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ICAR Unveils 2026 Biological Catalogue: A New Era of Sustainable Farming

In a landmark move poised to revolutionize Indian agriculture, the Indian Council of Agricultural Research (ICAR) has released its comprehensive list of biological for 2026. The exhaustive catalogue, spanning biofertilizers, biopesticides, and biostimulants, showcases a massive push towards sustainable, eco-friendly farming practices and promises to significantly reduce the sector's reliance on chemical inputs. The list, compiled from over a dozen premier ICAR institutes across the country, features more than 100 distinct technologies and products, many of which are already commercialized. A Trio of Sustainable Solutions.

The 2026 list is strategically divided into three core categories:

- **Biofertilizers:** Spearheading the nutrient revolution are advanced formulations like ICAR-IARI's "PUSA Sampoorn" and "PUSA Biophos," alongside ICAR-NBAIM's "Bio NPK liquid formulation." A significant focus is also on decomposers, such as ICAR-CSSRI's "CSR-Manage-R," a bio-decomposer designed to manage paddy residue, offering a direct solution to the persistent issue of stubble burning.
- **Biopesticides:** The catalogue presents a formidable arsenal of biological pest control agents. Leading the charge are ICAR-NBAIR's novel formulations of entomopathogenic nematodes and fungi like Metarhizium anisopliae and Beauveria bassiana for controlling devastating pests such as white grubs and fall armyworm.
- **Biostimulants:** To boost crop resilience and productivity, the list introduces powerful biostimulants. Products like ICAR-CISH's "FUSICONT" and ICAR-NBAIM's "Kush SalBoost" are designed to enhance plant growth, improve stress tolerance, and increase yields.

From Lab to Land: Commercialization Success

A key highlight of the 2026 list is the high rate of commercialization. A vast majority of the biofertilizers from institutes like IARI and NBAIM, and biopesticides from NBAIR and IIHR, are marked as "Commercialized: Yes," indicating a successful pipeline from research to market-ready products.

A Collaborative National Effort

The breadth of the list is a testament to a nationwide collaborative effort. Contributions have come from institutions including ICAR-IARI (New Delhi), ICAR-NBAIR (Bengaluru), ICAR-IIHR (Bengaluru), ICAR-IIPR (Kanpur), and ICAR-CSSRI (Karnal), among others. The release of this list is a strategic roadmap for the future of Indian agriculture. By championing these biological solutions, ICAR is empowering farmers with safer, more sustainable tools while reinforcing the nation's commitment to environmental stewardship and food security.

Capacity Building Training Programmes

During October 2026, the Institute of Horticulture Technology (IHT), Greater Noida, continued its efforts to promote modern horticultural practices through specialized training programmes and educational visits. The Institute organized several skill development programmes covering protected cultivation, hydroponics, mushroom production, saffron cultivation, landscape gardening and home gardening. Along with these activities, students from universities and colleges visited the IHT Technology Park to gain practical exposure to advanced horticultural technologies and modern crop production systems.

Saffron Production Technology

A three-day training programme on Saffron Production Technology was organized from 14 to 16 October 2026. The programme focused on modern and soilless methods of saffron cultivation, with special emphasis on protected and indoor production systems. Participants were introduced to the importance of saffron, its market potential, quality corm selection, pre-planting treatments, planting techniques and environmental requirements. The sessions also covered nutrient management, fertigation, irrigation, climate control, pest and disease management, harvesting, drying, processing and storage. Practical demonstrations on the preparation and sterilization of soilless growing media and corm planting provided participants with useful hands-on experience. The programme also highlighted entrepreneurship opportunities and the scope of technology-based saffron cultivation.



Hands on training saffron corms production & planting methods

Mushroom Production Technology

A three-day training programme on Saffron Production Technology was organized from 14 to 16 October 2026. The programme focused on modern and soilless methods of saffron cultivation, with special emphasis on protected and indoor production systems. Participants were introduced to the importance of saffron, its market potential, quality corm selection, pre-planting treatments, planting techniques and environmental requirements. The sessions also covered nutrient management, fertigation, irrigation, climate control, pest and disease management, harvesting, drying, processing and storage. Practical demonstrations on the preparation and sterilization of soilless growing media and corm planting provided participants with useful hands-on experience. The programme also highlighted entrepreneurship opportunities and the scope of technology-based saffron cultivation.



