

Preface

3rd International Conference on Recent Advances in Horticulture Research (ICRAHOR-2026) was held at Amity Institute of Horticulture Studies Research, Amity University Uttar Pradesh, Noida, under the aegis of Amity Food and Agriculture Foundations from April 8th – 9th, 2026 in hybrid mode (online/in-person). The conference theme “ Next-Generation Horticulture: Technology, Sustainability, and Innovation Driven Future of Farming” focused on the various aspects of horticulture viz. Breeding and Biotechnological Innovations In Horticulture, Digital Horticulture and Smart Farming, Post-Harvest Management, Value-Addition, Zero-Waste Horticulture, Climate Resilient Horticulture, Urban & Backyard, and Farming, Horti-Entrepreneurship Start-Ups Success Story and Young Horti Entrepreneur Pitch Competition. The conference aimed to share experiences and perspectives from various fields of horticulture, highlighting the interdisciplinary input from various fields. The conference also sought to provide researchers and students with up-to-date information on technological trends, molecular approaches, nanotechnology, organic agriculture, sustainability, and hi-tech horticulture, as well as cutting-edge ideas in big data, robotics, and vertical farming.

Next-Generation Horticulture represents a move towards more technologically driven and sustainable farming practices with a holistic approach. Next-Gen horticulture focuses on using technology, promoting sustainability, and fostering innovation to transform traditional farming practices. This involves integrating advanced technologies like precision agriculture, automation to enhance efficiency, productivity, and resource utilization while minimizing environmental impact. The key aspects of Next-Gen Horticulture are Precision agriculture, Smart farming, Micro-irrigation, Crop improvement, Biotechnological innovations involving omics technologies (Metabolomics, Proteomics, Transcriptomics, etc.), Nanotechnology, Vertical farming, Hydroponics, Aeroponics, Digitalization (Robotics, Sensors, Drones and Big Data, IoT, Data analytics, AI and Machine learning), Protected cultivation and Urban farming, Sustainable practices, Climate Resilience, Advances in Post-Harvest Technology and Value Addition, Decarbonization, Circular Economy, Closed-Loop System, Waste Valorisation into Packaging, Bioenergy, and Compost. In addition, Value-chain development, market access, ICT-based business models, youth engagement through entrepreneurship contest and startup ideas sums up the main agenda of the conference theme. On that account, advancements in horticulture sector emphasizes the use of technology to optimize existing horticultural practices where, Next-Generation horticulture integrates technological advancements with a holistic approach to sustainability and innovations. Through this conference, our focus is more towards

holistic approach to horticulture, integrating future-oriented practices to obtain nutritional and food security. The conference gave attendees a forum to discuss and deliberate upon the latest developments, emerging trends, and technological advancements in the horticulture sector, ensuring that innovations are inspired, knowledge is disseminated, collaborative partnerships are strengthened, and sustainable solutions are developed to address current and future challenges in horticultural production, post-harvest management, value addition, and food security.