GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
DEPARTMENT OF AGRICULTURAL RESEARCH & EDUCATION

RAJYA SABHA
STARRED QUESTION NO. 219
ANSWERED ON 07.08.2026

ADVANCEMENT IN CROP NUTRITION FOR SUSTAINABLE AGRICULTURE

*219. SHRI R. GIRIRAJAN:

Will the Minister of AGRICULTURE AND FARMERS WELFARE be pleased to state:

(a) whether Government has explored advancements in crop nutrition and its significance for sustainable agriculture, if so, the details thereof;
(b) whether Government has discussed with subject experts, State Governments, Farmers Federations about the innovative practices and technological advancements to enhance crop productivity and need for collaborative efforts to address food security and nutritional needs; and
(c) if so, the details thereof and the action taken in this regard?

ANSWER

THE MINISTER OF AGRICULTURE AND FARMERS WELFARE
(SHRI SHIVRAJ SINGH CHOUHAN)

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

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STATEMENT REFERRED TO IN REPLY TO PARTS (A) TO (C) IN RESPECT OF RAJYA SABHA STARRED QUESTION NO. 219 FOR REPLY ON 07.08.2026 REGARDING "ADVANCEMENT IN CROP NUTRITION FOR SUSTAINABLE AGRICULTURE" ASKED BY SHRI R. GIRIRAJAN.

(a): Yes, the Union government has explored the advancement in crop nutrition and its significance in sustainable agriculture.

ICAR has developed micronutrient and soil organic carbon maps, and recommended integrated nutrient management for different crops. ICAR has suggested several soil health improving practices which improve the crop nutrition such as liming in acid soil, gypsum application for sodic soils and application of organics in low SOC soils. Nature based solutions such as organic farming and natural farming which are developed and demonstrated through NMNF. Further, mobile based application for fertilizer recommendation such as e-FARMS for on site precise fertilizer recommendation has been developed and demonstrated. ICAR has undertaken micronutrient assessment and mapping of agricultural soils and developed crop- and region-specific micronutrient recommendations to address hidden hunger, improve crop productivity and crop nutritional quality, and support sustainable and climate-resilient agricultural production.

The Council recommends Integrated Nutrient Management (INM), combining chemical fertilizers with organic manures, crop residues, green manures and biofertilizers, supported by General Fertilizer Recommendations (GFR) based on Soil Test Crop Response (STCR). ICAR has also developed precision nutrient management technologies, including site-specific nutrient management, sensor and decision support-based fertilizer recommendations, drip fertigation schedules for 50 crops across 14 agro-ecological regions, and nutrient management protocols for hydroponics and protected cultivation to optimize fertilizer use. In addition, all these measures help in improving soil health, plant nutrition and sustainable agriculture.

(b) & (c): Yes, the Government has multilevel discussions/ interface involving scientists, subject matter experts, officials of State Deptt. of Agriculture, farmers and other stakeholders about the innovative practices and technological advancements to enhance crop productivity and address food security and nutritional needs.

National Agricultural Research System (NARS) under the aegis of Indian Council of Agricultural Research (ICAR) is involved in development of improved varieties and innovative agricultural practices and advance technologies across 300 crops through its 73 ICAR Institutes and 52 Central/ State Agricultural Universities across the country. The technologies thus developed are discussed in the ICAR Institutes – State Agricultural Universities - State Department of Agriculture interface zone-wise in each state and included in the package of practice of the zone based on performance in the state adaptive trials conducted by the agriculture Department ICAR and Department of Agriculture and Farmers Welfare have elaborated interface meeting based on the feedback on technological gaps before rabi and kharif seasons every year. National level Agriculture Conference cum Rabi/ Kharif Campaigns are organized by the Ministry of Agriculture and Farmers Welfare before each crop season, which is chaired by the Minister of Agriculture and Farmers Welfare and attended by the Ministers of Agriculture of states along with Secretary level officers of state deptt. of Agriculture. Zonal Conferences have also been conducted by the Ministry of Agriculture and Farmers Welfare, which are chaired by Hon'ble Minister of Agriculture and Farmers Welfare and attended by Agriculture Ministers of States. The 11 Agricultural Technology Application Research Institutes (ATARI) through its 731 Krishi Vigyan Kendras (KVKs) in collaboration with the state disseminates various technologies to the farmers. The need-based programmes like Viksit Krishi Sankalp Abhiyan and Khet Bachao Abhiyan for awareness of the farmers about the technologies and specific issues, are also conducted.

During the last eleven years (2014-2025), a total of 3236 field crop varieties have been released and notified out of which 1574 are of Cereals, 444 of Oilseeds, 473 of Pulses, 207 of Forage crops, 408 of Fibre crops, 96 of Sugarcane and 34 of other crops. Among these varieties, 2995 varieties are resistant/ tolerant to one and/or more biotic/ abiotic stresses. Moreover, 587 varieties among them are tolerant to extreme weather conditions like drought, heat, flood/ water submergence, salinity/ alkalinity and cold/ frost.

The Government through ICAR have put a strong focus on developing nutrient rich crops and varieties during past 11 years. To address the challenge of malnutrition, ICAR has developed 204 bio-fortified varieties of field and horticultural crops that improved the nutritional quality of food grains.

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