Hands on training on compost preparation and mushroom production practices

Leafy Green and Herbs Hydroponic Production Technology

IHT organized a three-day training programme on Leafy Green and Herbs Hydroponic Production Technology from 22 to 24 October 2026. The training focused on different hydroponic systems, greenhouse technology and the commercial production of leafy vegetables and herbs. Participants were introduced to hydroponic nursery planning, seed selection, growing media preparation and seed sowing techniques. Special sessions covered nutrient solution preparation, fertilizer selection, EC and pH management, and hydroponic irrigation and fertigation systems. The programme also included a visit to the hydroponic production facility, where participants had an opportunity to see NFT and DFT systems and gained practical exposure to the production of salad crops and minor herbs. Pest and disease management in hydroponic systems was also discussed.



Hands on training on herb production

Landscape and Garden Maintenance

A five-day training programme on Landscape and Garden Maintenance was conducted from 26 to 30 October 2026. The programme aimed to develop practical skills in garden planning, landscape designing and scientific garden maintenance. The sessions covered different landscape styles, garden design principles, climatic and environmental factors, soil health management, plant selection and propagation techniques. Participants also had hands on training on seed sowing, cuttings, layering, grafting, potting and repotting of ornamental plants. A dedicated session on micro-irrigation and water-use efficiency highlighted the importance of efficient water management in landscape gardens. The programme further covered lawn establishment and maintenance, pest and disease management, and modern gardening practices. Practical activities and field visits helped participants understand the techniques required for maintaining healthy and attractive landscapes.



Home Care Training Programme

A one-day Home Care Training was conducted on 9 October 2026 at IHT. The programme focused on practical gardening techniques suitable for homes, balconies, terraces and small spaces. Participants were introduced to the selection of plants, containers and growing media, along with basic practices related to watering, nutrition and plant care. The sessions also covered common pest and disease problems and their management. The programme encouraged participants to adopt gardening as a practical and sustainable activity at home.

Commercial Hydroponics Training Programme

A two-week training programme on Commercial Hydroponics was conducted at the Institute of Horticulture Technology during October 2026. The programme focused on commercial hydroponic production systems, greenhouse technology and modern soilless cultivation practices. Participants were introduced to different hydroponic systems, nursery planning and management, selection of growing media, nutrient solution preparation, and irrigation and fertigation techniques. Special emphasis was given to nutrient management, EC and pH monitoring, climate control, and the production of leafy vegetables and other horticultural crops. The programme also included practical demonstrations and hands-on sessions at the hydroponic facility, enabling participants to understand system operation, crop management and the commercial aspects of hydroponic farming.

Educational Visits and Student Exposure Programmes

1. Visit by Vikrant University, Gwalior, Madhya Pradesh

The Institute welcomed B.Sc. students and faculty members from Vikrant University, Gwalior, on 4 October 2026 for a one-day educational visit focused on hydroponic farming. The programme provided students with an opportunity to understand the basic concepts and commercial applications of hydroponics. They were introduced to different hydroponic systems, greenhouse technology, nursery management, nutrient solutions and EC and pH management. The visit also included practical exposure to hydroponic production facilities and modern soilless cultivation techniques. The programme helped students gain a better understanding of hydroponics as an innovative and resource-efficient approach to modern horticulture.



Glimpses of Vikrant University, Gwalior, Madhya Pradesh visit to Technology Park

2. Visit by Government Post Graduate College, Noida, Uttar Pradesh

The Institute also welcomed B.Sc. students from Government Post Graduate College, Noida, on 9 October 2026 for an educational visit to the IHT Technology Park. The visit was organized to provide students with practical exposure to modern horticultural technologies and advanced crop production systems. Students visited the automated fertigation and irrigation unit, different greenhouse structures, the soilless nursery and the hydroponic production unit. They also observed modern vegetable cultivation practices, including training, pruning, trellising, irrigation and fertigation. The visit further included lectures and discussions on mushroom cultivation and organic farming, helping students understand the practical application of modern technologies in horticulture.



Glimpses of Government Post Graduate College, Noida visit to Technology Park

3. Visit by Students from Tamil Nadu Agricultural University

IHT hosted 90 B.Sc. Agriculture students from Tamil Nadu Agricultural University (TNAU) on 30 October 2026 for a one-day educational visit under the theme “Modern Horticulture Technology.” The programme began with visit to Technology Park of IHT. During the Technology Park visit, faculty of IHT- Sh. Lalit Pratap Singh, Karan Singh and Er. Anita conducted the guided tour of the students in the Tech Park. The Students received practical exposure to automated irrigation and fertigation systems, different greenhouse structures, soilless nursery techniques, hydroponic production systems and modern vegetable cultivation practices. The visit provided an opportunity to understand the role of technology, innovation and scientific crop management in the development of modern horticulture.

The students were explained the importance of Bioentrepreneurship by Dr. Koul Associate Director IHT with examples of the bio entrepreneurs who have started up their ventures after training in IHT. He asked the students to find out the market gaps and think about the startups for addressing the gaps and doing business with such bio entrepreneurship projects.

