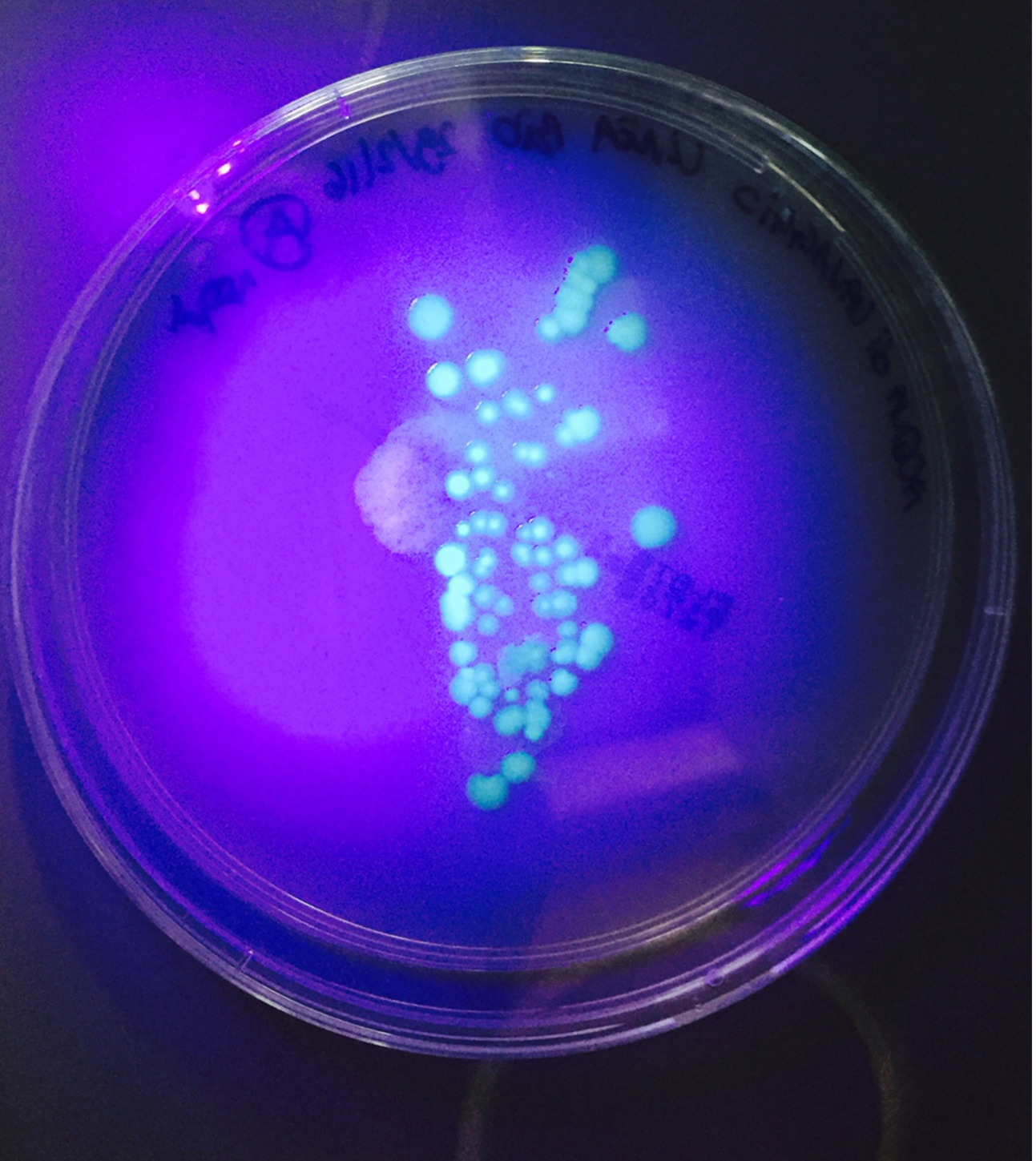

SP SOURCON PADENA
Proradix®

Proradix®

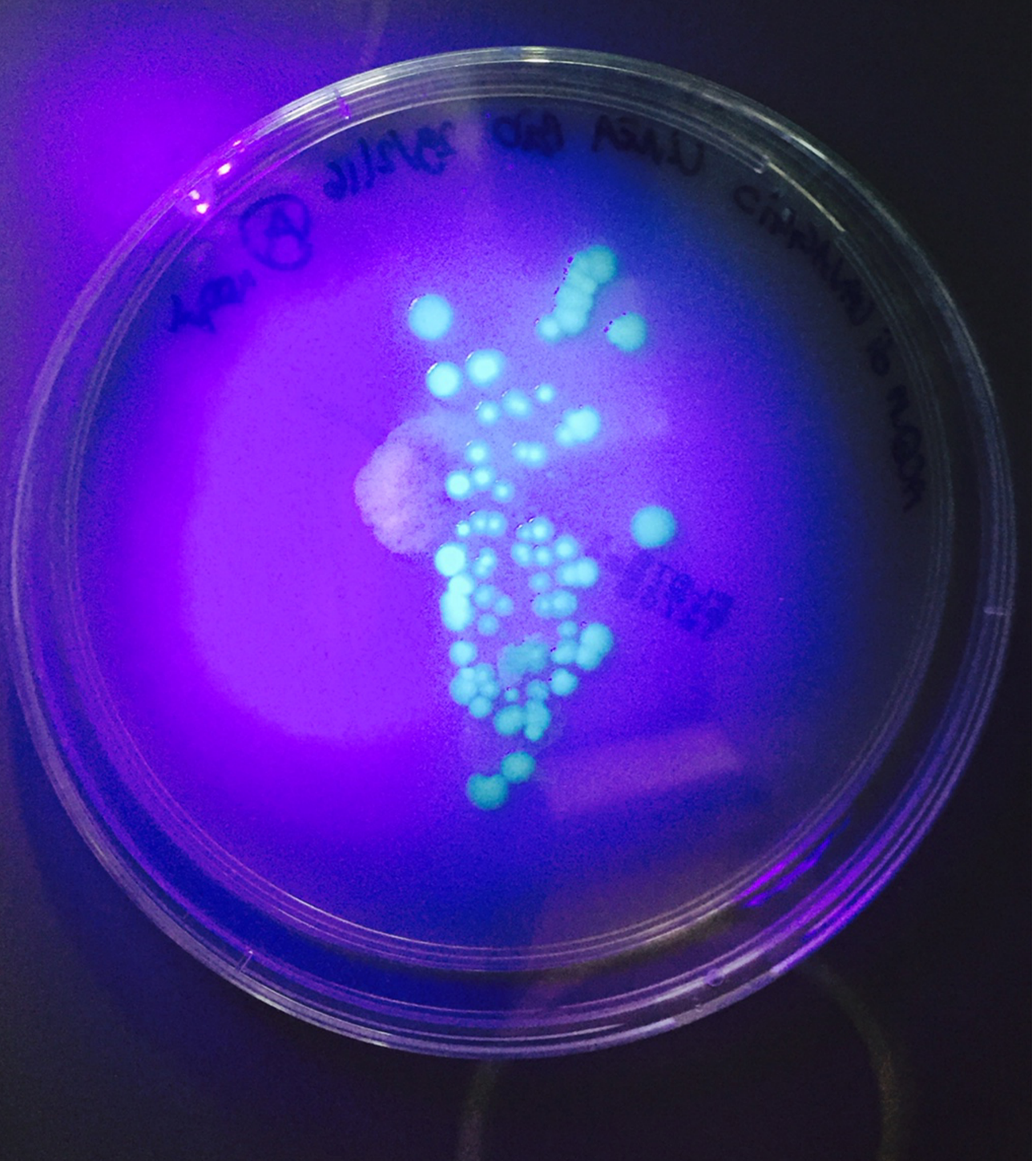
a product by

SP SOURCON PADENA



Pseudomonas sp. DSMZ 13134

Domain	Prokaryota
Kingdom	Bacteria
Phylum	Proteobacteria
Class	Gammaproteobacteria
Order	Pseudomonadales
Family	Pseudomonadaceae
Genus	Pseudomonas
Species	Protegens



Pseudomonas sp. DSMZ 13134

Rhizosphere Bacteria = living being.

Isolated on lettuce in Germany during a research for a Biological Control against *Pythium*.

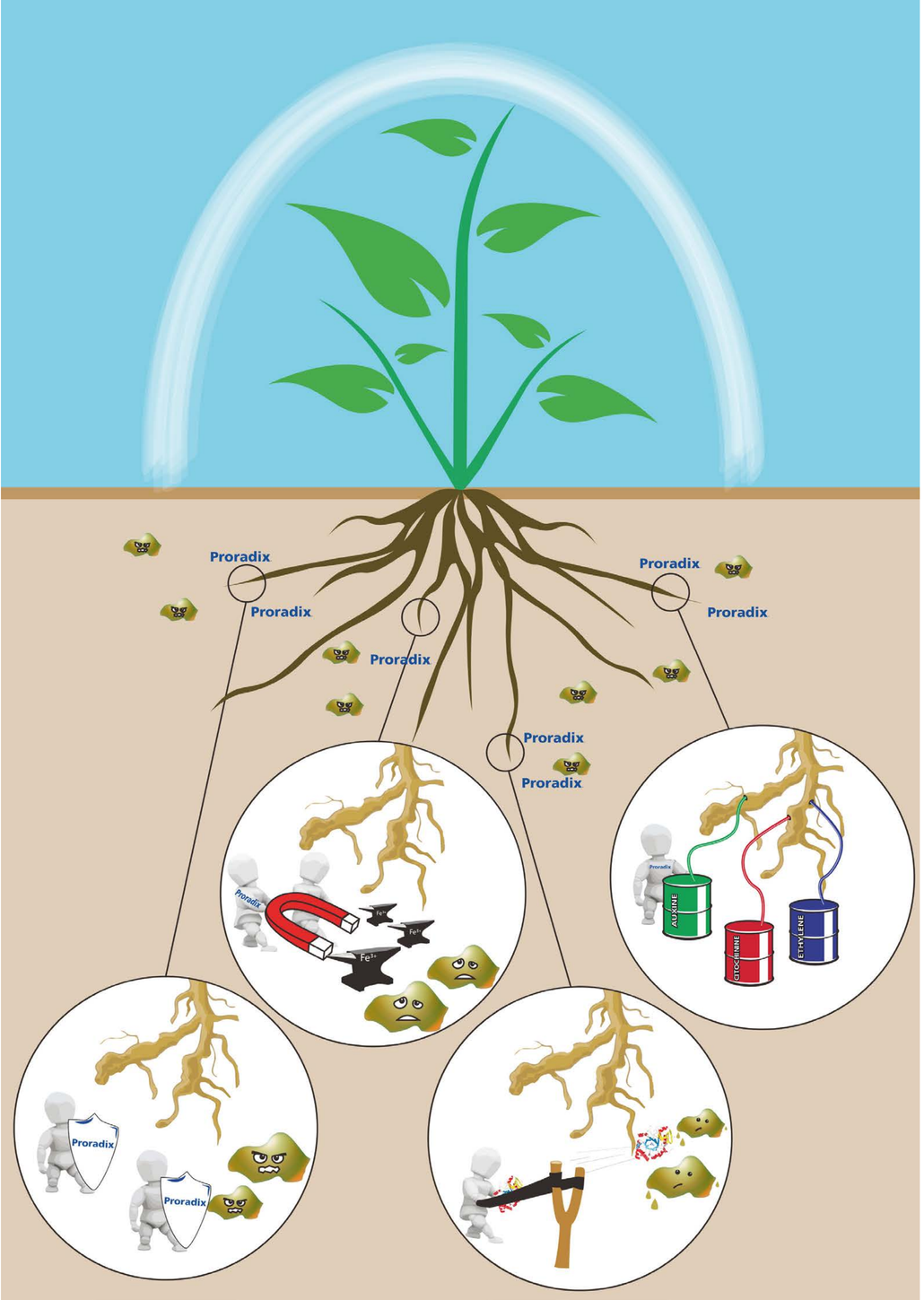
It can be found naturally in the environment and it has not been genetically modified.

Its best growing area is on the roots.

