

## Liquid Nano Urea

### Why in news?

Recently, Prime Minister Narendra Modi officially inaugurated the country's first liquid nano urea plant at Kalol.

### What is liquid nano urea?

- Urea is a chemical nitrogen fertiliser, white in colour, which artificially provides nitrogen, a major nutrient required by plants.
- Liquid nano urea is essentially urea in the form of a nanoparticle.
- The product has been developed at IFFCO's Nano Biotechnology Research Centre (NBRC) at Kalol.
- Liquid nano urea is sprayed directly on the leaves and gets absorbed by the plant.
- IFFCO advises that 2-4 ml of nano urea should be mixed a litre of water and sprayed on crop leaves at active growth stages.
- Liquid nano urea has a shelf life of a year, and farmers need not be worried about caking when it comes in contact with moisture.
- According to IFFCO, liquid nano urea contains 4% total nitrogen evenly dispersed in water.
- The size of a nano nitrogen particle varies from 20-50 nm.

To know more about liquid nano urea, click [here](#)

*IFFCO is a multi-state cooperative society wholly owned by Cooperative Societies of India that is engaged in the business of manufacturing and marketing of fertilizers. IFFCO is headquartered in New Delhi, India.*

### What are the advantages of liquid nano urea over imported urea?

- **Subsidy reduction**- Liquid nano urea reduces the country's subsidy bill.
- **Reduced usage**- It reduces the unbalanced and indiscriminate use of conventional urea.
- **Crop production**- It also aims to increase crop productivity, and reduce soil, water, and air pollution.
- **Efficacy**- While conventional urea has an efficiency of about 25%, the efficiency of liquid nano urea can be as high as 85-90 %.
- **Loss**- Loss of nitrogen is high in conventional urea when compared to liquid nano urea.
- **Targeted use**- Fertilisers in nano form provide a targeted supply of nutrients to crops, as they are absorbed by the stomata.
- **Cost**- The liquid nano urea produced by IFFCO comes in a half-litre bottle priced at Rs 240 while a farmer pays around Rs 300 for a 50-kg bag of heavily subsidised urea.

*The government's fertiliser subsidy payout this financial year will be Rs 2 lakh crore, up 25% from the Rs 1.6 lakh crore it paid last year.*

## **What is planned for the future with regard to liquid nano urea production?**

- IFFCO commissioned the Kalol liquid nano urea plant, the country's first in 2021.
- IFFCO is setting up additional facilities for production of nano fertilisers at Aonla, Phulpur, Bengaluru, Paradeep, Kandla, Deoghar and Guwahati, besides expanding the Kalol plant.
- These plants will provide for the production of nano DAP and nano micronutrients apart from nano urea.

### **References**

1. <https://indianexpress.com/article/explained/everyday-explainers/pm-modi-gujarat-visit-india-first-nano-urea-plant-kalol-farms-iffco-7946163/>
2. <https://www.iffco.in/en/story-of-iffco>

