Undergraduate Students Research Initiatives
Department of Botany 2023 2024

2023 2024 presentation by students of the Department of Botany at National/International Seminars with faculty members as mentors/corresponding authors.

1. **Papers presented as posters at an International Seminar on 15th July, 2023**

   Ten Botany Honours students from the Department of Botany participated in the International Seminar on "Recent Developmental Trends on Biological Research" held at Acharya Prafulla Chandra College on 15th July, 2023. It was organised by the Departments of Botany & Zoology in collaboration with the IQAC of Acharya Prafulla Chandra College. The students showcased their research skills through 3 (three) poster presentations, each presentation was mentored by one or two faculty members. An oral presentation was given by Dr. Mitu De. Two of the faculty, Dr. Mitu De and Dr. Suptotthita Choudhury participated in the International Seminar.


International Seminar on 'Recent Developmental T
in Biological Research'
Organized by
Department of Zoology, Acharya Prafulla Chandra College
&
Department of Botany, Acharya
In Collabo
IQAC of Acharya Pr
Prof. Jayanta Das
Department of Health and
Natural Sciences,
Memorial University, USA
Electronic nicotine delivery
systems (ENDs) initiate
reprogramming of lung stem cells
Venue: APC College, New Barrackpore
Prof. V
Miami Dade
Pardon, and W
U
Topics: Cancer he
learning and ap
techn
Punarbasu
Associate Pro
rtment of Enviro
niversity of Calcu
Topics: Sc
ical Research
arctic Pr

List of presentations by undergraduate students (as Poster Presentation).

1.**Title of paper:** Comparative analysis of vegetables and fruits availability in urban, suburban and rural market areas *vis-à-vis* indigenous food systems and their nutraceutical value by survey and documentation: Findings of a student research project.

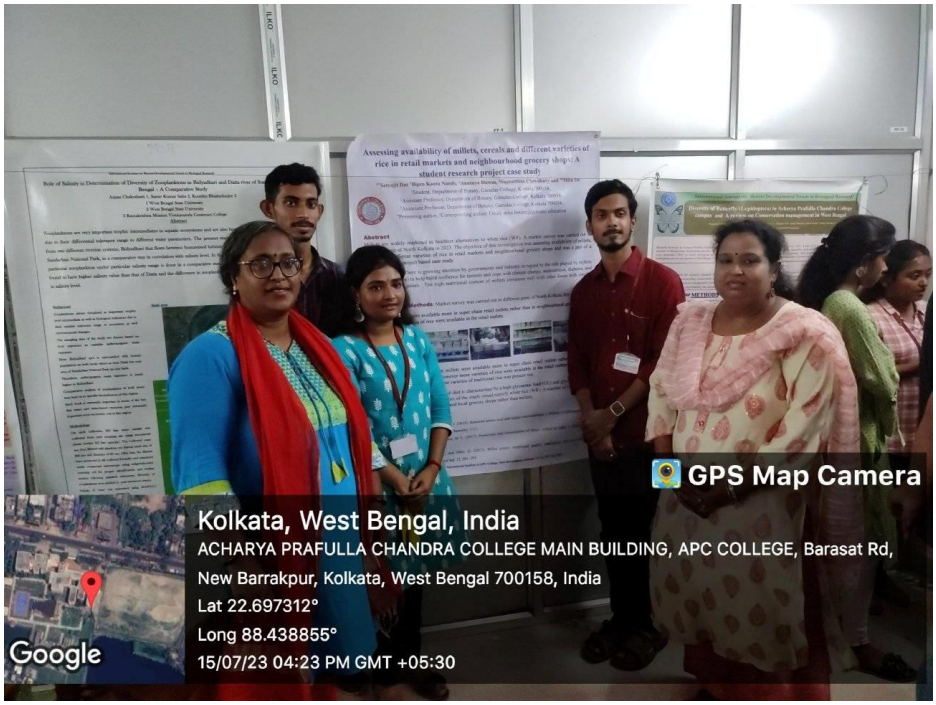
Names of the student presenters: Megha Das Priyanka Sen, Sovnom Suriya,

Faculty as mentor: Dr. Goutam Kumar Pahari and Mitu De

2.**Title of paper:** Assessing availability of millets, cereals and different varieties of rice in retail markets and neighbourhood grocery shops: A student research project case study

Names of the student presenters: Satyajit Das Bipro Kanta Nandy, Anasuya Biswas,

Faculty as Mentor: Dr.Suptotthita Choudhury and Dr. Mitu De



3.**Title of paper:** Undergraduate student research initiative: Assessment of urban avenue tree population in selected urban areas of North Kolkata.

