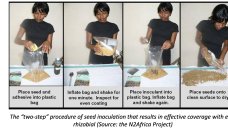


Seed Inoculation with Rhizobia

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.

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

Total cost of manufacturing one ton of dry inoculant



Unknown

Technology originally documented by

ProPAS

Commodities

Soybean, Common bean

Sustainable Development Goals



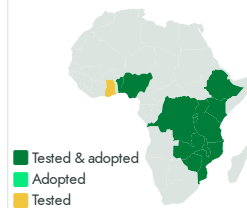
Categories

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](#)

Tested/adopted in



Where it can be used

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



Seed Inoculation with Rhizobia

<https://e-catalogs.taatafrica.org/org/technologies/seed-inoculation-with-rhizobia>

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