LEGUME technology

part of Green Universe Agro Group

Microbial biostimulants for agriculture

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About Legume Technology

Legume Technology was established in 2000 and has steadily grown by customer referrals and by providing consistently high-quality products. Competing against inoculant products from several global companies, we are proud to offer a better product and a better customer experience – providing flexibility that is impossible for larger companies.

Our Services

We offer a comprehensive range of services to support our partners:

- Advice on Application Strategy & Techniques
- Training
- Registration Support
- Marketing Support
- Private Labelling

Research and Development

We are committed to improving yield and quality through continuous technical developments:

At Legume Technology, we are dedicated to enhancing both yield and quality through constant technical advancements. To achieve this, we continually invest in research and develop innovative solutions for an ever-expanding range of crop types. This sustained development is critical for us to provide highly efficient and eco-friendly inoculants that serve as a sustainable alternative to traditional chemicals. In addition to conducting research in-house, we collaborate on research and development projects with leading industrial partners, research institutes, and universities in the field.

Our primary objective is to create naturally effective solutions that improve seedling health and promote early establishment, leading to higher crop yields and minimizing the use of synthetic fertilizers.

Our Research Pipeline is currently working towards:

Elite strain selection programmes to offer the best combination of competitive nodule occupancy and nitrogen supply.

Tailored product formulations for individual clients.

Microbial biostimulants stand alone or in combination with Rhizobium to improve yield and the nutritional value of crops and increase the abiotic stress resistance.

Welcome to Green Group

That's the name of the alliance we've created with our new partner, Green Universe Agriculture, with the intention of expanding our ability to identify and develop novel, sustainable crop inputs.

GREEN UNIVERSE AGRICULTURE

Best described as an 'alliance of equals', this partnership allows both companies to retain their independence while sharing not only knowledge but also a common strategic vision: to help farmers increase agricultural productivity, while adapting to climate change and improving resource-use efficiency.

Most of Legume Technology's products are seed-applied, whereas those from Green Universe are foliar. We have tended to focus on crop/bacteria interactions, but Green Universe has exploited the effects of secondary metabolites produced by bacteria. These substances can act as biofertilisers or biostimulants or even bio-protectors, improving resilience to environmental stresses such as temperature, pH or drought.

To be known as the Green Group, the Alliance may become a vehicle for future acquisitions as opportunities arise.

Our Products

SUITABLE FOR ORGANIC GROWERS

Our product range complies with organic regulations and is approved for Organic Systems in Canada and Europe.

LIQUIFiX

- Soya, Lupin, Chickpea, Pea, Lentil
- Farm applied
- Liquid

MOLYFiX

- All Legume crops
- Farm applied
- Liquid

LIQUIFiX120

- Soya, Lupin, Pea
- Pre-treatment
- Liquid with coloured extender

MYCOFiX

- Cereals, Corn, Sunflower, Legumes
- Farm applied
- Dried seaweed carrier (or microgranules)