Names of the student authors: Trishita Saha Asmita Paul, Shuvajit Mondal, Angana Das

Faculty as corresponding author: Dr. Mitu De

Oral presentation by Faculty at the International Seminar on 15th July, 2023.

Title of paper: Use of ClustVis: a web tool for visualizing clustering of multivariate data for validating the Evolution of traditional rice (*Oryza sativa* L.) varieties by artificial selection.

Faculty: Dr. Mitu De

Group photo of the students of Gurudas college along with their mentors and the faculty members of the organizing departments

5. Semester VI Botany Hons student, Priyanka Sen, participated in a poster competition at Shri Shikshayatan College on 24th May, 2024.

A. Poster presentations by students

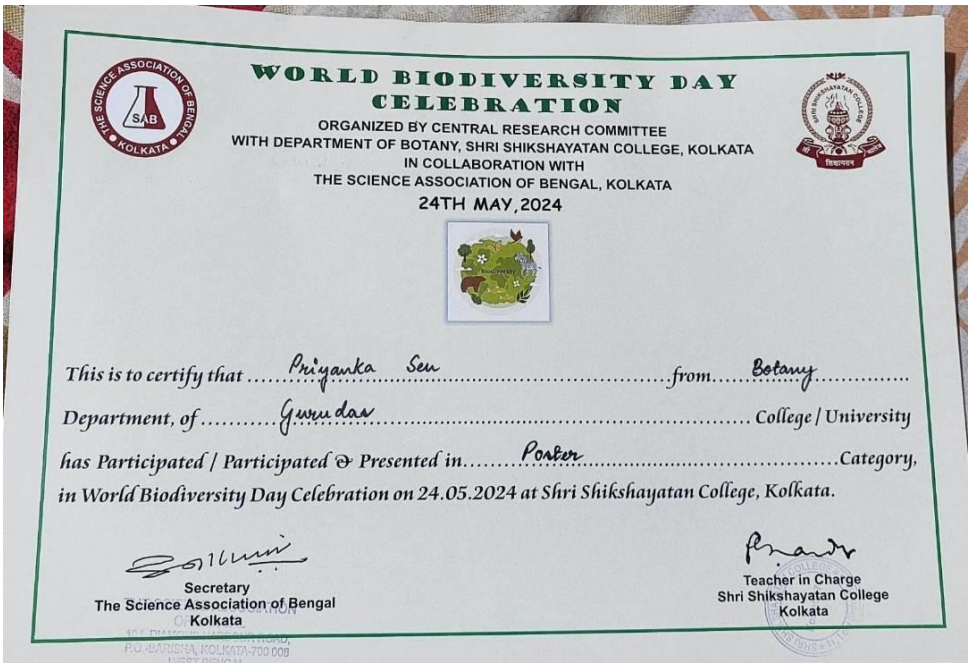
Date of the seminar: 24th May, 2024

Name of seminar: World Biodiversity Day Celebration

Details of organisers: Central Research Committee with the Department of Botany, Shri Shikshyatan College, Kolkata in collaboration with The Science association of Bengal, Kolkata.

1.**Title of paper:** Tribes in Conservation of Nature

Names of the student presenter: Priyanka Sen,



WORLD BIODIVERSITY DAY CELEBRATION

ORGANIZED BY CENTRAL RESEARCH COMMITTEE
WITH DEPARTMENT OF BOTANY, SHRI SHIKSHAYATAN COLLEGE, KOLKATA
IN COLLABORATION WITH
THE SCIENCE ASSOCIATION OF BENGAL, KOLKATA
24TH MAY, 2024

This is to certify that Priyanka Sen from Botany
Department, of Gurudas College / University
has Participated / Participated & Presented in Poster Category,
in World Biodiversity Day Celebration on 24.05.2024 at Shri Shikshayatan College, Kolkata.

