



# **BOTANY**

# **NEWSLETTER**

**Department of Botany**  
**Durgapur Government College**

# BOTANY

NEWSLETTER

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### ISSUE 2 (JUNE 2023)

Learning is a continuous process from the minute we are born, until we die. This newsletter provides an excellent platform to show case the achievement of the department of botany, Durgapur Government college and the excellent journey of the young mind of our department nurturing the nature.

Our mission should be to develop a dais of excellence that is committed to attracting and retaining diverse talent; creating a collaborative environment open to the free exchange of ideas, where learning, creativity, innovation can flourish

# Walk with scholars

DBT STAR  
COLLEGE  
SCHEME  
SPONSORED  
INSTITUTE  
VISIT 2023



## Event details

Date : 08/02/2023

Time : 11:00 am

Place : NIT Durgapur,  
Mahatma Gandhi Road,  
Durgapur, West Bengal -  
713209

Participants : Student of  
1st year, 2nd year and  
3rd year Hons.,  
Department of Botany,  
Durgapur Government  
College

Assisted by : Dr. Prasanta  
Saha, Dr. Subhojit Ojha,  
Dr. Sandipan Ray,  
Mr. Anish Bhattacharya

## Out of the box

A paradigm shift from academic to practical learning was seen in the education sector. It's critical for pupils to have a competitive advantage to thrive in today's world. Diverse service learning opportunities on educational excursions are advantageous to the community as well as the students. These "service learning or educational trips" offer students the chance to build interpersonal, organizational, and civic engagement skills with systematic planning and student feedback

The institutional tour is planned and organized with the following goals in mind

**Building Confident Individuals**

**A smoother transition**

**Bridging the gap**

## Know me:

National Institute of Technology Durgapur (also known as NIT Durgapur or NITDGP), formerly known as Regional Engineering College, Durgapur (also known as REC Durgapur or RECDGP), is a public technical university in the city of Durgapur in West Bengal, India. Founded in 1960, it is one of India's oldest technical universities. It is located on a campus of 187 acres the Government of India and the Government of West Bengal aimed to advance engineering education in the country and to foster national integration



### Visit highlight

- Visit to 17 laboratories
- Interaction with faculties
- Knowledge exchange with scholars
- Demonstration of instruments

## Purpose:

Biotechnology is a broad range of technologies that employ living organisms or parts of them to make diverse products. Biotechnology is most important for its implications in health and medicine. Now a days Biotechnology can help address many global problems, such as food security, energy security, climate change, aging society, infectious diseases. Thus it is not only important but also interesting. Laboratory experiences may enhance student understanding of specific scientific facts and concepts and of the way in which these facts and concepts are organized in the scientific disciplines. Labs provide students with various opportunities to learn and experiment, which plays a crucial role in the ongoing intellectual development of students. Thus lab visit is an important activity

# Welcome address

Student of 1st year, 2nd year and 3rd year Hons., Department of Botany, Durgapur Government College has participated in the visit assisted by assistant professors Dr. Prasanto Saha, Dr. Subhojit Ojha, Dr. Sandipan Roy, Mr. Anish Bhattacharya. The students of Botany Department, Durgapur Government College, gathered in the college campus at 10:30 am morning, 8th February 2023 for an educational tour to NIT Durgapur. This trip was organized by the Professors of Botany Department in growing aspects of biotechnology. This excursion would encompass visit to laboratories working on plant biotechnology, molecular biology and microbiology, that forms a major part of our present curriculum. Now a days, biotechnology is not only is very much needed. The morning became more cheerful and enthusiastic when we reached there at 11:00 am. First we were happily welcomed & attended by Dr. Debjani Dutta, HOD of Biotechnology Department followed welcome addressed by Dr. Sudip Sekhar Mukhopadhyay. We got introduced to the biotech department of NIT and also got an idea about various labs. They had total 17 labs (e.g. Tissue culture lab, Molecular Plant Pathogen Interaction lab, Microbial biotechnology and Environmental Toxicology lab, Bioinformatics lab etc). He gave a brief account of Dr. Sudip Chatterjee's work on light signalling pathways in *Arabidopsis* sp. Seed



# Lab visit



Explained by Riya Basu:

Skotomorphogenesis is characterized by an etiolated appearance of seedlings with a fast-growing hypocotyl or epicotyl, presence of an apical hook, and small and closed cotyledons or primary leaves.

