SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE

(AUTONOMOUS)

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SUNDARAKKOTTAI, MANNARGUDI-614 016.

TAMILNADU, INDIA.

PG AND RESEARCH DEPARTMENT OF MICROBIOLOGY

BIOFARM/ TROPICAL BIOSCIENCE PRIVATE LTD, COIMBATORE

27.01.2025-30.01.2025

PG and Research Department of Microbiology organized three days (27.01.2025-30.01.2025) industrial visit and Training on Bioentreprenurship and Product Development for II M.Sc., Microbiology students at Biofarm & Tropical Bio science Private Ltd, Coimbatore. Industrial visits provide the students with an opportunity to learn practically through interaction, working methods and employment practices. This also serves as a relation building between institute and industry.

Day -I

Director Dr. S.Anilkumar given brief introduction about the Company, and their Bio Products. He Clearly explained about the need for the development of agricultural products, farmers problems, environmental pollutions and role of microbes in waste degradation.

In the next session he has demonstrated the production of VAM spores using root organ culture in tissue culture medium. We have seen microscopic observation of VAM sopres, infection thread – fungal hyphae. He also explained the different type of formulation of VAM spores using vermiculite and lignite carrier material.

In Afternoon session Technician R.Yoganantham explained the screening method for the selection of Biofertilizer organism and Mass multiplication method. Then we have entered into Large scale fermentation unit of NPK Biofertizers namely *Rhizobium, Azospirillum,Pseudomonas, Azotobacter* and *Bacillus.* In this regard recovery and field application of biofertilizer was also demonstrated by in charge of fermentation unit.

Day -II

In second day, Dr.V.Prasad explained the molecular techniques such as the amplification of DNA , Agarose gel electrophoresis and gene cloning . T.Gopalakrishnan demonstrated the Bioinsecticide production and Protein separation by SDS-PAGE. We have seen Bt toxin – CRY gene in SDS PAGE using gel documentation system. Next we have visited analytical unit for the separation of gibberellic acid and gluconic acid. In this unit, the demonstration of Gaschromatography (GC) and High Pressure Liquid Chromatography(HPLC) were performed.

In Afternoon session of the second day, Technician Mr. Yoganantham demonstrated the seed coating method for the biofertilizer application using maize seeds. We have seen pot and field trial plants for quality testing of biofertilizer and bioinsecticides.

Day -III

Third day, we went to Fungal culture production unit. In this unit, Mr.Rajapradeep explained the method for the production of biocontrol agents. Fungal cultures are produced and exported

to foreign countries are used as biocontrol agents namely *Trichoderma, Paecilomyces* and *Verticillium.* We have seen fungus fermentation using cheap raw material ragi and rice as the substrate.He also demonstrated the spore production, harvesting and formulations.

In the last session we have seen Probiotics fermentation. Dr. C, Socrates clearly explained the cultural characteristics of *Lactobacillus* and Bacillus. He also demonstrated the Upstream and Downstream process in fermentation technology. We have seen various fermentation unit, harvesting methods such as centrifugation and filtration methods, centrifuges, cell extractor and purifier.We also visited chemistry lab. They also demonstrated nitrogen estimation Kjeldhal method, metal analysis using Atomic Absorption Spectrophotometer.

Outcome of this Industrial Visit

- It helps the students gain first hand information regarding functioning of industry
- Providing an opportunity to plan, organize and engage in active learning experiences both inside and outside the classroom
- Providing an insight into the real working environment of the industry
- Helps them to see their future place in the working world
- They learned about the products development and quality control of finished products.
- They learned how the subjects are correlated with industries.