Secretary
The Science Association of Bengal
Kolkata

Teacher in Charge
Shri Shikshayatan College
Kolkata

Participation of Undergraduate students from the Department of Botany in Workshops in the Academic Session 2023 - 2024

1. **Three students of Botany Honours**, Sumit Saha, Harsh Kumar and Noor Mohamad of Gurudas College, actively participated in a comprehensive **Skill Development Workshop** on **"Mushroom Cultivation Techniques and Entrepreneurial Prospects"** organized by the Department of Botany, South Calcutta Girls' College held on **12th October, 2023.** This engaging workshop aimed to equip students with practical knowledge and skills in mushroom cultivation, while also exploring its entrepreneurial potential. The workshop featured expert lectures and hands-on training sessions, where students learned about various aspects of mushroom cultivation, including substrate preparation, spawn production, and environmental control. The resource persons shared valuable insights into the commercial cultivation of mushrooms, highlighting the opportunities and challenges in this field. As a token of appreciation for their active participation, the organizers presented certificates to the participating students, formally recognizing their involvement and completion of the workshop. This certification will undoubtedly enhance their academic credentials and provide a competitive edge in their future endeavours. The participation of Botany Honours students in this workshop reflects their enthusiasm for experiential learning and their commitment to acquiring skills that can be applied in real-world scenarios. The experience gained from this workshop will undoubtedly enrich their academic pursuits and prepare them for future careers in botany, agriculture, and related fields.

South Calcutta Girls' College

72, Sarat Bose Road, Kolkata-700 025

Skill Development Workshop on

Mushroom Cultivation Techniques and Entrepreneurial Prospects

Organized by

Department of Botany, South Calcutta Girls' College

Certificate of Participation

This is to certify that Harsh Kumar Ray of Gurudas College has participated in the Skill Development Workshop on Mushroom Cultivation Techniques and Entrepreneurial Prospects organized by the Department of Botany, South Calcutta Girls' College, Kolkata on October 12, 2023.

Dr. Rehana Khatun
Coordinator, IQAC
South Calcutta Girls' College

Dr. Soma Chanda
HoD, Department of Botany
South Calcutta Girls' College

Prof. (Dr.) Aparna De
Principal & Secretary
South Calcutta Girls' College

2. **Participation of Botany Hons. Students in the Workshop on IPR on 12th July, 2023**

Twenty students of the Department of Botany in the Workshop on IPR on 12th July, 2023 which was organised by the IPR Cel , IQAC and the Career Counselling Cell of Gurudas College.

