Department of Agricultural Engineering
BTech 2nd Sem Summer Training Report
16th May 2025 – 29th May 2025
Venue: Various Departments and Field Units, DEI Campus, Agra

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1. Introduction and Motivation

In alignment with the holistic development philosophy of Dayalbagh Educational Institute (DEI), the Department of Agricultural Engineering organized a Summer In-house Training for B.Tech (Agricultural Engineering) students from 16th May to 29th May 2025. This initiative aimed to bridge the gap between classroom learning and field applications through structured experiential learning.

The training was designed with the following motivations:

• Instill a sense of responsibility in students toward sustainable and self-reliant agriculture.

• Familiarize students with both modern and indigenous technologies in farm operations, renewable energy, and irrigation systems.

• Encourage hands-on practice to strengthen technical competencies.

• Promote eco-friendly and regenerative farming techniques through the use of organic inputs and natural resource conservation strategies.

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2. Program Objectives

The main objectives of the Summer Training Workshop aree to:

• Expose students to the working of a biogas plant and its utility in sustainable rural energy solutions.

• Offer experiential learning on Goshala (cattle shed) management and its integration with organic agriculture.

• Familiarize students with essential farm machinery and tools used in tillage, sowing, interculture, and harvesting operations.

• Demonstrate milk processing techniques and dairy value addition.

• Introduce solar power systems and their applications in agriculture.

• Train students in designing farm ponds and earthen dams for efficient water resource development.

• Provide exposure to GIS and GPS applications in land and water resource mapping.

• Demonstrate the preparation and field application of organic formulations such as Jeevamrut, Beejamrut, Panchagavya, and Vermicompost.
• Provide hands-on experience with drip irrigation systems, including component functions and maintenance procedures.

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3. Key Learning Themes

To deepen students' understanding of sustainable farming practices, the training incorporated a diverse range of experiential learning activities grouped under the following core themes:

1. Hands-on Exposure to Campus Agricultural Facilities
   Guided visits were conducted to DEI's Goshala, Dairy Unit, Weather Station, and Drip Irrigation Farms, allowing students to witness integrated farming operations in action.

2. Practical Learning in Sustainable Resource Management
   Training included the design and layout of farm ponds, solar-powered agricultural systems, and demonstration of biogas plant functioning.

3. Introduction to Organic Agriculture Practices
   Students participated in practical sessions on compost making, bio fertilizer preparation, and natural pest repellent formulation using locally available materials.

4. Field Mapping and Resource Assessment
   Resource mapping of the 100-acre university farm using GPS and GIS tools enhanced students' analytical and planning abilities.

5. Biodiversity Park Exploration
   Students explored and documented diverse plant species, fostering awareness about ecological balance and developing skills in plant taxonomy.

6. Irrigation System Familiarization
   Detailed orientation was provided on surface, sub-surface, drip, and sprinkler irrigation methods, including system components and efficiency techniques.

7. Integration of Renewable Energy in Agriculture
   The role of solar and biogas energy in farm operations was emphasized, showing students the future of low-carbon agriculture.

8. Idea Incubation for Future Projects

   The training encouraged students to identify areas for future capstone projects through practical exposure and critical thinking exercises.

9. Holistic Motivation and Mental Wellness

   Nature-based activities and outdoor learning sessions were integrated to reduce academic stress, build teamwork, and instill a connection with nature.

10. Fostering Future Brand Ambassadors of Sustainable Farming

    Students gained a sense of purpose and direction toward becoming advocates of eco-friendly agriculture and rural innovation.

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4. Highlights of the Workshop

• Biogas Plant Visit and Demonstration: Live demonstration of anaerobic digestion, biogas generation, and its utility in cooking and lighting.

• Goshala Interaction: Students learned about indigenous cow breeds, ethical cattle care, and preparation of cow-based bio-inputs.

• Farm Machinery Demonstration: Operation and utility of tillage implements, seed drills, weeders, and harvesting tools were explained practically.

• Milk Processing Lab: Students observed pasteurization, flavored milk production, and hygienic packaging techniques.

• Solar Power Unit: Explanation of solar panel installation, inverter systems, and their use in powering water pumps and lights.

• Farm Pond and Earthen Dam Design: Students drafted designs, estimated excavation volumes, and studied siting criteria.

• Organic Input Preparation: Practical experience in preparing Jeevamrut, Beejamrut, Panchagavya, and Vermicompost.

• Drip Irrigation System Practice: Identification of drip components, system layout planning, and troubleshooting of common blockages.

• Field Mapping with GPS: Digital resource mapping exercises provided spatial insights for land and water planning.

5. Student Testimonials

"This training gave me the confidence to design a biogas unit on my family farm. The practical experience was eye-opening."
— **Rasika Sharma, 1st Year**

"Seeing the milk processing setup in DEI helped me understand how farmers can add value to their produce instead of selling raw milk."
— **Gagan, 1st Year**

"Learning to prepare Jeevamrut and Panchagavya taught me how simple, cost-effective methods can improve soil health and reduce chemical use."
— **Manthan, 1st Year**

"The session on farm pond design helped me realize how water harvesting structures can be critical in drought-prone regions like mine."
— **Sumit Diwakar, 1st Year**

"I now understand the working of solar power systems and how they can be integrated into farming operations."
— Saloni Kumari, 1st Year

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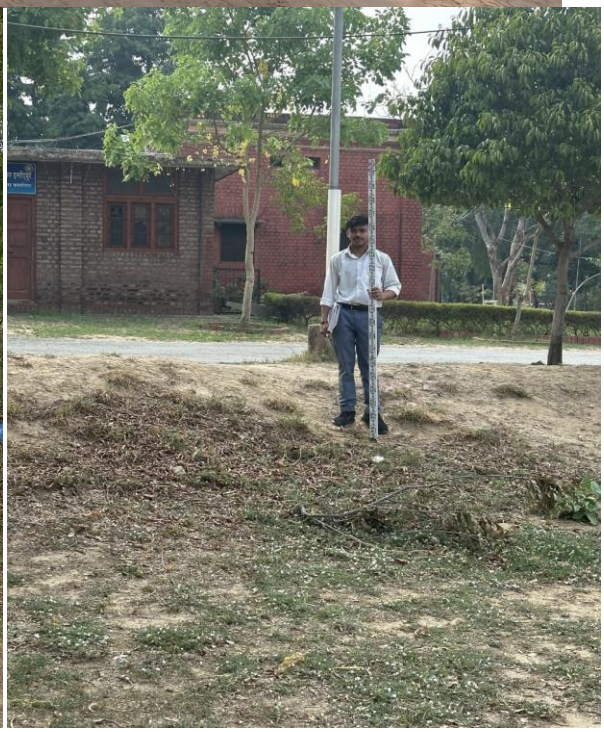
6. Conclusion

The Summer In-house Training provided students with valuable exposure to real-world applications of agricultural engineering principles. It effectively nurtured technical competencies, environmental awareness, and personal motivation. The Department of Agricultural Engineering at DEI remains committed to equipping students with skills aligned with sustainable rural development.

Plans are in place to document field models, practical outcomes, and project ideas generated during this training for future student reference, institutional outreach, and demonstration purposes.

Glimpses' of Training



1. Visit of Anupam Upvan and Mapping of the area

2.Survey work for design of Earthen Dam

3. Preparation of Vermi Compost

4. Field Preparation for research work for Kharif season

5. Threshing of Wheat in Dayalbagh Satsang Sabha Farm

6.Visit of Solar Agro Farm

7. Preparation of Panchagavya (organic plant growth regulator)

8. Classroom session on Medicinal and Aromatic Plants

9. Plantation work DEI Farms