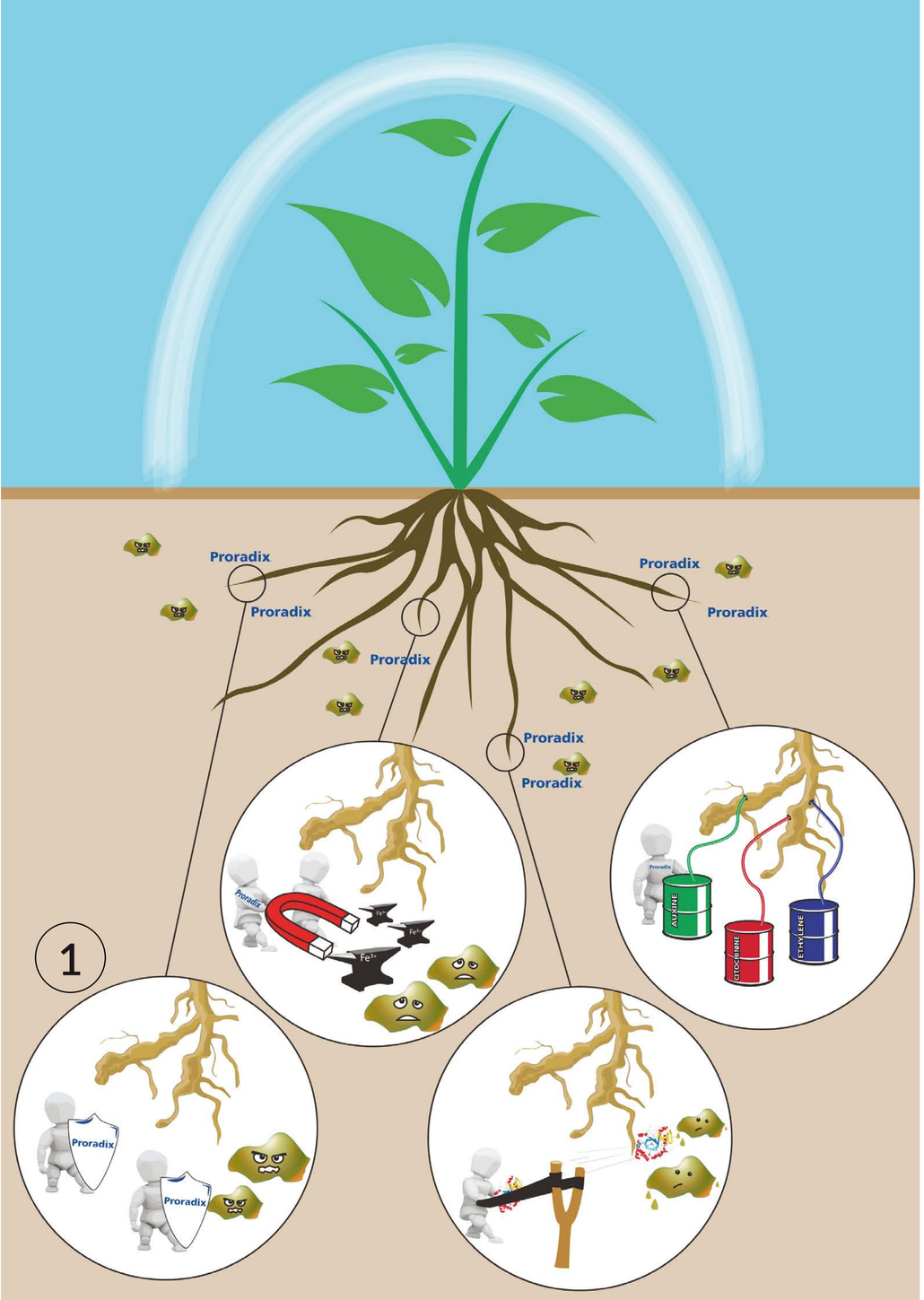
PGPR - Plant Growth Promoting Rhizobacteria.

Several Mode of Action.

Preventive application against most of the soil-borne diseases.

