GOVERNMENT OF INDIA
MINISTRY OF CHEMICALS AND FERTILIZERS
DEPARTMENT OF FERTILIZERS

LOK SABHA

STARRED QUESTION **NO. 183*** TO BE ANSWERED ON: **12.12.2025**

Initiative to promote Nutrient Management

***183: Shri Robert Bruce C:**

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

(a) the measures being taken to address nutrient imbalance, soil degradation and groundwater nitrate contamination in intensively cultivated agricultural regions of the country;

(b) the initiatives being taken to promote balanced nutrient management, biofertilisers and micronutrient-enriched formulations under various fertiliser sector schemes; and

(c) whether the Government proposes to expand soil testing infrastructure and farmer advisory services nationwide to ensure crop-specific fertiliser application and sustainable soil health management, if so, the details thereof?

ANSWER
THE MINISTER OF STATE IN THE MINISTRY OF CHEMICALS & FERTILIZERS
(SHRI JAGAT PRAKASH NADDA)

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

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STATEMENT REFERRED TO LOK SABHA STARRED QUESTION NO. *183 FOR 12.12.2025 REGARDING "Initiative to promote Nutrient Management" TABLED BY SHRI ROBERT BRUCE C:

(a) Understanding the critical importance of soil health in ensuring sustainable agricultural productivity and environmental stability, the Government has undertaken various initiatives to address nutrient imbalance, soil degradation and groundwater nitrate contamination in intensively cultivated agricultural regions of the country as follows:-

i. ICAR recommends soil test based balanced and integrated nutrient management (INM) through conjunctive use of both inorganic and organic sources (manure, biofertilizers, green manuring, in-situ crop residue recycling etc.) of plant nutrients with 4R approach i.e., right quantity, right time, right mode and right type of fertilizer for judicious and balanced use of fertilizers and to reduce the pollution. The ICAR also imparts trainings to different stakeholders, organizes front-line demonstrations, awareness programs etc. to educate farmers on all these aspects.

ii. ICAR recommends soil test based INM, split application and placement of nitrogenous fertilizers, use of slow releasing N-fertilizers, nitrification inhibitors and use of coated urea (neem, tar, Sulphur), water-saving irrigation methods and conservation agriculture practices to reduce nutrient runoff and to minimize ground water nitrate contamination. Besides, adoption of precision agriculture tools—nutrient decision-support systems, Leaf Colour Charts (LCC), and drone-based nutrient application is promoted to minimize fertilizer losses and prevent nitrate leaching.

iii. ICAR recommends an integrated natural resource management approach to control land degradation with focus on soil and water conservation, regulated input use, and ecological restoration. Bio-engineering measures such as contour bunding, vegetative barriers, mulching, check-dams and gully plugs help arrest soil erosion, while the watershed approach promotes in-situ moisture conservation, regulated runoff and landscape-level resource planning. Gypsum application, use of halophytic microbes, subsurface drainage technologies for salinity management. ICAR emphasizes controlled and demand-based irrigation, micro-irrigation and avoidance of excessive watering to prevent salinity, waterlogging and nutrient leaching. Practices like cover cropping, agroforestry and shelterbelts protect soil from wind erosion and improve biomass recycling.

iv. Awareness and promotional programmes :-

- Programs being organized through National Institutes like NCONF & Central Fertilizer Quality Control & Training Institute (CFCQTI) along with Indian Council of Agricultural Research (ICAR), State Agricultural Universities (SAUs) and Krishi Vigyan Kendras (KVKs) to educate farmers on sustainable soil and natural recource management.
- The Government also promotes chemical free farming practices like organic and natural farming under programs such as Paramparagat Krishi Vikas Yojana (PKVY), MOVCDNER and Bharatiya Prakritik Krishi Paddhati (BPKP), NMNF respectively to improve soil organic matter.
- Besides agricultural practices which focus on techniques like zero tillage, mulching, and crop rotation are promoted to enhance soil health and prevent erosion.

(b) Government has taken several initiatives to promote balanced nutrient management, bio-fertilisers, and micro-nutrient-enriched formulations through various schemes and policies.

A. Promotion of Balanced Nutrient Management:-

i. **Soil Health Card (SHC) Scheme:** This program issues Soil Health Cards to farmers every two years, providing information on 12 key soil parameters (N, P, K, S, Zn, B, Fe, Mn, Cu, pH, EC, OC). The cards include crop-specific recommendations on the appropriate dosage of nutrients and micronutrients, promoting soil test-based balanced application and discouraging the overuse of specific chemicals like nitrogen.

ii. **Integrated Nutrient Management (INM):** The government actively promotes INM, to farmers using both inorganic and organic nutrient sources according to the "3Rs" approach.

iii. **Quality Control of Biofertilizers and Organic Fertilizers as per FCO 1985:**- The Government encourages the use of quality biofertilizers and organic fertilizers to enhance soil fertility and reduce soil degradation caused by imbalanced & excessive chemical use.

iv. Neem-Coated Urea (NCU) slows down nitrogen release, making it more available to plants and reduces leaching into groundwater.

B. Promotion of Biofertilisers and Organic Inputs

i. Organic farming is being promoted through **Paramparagat Krishi Vikas Yojana (PKVY)** in all the States/UTs except North Eastern States and **Mission Organic Value Chain Development for North Eastern Region (MOVCDNER)** for the North Eastern States since 2015-16. Both schemes stress on end-to-end support to farmers engaged in organic farming i.e. from production to processing, certification and marketing.