Photomorphogenesis is a developmental process in plants in which the incident light determines the growth of the plant. During this process, the pattern of plant growth is controlled by the spectrum of light available to the plant as energy



**Plant pathogen interaction By Mousumi Biswas :**

Magnaporthe oryzae , Ascomycetes fungus,



causes one of the most destructive diseases of cultivated rice in the world.

Working way: Understand the Mechanism of Pathogenesis. Making the Transgenic variety of this fungus. Empower the resistance gene.

**Microbial treatment of waste management by Gourav Singh (Microbial biotechnology and environmental Toxicology):**

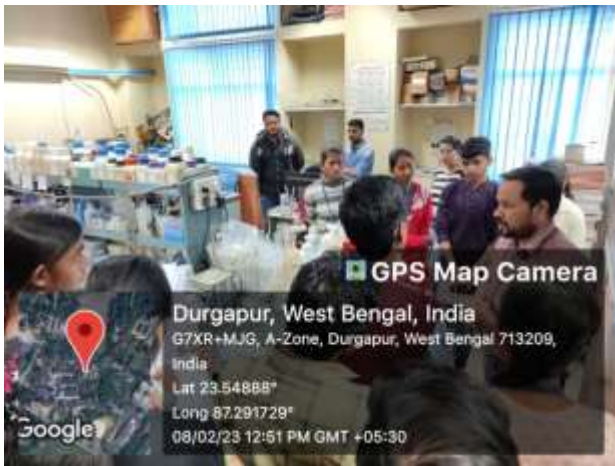


The waste generated in sugarcane industry is processed and reuse with the help of microorganisms. Biofuel from marine microorganisms: Extraction of lipid by Bligh and Dyer method.

Transfer lipid

Checking lipid profile by Gas chromatography.

## Gas chromatography explained by Sudhir Kumar Buri:



Principle of gas chromatography: The sample solution injected into the instrument enters a gas stream which transports the sample into a separation tube known as the “column.” (Helium or nitrogen is used as the so-called carrier gas.) The various components are separated inside the column. The detector measures the quantity of the components that exit the column. To measure a sample with an unknown concentration, a standard sample with a known concentration is injected into the instrument. The standard sample peak retention time (appearance time) and area are compared to the test sample to calculate the concentration

**Biswajit Singh and Sneha Khatar, Scholar of durgapur NIT showed us Human embryonic kidney cell in inverted microscope**



**Biswajit Singh also demonstrated the use of different microscopes ( Confocal and Fluorescence)**

## Instrument demonstrated in NIT



Laminar air flow



SDS PAGE set up



Thermocycler



Gas chromatography



# knowledge exchange

DBT STAR COLLEGE SCHEME SPONSORED ONE DAY NATIONAL SEMINAR ON 'IMPROVEMENT IN THE STATE OF ART KNOWLEDGE ON PLANT SCIENCES'



**Government of West Bengal**

**Durgapur Government College**  
(Accredited by NAAC with "A" Grade)

J.N. Avenue, Durgapur, District- Paschim Bardhaman,  
West Bengal, Pin-713214

**DBT Star College Scheme Sponsored**

**ONE DAY NATIONAL SEMINAR ON**  
**'Improvement in the State of Art Knowledge**  
**on Plant Sciences'**

*Organized by*

**Department of Botany**

*In collaboration with*

**Internal Quality Assurance Cell**  
Durgapur Government College



**16<sup>th</sup> February 2023; 10:30 am**

Seminar will be in blended mode (online and offline)

FREE REGISTRATION LINK : <https://forms.gle/7VJJU9xdaUxJSBGB8>



8777342491, 9836983070



[dbt.seminar@gmail.com](mailto:dbt.seminar@gmail.com)

The Department of Botany and the Internal Quality assurance cell, Durgapur Government College organized a one day National seminar on 'Improvement in the State of Art Knowledge on Plant Sciences' on February 16th, 2023. The program started at 10:30 am on with the welcome address by Dr. Debnath Palit, Principal, Durgapur Government College. This was followed by the inaugural speech by Dr. Avijit Mandal, coordinator IQAC. Subsequently, the note of greetings was delivered by Dr. Ashoke Bhattacharya, Head of the Department of Botany, Durgapur Government College. Dr. Roli Shukla Roy, coordinator DBT Star College Scheme, Durgapur Government College, addressed the audience about the mission and vision of the DBT Star College Scheme and wished success of the event

characterization and documentation of the specimens. Thus, proper description of plant forms through such seminar proves beneficial for students and young researchers.

