Technical Bulletin

Seed Coat formulation of Biofertilizers

Features

- Thin film of biofertilizers coated on the surface of the seeds.
- Customized biofertilizers coating using *Rhizobium, Azospirillum,* Phosphobacteria, mineral solubilizers.
- Seed coating ensures effective delivery of biofertilizers to the crop plants.
- Easy to apply for any annual crop seeds.
- Economic as it reduces the inoculant dosage and ensures proper application.
- Dust free biofertilizer and ready to use product with less environmental pollution.
- Seeds are individually coated and free flow product for easy application.
- No interference with seed viability and germination
- Biofertilizer strains can survive up to 90 days in the coated seeds.
- Compatible with mechanized sowing.

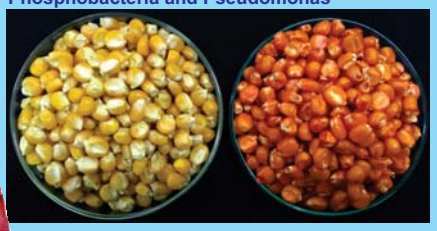
The Team: M GNANACHITRA | M SENTHILKUMAR | D BALACHANDAR | SANTOSH RANJAN MOHANTY

Department of Agricultural Microbiology
Directorate of Natural Resource Management
Tamil Nadu Agricultural University
Coimbatore 641003

ICAR - All India Network Project on
Soil Biodiversity - Biofertilizers
Indian Institute of Soil Science
Bhopal 462038

Technical bulletin No. AINP-SBB/TNAU/2020/01

Maize seed coated with Azospirillum, Phosphobacteria and Pseudomonas



Green gram seed coated with Rhizobium, Phosphobacteria and Pseudomonas

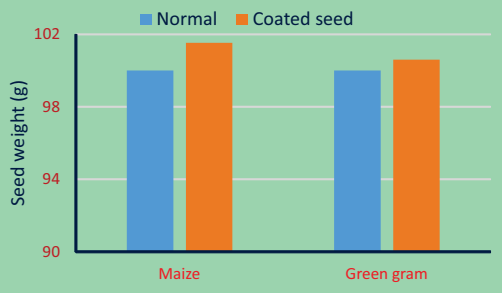
Soybean seed coated with Rhizobium, Phosphobacteria and Pseudomonas

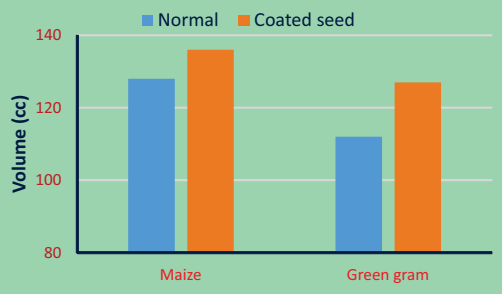
Seed Coating Method

- [x] Film coating
- [ ] Seed Pelleting
- [ ] Seed Encrusting

Ingredients

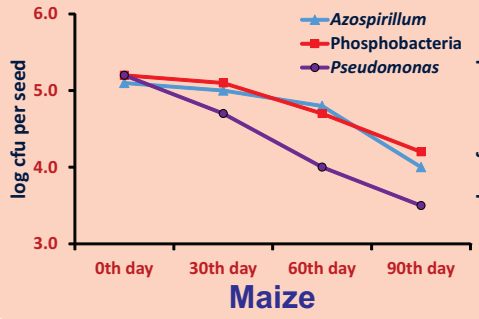
- [x] Bioinoculant (25 ml of 10^{10} cells/ml)
- [x] Binder (20 ml of 5% HPMC)
- [x] Seed (1 kg)

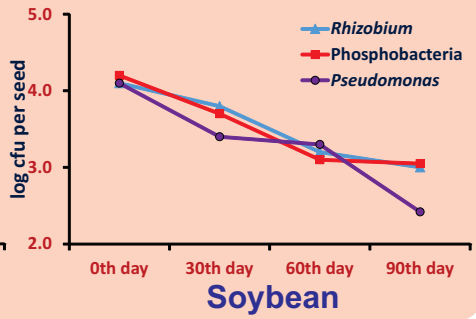




The total weight and volume of the seed did not increase apparently due to seed coating of bioinoculants

Survival of inoculants on seeds





Field trials

Crop	FLDs	Yield (kg/ha)			B:C ratio	
		Seed-coat bioinoculant	Control	% increase	Regular	Seed-coat
Maize	8	3150	2457	28	1.88	2.16
Ragi	1	310	250	24	1.68	1.91
Red gram	2	245	205	20	1.20	1.30
Ground nut	24	1225	892	37	1.81	2.17

Benefits

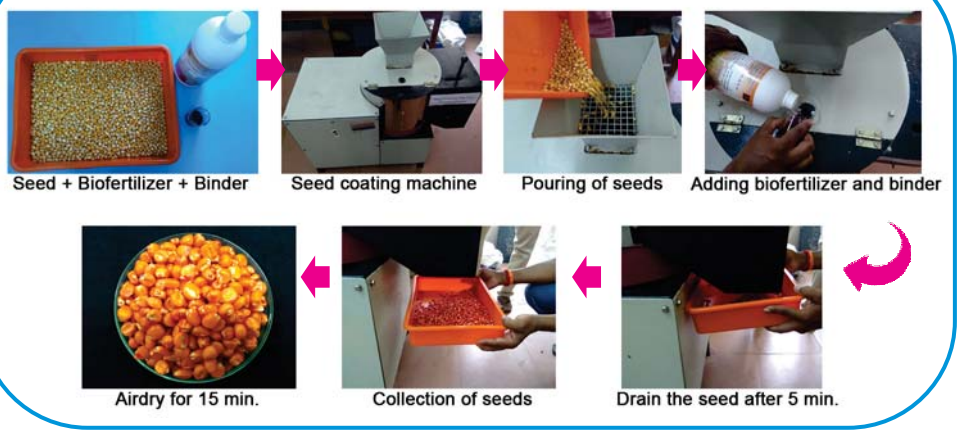
- Easy to handle
- Ensures biofertilizer delivery
- Effective colonization in roots
- Economically viable

- No change in seed appearance
- No dusting
- No interference with germination
- No harm to environment
- No interference with mechanized sowing

Technology Transfer

- 35 Front-line demonstrations organized in 2017-2020
- 200 farmers trained
- 410 farmers benefited
- State Agriculture Department intended 'Rhizobium-coated pulses' for 10,000 ha of Tamil Nadu farmers in 2019.

Mechanized seed coating



Standardized seed coating machine for biofertilizer application. Farmers can coat their seeds with required biofertilizers uniformly.

Contact Us

Professor & Head
Department of Agricultural Microbiology
Tamil Nadu Agricultural University
Coimbatore 641003
Email: microbiology@tnau.ac.in
Phone: 0422-6611294

Technical bulletin No. AINP-SBB/TNAU/2020/01