Primary focus of the schemes is to form organic clusters, with preference to small and marginal farmers, to create a supply chain. Both the schemes are implemented through States /UT Governments. Under PKVY, assistance of Rs. 31,500 per ha in 3 years is provided for promotion of organic farming. Out of this, assistance of Rs. 15,000 per ha is provided to farmers through Direct Benefit Transfer for on-farm /off -farm organic inputs. Under MOVCDNER, assistance of Rs. 46,500/ha in 3 years is provided for creation of Farmers Producer Organization, support to farmers for organic inputs etc. Out of this, assistance @ Rs. 32,500/ ha is provided to farmers for off-farm/on-farm organic inputs under the scheme including Rs. 15,000 as Direct Benefit Transfer to the farmers.

Since its inception, the Paramparagat Krishi Vikas Yojana (PKVY) has converted 16.90 lakh hectares of land to organic farming, benefiting 28.35 lakh farmers. From 2015-16 up to 31 October 2025, a total of ₹2535.74 crore (central share) has been released under the scheme. Similarly, since its inception, the Mission Organic Value Chain Development for North Eastern Region (MOVCDNER) has brought 2.36 lakh hectares of land under organic farming, benefiting 2.70 lakh farmers. From 2015-16 up to 31 October 2025, a total of ₹1480.48 crore (central share) has been released under the scheme.

ii. **GOBAR-dhan Initiative:** This initiative promotes the use of organic fertilisers (Fermented Organic Manures, Liquid FOM, and Phosphate Rich Organic Manures) produced from bio-gas/Compressed Biogas (CBG) plants to help manage agricultural waste and provide affordable organic nutrients.

iii. **PM-PRANAM (PM Programme for Restoration, Awareness, Nourishment and Amelioration of Mother Earth) Scheme:** PM Programme for Restoration, Awareness Generation, Nourishment, and Amelioration of Mother-Earth (PM-PRANAM) is an initiative which aims to support the mass movement initiated by States and Union Territories (UTs) to preserve the health of Mother Earth through the promotion of sustainable and balanced fertilizer use, adoption of alternative fertilizers, promotion of organic farming, and implementation of resource conservation technologies. All States/UTs are covered under the PM-PRANAM scheme. Under the PM-PRANAM scheme, there is a provision to provide incentives to States/UTs for reduction of consumption of chemical fertilizers (Urea, DAP, NPK, MOP) in a given financial year, compared to the average consumption over the previous three years, equivalent to 50% of the fertilizer subsidy saved.

iv. Promotional efforts by ICAR :-

- ICAR promotes use of organic fertilizers namely FYM, compost, vermicompost, green manure, oil / concentrated cakes, biofertilizers, biogas wastes etc. are

usually used in agriculture through demonstrations, public campaign, training and media.

- In order to promote biofertilizer use, the Council has developed improved and efficient strains of biofertilizers specific to different crops and soil types in liquid and powdered form. Biofertilizers for Phosphorus solubilization, Nitrogen fixation, Potassium and Zinc solubilization and faster composting of organic wastes suitable for different crops across the country are being developed and commercialized.

C. Promotion of Micronutrient-enriched formulations :-

- Under Nutrient Based Subsidy (NBS) Scheme for Phosphatic and Potassic (P&K) fertilizers, an additional subsidy of Rs. 500/MT and Rs. 300/MT is being provided for fortification of any notified P&K fertilizers with Zinc & Boron micro-nutrient respectively.
- ICAR and in collaboration with State Agriculture Universities (SAUs) are developing micronutrient formulations, micronutrient enriched compost and bio-fertilizer technologies, along with field-level demonstrations through KVKs to improve farmer adoption.

(c) The government promotes judicious use of fertilizer through Soil Health & Fertility scheme. The scheme is being implemented since 2014-15 to provide Soil Health Cards (SHCs) for all farm holdings, to promote balanced and integrated nutrient management for improving productivity and soil fertility.

i. Soil samples are processed as per standard procedures and analyzed for parameters such as pH, Electrical Conductivity, Organic Carbon, available Nitrogen, Phosphorus, Potassium, Sulphur, and micronutrients (Zinc, Copper, Iron, Manganese & Boron).
ii. The diagnostic soil health assessment of farmer fields is taken up periodically so as to issue SHCs at least once in 3 years.
iii. Since 2014-15, 25.61 crore Soil Health Cards have been generated/ distributed as on date across the country.
iv. Total 8302 Soil Testing Labs (1082 Static Soil Testing Labs, 163 Mobile Soil Testing Labs, 6376 Mini Soil Testing Labs and 681 Village Level Soil Testing Labs) have been established across the country.
v. In addition to state soil labs above, 1020 school mini soil labs are also established in the country under school soil health programme.
vi. Under the scheme, Rs. 1970 Crore fund has been released so far since inception.

vii. 93781 farmer's trainings, 6.80 lakh demonstrations, 7425 farmer's melas/ campaigns on soil health card recommendations have been organized across the country.

ICAR has informed that they have developed Mirtha Parikshak and the Pusa STCR Meter for rapid, field-level testing of key soil parameters, and these technologies have been commercialized to make soil analysis more accessible to farmers. ICAR has also created a soil spectral library to enable fast, contactless and sensor-based assessment of soil properties. In addition, ICAR is developing soil-test–based fertilizer recommendations for major crops across different agro-climatic zones, ensuring precise and crop-specific nutrient application. These interventions, along with the expansion of soil testing laboratories, mobile testing facilities and digital advisory systems under the Soil Health Card programme, aim to provide farmers with timely, accurate guidance for sustainable soil health management nationwide.

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