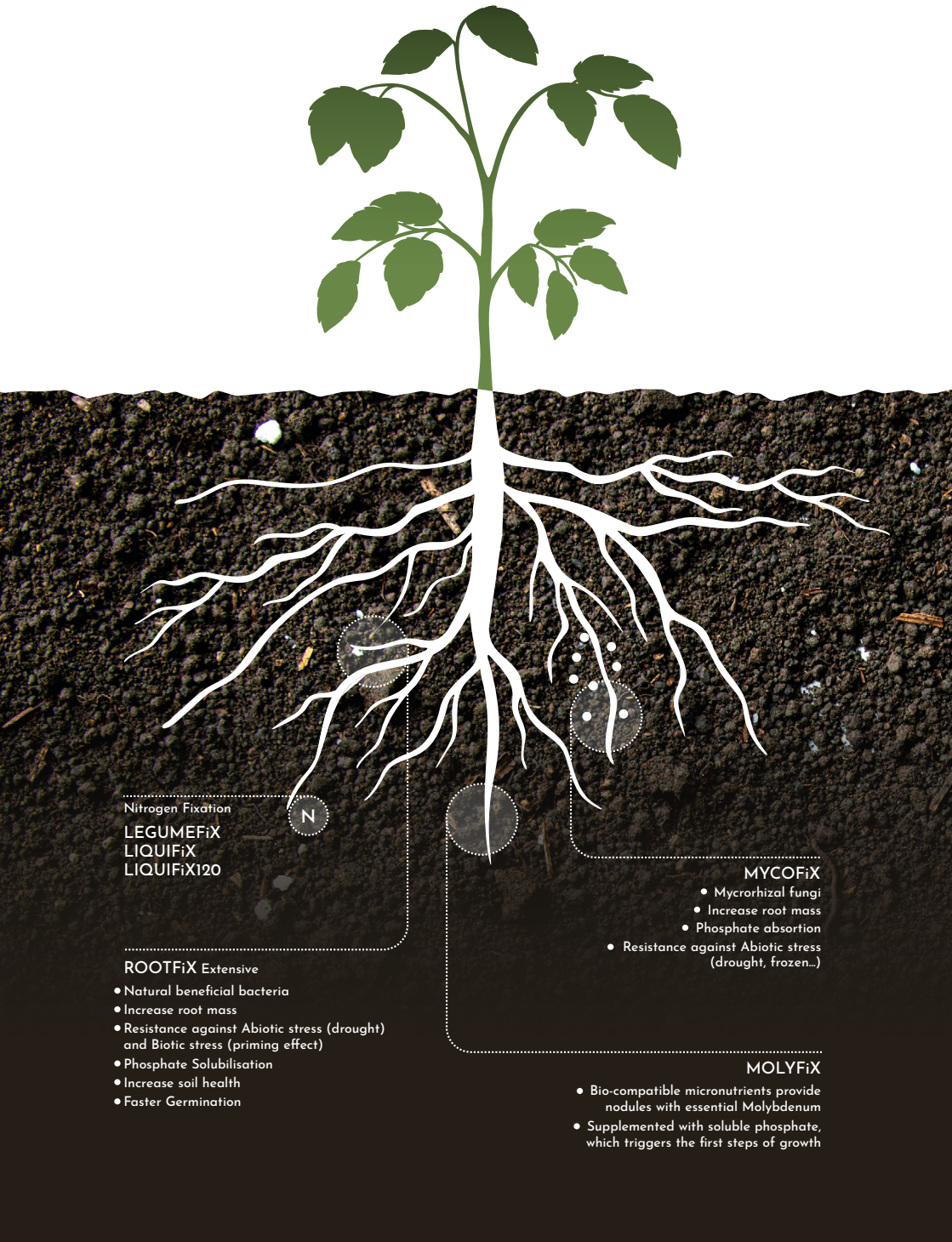
LEGUMEFiX

- Soya, Lupin, Pea, Lentil, Phaseolus, Faba Bean, Chickpea, Groundnut, Clover, Lucerne
- Farm applied
- Peat Carrier

NEW!

ROOTFiX

- Soya, Cereals, Corn, Sunflower and Rice
- Farm applied
- Liquid


Nitrogen Fixation
LEGUMEFiX
LIQUIFiX
LIQUIFiX120
N
ROOTFiX Extensive
• Natural beneficial bacteria
• Increase root mass
• Resistance against Abiotic stress (drought) and Biotic stress (priming effect)
• Phosphate Solubilisation
• Increase soil health
• Faster Germination
MYCOFiX
• Mycrorhizal fungi
• Increase root mass
• Phosphate absortion
• Resistance against Abiotic stress (drought, frozen...)
MOLYFiX
• Bio-compatible micronutrients provide nodules with essential Molybdenum
• Supplemented with soluble phosphate, which triggers the first steps of growth

LIQUIFiX SOYA, LUPIN

A high bacterial concentration liquid-based Rhizobium inoculant.

