



(e-Magazine for Agricultural Articles)

Volume: 01, Issue: 04 (SEP-OCT, 2021) Available online at <u>www.agriarticles.com</u> <sup>©</sup>Agri Articles, ISSN: 2582-9882

## Nano Urea: Eco Friendly and Better Substitute for Urea

(\*Mukesh Jakhar<sup>1</sup>, Shishpal Kantwa<sup>2</sup> and Suman Kudi<sup>2</sup>)

<sup>1</sup>Department of Entomology, DBRAU, Agra

<sup>2</sup>Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj

#### <sup>\*</sup>jakharmukesh689@gmail.com

Through a proprietary patented technology, IFFCO - Nano Biotechnology Research Centre (NBRC) Kalol, Gujarat developed Nano Urea (Liquid) for the first time in the world. This Nano fertilizer content nitrogen which is a major essential nutrient required for proper growth and development in comparison to conventional urea, foliar application of Nano Urea (Liquid) at critical crop growth stages of a plant effectively fulfills its nitrogen requirement and leads to higher crop productivity and quality in comparison to conventional urea. Nano Urea contains 4.0 % total nitrogen (w/v). Nano nitrogen particle size varies from 20-50 nm. These particles are evenly dispersed in water. Nano Urea because of its small size (20-50nm) and higher use efficiency (>80 %). Sprayed on leaves of plant at critical growth stages, it enters through stomata and other openings and is assimilated by the plant cells. Because of phloem transport it is distributed from source to sink inside the plant wherever, it is required. Unutilized nitrogen is stored in the plant vacuole and is slowly released for proper growth and development of the plant.

### Time and Method of Application

Mix 2-4 ml of Nano urea (4 % N) in one Litre of water and spray on crop leaves at its active growth stages.

For best results apply 2 foliar sprays: Jishing Skills

- 1st spray: At active tillering/branching stage (30-35 Days after germination or 20-25 Days after transplanting)
- > 2nd spray: 20-25 days after 1st spray or before flowering in the crop.

### Safety, Precautions and General Instruction

- Nano urea is non-toxic, safe for the user; safe for flora and fauna but it is recommended to use face mask and gloves while spraying on the crop.
- Store in a dry place avoiding high temperature.





- Keep away from the reach of children and pets. Shake the bottle well before use. Use flat fan or cut nozzles for uniform spraying on the foliage.Spray during morning or evening hours avoiding dew.It is advised to repeat the spray, if rain occurs within 12 hours of Nano urea spray.
- Nano Urea can easily be mixed with bio stimulants, 100 % water-soluble fertilizers and compatible agrochemicals. It is always advised to go for a jar test before mixing and spraying for checking the compatibility. For better result Nano urea should be used within 2 years from the date of its manufacturing.



# ECO FRIENDLY LIQUID FERTILIZER