



A REPORT ON STUDENTS SEMINAR

AT DEPT. OF MICROBIOLOGY

THEME OF THE EVENT: The Department of Microbiology at Asutosh College organized a student seminar aimed at fostering academic discussion, knowledge sharing, and research insights among the students. The seminar was organized as part of the department's efforts to enhance students' presentation skills, deepen their understanding of microbiology topics, and encourage collaborative learning. The event was divided into group presentations, with each group covering a specific topic related to microbiology and modern biology.

ACADEMIC SESSION: 2024-2025

DATE: 08 May 2025

VENUE: Dept. of Microbiology, Asutosh College

OBJECTIVE/ PURPOSE: The seminar provides an imperative platform for students to enhance their understanding of microbiology and develop essential academic and communication skills. It enlightened students and highlighted the importance of thorough research, clear presentation, and the ability to engage with complex topics. The event also demonstrated the diversity of microbiological research, with each group offering unique and novel insights into various facets of the field.

RESOURCE PERSON: None

ORGANIZERS: Following Faculties of Dept. of Microbiology, Asutosh College

Dr. Kuntal Kanti Goswami, Assistant Prof. & HOD
Dr. Pranab Kumar Das, Assistant Prof.
Dr. Gajendra Nath Maity, Assistant Prof.
Dr. Arpita Mondal, Assistant Prof.

Dr. Sankar Chandra Basu, Assistant Prof.

TARGET PARTICIPANTS: Semester II students of the Department.

ATTENDANCE SHEET:

Students' Seminar
Date - 8.05.2025

Signature of faculty members: —

1. Anpita Mandal
2. Gyanendra Nath Maity
3. Pranabkumardas
4. Sankar Chandra Basu

Signature of students participants: —

Group D

- 1) Bhaswati Dhara
- 2) Abhisikta Biswas
- 3) Sayak Maity
- 4) Kastor Mondal
- 5) Bibhas Musumee
- 6) Sayak Biswas

Group E

Group - A

- 1) Soumya Paul
- 2) Zinat Anze
- 3) Samyita Banerjee
- 4) Rupenjoy Roy
- 5) Harsh Agrawal

Group - B

- 1) Ankita Narain
- 2) Astomi Adharyee
- 3) Rishika Das
- 4) Abana Das
- 5) Bidipta Das
- 6) Srijani Chatterjee

Group - C

- 1) Snehasish Chakraborty
- 2) Hansita Upadhyay
- 3) Rupsha Halder Saha
- 4) Dipayan ROY
- 5) MD Sayd Saikat Rahman
- 6) Priyam Mukherjee

Group A

- Mitasser Sen
- Aditya Halder
- Piyushan Ghosal
- Soumyadeep Das
- Smahan Bhanara
- Tilak Maity



BRIEF REPORT ABOUT THE EVENT/ PROGRAMME:

Seminar Structure

The students were divided into five groups, each responsible for preparing and presenting a research-based seminar on a microbiological subject. The seminar was organized in a competitive format, where each group was given an opportunity to present their findings and engage with the audience through a Q&A session.

Group B's Presentation (1st Place)

Group B stood out with their well-structured and informative presentation on the use of probiotics as a biological tool to combat mycotoxins. Their topic highlighted an important intersection between food microbiology and health.

Key Points Covered:

- **Introduction to Mycotoxins:** Explanation of what mycotoxins are, their sources (primarily fungi such as *Aspergillus*, *Fusarium*, and *Penicillium*), aflatoxins, and the health risks they pose through contaminated food products.
- **Health Impacts:** Detailed discussion on the toxicological effects of common mycotoxins like aflatoxins, ochratoxins, and fumonisins, including carcinogenicity, immunosuppression, and organ damage.
- **Probiotics as a Solution:** The core of the presentation focused on how specific probiotic strains (*Lactobacillus*, *Bifidobacterium*, etc.) can bind, degrade, or inhibit the absorption of mycotoxins in the gastrointestinal tract.
- **Mechanisms of Action:** Explored how probiotics interact with mycotoxins—through adsorption to cell walls, enzymatic degradation, and gut microbiota modulation.
- **Applications and Future Scope:** The potential of probiotic-based detoxification in the food industry, especially in dairy and fermented products, as well as future directions for research and clinical validation.

Their use of diagrams, real-world examples, and supporting scientific data enhanced the clarity and impact of their talk. Group B effectively answered questions from both the audience and the panel, demonstrating a strong grasp of the topic



Other Group Presentations – Brief Overview

- **Group A: (jointly second)**

This group explored the rise of plant-based and lab-grown meat alternatives- Vegan Meat, discussing the role of microbiology in developing these products and their impact on health and sustainability.

- **Group C: (jointly second)**

Group C examined the factors that influence bacterial growth, including temperature, pH, and nutrient availability, and discussed its implications in both medical and industrial microbiology.

- **Group D: Topic- Microbial Puppeteers**

This presentation focused on microorganisms that influence host behavior, such as parasitic manipulation and symbiotic relationships, illustrating the complex interactions between microbes and their hosts.

- **Group F: CRISPR Gene Editing- molecular scissors**

Group F provided an overview of CRISPR technology and its applications in genetic research, highlighting its transformative potential in medicine as cancer biology, agriculture, and biotechnology.

EXPECTED OUTCOME:

The expected outcome of the seminar was to enhance students' research, presentation, and teamwork skills by engaging them in the exploration of contemporary microbiological topics. Through their group presentations on subjects like probiotics, CRISPR, bacterial growth, and microbial manipulation, students were expected to deepen their understanding of emerging research areas, improve their ability to communicate complex scientific concepts, and foster curiosity for further study in microbiology. The event also aimed to encourage academic collaboration and provide valuable feedback, contributing to the students' overall academic and professional development.

GEO-TAGGED PHOTOGRAPHS:







Kolkata, West Bengal, भारत

Microbiology Department, Basanta Bose Rd, Jatin Das Park,
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Kolkata, West Bengal, India

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MATHEMATICS

LOG PHASE

Calculation of the growth rate constant

Let N_0 = the initial population constant
 N_t = the population number
 n = the number of generations in time t

For population reproducing by binary fission
 $N_t = N_0 \times 2^n$

Solving for n , the number of generations, when all logs ratios are to the base 10.

$\log N_t = \log N_0 + n \cdot \log 2$, and
 $n = \frac{\log N_t - \log N_0}{\log 2} = \frac{\log N_t - \log N_0}{0.301}$

The growth rate constant (k) is the number of generations per unit time (t). Thus
 $k = \frac{n}{t} = \frac{\log N_t - \log N_0}{0.301 \cdot t}$

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