

ICAR-MGIFRI Promotes integrated farming systems and soil health under Farmer FIRST and Khet Bachao Abhiyan in Bihar

17 June 2026 | Motihari, Bihar

As part of the nationwide Khet Bachao Abhiyan-2026 and the Farmer FIRST Programme, ICAR–Mahatma Gandhi Integrated Farming Research Institute (MGIFRI), Motihari organized a farmer awareness-cum-training programme on Integrated Farming Systems (IFS), soil health management, balanced fertilizer use, and summer mungbean cultivation for farmers from Balbhadarpur, Ujhilpur, Narha, and Hasanpur villages of Tetaria Block, East Champaran district, Bihar.



The Farmer FIRST (Farm, Innovations, Resources, Science and Technology) Programme of ICAR aims to strengthen farmer-scientist partnerships and place farmers at the center of technology development, validation, and adoption. The programme focuses on improving farm productivity, profitability, resilience, and sustainability through integrated resource management and climate-smart agricultural practices.



Addressing the gathering, Dr. Raghavendra Singh, Director, ICAR-MGIFRI, highlighted the importance of Integrated Farming Systems (IFS) for enhancing farm income and resilience. He encouraged farmers to diversify their enterprises through fish-based farming, goat rearing, backyard poultry, and crop-based interventions. He also emphasized the adoption of Resource Conserving Technologies such as laser land levelling, efficient water management (“Khet ka Pani Khet Mein”), residue recycling, and soil-test-based nutrient management for sustainable agricultural development. During the programme, farmers actively discussed field-level challenges and opportunities for developing location-specific IFS models suited to the waterlogged and flood-prone conditions of East Champaran.



Dr. S. K. Singh briefed participants on the objectives and implementation strategy of the Farmer FIRST Programme and highlighted the importance of the Khet Bachao Abhiyan in promoting soil health conservation and balanced fertilizer use.

Delivering a technical session, Dr. Vijay Singh Meena, Senior Scientist (Soil Science), emphasized the importance of crop diversification, crop planning, and efficient utilization of available resources throughout the year. He encouraged farmers to follow a well-designed crop calendar to ensure timely sowing, efficient use of inputs, and improved cropping intensity and profitability.

Dr. Meena highlighted the role of summer mungbean and Sesbania (Dhaincha) in improving soil fertility through biological nitrogen fixation. He explained that summer mungbean can fix approximately 25–30 kg nitrogen ha⁻¹, equivalent to about 55–65 kg urea ha⁻¹ (around 1.2–1.5 bags of urea), while Sesbania green manuring can contribute 50–60 kg nitrogen ha⁻¹, equivalent to nearly 110–130 kg urea ha⁻¹ (2.5–3 bags of urea). He emphasized that these legumes act as natural nutrient providers, improve soil organic matter, and reduce fertilizer requirements for subsequent crops.

A special demonstration on mungbean root nodulation was conducted by Dr. Meena, who explained the role of nitrogen-fixing root nodules in enriching soil fertility. Farmers enthusiastically referred to these nodules as a “natural urea factory in the field,” recognizing their contribution to reducing fertilizer costs and enhancing soil health.

He also highlighted the importance of crop residue retention and recycling, explaining that crop residues improve soil organic carbon, conserve soil moisture, support beneficial microorganisms, and reduce nutrient losses. Farmers were advised to avoid residue burning, which leads to nutrient depletion, environmental pollution, and deterioration of soil health.

Dr. Amol K. Jadhav reinforced the campaign’s message on judicious fertilizer use and reducing excessive dependence on chemical inputs. He explained how soil-test-based nutrient management can reduce unnecessary expenditure on fertilizers while improving crop productivity and profitability. He also highlighted the role of biofertilizers and eco-friendly nutrient management practices in improving soil biological health and enhancing nutrient-use efficiency.

The ICAR-MGIFRI team reviewed the progress of Farmer FIRST Programme activities, interacted with both adopted and non-adopted farmers, and collected feedback to strengthen future interventions and refine village-level implementation strategies.

Scientists also demonstrated sustainable crop residue management practices and promoted the principles of natural farming and integrated nutrient management for long-term soil health restoration and climate-resilient agriculture.

A total of 54 participants, including 38 male farmers and 16 female farmers, participated in the programme and actively interacted with scientists on sustainable farming solutions.

