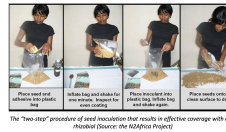


Seed Inoculation with Rhizobia

Boosting Crops, Nourishing Communities

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.



International Institute of Tropical Agriculture (IITA)
Paul Woomer

✓ 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.

Technology originally documented by

ProPAS

Commodities

Soybean, Common bean

Sustainable Development Goals



Categories

Production, Practices, Soil fertility, Yield improvement

Best used with

- [Climbing Bean with High Yield and N Fixation >](#)
- [Biofortified Beans for Improved Nutrition >](#)
- [Specialty Fertilizer Blends for Common Bean >](#)

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:

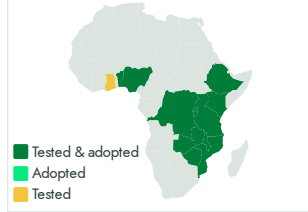
- Partnering with experts for training and quality control.
- Selecting suitable legumes and effective, adaptable rhizobia strains.
- Ensuring cost-effectiveness and proper distribution with storage and quality checks.
- Educating farmers and monitoring project success.

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

Total cost of manufacturing one ton of dry inoculant

IP
Unknown

Tested/adopted in



Where it can be used



Seed Inoculation with Rhizobia
https://e-catalogs.taatafrica.org/gov/technologies/seed-inoculation-with-rhizobia
Last updated on 22 May 2024, printed on 22 May 2024

Enquiries techs@taatafrica.org