GURUDAS COLLEGE
ESTD. 1994

WORKSHOP ON IPR

Organised by

IPR COMMITTEE, IQAC, & CAREER COUNSELLING CELL, GURUDAS COLLEGE

Certificate of Participation

This certificate is presented to

Harsh Kumar Roy

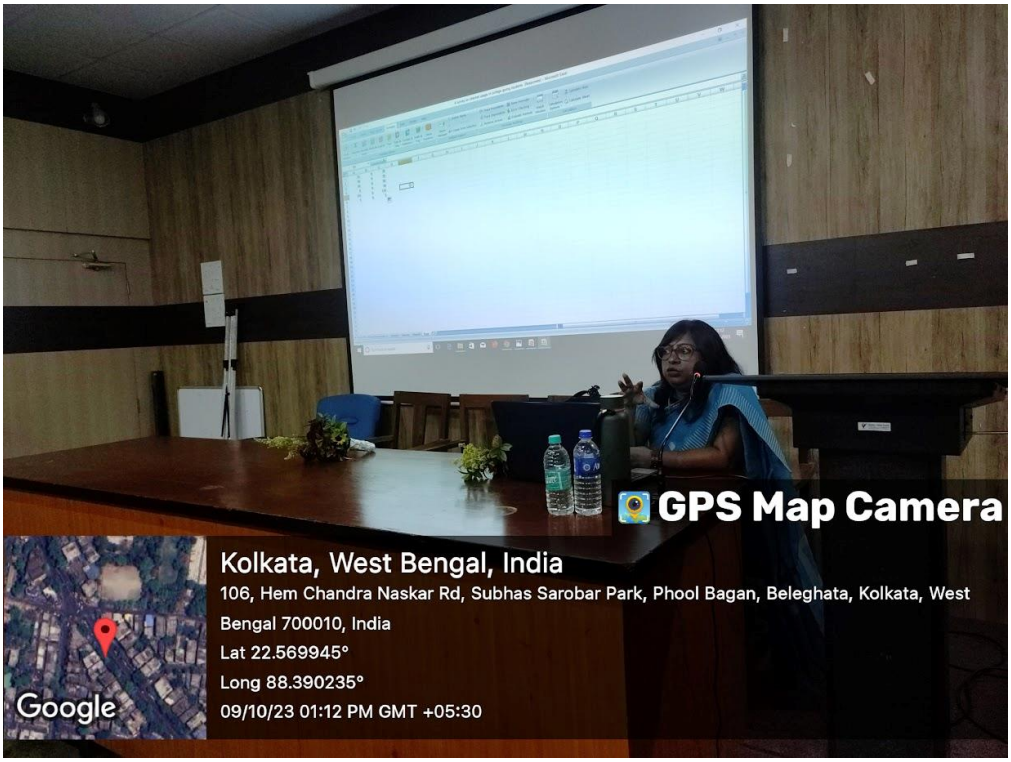
of Botany (H), Sem II , Gurudas College for his/her active participation in the **Workshop on IPR** on 12th July 2023.

Dr. Gautam Mukherjee
IQAC Coordinator, Gurudas College

Dr. Mausumi Chatterjee
Principal , Gurudas College

3. **Participation of Botany Hons. Students in Workshop organized by the Department of Statistics on 9th October, 2023.**

Twenty students of the Department of Botany in the Workshop on IPR on 12th July, 2023 which was organised by the IPR Cel , IQAC and the Career Counselling Cell of Gurudas College.



4. **Participation of students in the workshop on "Algal Biotechnology: Scope for Research and Entrepreneurship Development" on 8th & 9th, December 2023**

The Department of Botany, Gurudas College, in collaboration with the Internal Quality Assurance Cell (IQAC) and Research and Development (R&D) Cell, successfully organized a two-day workshop on "Algal Biotechnology: Scope for Research and Entrepreneurship Development" on December 8-9, 2023. The workshop featured esteemed resource persons, including Dr. Ruma Pal, Ex-Professor, Department of Botany, University of Calcutta, and Prof. Dr. Santanu Paul, Department of Botany, University of Calcutta. Experts from the Prabir Chatterjee Research Foundation provided hands-on training to the participants.

The inaugural session of the workshop commenced with a thought-provoking opening speech by Dr. Mousumi Das. The ceremony was graced by the presence of esteemed dignitaries, including Dr. Gautam Mukherjee, IQAC Coordinator, and Dr. Santanu Basu, Teacher-in-Charge. Following the welcome speech, Dr. Mukherjee and Dr. Basu extended a warm welcome to the participants, setting the tone for the engaging sessions

that followed. Dr. Das then introduced the first speaker, Dr. Ruma Pal, who delivered a comprehensive lecture on the scopes, research, and entrepreneurship development in algal biotechnology. The lecture was followed by a hands-on training session, where participants gained practical experience in algal growth and cultivation, marking a productive conclusion to the first day of the workshop.

On the second day, Prof. Monalisa Roy introduced the second speaker, Dr. Santanu Paul, who shared his expertise on future directions in algal research and development. The training session that followed provided participants with exposure to various aspects of application-based algal biotechnology.