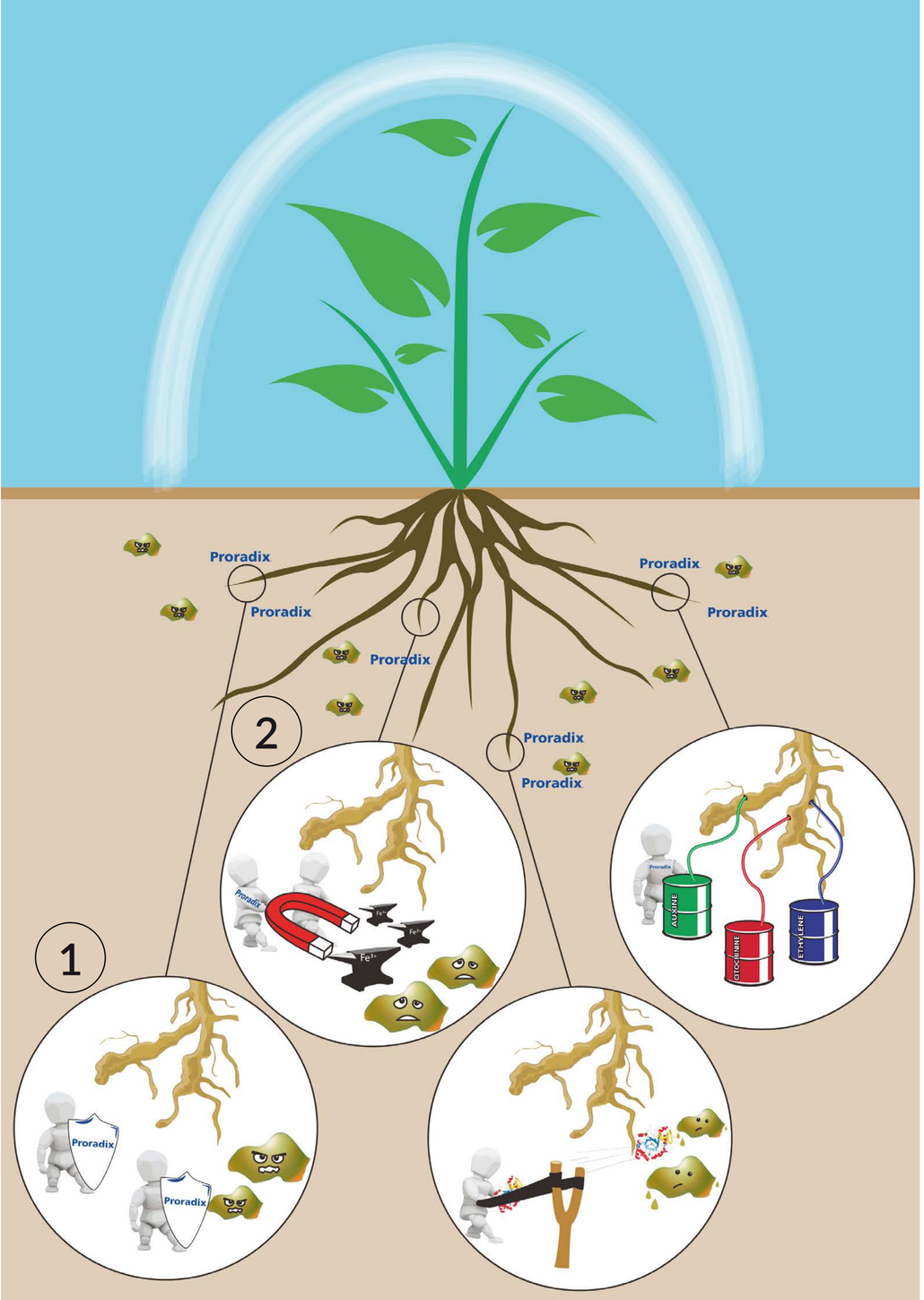


Pseudomonas sp. DSMZ 13134
Mode of Action



COMPETITION for SPACE

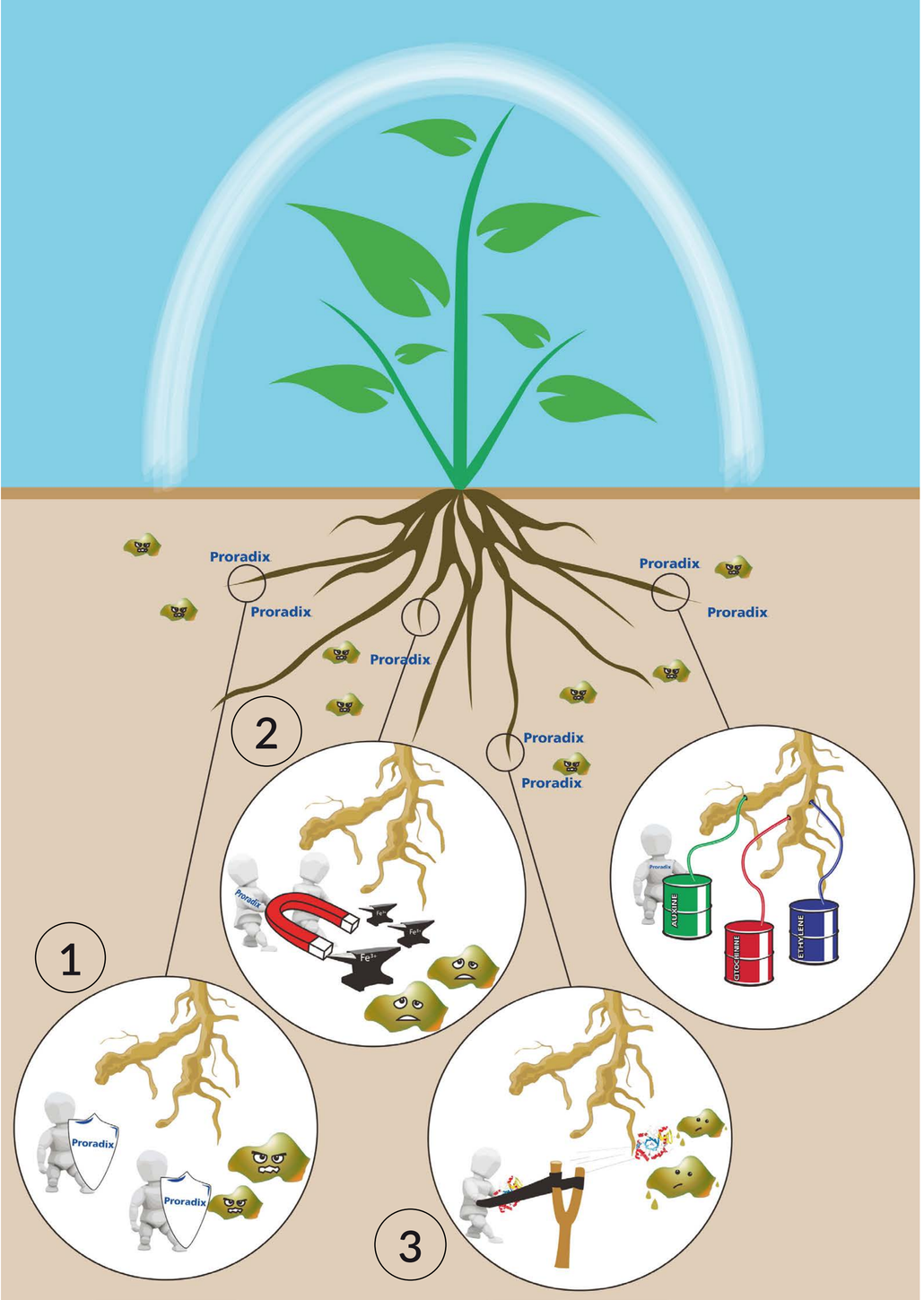
1 Proradix® colonizes rhizosphere quicker than pathogens, creating a biofilm in where availability of nutrients and space to access roots' mucigel is limited.



COMPETITION for NUTRIENTS

1. Proradix® colonizes rhizosphere quicker than pathogens, creating a biofilm in where availability of nutrients and space to access roots' mucigel is limited.

