

GOVERNMENT OF INDIA
MINISTRY OF CHEMICALS AND FERTILIZERS
DEPARTMENT OF FERTILIZERS

LOK SABHA

UNSTARRED QUESTION NO. 999 TO BE ANSWERED ON: 05.12.2025

Promotion of Nano Fertilizers

999. Shri Tharaniventhan M S:

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

- (a) the steps taken by the Government to promote the use of nano fertilizers across the country, State-wise including Tamil Nadu especially in Arani Lok Sabha Constituency;
- (b) the specific initiatives undertaken to create awareness among farmers regarding the benefits of nano fertilizers, including Tamil Nadu especially in the said Lok Sabha Constituency;
- (c) the financial assistance or support provided to farmers for adopting nano fertilizers in different regions, including Tamil Nadu especially in the said Lok Sabha Constituency;
- (d) the extent of Research and Development (R&D) conducted in the field of nano fertilizers and their effectiveness in improving crop productivity and reducing environmental impact; and
- (e) the expected impact of nano fertilizers on sustainable agriculture and soil health, particularly in the agricultural landscape of Tamil Nadu?

ANSWER

THE MINISTER OF STATE IN THE MINISTRY OF CHEMICALS & FERTILIZERS

(SMT. ANUPRIYA PATEL)

(a) and (b) In order to promote the use of Nano Fertilizers among farmers across the country, including in the State of Tamil Nadu and its Lok Sabha constituencies, the following measures have been undertaken:

- i. Use of Nano Fertilizers is promoted through different activities such as awareness camps, webinars, field demonstrations, Kisan Sammelans and films in regional languages etc.
- ii. Nano Fertilizers are made available at Pradhan Mantri Kisan Samridhi Kendras (PMKSKs) by concerned companies.
- iii. Nano Fertilizers has been included under monthly supply plan issued by Department of Fertilizers regularly.
- iv. For ease in application and utilization of Nano fertilizers like Nano Urea through foliar application, initiatives such as innovative spraying options like 'Kisan Drones' and distribution of battery operated Sprayers at retail points are undertaken. For this purpose, pilot training and custom hiring spraying services through Village Level Entrepreneurs are actively promoted.
- v. DoF in collaboration with fertilizer companies has initiated a Maha Abhiyan for adoption of Nano DAP in all 15 agro-climatic zones of the country through consultations and field level demonstrations. Further, DoF in collaboration with fertilizer companies has also launched campaign for field level demonstrations and awareness programs of Nano Urea plus in 100 districts of the country.
- vi. IFFCO has informed that it is conducting extensive mass-awareness activities on Nano Fertilizers across most states. Its field officers regularly organize Nano Model Village programmes, on-field demonstrations, drone-spraying campaigns, farmers' meetings, road shows, educative banners and retailer trainings at district, block and village levels, including in the Arani Lok Sabha Constituency. In Arani, IFFCO has undertaken 30 on-field demonstrations, drone spraying over 500+ acres, 25+ farmers' meetings, road shows (Sept–Oct 2025), 10 road-side banners and training of 100 retailers.

(c) Sir, no financial assistance or subsidy is provided by Government of India for Nano Fertilizers.

(d) An MoU was signed between National Productivity Council (NPC) of India and Department of Fertilizers on 5th March, 2024 to undertake the study of Nano Urea on "Evaluating Efficacy, Utility and Impact of Nano Urea in comparison to Conventional Urea. A Phase-II study by NPC has also been signed on 14.11.2025 for evaluating the extent of replacement of Conventional Urea by Nano Urea. The Phase-II study will be conducted at a cost of ₹61.52 lakh.

Additionally, an MoU has been signed with ICAR on 03.11.2025 for undertaking a Network Project on the evaluation of Nano Urea, at a cost of ₹21.20 crore (including GST) and funded jointly by fertilizer PSUs/cooperatives. The project is scheduled to be conducted over a period of five years. The project is being conducted in various Collaborating Agricultural University/Institutes, including Tamil Nadu Agricultural University (TNAU), Coimbatore.

Furthermore, ICAR has also initiated a 2024–26 project, funded by Indian Council for Fertilizers and Fertilizer Technology Research (ICFFTR) with a total outlay of ₹160 lakh, to evaluate the impact of Nano Fertilizers on crop growth, soil health, and nutrient uptake across various agro-ecological zones. There are various Collaborating Agricultural

University/Institutes including Agricultural College and Research Institute (ACRI), Madurai, under Tamil Nadu Agricultural University (TNAU).

(e) National Productivity Council (NPC) submitted key findings of its study regarding "Evaluating Efficacy, Utility and Impact of Nano Urea in comparison to Conventional Urea" on 26.11.2025, which also includes impact of nano urea on sustainable agriculture and soil health, as given below:

- i. The nano urea with 4% Nitrogen is not sufficient to fulfil nitrogen needs of all the crops hence, Nano Urea with 4% Nitrogen is required to be improved or discontinued. Improved Nano Urea plus with 16% Nitrogen (w/w) or 20% Nitrogen (w/v) which covers large number of crops is better for promotion.
- ii. Percentage increased 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. Percentage increase in yield with nano urea application is maximum in case of peas (6.14-14.82%) and minimum in case of sugarcane (1.65-8%) as compared to using conventional urea alone.
- iv. Crop specific recommended dose of nano urea fertilizer in foliar application may be notified as soil fertility and quality differs from region to region.
- v. Weed growth is curtailed with application of nano urea due to foliar application.
- vi. The crop growth is better if seed treatment is done with Nano DAP.
- vii. Nano urea does not degrade soil health as it is applied as a foliar application.
- viii. 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.
