

DEEP UREA PLACEMENT (NITROGEN MANAGEMENT)

Increase your yield with deep urea placement method

TECHNOLOGY / SOLUTION



Urea deep placement (UDP) is a technology designed to enhance the efficiency of nutrient delivery to crops. It involves drilling of large fertilizer granules (1 to 3 grams each, in the shape of briquettes) 7 to 10 centimeters (cm) below the soil surface that enable it to slowly release N into the root zone of rice crops. Urea briquettes are applied only once during the crop growing season, compared with two to three fertilizer applications needed for surface-applied prilled or granular urea.

Urea briquettes can be placed in the soil by hand or by using plunger-type applicator.



PROBLEM / ISSUE SOLVED

- Loss of 30%-50% of the nitrogen applied to the soil when urea is broadcast
- Low nitrogen application rate through urea fertilizer by most farmers and limited uptake of nitrogen from traditional method application
- About 1/3 of the nitrogen from broadcast method is lost through surface runoff evaporation and being washed down into the soil damage the environment and contamination of groundwater
- High greenhouse gas emissions, mainly N₂O, which are associated with the broadcast application of urea

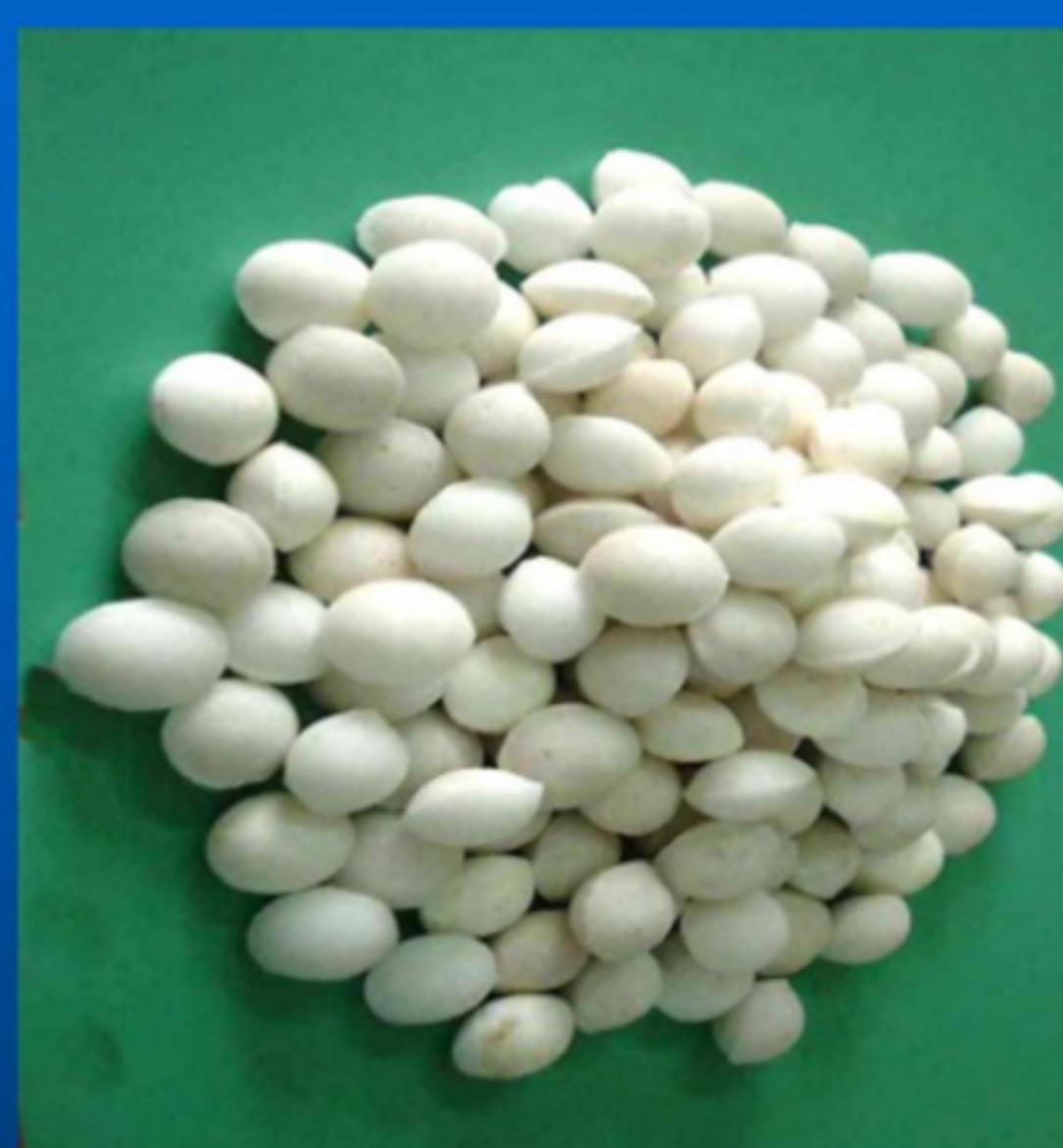


GOOD FOR
Small-scale farmers
Commercial farmers



BENEFITS

- ✓ It allows to use less fertilizer for maintaining yield levels as compared to the traditional application
- ✓ DUP reduces nitrogen (N) loss through gaseous emissions and floodwater runoff and strengthens the drought resilience of farming systems
- ✓ Less pollution of water and reduction of weed growth and competition because fertilizer is centered among four rice plants and away from the weed root zone.
- ✓ Ensures N availability beyond the flowering stage when applied at the proper rate without the



Urea Briquettes

The Applicator

Reduces drudgery. Saves time and money on labor.