2. Proradix® produces organic and siderophore acids (Pseudomonine and Quinolobactine), highly effective in chelating metal cations (zinc, copper and iron), then less available for pathogens. Iron is essential to start infective processes.



NON EXOGENOUS CHITINASE

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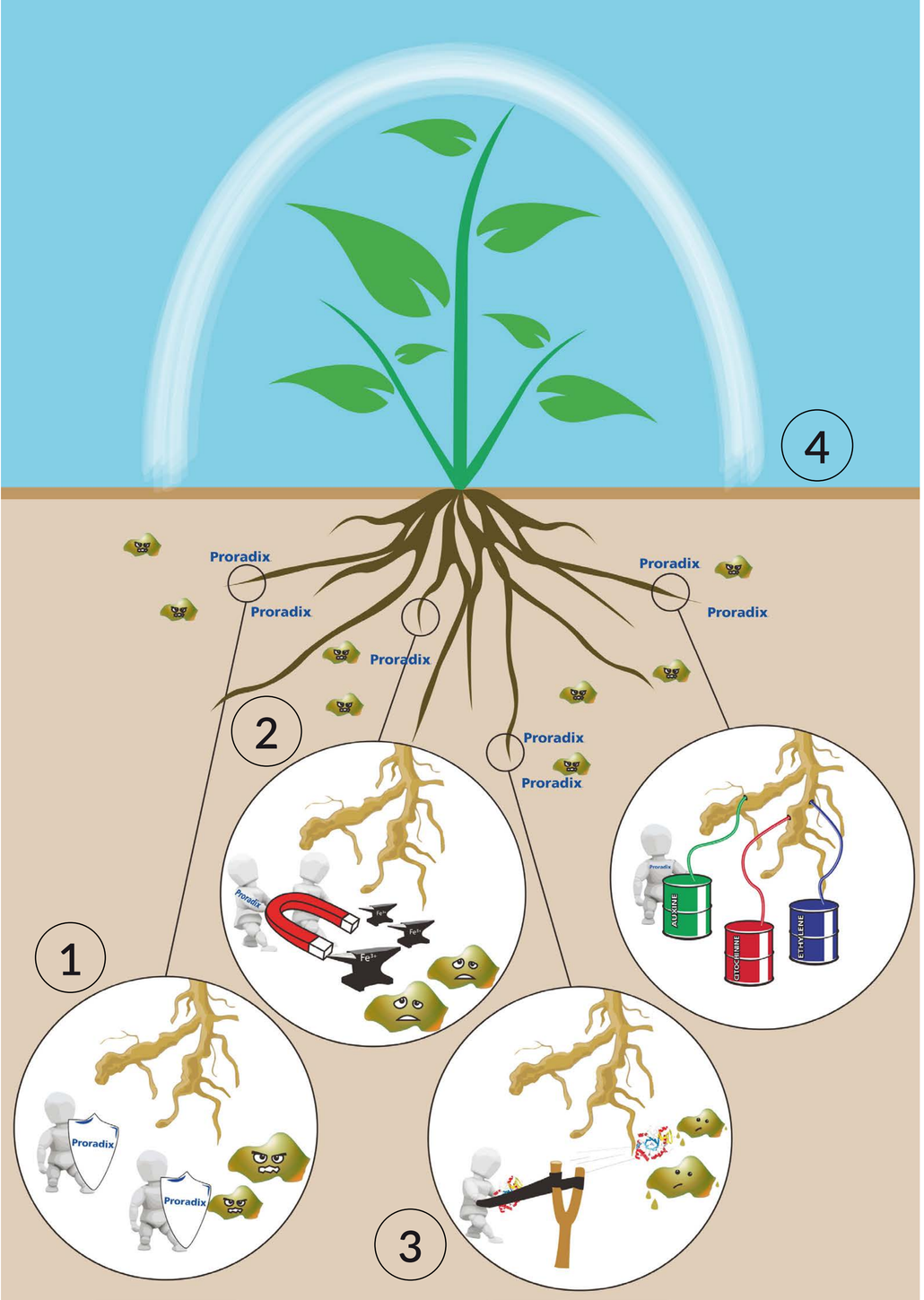
3. Proradix® produces non-exogenous **Chitinase** able to degrade pathogens' cellular walls.