Through a combination of lectures, hands-on training, and interactive sessions, **35** registered participants, some from Gurudas College and some from other colleges gained in-depth knowledge on various aspects of algal biotechnology. The workshop attracted participants from diverse backgrounds, including students, scholars, and faculties from various colleges.

The participating students were honored with certificates of appreciation, recognizing their dedication and enthusiasm. This initiative by the department demonstrates its commitment to promoting interdisciplinary research, innovation, and entrepreneurship in the field of algal biotechnology.


GPS Map Camera
Kolkata, West Bengal, India
1, 1, Suren Sarkar Rd, Jewish Graveyard, Phool Bagan, Beleghata, Kolkata, West Bengal 700010, India
Lat 22.571099°
Long 88.390226°
08/12/23 12:01 PM GMT +05:30
Google


GPS Map Camera
Kolkata, West Bengal, India
P-268, near Gurudas College, Jewish Graveyard, Uria Bagan, Beleghata, Kolkata, West Bengal 743270, India
Lat 22.571086°
Long 88.390188°
08/12/23 10:57 AM GMT +05:30
Google


Algal Exploration at Sunderbans
GPS Map Camera
Kolkata, West Bengal, India
1/1, Suren Sarkar Rd, near Gurudas College, Jewish Graveyard, Phool Bagan, Beleghata, Kolkata, West Bengal 700010, India
Lat 22.571162°
Long 88.390249°
08/12/23 10:57 AM GMT +05:30
Google

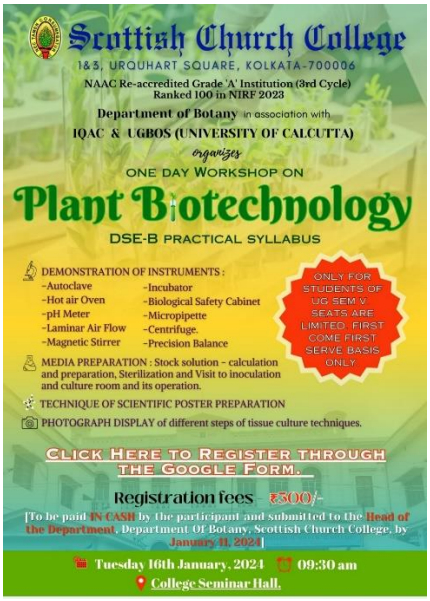

GPS Map Camera
Kolkata, West Bengal, India
P/273, near Gurudas College, Jewish Graveyard, Phool Bagan, Beleghata, Kolkata, West Bengal 700010, India
Lat 22.570943°
Long 88.390048°
08/12/23 12:50 PM GMT +05:30
Google

