K.R. MANGALAM UNIVERSITY
THE COMPLETE WORLD OF EDUCATION

Report on

Workshop on Protected Cultivation and Solar-Powered Farming Solutions

Date: 21 September 2023
Venue: Room No. 303, C Block and Agriculture Farm, K.R. Mangalam University
Event Type: Workshop
Mode of Activity: Hybrid
Resource Person: Dr. V. S. Pal (Founder & CEO, Pratham Organics)
Target Group: Students of SOAS and Local Community Farmers
Faculty Coordinators: Dr. Ambika Bhandari, Ms. Priyanshu Choubey, Dr. Deepak Kumar, Dr. Parita, Dr. Neha Sharma
Organized by: School of Agricultural Sciences, K.R. Mangalam University (Gurugram)
Number of Participants: 25

Introduction:

The School of Agricultural Sciences (SOAS) organized a "Workshop on Protected Cultivation and Solar-Powered Farming Solutions" on 21 September 2023 at Room No. 303 and the University's Agricultural Farm. The session, held in hybrid mode, aimed to equip students with practical knowledge of protected cultivation of high-value horticultural crops and raise awareness about solar-powered and energy-efficient technologies in farming.

The workshop emphasized the role of clean energy in sustainable agriculture, demonstrating how the integration of renewable energy, particularly solar power, with protected cultivation can enhance productivity, lower operational costs, and support climate-resilient farming aligned with SDG 7: Affordable and Clean Energy.

Objectives:

- To familiarize students with protected cultivation techniques for high-value crops.
- To promote the adoption of solar-powered solutions in modern farming systems.
- To build capacity for climate-smart and energy-efficient agriculture.

- To encourage entrepreneurship in sustainable horticulture and agri-technology.
- To indirectly benefit local farmers by promoting scalable, low-cost renewable energy practices.

Content:

The session began with a lecture by Dr. V.S. Pal, an expert in urban agriculture and sustainable horticulture, who outlined the advantages of protected cultivation, including controlled environments, reduced pest infestation, extended growing seasons, and efficient resource use through solar integration.

Dr. Pal highlighted how solar-powered irrigation and climate control systems can make greenhouse farming affordable and environmentally sustainable. He introduced recent advancements like vertical farming, fertigation systems, and automated solar-powered greenhouses, which can be applied not only in institutional farms but also in smallholder and community farming.

Participants learned nursery-raising techniques using cocopeat and perlite mixtures in polyhouses and explored micropropagation, soilless cultivation methods, and solar-powered drip irrigation. These skills are transferable to community-level agricultural settings, helping local farmers adopt energy-smart farming methods.

Hands-on Component:

At the university's agricultural farm, Dr. Ambika Bhandari led a practical training session on the plug tray technique for seed sowing. Participants were trained to:

- Prepare nutrient-rich potting mixes for efficient water and energy use.
- Sow seeds using optimal depth, spacing, and watering techniques.
- Utilize solar-powered environmental control for better germination and yield.

This low-cost, energy-efficient method supports community farming models and encourages local adoption of renewable energy technologies for protected cultivation.

Event Outcome:

- 25 students trained in protected cultivation and solar-powered farming applications.
- Knowledge and techniques transferrable to local farmers, supporting community adoption of clean energy practices.
- Strengthened awareness of energy-efficient greenhouse systems and climate-smart horticulture.

- Encouraged entrepreneurial and sustainable farming models in rural areas.
- Advanced the University's role in promoting SDG 7 (Affordable and Clean Energy), SDG 2 (Zero Hunger), and SDG 13 (Climate Action).

Conclusion:

The workshop effectively merged technical training with clean energy solutions, empowering students with the skills to apply these methods in both academic and community farming contexts. By demonstrating practical and affordable solar-powered techniques, the event also helped bridge knowledge between the university and local agricultural communities.

Dr. Ambika Bhandari thanked Dr. V.S. Pal for his insightful session and emphasized that energy-smart agriculture can transform rural livelihoods by reducing input costs and increasing productivity.

Students receiving hands-on training in protected cultivation techniques using solar-powered farming solutions

Practical training of students: Students learning energy-efficient and sustainable farming methods through plug tray sowing.