IPM):** Mode of action rotation, low risk of resistance.



Avda. Dr. Arturo Frondizi N° 1150 - Parque Industrial
Zip code: B2702AME - Pergamino (Bs. As.)
Argentina Phone: +54 2477 409400
<https://rizobacter.com.ar/rizoderma/>