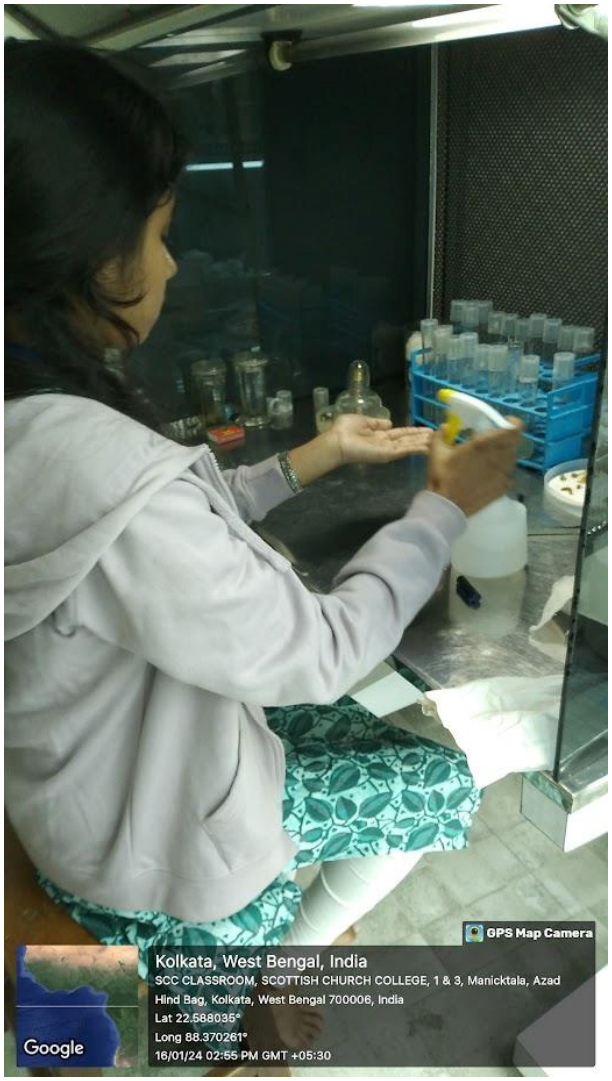

GPS Map Camera
Kolkata, West Bengal, India
P/273, near Gurudas College, Jewish Graveyard, Phool Bagan, Beleghata, Kolkata, West Bengal 700010, India
Lat 22.570958°
Long 88.390154°
09/12/23 11:45 AM GMT +05:30
Google


GPS Map Camera
Kolkata, West Bengal, India
P/273, near Gurudas College, Jewish Graveyard, Phool Bagan, Beleghata, Kolkata, West Bengal 700010, India
Lat 22.570962°
Long 88.390015°
09/12/23 01:04 PM GMT +05:30
Google

5. **Students of Botany Department attended a One Day Workshop on Plant Biotechnology on 16th Jan, 2024 at Scottish Church College.**

13 (Thirteen) Students of Botany Department attended a One Day Workshop on Plant Biotechnology on 16th Jan, 2024 at Scottish Church College. Techniques of Plant Tissue culture was demonstrated for the student. Then they were allowed to follow the techniques done under a laminar machine



