

# Urea deep placement: Nitrogen management for Efficient Rice Fertilization



AfricaRice

Africa Rice Center  
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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.

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 recommended rate per Ha

**10 USD**

plunger-type applicator

IP

Open source / open access

Technology from

ProPAS

Commodities

Rice

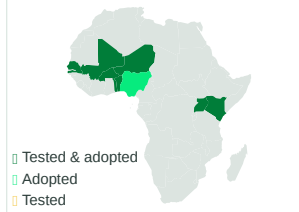
Sustainable Development Goals



Categories

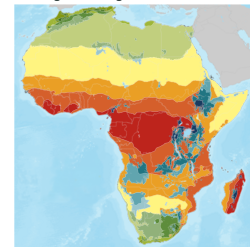
Production, Inputs, Fertilizer

Tested/adopted in



Where it can be used

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



Target groups

Farmers

## 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



Urea deep placement

<http://taatdb-web.com/technologies/urea-deep-placement-nitrogen-management-for-efficient-rice-fertilization>

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