

GOVERNMENT OF INDIA
MINISTRY OF CHEMICALS AND FERTILIZERS
DEPARTMENT OF FERTILIZERS

RAJYA SABHA

UNSTARRED QUESTION NO. 1791 TO BE ANSWERED ON: 05.08.2025

Status of nano urea production, efficacy validation, and safety guidelines

1791. Shri A. D. Singh:

Will the **Minister of CHEMICALS AND FERTILIZERS** be pleased to state:

- (a) the current production and distribution status of nano urea in the country, State-wise;
- (b) whether the efficacy of nano urea has been validated by independent studies;
- (c) if so, the details thereof; and
- (d) whether any safety concerns or guidelines have been issued regarding its use, if so, the details thereof?

ANSWER

THE MINISTER OF STATE IN THE MINISTRY OF CHEMICALS AND FERTILIZERS
(SMT. ANUPRIYA PATEL)

(a) The State-wise Production and Sales status of Nano Urea in the country, as on 31.07.2025, is placed at **Annexure**.

(b) to (d) Yes, Sir. Indian Council of Agriculture Research (ICAR) research institutes/state agricultural Universities carried out nano urea trials on different crops such as Paddy, Wheat, Mustard, Maize, Tomato, Cabbage, Cucumber, Capsicum and Onion in different agro-climatic zones. The study on the effect of nano urea (liquid) on crop yield and soil indicated that nano-urea can be used as foliar spray for top-dressing instead of normal urea. In an another independent study carried out by the ICAR institute on selected crops revealed that Nano urea spray along with recommended practice enhanced 0.8% growth (height, tillers), 1% in physiological traits (chlorophyll, enzyme), 2% yield attributes over 100% RDN in rice. It also significantly decreased the cyanogen (bitterness compound) in cassava and enhanced protein content (1-2%) and reduced fiber fractions in fodder maize.

The study also showed that application of nano urea (02 sprays) with 100% RDF (Recommended Dose of Fertilizer) in rajma has no adverse impact on soil nutrients content. There is no significant change in the soil mineral N concentration for 75 % RDF + 1 NU spray for wheat.

Furthermore, National Productivity Council (NPC) of India has been assigned to undertake the study of Nano Urea on "Evaluating Efficacy, Utility and Impact of Nano Urea

in comparison to Conventional Urea for the year 2024-26. Study conducted in 8 States (AP, Assam, Gujrat, Bihar, Karnataka, MP, Maharashtra, UP), 24 districts and 120 villages from key stakeholders viz. farmers, retailers, SAU/KVK and submitted their draft findings, which is as under:

- (i) Improved Nano Urea plus with 16% Nitrogen (w/w) or 20% Nitrogen (w/v) which covers large number of crops is better for higher yield.
- (ii) Percentage increase in yield for combined application of conventional urea (basal dose) and nano urea (foliar application) as compared to conventional urea alone is 1.65-14.82% depending upon the crop based on feedback from farmers.
- (iii) The crop growth is better if seed treatment is done with Nano DAP.
- (iv) Conventional urea harms the population of earthworms which are beneficial for the health of soil and the crops. Hence conventional urea may be used to a minimum extent and the use of nano urea has to be promoted for better soil and crop health.
- (v) Nano urea does not degrade soil health as it is applied as a foliar application.

Annexure

Annexure referred to in reply to part (a) of Rajya Sabha Unstarred Question No 1791 for answering on 05.08.2025

(In lakh Bottles of 500ml each)

S.No	State Name	PRODUCTION	SALES
1	Andaman & Nicobar	0.00	0.00
2	Andhra Pradesh	3.71	18.46
3	Arunachal Pradesh	0.00	0.00
4	Assam	0.00	33.21
5	Bihar	0.00	70.07
6	Chandigarh	0.00	0.00
7	Chhattisgarh	0.00	25.11
8	Dadra and Nagar Haveli	0.00	0.00
9	Daman and Diu	0.00	0.00
10	Delhi	0.00	0.71
11	Goa	0.00	0.00
12	Gujarat	851.76	86.65
13	Haryana	0.00	49.59
14	Himachal Pradesh	0.00	6.39
15	Jammu and kashmir	0.00	9.45
16	Jharkhand	0.00	12.97
17	Karnataka	1.50	60.26
18	Kerala	0.00	3.76
19	Lakshadweep	0.00	0.00
20	Madhya Pradesh	0.00	85.44
21	Maharashtra	0.00	99.09
22	Manipur	0.00	0.71
23	Meghalaya	0.00	0.01
24	Mizoram	0.00	0.85
25	Nagaland	0.00	0.01
26	Odisha	0.00	31.89
27	Puducherry	0.00	0.11
28	Punjab	7.24	94.33
29	Rajasthan	0.00	86.42
30	Sikkim	0.00	0.00
31	Tamil Nadu	0.00	36.19
32	Telangana	0.00	23.43
33	Tripura	0.00	0.21
34	Uttarakhand	0.00	33.89
35	Uttar Pradesh	510.07	136.39
36	West Bengal	0.00	77.59
GRAND TOTAL		1374.28	1083.21