S.A.R. - I.S.R.

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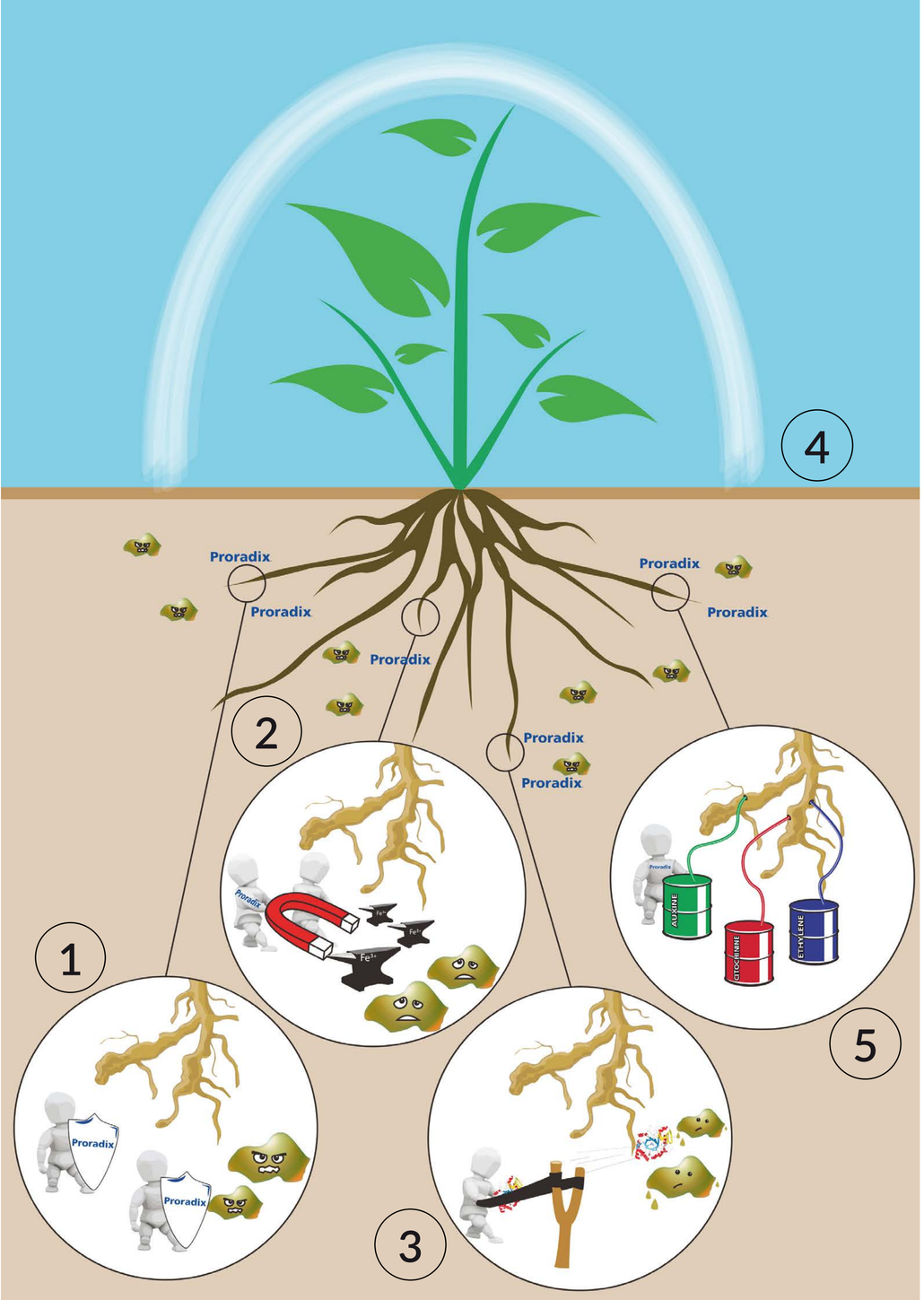
3. Proradix® produces non-exogenous **Chitinase** able to degrade pathogens' cellular walls.

4. Proradix® SAR is correlated to the production of Salycilic Acid, a phytohormone that induces the production of PR-proteins (Pathogen Related proteins), among which chitinase, peroxidase, lysozyme and deposition of lignin.

   Proradix® is able to induce ISR raising the speed of reaction of specific defenses against pathogens and abiotic stresses. ISR is transmitted through jasmonic acid and ethylene.



PHYTOHORMONES

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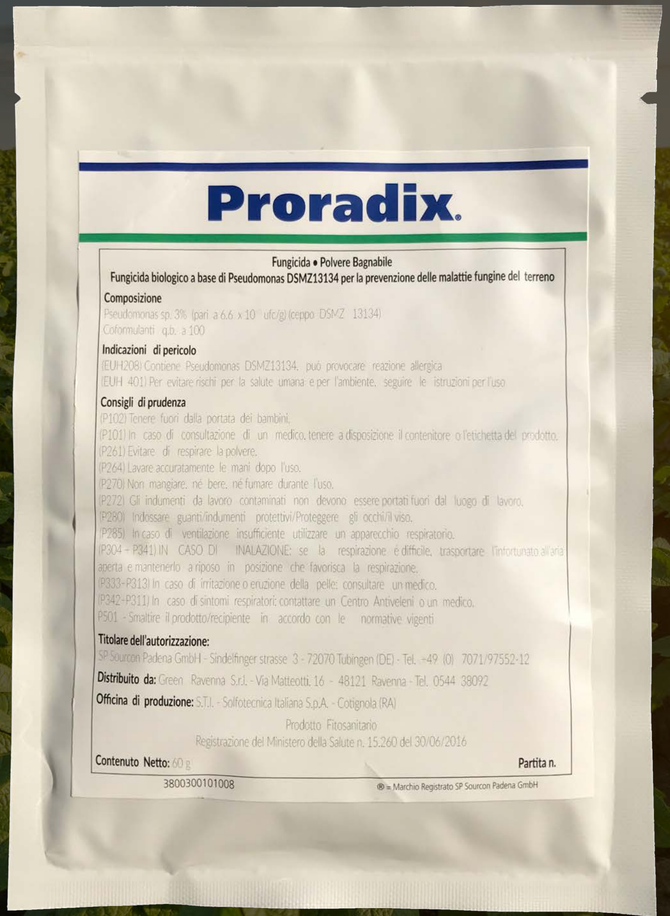
5. Proradix® fosters roots' growth through hormonal-like substances, as auxine, citochinine and ethylene. These do not have a direct effect against pathogens, however stimoulating the roots the plant is more resistant against abiotic stresses and pathogens.