CROPS*

Soya, Lupin

STORAGE TEMPERATURE

+5°C to +15°C

SHELF LIFE

12 months

FORMULATION

Liquid

ACTIVE SUBSTANCE

Crop specific Rhizobium bacteria
1 x 10^{10} CFU/ml at manufacture

APPLICATION RATE

Package size	Amount of seeds	Units per box
1l	335kg	15
2l	670kg	8
3l	1000kg	6
4l	1330kg	4

KEY ADVANTAGES

- 7 day planting window
- Axenic manufacture
- Easy application at farm
- Recommended for first time growers
- Zero contaminants
- Compatible with wide range of seed treatment chemicals
- Targeted nitrogen application, no residue for the weeds
- Potential to supply more than 100 kg of nitrogen per ha
- Increased protein content by up to 10%

* Each crop has a crop-specific strain and formulation

LIQUIFiX PULSES

A high bacterial concentration liquid-based Rhizobium inoculant.

CROPS*

Pea, Chickpea, Lentil

STORAGE TEMPERATURE

+5°C to +15°C

SHELF LIFE

6 months

FORMULATION

Liquid

ACTIVE SUBSTANCE

Crop specific Rhizobium bacteria
2 x 10^9 CFU/ml at manufacture

APPLICATION RATE

Package size	Amount of seeds	Units per box
1l	335kg	15
2l	670kg	8
3l	1000kg	6
4l	1330kg	4

KEY ADVANTAGES

- 48 hour planting window
- Axenic manufacture
- Easy application at farm
- Recommended for first time growers
- Zero contaminants
- Compatible with wide range of seed treatment chemicals
- Targeted nitrogen application, no residue for the weeds
- Potential to supply more than 70 kg of nitrogen per ha

* Each crop has a crop-specific strain and formulation

LIQUIFiX120

A high bacterial concentration liquid-based Rhizobium inoculant for exclusive use with legume crops. Suitable for pre-treatment.

CROPS*

Soya, Lupin, Pea

STORAGE TEMPERATURE

+5°C to +15°C

SHELF LIFE

12 months

FORMULATION

Liquid

ACTIVE SUBSTANCE

Crop specific Rhizobium bacteria
1 x 10^{10} CFU/ml at manufacture

APPLICATION RATE FOR 1000 kg OF SEED:

Units per box	Benefits of COLOURFiX Blue
4 x 4l + 4l COLOURFiX Blue	• Additional colour pigment • Ensures bacteria survival • Provide beneficial trace elements

KEY ADVANTAGES

- Easy to apply
- Extended storage time for up to 120 days
- Zero contaminants
- Nitrogen left in the field for the following crop
- Convenient for farmers who are not able to apply the product on farm

* Each crop has a crop-specific strain and formulation

MOLYFiX

Essential biocompatible molybdenum, supplemented with soluble phosphate, providing essential micronutrients in the first phases of nodule growth.

CROPS

All legume crops

STORAGE TEMPERATURE

+5°C to +20°C

SHELF LIFE

24 months

FORMULATION

Liquid

ACTIVE INGREDIENTS PER 1 LITRE

Available Phosphate (P_2O_5) - 1%
Molybdenum (Mo) - 15,5 %

APPLICATION RATE

Package size	Amount of seeds	Units per box
1l	5000kg	18
0,2l	1000kg	

KEY ADVANTAGES

- Provides key trace elements to support the seedling during establishment and supplies the 'root nodule' with molybdenum – an essential part of nitrogen-fixing enzymes
- Our field trials in Hungary showed that using MOLYFiX, in addition to our Rhizobium inoculant LIQUIFiX, increased soya yield by 12%

LEGUMEFiX

A high bacterial count peat-based Rhizobium inoculant for exclusive use with all legume crops.

