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Technical Report on International Webinar: Speed Breeding on Crops

The Institute of Horticulture Technology (IHT) and Saveer Biotech Limited organized an International Webinar on "Speed Breeding on Crops" on 16th November 2024, bringing together leading experts in the field of crop genetics, breeding, and biotechnology. The event was conducted online, with broad participation from agricultural scientists, breeders, and researchers. The webinar commenced with an inaugural session featuring Dr. R.S. Kureel, Director, IHT, who welcomed the attendees, followed by Dr. A.K. Singh, Vice Chancellor of RLB Central Agricultural University, Jhansi, and Dr. Sudhakar Pandey, Assistant Director General (Horticulture), ICAR, who highlighted the critical role of speed breeding technologies in accelerating the development of improved crop varieties for food security and sustainable agriculture.

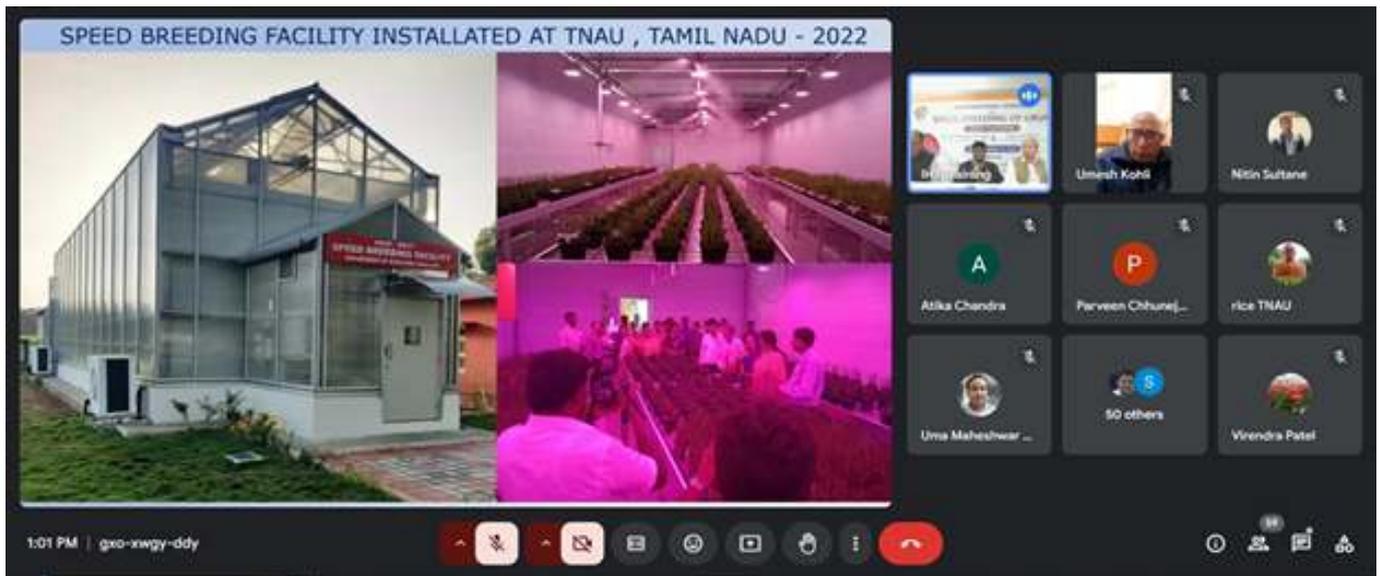


Session 1: Varietal Development Using Speed Breeding Technologies

The first technical session focused on the application of speed breeding technologies in varietal development, emphasizing rapid generation advancement (RGA) techniques. Experts such as Dr. Pathik Patel (Navsari Agricultural University), Dr. Uma Maheshwar Singh (International Rice Research Institute), Dr. Dharmendra Bhatia (PAU, Ludhiana), and Dr. S. Manonmani (TNAU, Coimbatore) presented insights into the genetic and physiological principles of speed breeding, highlighting methodologies that accelerate the breeding cycle in crops like rice, wheat, and vegetables. The session explored the integration of modern tools, such as controlled environments and photoperiod manipulation, to shorten breeding timelines while maintaining genetic integrity and improving yield potential.

Session 2: Speed Breeding and Global Food Security

In the second technical session, the discussion shifted to speed breeding as a transformative solution to global food security challenges. Dr. Sanjay Sudan (Saveer Biotech), Dr. Dharmendra Singh (IARI, New Delhi), Dr. Anil Khar (IARI, Pune), and Dr. Umesh Kohli (Dr. Y.S. Parmar University of Horticulture and Forestry, Solan) presented case studies on the practical applications of speed breeding in different crop species. They elaborated on how speed breeding can address the challenges of climate change, pest resistance, and nutritional enhancement, particularly in biofortified crops. This session underscored the urgency of adopting such technologies to meet the increasing food demand from a growing global population.



