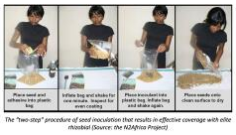
Seed Inoculation with Rhizobia

Boosting Crops, Nourishing Communities



The "two-step" procedure of seed inoculation that results in effective coverage with elite rhizobial (Source: the N2Africa Project)

Seed inoculation with elite rhizobium strains boosts legume yields by addressing nitrogen limitations through Biological Nitrogen Fixation (BNF). This cost-effective practice enhances crop production on small-scale farms in Africa, reducing reliance on expensive fertilizers, promoting environmental sustainability, and ensuring food, nutrition, and income security for farmers.

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This technology is TAAT1 validated.

7·7 Scaling readiness: idea maturity 7/9; level of use 7/9

Gender assessment 4

Climate impact 7

Problem

- **Nitrogen Deficiency**: Soils often lack sufficient nitrogen for plant growth.
- **Incompatible Rhizobia**: Newly introduced legume species may not be compatible with local rhizobia, leading to low yields.
- **Soil Health**: Maintaining soil fertility and health is a constant challenge.
- **Plant Diseases**: Farmers constantly battle against diseases that can devastate crops.
- **Sustainability**: Balancing economic viability with environmental sustainability is a major concern.

Solution

- **Biological Nitrogen Fixation**: Rhizobia address nitrogen deficiency.
- **Specific Strain Introduction**: Inoculation ensures the presence of the needed rhizobia.
- **Rhizobia Population Boost**: Inoculation guarantees optimal nodulation and nitrogen fixation.
- **Sustainable Farming**: Rhizobia promote sustainable agriculture.
- **Stress-Tolerant Strains Introduction**: Inoculation mitigates effects of stress on nitrogen-fixing symbiosis.

Key points to design your project

Rhizobia inoculant technology is a win-win for Africa:

It boosts food security (SDG 2), increases legume yields mean more food and income for farmers, especially women (SDG 5). Climate-smart agriculture (SDG 13), less reliance on chemical fertilizers reduces emissions.

To integrate this tech in your project, consider:

- Partnering with experts for training and quality control.
- Selecting suitable legumes and effective, adaptable rhizobia strains.
- Ensuring cost-effectiveness and proper distribution with storage and quality checks.
- Educating farmers and monitoring project success.

Cost: $$$ **15,000 USD**

Total cost of manufacturing one ton of dry inoculant

IP

Unknown

Technology from

ProPAS

Commodities

Soybean, Common bean

Sustainable Development Goals

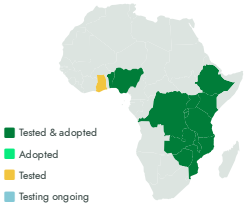
Categories

Production, Inputs, Inoculant

Best used with

- Climbing Bean with High Yield and N Fixation ›
- Biofortified Beans for Improved Nutrition ›
- Specialty Fertilizer Blends for Common Bean ›

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.