CROPS*

Soya, Lupin, Pea, Lentil, Phaseolus, Faba bean, Chickpea, Groundnut, Lucerne, Clover B, Clover C

STORAGE TEMPERATURE

+5°C to +20°C

SHELF LIFE

24 months

FORMULATION

Peat

ACTIVE SUBSTANCE

2 to 5 x 10^9 CFU/g Rhizobial types specific for the crop

APPLICATION RATE

Package size	Amount of seeds small *10g / 1kg*	Amount of seeds big *4g / 1kg*	Units per box
250g	25kg	60kg	40
750g	75kg	180kg	18
1,25kg	125kg	300kg	10
2,5kg	250kg	600kg	6

KEY ADVANTAGES

- 48 hour planting window
- Excellent choice for farmers planting into land with no history of the selected legume crop
- Robust peat carrier formulation that allows more flexible storage conditions compared to liquid products, due to higher resistance to heat

* Each crop has a crop-specific strain and formulation

ROOTFiX

Elite Strains of *Bacillus*

Microbial biostimulant for seed coating. Blend of beneficial bacteria, specially selected from millions of strains. Increases the root mass, resistance against abiotic and biotic stress, solubilize phosphate and increases the soil health.

CROPS

Soya, Cereals, Corn, Sunflower, Rice

STORAGE TEMPERATURE

+5°C to +15°C

SHELF LIFE

12 months

FORMULATION

Liquid

ACTIVE SUBSTANCE

5 x 10^8 CFU/g of: *Bacillus* spp.

APPLICATION RATE

2 - 4l for 1000 kg of seed*

*Ask your distributor for specific application rate for your crop

KEY ADVANTAGES

- Extended storage period
- Faster germination
- Improved early vigor
- Higher % plant establishment
- Compatible with a range of seed treatment chemicals
- Phosphate mobilization
- Improved drought resilience

MYCOFiX

High quality mycorrhizal fungi in a seaweed formulation. Provides a double effect to extensive crops; the mycorrhizal effect (phosphate solubilisation, drought resistance and increased root absorption surface) and the seaweed effect (natural micronutrients and phytohormones).

CROPS

Cereals, Corn, Sunflower, Legumes

STORAGE TEMPERATURE

+5°C to +15°C

SHELF LIFE

12 months

FORMULATION

1. Dried seaweed carrier containing mycorrhizae
2. Granular carrier containing mycorrhizea

ACTIVE SUBSTANCE

99% Ascophyllum nodosum (seaweed extract); 1% of mycorrhizae roots (2000 propagules/g)

APPLICATION RATE

Planting rates	Application rate/ Ha in g	1 pack treats
Sunflower	50	20Ha
Soya	125	10Ha
Grass mix	200	5Ha
Cover Crop	200	5Ha
Wheat	200	5Ha

KEY ADVANTAGES

- Fungal partnership that collects nutrition and water from much greater area
- Phosphate uptake
- Resistance against abiotic stress (drought, freezing)
- Improves long term soil fertility as the benefitial funghi

Recommended Product Application Scheme

PEAT PRODUCTS

STEP 1:

Add 2L of non-chlorinated water to 1 tonne of seed

STEP 2:

STEP 3:

Plant the seeds

LIQUID PRODUCTS

STEP 1:

Mix the product with 1 tonne of seeds manually or using seed coating machinery

STEP 2:

Plant the seeds

Recommended MYCOFiX Application Scheme

1 STEP 1:

Mix Mycofix granular solution with non-chlorinated water

STEP 2:

Mix the moist seed with inoculant by hand or using specialist machinery

STEP 3:

