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NATURE IN ACTION

BIOLOGICAL SOLUTIONS FOR BETTER AGRICULTURE

RhizoPulse Lucerne™

Ensifer meliloti Biological Inoculant

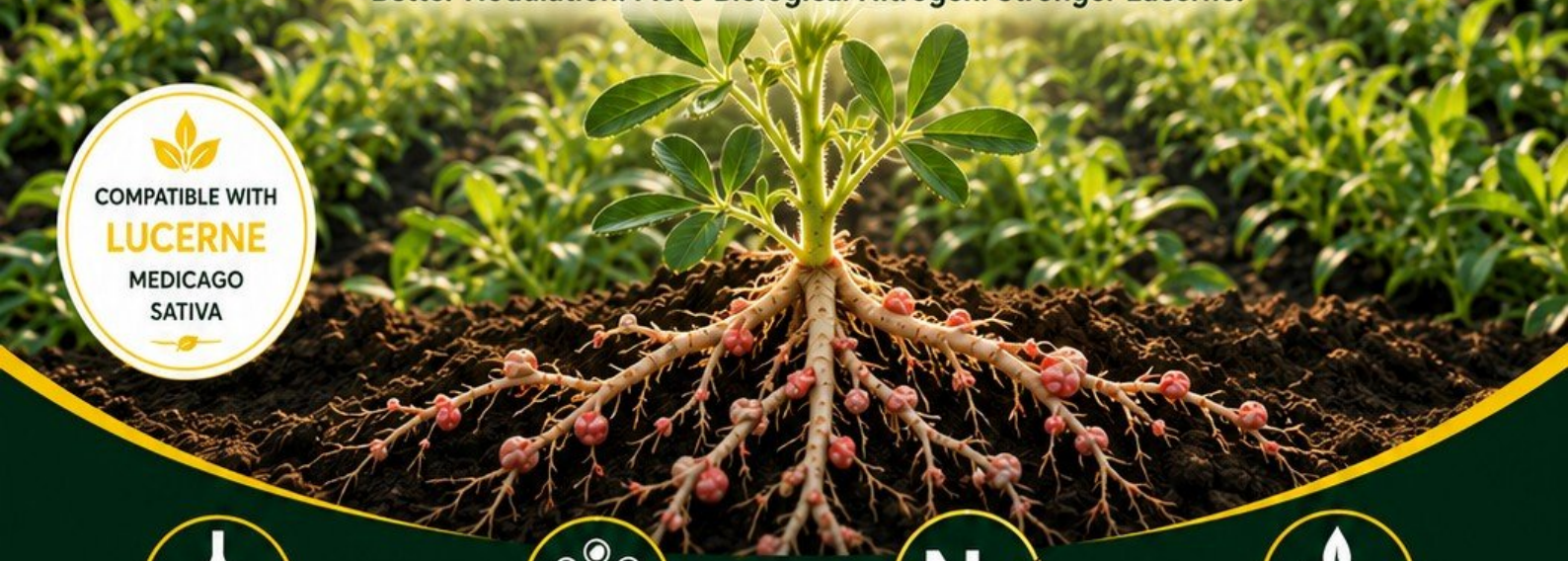
BY

AGRIBAC

LIVE *ENSIFER MELILOTI* INOCULANT + DP500 PROTECTANT

SEED TREATMENT

Better Nodulation. More Biological Nitrogen. Stronger Lucerne.



COMPATIBLE WITH
LUCERNE
MEDICAGO SATIVA

STRONGER ROOTS
Supports vigorous root establishment.

EFFECTIVE NODULATION
Promotes formation of active nitrogen-fixing nodules.

BIOLOGICAL NITROGEN FIXATION
Helps convert atmospheric nitrogen into plant-available nitrogen.

PRODUCTIVE STANDS
Supports vigorous growth and long-term lucerne productivity.

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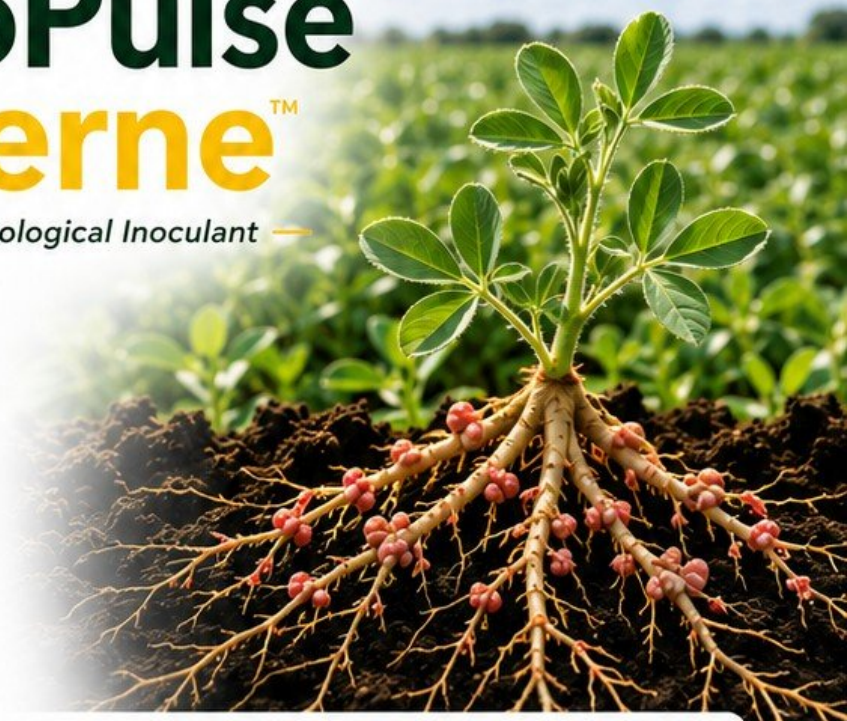