Proradix®



SP SOURCON PADENA

Proradix®

Proradix® is a latin word meaning “in favor of the roots”. **Proradix®** is a preventive bio-fungicide that helps to improve the yield of potatoes both in quantitative and qualitative terms. Its naturally occurrence, low eco-tox characteristics and the efficacy against most of the soil-borne diseases make **Proradix®** a valuable option to the chemical pesticide for the protection of tubers along the whole crop cycle. The different Modes of Action lead to a more difficult diseases’ development of resistances towards **Proradix®**.

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Proradix®

Pros of Proradix®

Preventive Bio-fungicide
to control soil-borne diseases

Harder for diseases to delevelop resistances
due to the several Mode of Action

Allowed in Organic Farming
according to reg. EC 889/2008

Maximize your profit:
Protect from diseases
Improve the quality of the harvest
Increase the yield of the field

Naturally occurs

Integrated Pest Management:
manifest its great potentiality along with chemical pesticides

Several Modes of Action

No Residues
on the crops

Healthier Fruits:
Less Nitrates
More Antioxidants

Bio-stimulating effect
on roots, plant and fruits

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Proradix

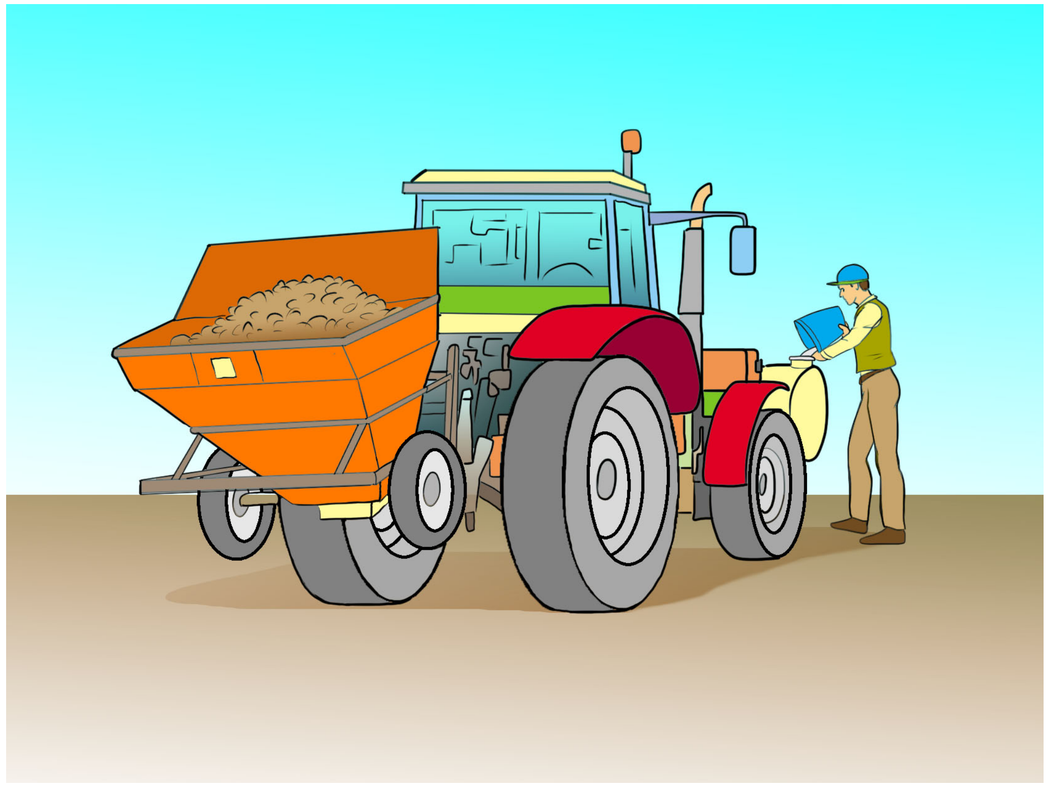
Application

- Leave at room temperature for at least 1 hr before application
- Pour half of the bags in a bucket or shaker.
- Pour around 1,5 - 2 L of water at 20°C
- Start stirring/shaking for about 2 minutes.
- Pour completely the bags in the container.
- Stir/Shake until the product is completely diluted.
- Wait 3-6 hrs before applying Proradix®

SP SOURCON PADENA

Proradix

Application



- BBCH 00-03
- **SEED TREATMENT AT PLANTING**
- Spray with nozzles when the machine is laying the potato.
- Rate: 60 g/ha
- Volume of H_2O: 60-100 L/ha

SP SOURCON PADENA

Proradix

Application

- BBCH 00-03
- **SEED TREATMENT BEFORE PLANTING**
- Ultra Low Volume (ULV) Machine
- Rate: 20 g/ton of potato
- Volume of H_2O: 2-4 L/ton of seeds