Plant the seeds

2 STEP 1:

Legume Technology can supply pre-mixed microgranular packs if requested

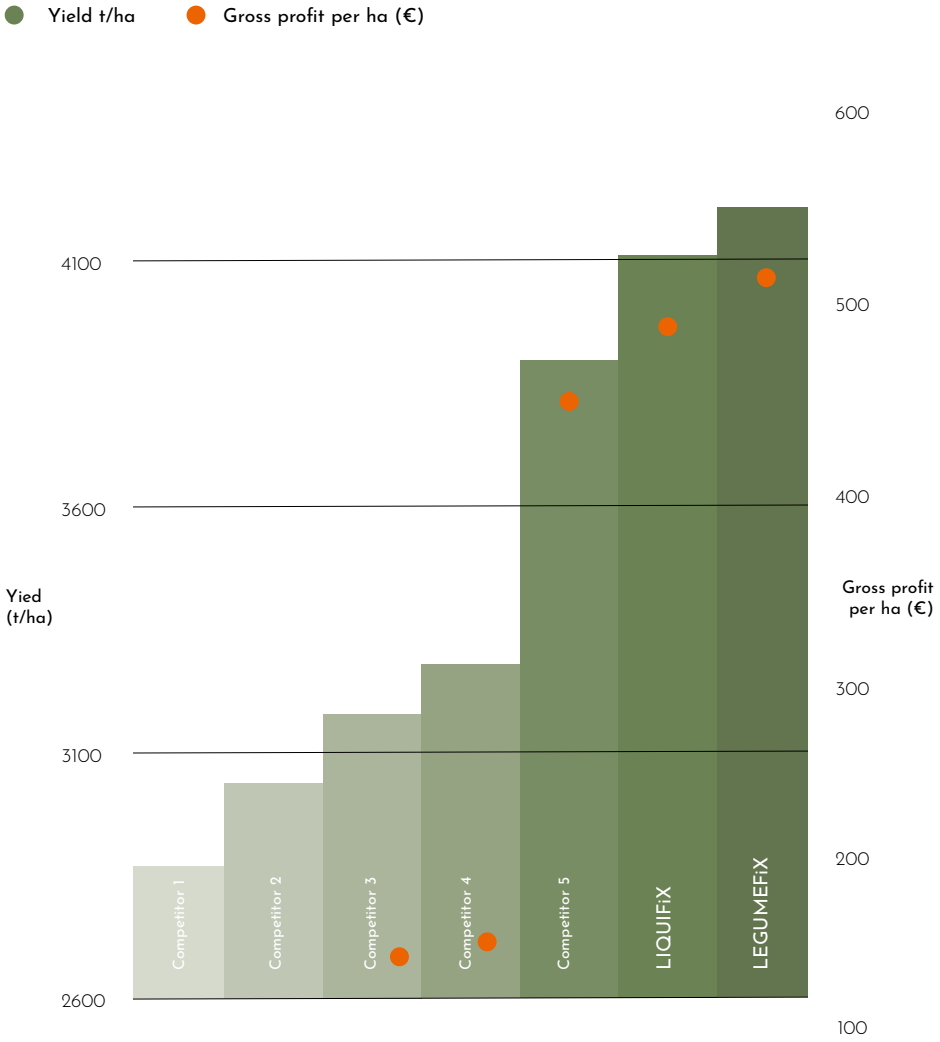
STEP 2:

Apply at planting using granular applicator

If using seed treatment chemicals, apply these to the seeds first, allow to dry, then follow the steps above.

