Urea deep placement: Nitrogen management for Efficient Rice Fertilization

Boost rice yields and save on fertilizer costs through efficient nitrogen management

Deep Urea Placement involves drilling urea granules into rice fields, optimizing nutrient uptake, soil fertility, and productivity. Placed 7 to 14 centimeters deep, it ensures consistent nitrogen supply, particularly suitable for lowland rice farming with clay soils.

Africa Rice Center
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This technology is TAAT1 validated.

8·8 Scaling readiness: idea maturity: 8/9; level of use: 8/9

Cost: $$$ **0.4—0.8 USD** per Kg

ROI: $$$ **30 %** increase in yield

0.25 ton Recommended rate per Ha

100—200 USD Equivalence cost for the recommendated rate per Ha

10 USD plunger-type applicator

IP Open source / open access

Problem

- Inefficient Nitrogen Utilization.
- Environmental Pollution due to traditional urea application.
- Low Grain Productivity due to high nitrogen losses from current urea practices.
- High production costs without proportional yield increases.
- Limited irrigation in optimizing traditional urea application under varying rainfall.
- Climate disturbances causing by greenhouse gas emissions from conventional urea application.

Solution

- Large granules release nitrogen slowly, optimizing absorption by rice crops, reducing waste, preserving the environment and preventing contamination.
- Direct nitrogen delivery enhances soil fertility, promoting healthier rice crops and higher yields.
- Subsoil placement contributes to increased drought resilience in farming systems.
- Single-season application reduces labor and overall production costs.
- Suited for diverse agroecologies, benefiting both subsistence and commercial rice farmers.

Key points to design your business plan

This technology is beneficial for three main groups: manufacturers, resellers, and end users (farmers).

For manufacturers, efficient production requires reliable suppliers for machinery and raw materials.

Resellers must navigate the market by sourcing Urea briquettes, efficient transportation, and storage.

Success across manufacturing, reselling, and user segments is driven by key partnerships and careful consideration of costs.

Gender assessment 4

Climate impact 7

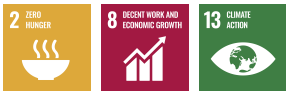
Technology from

ProPAS

Commodities

Rice

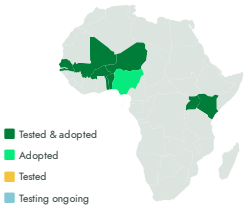
Sustainable Development Goals



Categories

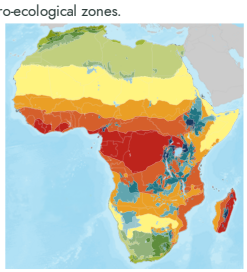
Production, Practices, Fertilizer management

Tested/adopted in



Where it can be used

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



Target groups

Farmers