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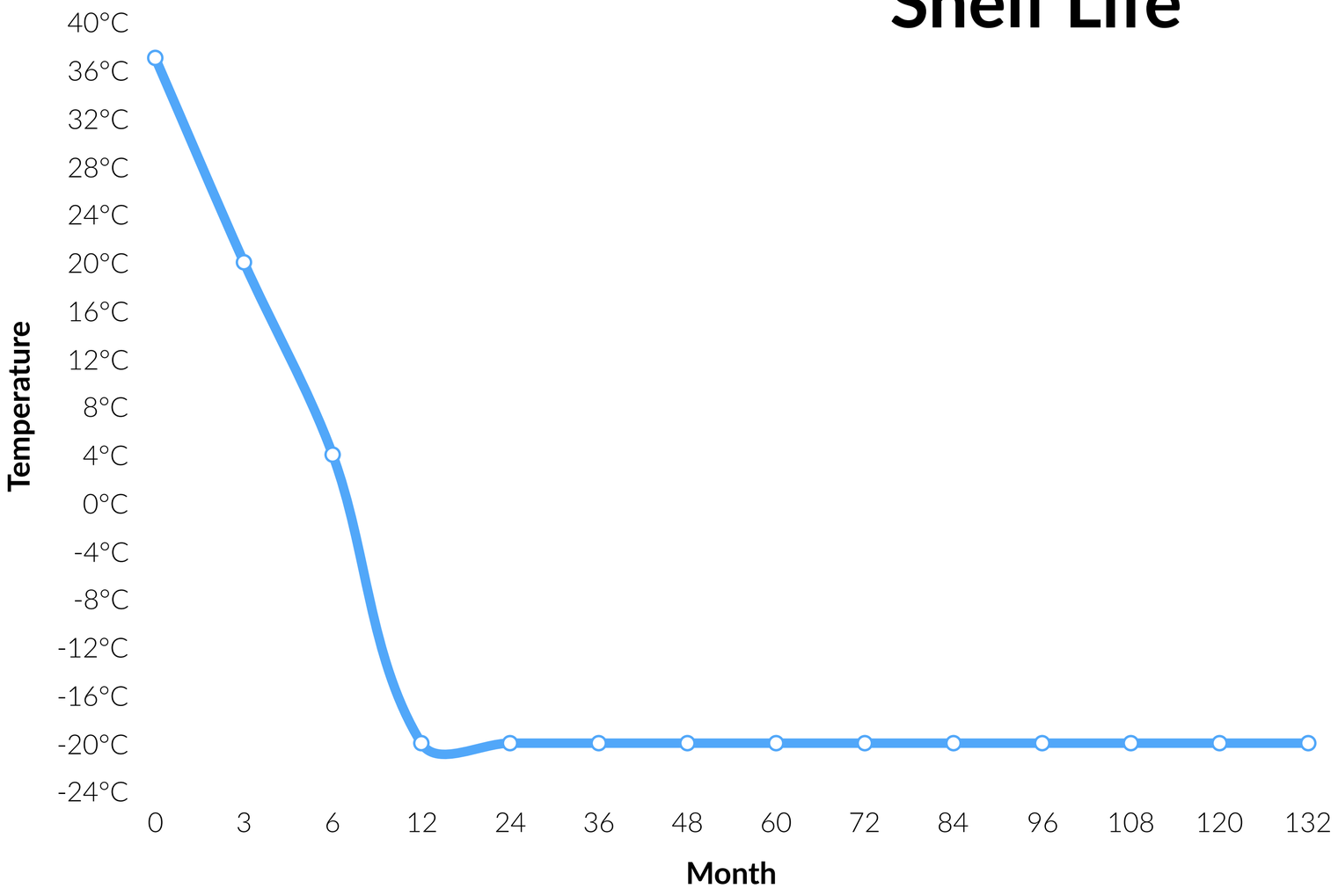
Proradix

Shelf Life



To have the best efficacy of Proradix®, it is advised to store it a -20°C.

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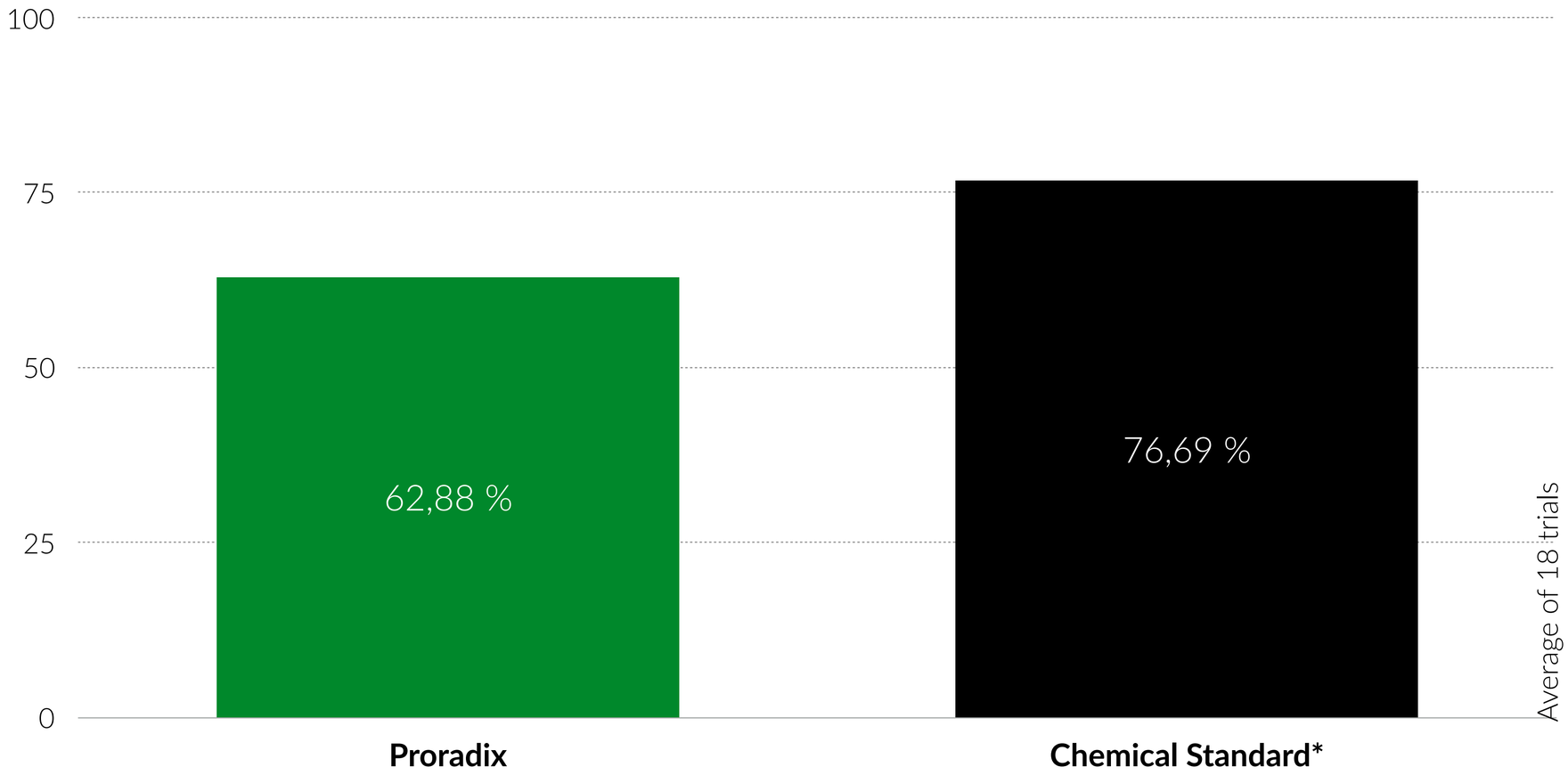
POTATO

