



## Contents

- Bio-Entrepreneurship in Hydroponics: A Step Toward Sustainable Urban Farming
- Commercial Hydroponic
- Advancing Agribusiness: Training Entrepreneurs in Protected Cultivation of Vegetable Crops

## Bio-Entrepreneurship in Hydroponics: A Step Toward Sustainable Urban Farming

A two-day workshop titled "Bio-Entrepreneurship in Hydroponics: Farming without Soil" was successfully organized on October 4-5, 2024, by the Institute of Horticulture Technology (IHT) Greater Noida, in collaboration with the Delhi University Botanical Society, Department of Botany. The participants included senior faculty members from different colleges of Delhi and Delhi University and students perusing M.Sc/Ph.D and others. The workshop opened with an inaugural session featuring Prof. Dinabandhu Sahoo, Head of the Department of Botany, and Dr. R.S. Kureel, Director of IHT, who delivered insights into the potential of hydroponics and vertical farming. Highlighting the economic and environmental advantages of soil-less farming, they emphasized how hydroponics is transforming the future of agriculture, especially in urban settings where space and water are limited.

### First Day: In-depth Insights and Innovations in Hydroponics

The first day's sessions provided a comprehensive introduction to commercial hydroponics. Sh. Sanjay Sudan, Director, Saveer Biotech Limited, discussed the role of controlled environment agriculture, showcasing how modern hydroponic systems can optimize plant growth in urban and peri-urban areas. Dr. V. Koul Assoc. Director, IHT discussed the importance of Integrated Pest Management (IPM) to ensure the production of safe, high-quality crops. Dr. V. Patel detailed out various types of hydroponic setups such as NFT, DFT and grow bag systems, helping attendees to understand which system best suits different business models. Er. Anita presented innovative approaches to nutrient and water management, essential components for successful hydroponic farming. Following this, Sh. D.C. Sharma delivered an in-depth session on hydroponic production technologies for vine crops like tomatoes, capsicum, and cucumbers, focusing on nursery production, growing media, and environmental controls. Dr. Kureel concluded the day with a session on government support schemes for aspiring hydroponic entrepreneurs and the potential profitability of hydroponic farming ventures.



A. Lighting of the lamp by Prof. Dinabandhu Sahoo, Head of the Department of Botany, and Dr. R.S. Kureel, Director of IHT, Dr. Koul Assoc. Director IHT and Students  
B. Dr. Koul Assoc. Director IHT initiating the proceedings for the first session.

## Second Day: Hands-on Training at IHT Greater Noida

The second day was dedicated to hands-on practical training at the IHT Greater Noida campus. Participants visited various hydroponic production facilities, including greenhouses equipped with NFT, DFT, and grow bag systems. The guided tour involved experts like Dr. V. Patel, Sh. D.C. Sharma, and Sh. L.P. Singh. The participants had interaction with the experts on essential techniques for nursery planning and management, including crop selection, seed sowing methods, irrigation, fertigation, and the importance of media quality (pH and EC levels). The afternoon session focused on indoor vertical farming, where Ms. Anita demonstrated how vertical systems are being used to maximize space efficiency in urban farming. A comprehensive session on nutrient management followed, where participants learned how to prepare and apply nutrient solutions, maintain optimal EC and pH levels, and choose the right fertilizers.

The workshop concluded with a certificate distribution ceremony, where Dr. Kureel and Prof. Sahoo congratulated participants for their active involvement. The closing remarks by Dr. V.Koul reinforced the importance of fostering bio-entrepreneurship in hydroponics to address the challenges of food security and sustainability in urban areas.



*Experts from IHT explaining the participants' different components of hydroponics during the guided tour in IHT's Technology Park in Greater Noida*

## Commercial Hydroponic

The Institute of Horticulture Technology (IHT) organized a two-week training program on Commercial Hydroponics, in which entrepreneurs across various states of India participated. During the program, participants gained in-depth knowledge about hydroponic farming through online classes, understanding the details of the process. They also attended on-site practical sessions at the institute, where they actively engaged in nutrient management, nursery production, training and pruning of vine crops, crop care, insect - pest management, and water distribution. Participants expressed great satisfaction with the training, stating that they now have a comprehensive understanding of hydroponic farming. They appreciated the opportunity to learn both theoretical and practical aspects of this modern farming technique, and are eager to implement these insights in their future agricultural ventures. The training not only equipped them with technical knowledge but also instilled confidence to adopt hydroponic farming practices successfully.



