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Report on Field Visit to Gharda Agriculture Resource Centre (GARC)

Subject: Waste Management

Date: 04/10/2025

Department: Chemical Engineering (Second Year)

Institute: Gharda Institute of Technology, Lavel

Location of Visit: Gharda Agriculture Resource Centre (GARC), Lavel, Maharashtra

Objective of the Visit

The educational visit was organized as part of the curriculum requirement for the subject of Open Elective course-1 Waste Management to provide students with practical exposure to sustainable methods of organic waste management through Composting and Vermicomposting techniques. The visit aimed to bridge the gap between theoretical concepts and real-life industrial/agricultural applications.

About Gharda Agriculture Resource Centre (GARC)

GARC is a research-oriented initiative under Gharda Chemicals Ltd., focused on sustainable agriculture practices, organic farming, soil health management, and innovative agricultural technologies. The centre is equipped with facilities for composting, vermicomposting, biofertilizer development, and organic cultivation trials.

Activities Conducted During the Visit

a) Orientation Session

- Students were welcomed by the staff and given a brief overview of GARC's mission and ongoing projects.

- A presentation on organic waste management was delivered, focusing on environmental impacts, need for composting & Vermicomposting, and relevance to chemical engineering.

b) Composting & Vermicomposting Unit Visit

- Students observed the aerobic composting process using agricultural waste like crop residues, cow dung, and kitchen waste.

Also, students were introduced to Eisenia fetida (red wigglers), the main earthworm species used.

- A live demonstration of bedding preparation, feeding, and moisture control was provided.
- Discussion included nutrient content of vermicomposting and its benefits for soil health and crop yield.
- Students learned how vermi-wash, a nutrient-rich liquid byproduct, is collected and used as bio-fertilizer.

c) Interaction and Q&A

- Students interacted with the GARC staff and researchers to clarify doubts.
- Topics such as Duration required for vermicomposting, quantity of manure formation, C:N ratio, compost maturity indicators, and pathogen destruction in composting were discussed.

4. Key Learning Outcomes

- Practical understanding of biological waste treatment methods.
- Application of chemical engineering principles such as mass balance, reaction kinetics, and process control in waste management.
- Insight into the role of microorganisms and aerobic/anaerobic conditions in composting.
- Awareness of sustainable agriculture and the importance of organic fertilizers in reducing chemical inputs.

5. Conclusion

The visit to Gharda Agriculture Research Centre was highly informative and aligned with the academic goals of the Waste Management course. It provided valuable exposure to environmentally sustainable practices and highlighted the role of chemical engineers in developing and optimizing waste-to-resource technologies. Such field visits enhance student engagement and deepen understanding beyond the classroom.

6. Acknowledgement

We extend our sincere thanks to the staff and researchers at GARC for their warm hospitality and insightful sessions. We also thank the Department of Chemical Engineering, GIT, and the faculty coordinators for organizing the visit successfully.

7. Photos and Annexures *(Attach if applicable)*


GPS Map Camera
Lavel, Maharashtra, India
Jfw8+34h, Bouddh Wadi Rd, Lavel, Maharashtra 415708, India
Lat 17.645783° Long 73.465203°
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