Session 3: Speed Breeding Technology for the Seed Industry

The final session explored the significant impact of speed breeding on the seed industry, a key sector for agricultural advancement. Dr. Neha Pandey (IHT, Greater Noida) and Dr. Dipankar Pandey (NSAI, New Delhi), along with other experts from AgroStar Seeds Pvt Ltd and Nuziveedu Seeds, discussed the potential of speed breeding to accelerate seed production, enhance seed quality, and reduce the time to market for new crop varieties. They highlighted innovations in seed priming, hybrid vigor enhancement, and accelerated multi-generational breeding to meet the demands of commercial agriculture.

A virtual tour of Saveer Biotech's state-of-the-art speed breeding facility followed, showcasing the practical application of these technologies in a controlled environment.

The webinar concluded with an open discussion and Q&A session where participants raised queries on the integration of speed breeding into regional agricultural practices. The valedictory session, chaired by Dr. S.K. Malhotra (Vice Chancellor, Maharana Pratap Horticulture University), emphasized the potential of speed breeding to revolutionize crop improvement and strengthen food security. This technical webinar provided a comprehensive understanding of the latest advancements in speed breeding and its applications across various agricultural sectors, marking a significant step toward the rapid development of high-yielding, climate-resilient crop varieties.

Exposure Visit to Raipur: Empowering Farmers of Ramgarh and Hazaribagh, Jharkhand

Under the Mission for Integrated Development of Horticulture (MIDH), the Institute of Horticulture Technology (IHT) organized a seven-day exposure visit in November, 2024, for 100 farmers (50 each from Ramgarh and Hazaribagh districts, Jharkhand) to Raipur, Chhattisgarh. The program focused on equipping farmers with modern horticultural techniques to enhance productivity and income. Farmers visited the Precision Farming Development Centre (PFDC) in Raipur, a key institution for modern agriculture. Here, they learned about drip irrigation, plug nursery operations, hydroponics, and bio-fertilizer production. This practical exposure to cutting-edge technologies equipped them with tools to improve efficiency and sustainability. Highlights included participation in a Farmers' Fair at Chawda Bagh Nursery, where they interacted with industry experts and learned about advanced agricultural inputs, machinery, and techniques. Visits to progressive farms showcased high-value crop production, high-density planting, integrated pest management (IPM), and efficient post-harvest practices. The program empowered participants to adopt eco-friendly practices, plug nurseries, and crop diversification while enhancing their understanding of market demands, fostering long-term agricultural sustainability and growth.



IHT Organizes Training on Commercial Hydroponics and Hi-Tech Nursery Production

In November 2024, the Institute of Horticulture Technology (IHT), Greater Noida, organized a specialized training program on Commercial Hydroponics and Hi-Tech Nursery Production. Entrepreneurs and professionals from various states across India participated in this specialized course to enhance their knowledge and skills in modern agricultural practices. The Hydroponics Training focused on soil-less farming methods, where participants learned to grow crops like lettuce, spinach, wine crops and herbs using nutrient-rich water. They were taught how to set up and manage different hydroponic systems, such as NFT (Nutrient Film Technique), grow bags, dutch buckets and DWC (Deep Water Culture), along with tips for maintaining the right environment to optimize plant growth. In the Hi-Tech Nursery Production module, attendees learned how to produce high-quality seedlings using advanced techniques. The training covered methods like plug tray production, grafting, and how to use controlled environments to grow healthy plants. The focus was on improving the quality of nursery plants for better market value. Participants left with practical skills they can apply to their businesses, helping them improve productivity, reduce costs, and meet the growing demand for high-quality crops and plants. By equipping entrepreneurs with cutting-edge knowledge and practical skills, IHT continues to play a pivotal role in transforming the agricultural landscape of India. These courses not only boost individual entrepreneurial success but also contribute to sustainable and profitable horticulture nationwide.



Participants during hands on training on training and punning of tomato crop

IHT Conducts Advanced Landscape Gardening Master Class for U.S. Embassy Gardeners

In November 2024, the Institute of Horticulture Technology (IHT) organized an Advanced Landscape Gardening Master Class specifically for gardeners from the U.S. Embassy. This specialized training was aimed at enhancing the skills of the embassy gardeners in creating and maintaining beautiful, sustainable landscapes. The training covered a wide range of topics, including modern landscaping techniques, garden design principles, and sustainable practices that are essential for creating eco-friendly and aesthetically pleasing outdoor spaces. Participants were trained in soil management, plant selection, irrigation systems, and the use of eco-friendly materials to design landscapes that are both visually appealing and environmentally sustainable. The hands-on sessions helped gardeners to learn practical skills in garden layout, plant arrangement, and maintenance, along with advanced techniques for managing different types of landscapes. Special emphasis was placed on seasonal planting, pest and disease control, and water conservation techniques, making the gardens more resilient and easier to maintain. IHT's training programs are part of its ongoing efforts to provide world-class horticulture education. This Master Class helped them to enhance their expertise,



Hands on training on modern gardening practices



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