*Participants during hands on training on vertical hydroponic crop production*





## Advancing Agribusiness: Training Entrepreneurs in Protected Cultivation of Vegetable Crops

The Institute of Horticulture Technology (IHT) recently organized a training program on "Protected Cultivation of Vegetable Crops" for entrepreneurs from various regions of India. The program aimed to equip participants with the knowledge and skills necessary to adopt advanced greenhouse technologies for vegetable production. Through a combination of theoretical sessions and practical demonstrations, participants learned about climate control, pest management, irrigation techniques, and high-yield vegetable varieties. The training emphasized sustainable practices, helping entrepreneurs enhance productivity while ensuring environmental conservation. By fostering innovation in protected cultivation, the program supports the growth of profitable, resilient agribusiness ventures across India.



*Participants during hands on training on greenhouse crop production technologies*

## Advanced Landscape Gardening Master Class for U.S. Embassy Gardeners

Embassy gardens are crucial in maintaining the aesthetic appeal and ecological balance of diplomatic premises. Given their expansive size, it is essential that the gardening staff is proficient in modern techniques and tools to manage the gardens effectively. In response to this need, the Institute of Horticulture Technology (IHT) recently organized an advanced training program for the gardening staff of the U.S. Embassy. This training, titled "Advanced Landscape Gardening Master Class," built on a previous successful landscaping training initiative and was designed to enhance the gardeners' skills and knowledge. The program aimed to introduce the latest advancements in gardening practices, focusing on cutting-edge tools and techniques that could streamline gardening tasks, increase efficiency, and elevate the visual and ecological quality of the embassy's extensive garden area. The course combined interactive lectures with hands-on training, providing a comprehensive approach to modern landscape gardening. By equipping the embassy gardeners with advanced skills, the training ensures they are well-prepared to manage the gardens with greater expertise, ultimately contributing to the upkeep and enhancement of the embassy's landscape.



*Hands on training on modern gardening practices*

## Empowering Farmers through Orchid Cultivation: The Impact of IHT Mandira's Orchidarium

Orchids are highly valued for their beauty and uniqueness, which makes them popular in both local and international markets. Their aesthetic appeal drives demand among consumers and businesses alike. The cultivation and sale of orchids provide a lucrative income source for local farmers. With proper training and support, farmers can tap into high-value markets and achieve substantial financial gains. At IHT Mandira Assam, IHT established an orchidarium aimed at supporting local farmers. This center provides comprehensive training on orchid cultivation, helping farmers gain valuable knowledge and skills. The orchids produced at the orchidarium are in high demand in the market.

The orchidarium serves as a valuable resource for farmers, offering them the opportunity to learn advanced techniques for growing orchids. By equipping them with the necessary expertise and resources, we enhance their ability to produce high-quality orchids. Overall, the orchidarium at IHT Mandira plays a crucial role in improving the livelihoods of local farmers by providing them with the tools and knowledge needed to succeed in the orchid market. This initiative not only boosts their income but also supports the growth and sustainability of the local orchid industry.



*Harvested dendrobium form Orchidarium –Ready for Market*



ISO 9001 : 2008

# इंस्टीट्यूट ऑफ हॉर्टीकल्चर टेक्नोलॉजी Institute of Horticulture Technology

**Main Campus:** 42A, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh  
**North East Campus:** Mandira, Kamrup - 781127, Assam  
Mobile: 8860621160, website: [www.iht.edu.in](http://www.iht.edu.in), Email: [enquiry@iht.edu.in](mailto:enquiry@iht.edu.in), [training@iht.edu.in](mailto:training@iht.edu.in)