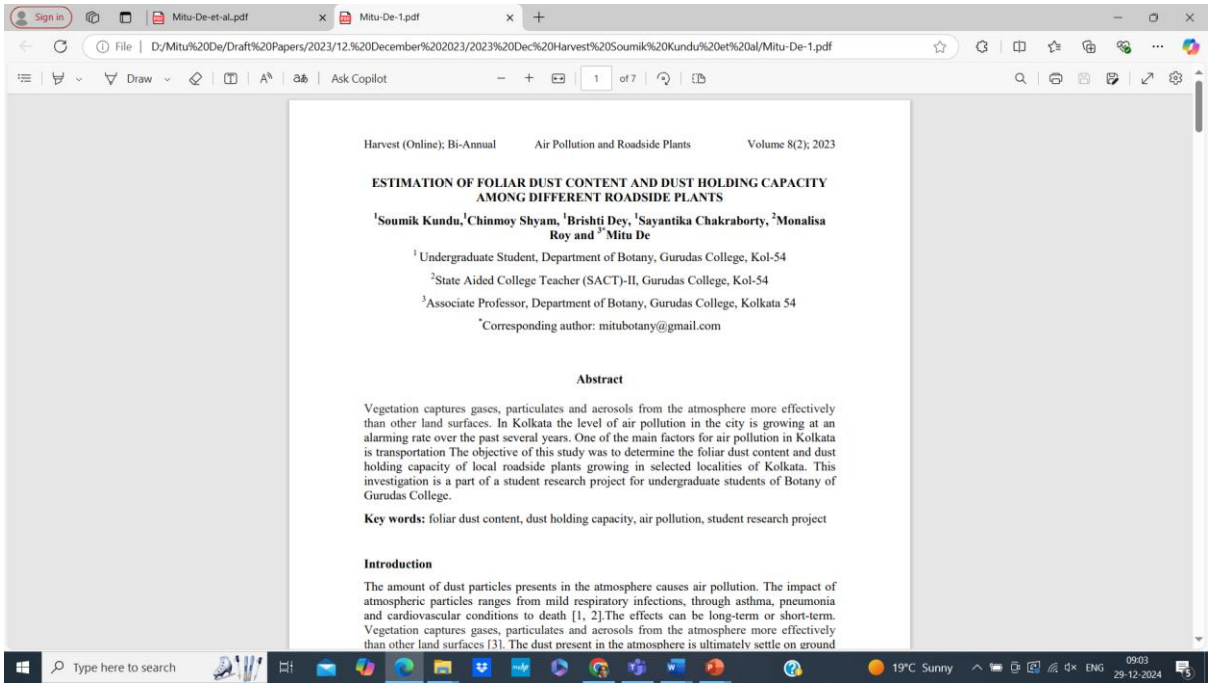

GPS Map Camera
Kolkata, West Bengal, India
SCC CLASSROOM, SCOTTISH CHURCH COLLEGE, 1 & 3, Manicktala, Azad Hind Bag, Kolkata, West Bengal 700006, India
Lat 22.588035°
Long 88.370261°
16/01/24 02:55 PM GMT +05:30
Google


Plant Biotechnology

2022 2023 Publication by students of the Department of Botany with faculty as mentor(s).

1. 1, Kundu, Soumik, Shyam, Chinmoy, Dey, Brishti, Chakraborty, Sayantika, Roy, Monalisa and De, Mitu**.** (2023). Students' Project Report on the estimation of foliar dust content and dust holding capacity among different roadside plants. Harvest- Online Journal **(ISSN 2456-6551)** Vol. 8 (2), 17 – 23 pp.

2. Das, Megha, Sen, Priyanka, Suriya, Sovnom, Pahari, Goutam Kumar and De, Mitu. (2023). Availability of wild edible Plants (WEPS) in Urban, Suburban and Rural market areas in Rainy Season. NDC E-BIOS (Online) Volume 3, pp 21-28 (2023) ISSN: 2583-644, 21 – 28 pp.
3. Choudhury, Suptotthita, Pahari, Gautam Kumar, Das, Ripan Chandra and De, Mitu. (2023).Ecological sampling methods in Gurudas College campus for the assessment of the changes in the herbaceous angiosperm species diversity over time: A case study. Harvest- Online Journal (ISSN 2456-6551) Vol. 8 (1), 24 – 28 pp.
4. Chakraborty, Sayantika, Dey, Brishti, Shyam, Chinmoy and De Mitu. (2023). Students' Project Report on Conservation of plants around Gurudas College based on religious practices. Harvest- Online Journal **(ISSN 2456-6551)** Vol. 8 (1), 33 – 38 pp.



Harvest (Online); Bi-Annual Air Pollution and Roadside Plants Volume 8(2); 2023

ESTIMATION OF FOLIAR DUST CONTENT AND DUST HOLDING CAPACITY AMONG DIFFERENT ROADSIDE PLANTS

[1]Soumik Kundu,[1]Chinmoy Shyam, [1]Brishti Dey, [1]Sayantika Chakraborty, [2]Monalisa Roy and [3*]Mitu De

[1] Undergraduate Student, Department of Botany, Gurudas College, Kol-54

[2]State Aided College Teacher (SACT)-II, Gurudas College, Kol-54

[3]Associate Professor, Department of Botany, Gurudas College, Kolkata 54

*Corresponding author: mitubotany@gmail.com

Abstract

Vegetation captures gases, particulates and aerosols from the atmosphere more effectively than other land surfaces. In Kolkata the level of air pollution in the city is growing at an alarming rate over the past several years. One of the main factors for air pollution in Kolkata is transportation The objective of this study was to determine the foliar dust content and dust holding capacity of local roadside plants growing in selected localities of Kolkata. This investigation is a part of a student research project for undergraduate students of Botany of Gurudas College.

Key words: foliar dust content, dust holding capacity, air pollution, student research project

Introduction

The amount of dust particles presents in the atmosphere causes air pollution. The impact of atmospheric particles ranges from mild respiratory infections, through asthma, pneumonia and cardiovascular conditions to death [1, 2].The effects can be long-term or short-term. Vegetation captures gases, particulates and aerosols from the atmosphere more effectively than other land surfaces [3]. The dust present in the atmosphere is ultimately settle on ground

ECOLOGICAL SAMPLING METHODS IN GURUDAS COLLEGE CAMPUS FOR THE ASSESSMENT OF THE CHANGES IN THE HERBACEOUS ANGIOSPERM SPECIES DIVERSITY OVER TIME: A CASE STUDY