PRODUCT OVERVIEW

RhizoPulse Lucerne is a live biological inoculant containing selected *Ensifer meliloti*, a bacterium naturally capable of forming a nitrogen-fixing symbiosis with lucerne (*Medicago sativa*).

After successful infection of the developing roots, the bacteria stimulate formation of specialised root nodules where atmospheric nitrogen is converted into forms the plant can use.

WHY INOCULATE LUCERNE?

RAPID ROOT COLONISATION
Places compatible rhizobia close to the emerging root.

EFFECTIVE NODULE FORMATION
Supports early establishment of functional nodules.

BIOLOGICAL NITROGEN FIXATION
Allows the crop to access atmospheric nitrogen through its symbiotic relationship with *E. meliloti*.

STRONGER EARLY ESTABLISHMENT
Supports vigorous plant development during establishment.

LONG-TERM PRODUCTIVITY
Good nodulation establishes the biological nitrogen system required by a productive perennial lucerne stand.

ENSIFER MELILOTI

- A proven symbiotic partner of lucerne and other *Medicago* species.
- Forms nodules on lucerne roots where nitrogen fixation takes place.
- Helps reduce dependency on applied nitrogen.
- Supports sustainable, cost-effective lucerne production.

1. SEED
Treated seed is planted.

2. ROOT INFECTION
E. meliloti colonises the root surface and enters root hairs.

3. NODULE FORMATION
Specialised nodules develop on the roots.

4. N_2 FIXATION
Atmospheric nitrogen (N_2) is converted to plant-available nitrogen.

5. PLANT GROWTH
The plant utilises the nitrogen for growth and production.

POWERED BY NATURE.
FUELLED BY SCIENCE.

Unlock the power of biological nitrogen for stronger lucerne stands.

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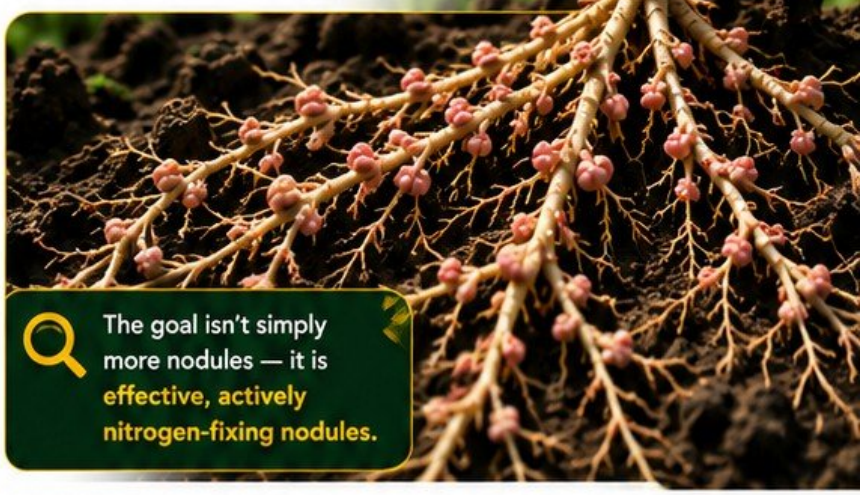

The goal isn't simply more nodules — it is **effective, actively nitrogen-fixing nodules.**

HOW RHIZOPULSE LUCERNE WORKS

1 ROOT RECOGNITION
Lucerne roots and compatible *Ensifer meliloti* communicate through chemical signalling in the rhizosphere.

2 ROOT INFECTION
Compatible bacteria enter developing root tissue and initiate the nodulation process.

3 NODULE DEVELOPMENT
The plant forms specialised nodules that house the beneficial bacteria.

4 BIOLOGICAL NITROGEN FIXATION
Inside active nodules, *Ensifer meliloti* converts atmospheric:

N_2 → biologically available nitrogen

5 PLANT GROWTH
The resulting nitrogen contributes to vegetative growth, protein production and continued forage production.

