GOVERNMENT OF INDIA
MINISTRY OF CHEMICALS AND FERTILIZERS
DEPARTMENT OF FERTILIZERS

LOK SABHA

STARRED QUESTION **NO. *493** TO BE ANSWERED ON: **04.04.2025**

Adoption of Nano Fertilizers

***493: SHRI BHARATSINHJI SHANKARJI DABHI:**

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

(a) the steps taken by the Government to ensure widespread dissemination and adoption of Nano Urea and Nano DAP among farmers in the country particularly in the rural areas;
(b) the measures being taken to ensure the availability of nano fertilizers in remote and inaccessible areas;
(c) whether the Indian Council of Agricultural Research (ICAR) or other research institutes are conducting any studies on the long-term effects of nano fertilizers particularly on soil health and productivity; and
(d) if so, the details thereof?

ANSWER

MINISTER IN THE MINISTRY OF CHEMICALS AND FERTILIZERS

(SHRI JAGAT PRAKASH NADDA)

(a) to (d): A statement is laid on the table of the House.

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STATEMENT REFERRED TO LOK SABHA STARRED QUESTION NO. *493 FOR 04.04.2025 REGARDING "Adoption of Nano Fertilizers" TABLED BY SHRI BHARATSINHJI SHANKARJI DABHI

(a) & (b): In order to promote the use of Nano Fertilizers amongst the farmers in rural areas, the following steps have been taken:

i. Government of India has pursued with the states on use of Nano fertilizer at various forums. In the Zonal conference for assessment of fertilizers for Kharif 2024 season, held from 5th February to 9th February, 2024, Department of Agriculture and Farmers Welfare (DA&FW) requested the State Governments to promote the use of nano fertilizer in their states through their extension machinery.

ii. DA&FW during the Rabi, 2024-25 season assessed the requirement of Nano Urea and Nano DAP. DA&FW vide letter dated 3rd July, 2023 informed all the State Govt. / UTS /ICAR institutes to include FCO approved application of Nano-fertilizers as critical inputs in the cafeteria of interventions for demonstrations (Cluster Demonstrations/ Block Demonstrations/ Cluster Front Line Demonstrations/ Front Line Demonstrations) to be conducted under NFSM/ NMEO as per SAUs/ ICARs recommended package of practices.

iii. Use of Nano Urea is promoted through different activities such as awareness camps, webinars, nukkadnataks, field demonstrations, Kisan Sammelans and films in regional languages etc.

iv. Nano Urea and Nano DAPare made available at Pradhan Mantri Kisan Samridhi Kendras (PMKSKs) by concerned companies.

v. Nano Urea has been included under monthly supply plan issued by Department of Fertilizers regularly.

vi. ICAR through Indian Institute of Soil Science, Bhopal recently organized National Campaign on "Efficient and Balanced Use of Fertilizer (including Nano-fertilizers)".

vii. Promotion of use of nano fertilizers was done during the Viksit Bharat Sankalp Yatra (VBSY) which was launched on 15th November, 2023.

viii. 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 batteryoperatedsprayers at retail points are undertaken. For this purpose, pilot training and custom hiring spraying services through Village Level Entrepreneurs are actively promoted.

ix. 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.

(c) & (d): Indian Council of Agriculture Research (ICAR), research institutes (20), KVKs (30) and state Agricultural Universities (25) have carried out nano urea (liquid) and Nano DAP trials on different crops (> 20 crops) such as Paddy, Wheat, Maize, Sorghum, Finger millet, Bajra, Groundnut, Mustard, Pulse, Fodder, Cotton, Tomato, Chilly, Cabbage, Cucumber, Capsicum, Onion, Ginger, Turmeric, Cassava and Elephant foot yam covering 15 agro-climatic zones. Impact of nano urea varies with the crops. On an average it saved upto 8-12 % fertilizer nitrogen along with recommended package of practices. Application of nano urea (02 sprays) with 100% RDF 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, however soil N content decreased (10-15%) in rice (Patna). In okra and bottle gourd, application of 75% RDF + 2sprays of nano urea can replace N requirement by 25.0 % of foliar application but recorded depletion of soil mineral N (20-25%). Application of 100 % N + one nano urea spray significantly decreased the cyanogen (bitterness compound) in casava at Thiruvananthapuram (CTCRI). Combined use of chemical fertilizers (50% RDN) + two foliar nano urea spray + zinc application exhibited on par dry fodder production but elevated protein content (1-2%) and reduced fiber fractions in fodder maize at Karnal.

The project "Effect of Nano Urea and DAP and popularization of its use in crop production," is undertaken at ICAR from 2024 to 2026, to evaluate the impact of Nano Urea and DAP on crop growth, soil health, and nutrient uptake across various agro-ecological zones in India.

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”.

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