- Modern horizons of Botany in the area of plant biotechnology: Focus on plant-based products and their appropriate utilization for betterment of mankind is the need of the hour. Hence, discussions on modern research developments on plant biotechnology from transgenesis to genome editing broadens the horizon of young students and budding researchers and gives directionality to future research benefitting mankind



Following successful registration by all participants which included largely students of all Semesters of Botany, Zoology and Faculties of various Departments of Durgapur Government College, the seminar began with the aim to disseminate knowledge about various contemporary developments in the field of Plant Sciences. On this day, the plenary session had two eminent speakers, Professor Swapan Kumar Datta, Honorable Vice Chancellor, Biswa Bangla Biswabidyalay and Professor Sudhendu Mandal, Advisor Academic and Administrative, Central University of Odisha, Koraput

## OBJECTIVES OF THE WEBINAR

- A holistic overview of the study of Botany and its prospects: The great diversity of flora can be studied only after proper identification,



**Inaugural address by Dr. Debnath Palit, Principal, Durgapur Government College (left) and address by Dr. Roli Shukla Roy, Coordinator DBT Star college scheme, Durgapur Government College (right)**



**Felicitation of Professor Swapan Kumar Datta, Honorable Vice Chancellor, Biswa Bangla Biswabidyalay, by Dr. Debnath Palit, Principal, Durgapur Government College.**

The plenary session began with the lecture of Professor Swapan Kumar Datta in offline mode. Prof. Datta highlighted the necessity of crop improvement in the present day especially in order to meet the problem of food security of mankind. He emphasized on the various methods of crop improvement from classical breeding to transgenesis and finally genome editing technology. The detailed deliberation of Prof. Datta encompassed the various advantages, hindrances and possibilities of



**Plenary lecture by Professor Swapan Kumar Datta**

the different techniques of crop improvement. An emphasis on the innumerable possibilities of designer crop



**Audience eagerly listening to Prof. Datta's deliberation in both online (left) and offline (right) mode.**

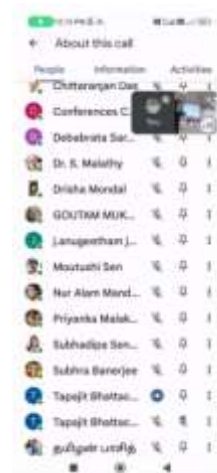
preparation by transgenic technology and genome editing tools, in order to meet up to the future demands of mankind, was explicitly addressed by him. An interactive session took place at the culmination of Prof. Datta's lecture and various students put up their questions related to the deliberation, which was very well answered and explained by Prof. Swapan Kumar Datta.

Subsequently, the second plenary lecture began in the online mode, with the deliberation of Prof. Sudhendu Mandal, Advisor Academic and Administrative, Central University of Odisha, Koraput. In an enlightening lecture, Prof. Mandal shed light on Indian scientific heritage, emphasizing on the utility of medicinal plants. He highlighted how the ancient scripts on Ayurveda like Charaka and Sushruta Samhitas were the foundations on



**Prof. Sudhendu Mandal, delivering his lecture in online mode.**

which modern day herbal medicine is developed. Prof. Sudhendu Mandal also mentioned that alongside a thorough knowledge on the morpho-physiology, anatomy and pharmacology of the medicinal plants, application of plant tissue culture and similar modern biotechnological techniques would prove to be useful for propagation of the medicinal plants and obtaining their active principle without endangering the natural resources. At the conclusion, the vote of thanks was delivered by Dr. Subhojit Ojha, Assistant Professor, Department of Botany, Durgapur Government College



Attendees in online mode (left) and offline mode (right), listening to the deliberation of Prof. Sudhendu Mandal.