

**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.

\*\*\*\*\*

**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.