WHAT DOES AN ACTIVE NODULE LOOK LIKE?

EFFECTIVE ACTIVE NODULE
Pink or red internally. Indicates active nitrogen fixation.

YOUNG NODULE
May initially appear pale before becoming fully active.

INACTIVE / INEFFECTIVE NODULE
Typically white, cream or green internally. Not fixing nitrogen.

SCIENCE. SYMBIOSIS. SUSTAINABLE NUTRITION.

RhizoPulse Lucerne delivers the right biology to the right crop, establishing the natural nitrogen partnership lucerne needs to thrive.

- Early colonisation of the root zone.
- Effective nodulation.
- Access to atmospheric nitrogen.
- Improved nutrition and plant vigour.
- Better forage yield and quality.

POWERED BY NATURE.
FUELLED BY SCIENCE.

Biological nitrogen for stronger lucerne, season after season.

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GET THE BIOLOGY ONTO THE ROOT FROM DAY ONE

SEED TREATMENT

RhizoPulse Lucerne + DP500

Ensure effective nodulation and a strong biological nitrogen foundation for your lucerne crop.

MIXING SEQUENCE

1. **SHAKE WELL**
   Mix *RhizoPulse Lucerne* thoroughly before use.
2. **APPLY RHIZOPULSE LUCERNE**
   Apply evenly to the lucerne seed while mixing.
3. **ADD DP500**
   Apply DP500 protectant immediately after the liquid inoculant.
4. **MIX THOROUGHLY**
   Ensure uniform coverage of the seed for consistent results.
5. **PROTECT THE BIOLOGY**
   Keep treated seed cool and protected from direct sunlight.
6. **PLANT PROMPTLY**
   Plant treated seed as soon as practical for best results.

IMPORTANT FOR SUCCESS

- Use clean mixing equipment.
- Avoid chlorinated water contacting the inoculant.
- Protect treated seed from heat and direct sunlight.
- Maintain adequate soil moisture during establishment.
- Ensure good seed-to-soil contact.
- Avoid unnecessary nitrogen application during establishment where it may suppress nodulation.
- Check compatibility before combining with unfamiliar chemical seed treatments.

LIVE BIOLOGICAL PRODUCT

KEEP COOL • DO NOT FREEZE • PROTECT FROM DIRECT SUNLIGHT

POWERED BY NATURE.
FUELLED BY SCIENCE.

N_2

Unlock the power of biological nitrogen for stronger lucerne stands.

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BUILDING THE NITROGEN ENGINE BELOW GROUND

A strong symbiosis today delivers biological nitrogen for many years to come.

BETTER ESTABLISHMENT
A strong early symbiosis helps establish the biological nitrogen supply required by the developing lucerne plant.

EFFECTIVE NODULATION
Compatible *Ensifer meliloti* establishes nodules specifically associated with lucerne and other *Medicago* species.

BIOLOGICAL NITROGEN SUPPLY
Active nodules provide the plant with access to atmospheric nitrogen through a natural, renewable process.

FORAGE PRODUCTION
Improved nitrogen nutrition supports vegetative growth, increased protein and high-quality forage.

PERENNIAL VALUE
Lucerne remains productive for several seasons, making establishment of an effective rhizobial population essential.

HEALTHY LUCERNE STARTS BELOW GROUND.

Build the symbiosis early and let biology supply nitrogen throughout the stand.

CHECK YOUR NODULES

4 – 8 WEEKS AFTER EMERGENCE

- Carefully dig plants rather than pulling them from the soil.
- Wash the roots gently and inspect the nodules.
- Cut several nodules open.

LOOK FOR:

- Nodules distributed on the root system
- Healthy root development
- Pink/red colour inside active nodules
- Vigorous above-ground growth

ACTIVE NODULE
Pink/red inside.

YOUNG NODULE
May be pale initially before becoming fully active.

INACTIVE NODULE
Typically white, cream or green inside. Not fixing nitrogen.

REDUCES RELIANCE ON APPLIED NITROGEN
Supports sustainable, cost-effective farming.

ENVIRONMENTALLY RESPONSIBLE
Helps reduce the carbon footprint of agriculture.

BUILT FOR PROFITABILITY
Better establishment. Better forage. Better returns.

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CONTACT US

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LIVE BENEFICIAL MICROORGANISMS
Working with nature to support crop vitality.

SCIENTIFICALLY DEVELOPED
Research-driven solutions for real-world results.

QUALITY ASSURED & RELIABLE
Produced under strict quality standards you can trust.

SUSTAINABLE AGRICULTURE
Better for your soil, crops and future.

POWERED BY NATURE. FUELLED BY SCIENCE.

N_2 Unlock the power of atmospheric nitrogen for stronger, more productive lucerne stands.

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Stronger roots. Better nodulation. Stronger lucerne.