

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>