Crop	Potato *(Solanum tuberosum)*
Pathogen	*Rhizoctonia solani*
Place	Germany - Italy - Netherland
Years	2001-2010

Proradix



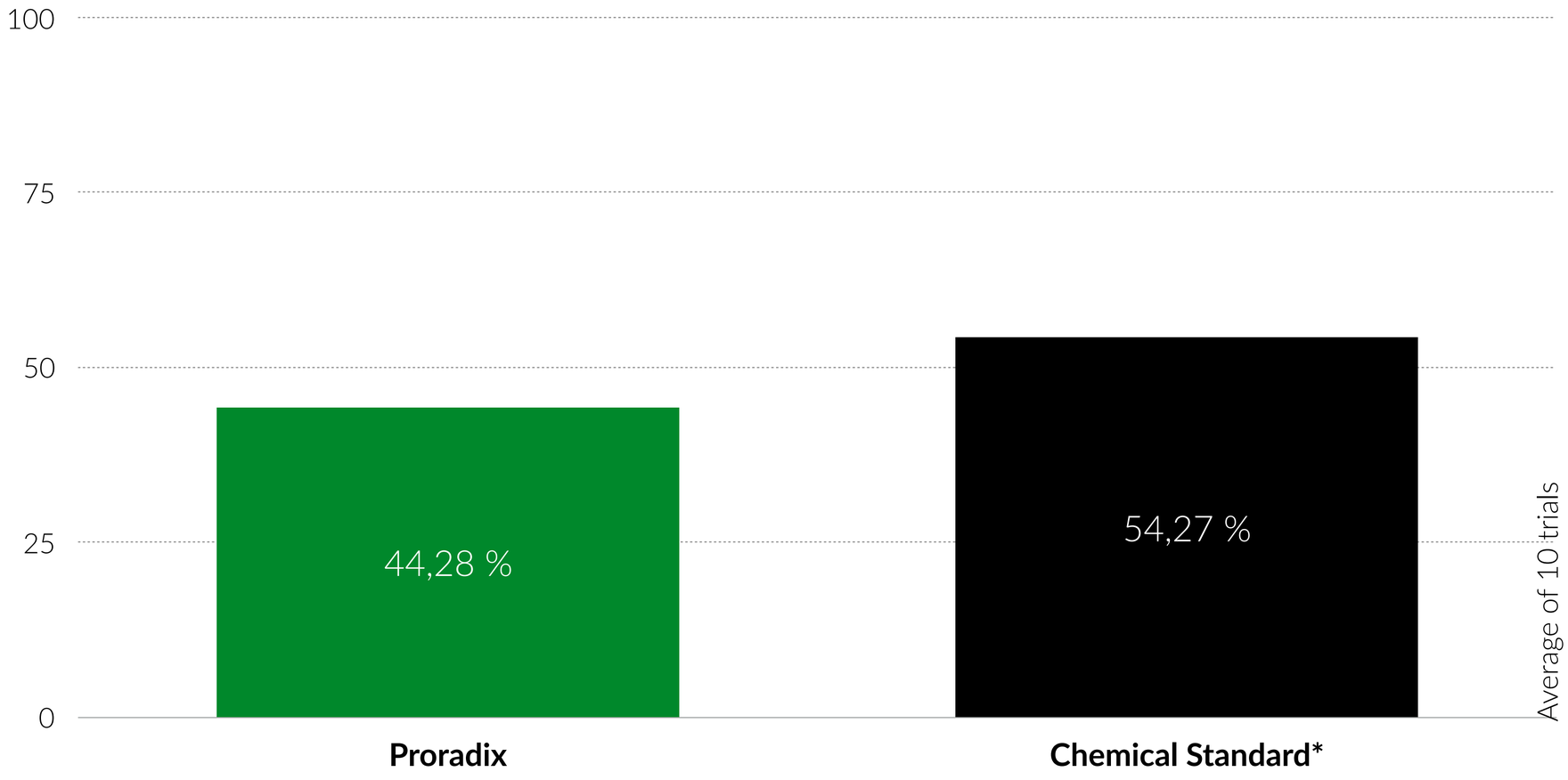
* Pencycuron
* Azoxystrobin
* Tolclofos Methyl

SP SOURCON PADENA

POTATO

Crop	Potato *(Solanum tuberosum)*
Pathogen	*Helmintosporium solani*
Place	Germany - Netherland
Years	2007-2010

Proradix



* Imazalil

SP SOURCON PADENA

Proradix®

Agricultural Entrepreneur with more than 20 ha.

CHEMICAL PESTICIDE - ORTIVA

COSTS	**5.637,30 €**
Fertilizers	1.024,00 €
Pesticides	409,30 €
Control of Rhizoctonia (Ortiva - Azoxystrobin)	135,00 €
Control Wireworms (Teflutrin)	37,50 €
Herbicide di pre-emergence (Pendimetalin)	55,00 €
Herbicide di post-emergence (Rimsulfuron)	40,80 €
Control of Phytophtora infestans (Cymoxanil - 3 treatments)	54,00 €
Control of Alternaria (Difeconazole - 1 treatment)	52,00 €
Control of Colorado potato beetle (Thiametoxam - 1 treatment)	35,00 €
Potato seeds	1.860,00 €
Direct costs of machines	518,00 €
Rents	935,00 €
Work Labor	306,00 €
Taxes	375,00 €
Insurances	30,00 €
Land Maintenance	100,00 €
General Costs	80,00 €
AMMORTIZATION	**451,00 €**
OPPORTUNITY COSTS	**673,00 €**
Land	500,00 €
Interests of machines	86,00 €
Other Interests	87,00 €
TOTAL/ha	**6.761,30 €**
Yield - ton/ha	40
Price/ton	250,00 €
Turnover	**10.000,00 €**
Income	***3.238,70 €***

Yield Increase

+ 10%

Income Increase

+ 32,11%

SOURCON PADENA

PRORADIX®

COSTS	**5.597,30 €**
Fertilizers	1.024,00 €
Pesticides	369,30 €
Control of Rhizoctonia (Proradix®)	95,00 €
Control Wireworms (Teflutrin)	37,50 €
Herbicide di pre-emergence (Pendimetalin)	55,00 €
Herbicide di post-emergence (Rimsulfuron)	40,80 €
Control of Phytophtora infestans (Cymoxanil - 3 treatments)	54,00 €
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General Costs	80,00 €
AMMORTIZATION	**451,00 €**
OPPORTUNITY COSTS	**673,00 €**
Land	500,00 €
Interests of machines	86,00 €
Other Interests	87,00 €
TOTAL/ha	**6.721,30 €**
Yield - ton/ha	44
Price/ton	250,00 €
Turnover	**11.000,00 €**
Income	***4.278,70 €***

Source: Banca dati INEA – RICA (Redditività e Costi di Produzione delle Aziende Agricole) - Rete di Informazione Contabile Agricola