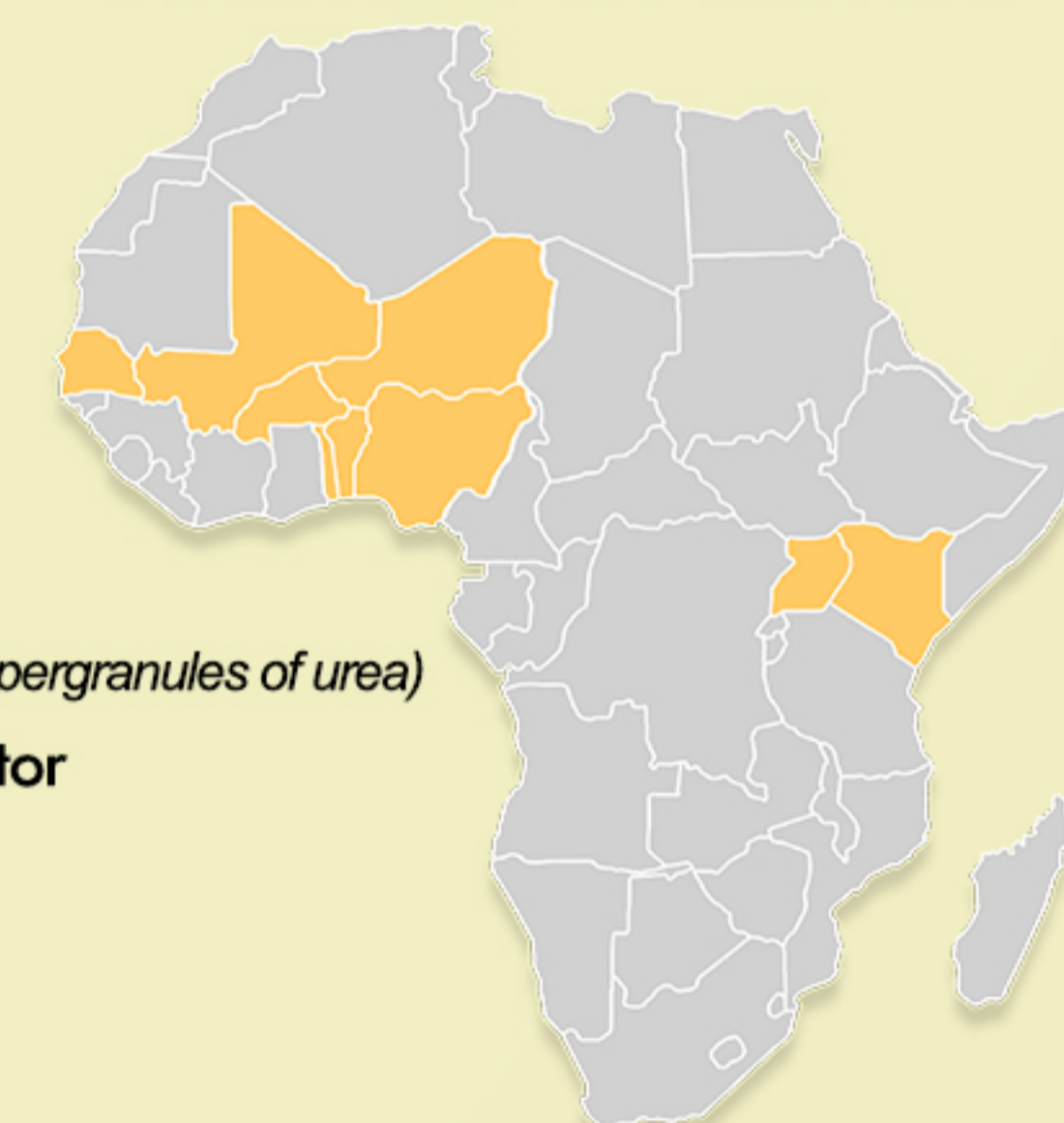
Soil Fertility
Speciality

Rice
Commodity

US\$100 - \$200/ ha (supergranules of urea)
US\$10 for plunger-type applicator
Purchase price

30%
(Percentage of increase of grain yields)
Added value

ALREADY IN USE IN



Nigeria, Kenya, Uganda, Niger,
Burkina Faso, Mali, Senegal,
Benin, Togo

HOW DOES IT WORK?

Typically, one briquette (size determined by required N application rate and planting density) is placed in the puddled soil (by hand, manual applicator, mechanized row applicator, etc.) at the center of each set of four hills of rice at a depth of 7-10 cm from one to seven days after transplanting rice. By being placed near the rice root zone, urea briquette delivers more nutrients to the plant. A minimal rate of 0.25 ton fertilizer per hectare is recommended.