Field trials

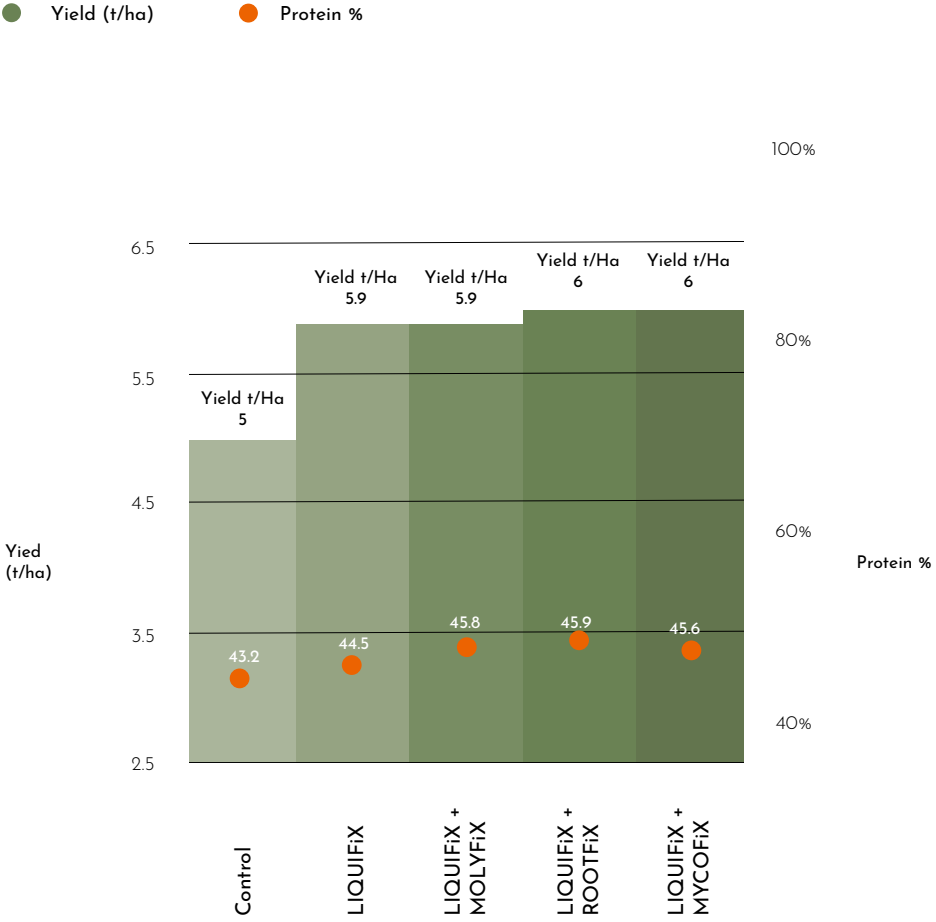
Soya trials in Spain, 2020



Field trials

Soya trials in Hungary, 2021

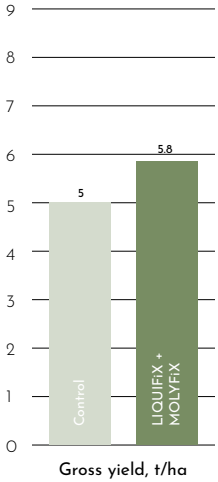
Soil-type: Ramann-type brown forest soil (Eutric Cambisol),
Soil texture: loam with about 21% clay, poor organic matter of 1.5%



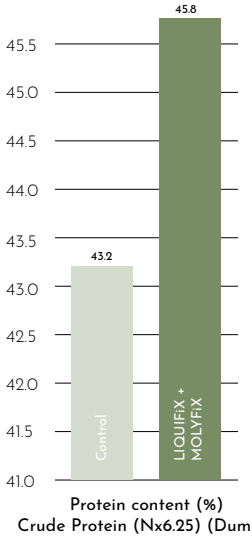
Field trials

MOLYFiX

Hungary, Soya



Gross yield, t/ha

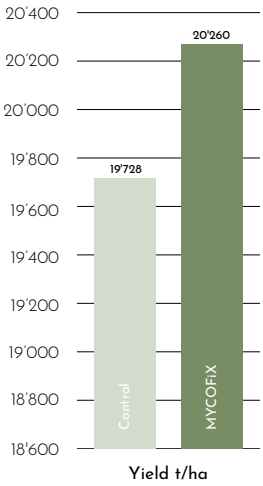


Protein content (%)
Crude Protein (Nx6.25) (Dumas)

MYCOFiX

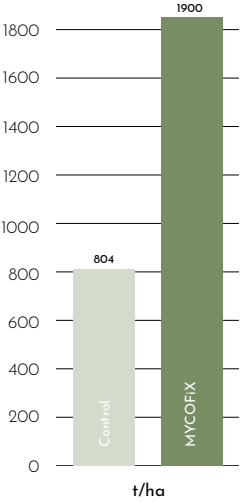
Spain

Corn



Yield t/ha

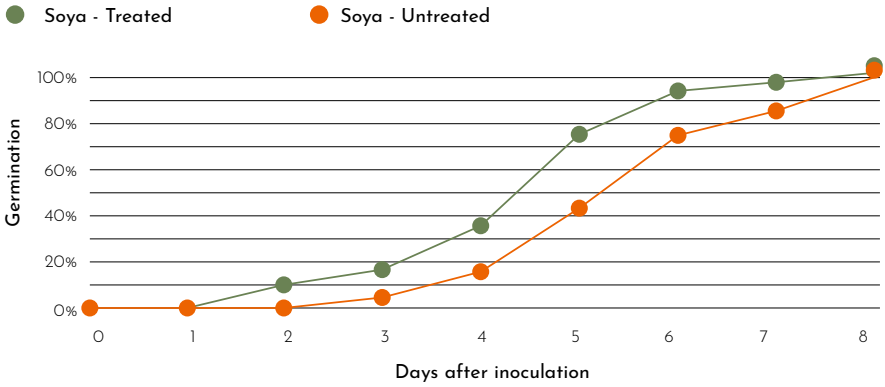
Sunflower

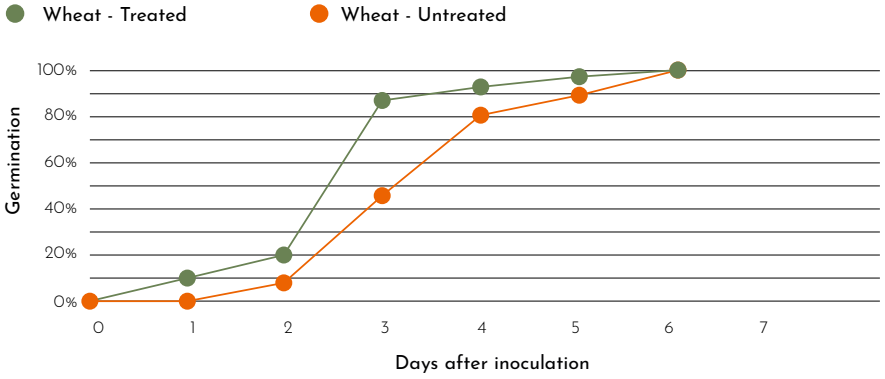


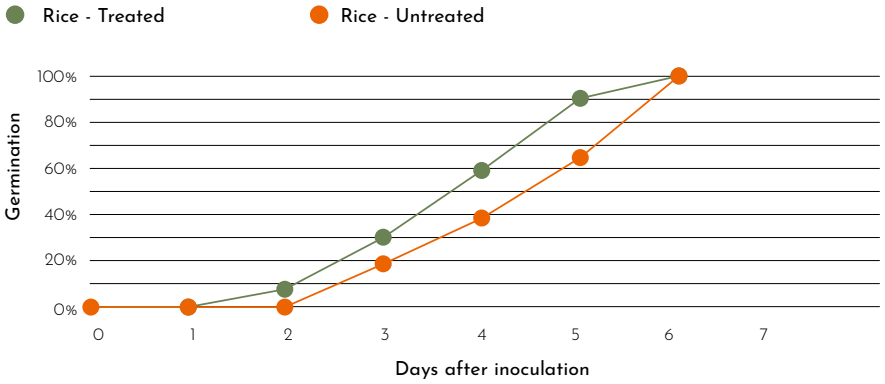
t/ha

Field trials

ROOTFiX



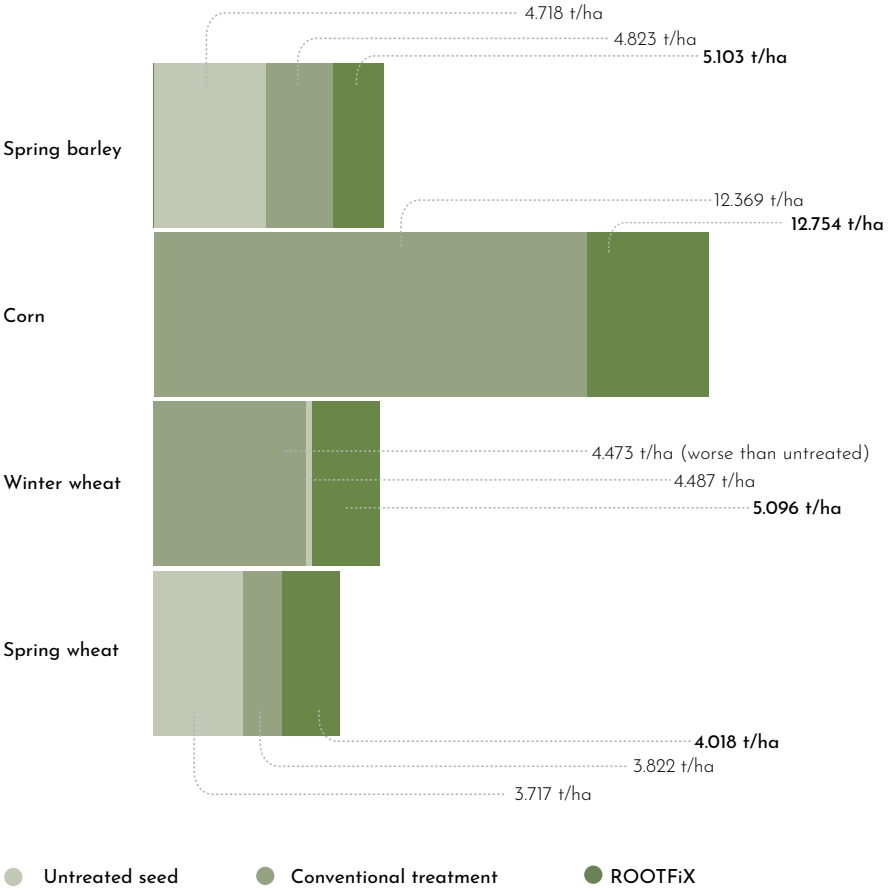




Field trials

ROOTFiX

Yield measurement of ROOTFiX on Cereals (Canada 2021)



All trials carried out by independent trials agent Tall Pine Agricultural Research, Ontario, Canada. In all cases the ROOTFiX product out performed the conventional treatments. ROOTFiX returned a strong trend of improvement, giving a significant increase in yield for corn. Converted from Bu/Acre using 0.7

Common questions

How fast does the inoculant start to work?

Within 4-6 weeks the bacteria should have infected the roots and produced nodules. In soils with high nitrogen availability the nodulation can be delayed.

What can inoculants do for agricultural crops?

Using inoculants establishes a beneficial population of natural bacteria on the root surface. These inoculants work by supplying nitrogen fixing partner bacteria to legume crops which supply a source of highly targeted nitrogen to the specific crop with no benefit to weeds. In 2018 Legume Technology had independent trials in 8 countries o5 continents. The results indicated that the minimum gross return using our inoculant products on soybeans is $70 per ha, the maximum - nearly $500 per ha, based on soybean price of $650 per t. The protein content in harvested crops was also significantly improved.

How can I tell the inoculant is working?

The nodules have a characteristic red colour inside when they are actively fixing nitrogen.

How much inoculant do I need?

Please contact us or your distributor directly to calculate the most efficient application rate, or use the recommended application rates in this brochure.

Is it easy to use?

The added sticking agent makes application simple and fast. Simply open the packet, sprinkle onto the seed and mix through until the seed is evenly coated.

The products contain live microorganisms, therefore it is essential to store the product correctly not to kill the bacteria. The temperature should be between +4°C & +25°C maximum, not in the direct sunlight, dry or hot environment. All works should be done in the shade. The seed drill should be clean of the residue of previous pesticide seed treatments and all seed contact with chlorinated water, including chlorinated municipal drinking water, should be prevented. Not to be tank mixed with chemical fertilizers.

> Legume Technology inoculants are delivering excellent results for African legume crop growers clear across Africa. For soybeans, peas, lentils, chick peas and other legumes, African growers rely on the extra performance Legume Technology inoculants delivers season after season.

Farm-Ag
Africa

> We have worked with Legume Technology for 16 years and have always been impressed by their willingness to go the extra mile.

Soya UK Ltd
United Kingdom

> Since their beginning 20 years ago, Legume Technology has fully focused on high quality legume inoculants. Besides their full range of inoculants for various crops, I do much appreciate their flexibility and good service. So far there has always been a solution.

GartenSoja
Germany

Our Academy and Industry Partners

University of Oxford

The James Hutton Institute

UKRI Innovate UK

University of Guelph

University of Reading

University of Stirling

Nottingham Trent University

University of York

Aarhus University

Warwick – The University of Warwick

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Please contact us to see
if we can offeryou support and
commercial terms to sell in your country.

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