Suptotthita Choudhury[1], Gautam Kumar Pahari[1], Ripan Chandra Das[1] and Mitu De[2*]

[1]Assistant Professor, Department of Botany, Gurudas College, Kolkata-54

[2]Associate Professor, Department of Botany, Gurudas College, Kolkata-54

[*]Corresponding author email: mitu.botany@gurudas.education

Abstract

Conservation biologists and environmental planners need reliable methods to evaluate the biological value of sites and to monitor changes over time. A major difficulty encountered when conducting diversity inventories is that species diversity cannot be recorded without reference to space, time and collection method. As biodiversity indices and species richness data are commonly used to assess community variation across sites and at different time periods the data from this study was analyzed using these parameters. The aim of this investigation was to study the changes in the distribution and abundance of the herbaceous angiosperm species found in Gurudas College campus over a period of 9 (Nine) years. The density, relative frequency, abundance and richness of the herbaceous angiosperm components were measured and compared with data taken 9 (nine) years ago at the same site. The results have been achieved by using the quadrat sampling technique. The ability to quantify diversity in this way is an important tool for biologists trying to understand community structure dynamics

NDC E-BIOS (Online) Volume 3, pp 21-28 (2023)
ISSN: 2583-6447

DOI: https://doi.org/10.5281/zenodo.11122872

ORIGINAL ARTICLE

AVAILABILITY OF WILD EDIBLE PLANTS (WEPS) IN URBAN, SUBURBAN AND RURAL MARKET AREAS IN RAINY SEASON

Megha Das, Priyanka Sen, Sovnom Suriya, Goutam Kumar Pahari and Mitu De*

Department of Botany, Gurudas College, Kolkata, 700054, West Bengal, India.
*Corresponding author: Email: mitubotany@gmail.com

Abstract: *Wild edible plants (WEPs) are widely consumed in the daily diet of the rural people. These plants are normally more common in rural areas. These are generally neglected and not considered as much useful for common people. Recently WEPs have attract the interest, due to their potential of various dimensions in terms of nutritional grade, edibility, medicinal use, potential to generate financial benefit for marginal communities and their availability in large scale in nearby area. Some WEPs are reported to have strong medicinal potential hence great economic value and are linked with the socio-economic development of the rural people. Access to affordable and nutritious food is complex and depends on supply (availability) and consumer demand. Local markets are important for large settlements and cities in terms of making the WEPs, which are usually found in suburbs and rural areas, available for the consumption by urban population. In the present investigation local markets were surveyed for WEPs in an urban area of Kolkata city, suburban market of Sealdah railway station and rural market of Bantala area of southern part of West Bengal, in rainy season, with special emphasis to plants with medicinal value. A total of 20 wild edible plant species belonging to 13 families were enumerated. Based on their potential nutritional and medicinal value, WEPs could contribute in a major way to food security, basic primary health care and balanced diets of rural households and possibly urban households as well. Inventory of wild food resources, ethno-botanical information on their diversity, usage, status, etc. coupled with nutritional evaluation can establish these wild edible species as an alternative to achieve food and nutritional security.*

Keywords: *Wild edible plants (WEPs), medicinal value, urban, suburban and rural market, West Bengal.*

Communicated: 6.11.2023 Revised: 13.11.2023 Accepted: 14.11.2023

ISSN: 2583-6447

Editorial board

Current Issue

Volume 3 (December 2023)

Past issue(s)

Volume 1 (December, 2021)

Volume 2 (December, 2022)

NDC E-BIOS (Online)

An Online Annual Open Access and Peer Reviewed Journal on Biological Sciences [Zoology, Microbiology, Genetics, Biotechnology, Botany, Anthropology, etc.]

NDC E-BIOS (Online) is a national level online open access,

CONSERVATION OF PLANTS AROUND GURUDAS COLLEGE BASED ON RELIGIOUS PRACTICES

[1]Sayantika Chakraborty,[1] Bristhi Dey,[1]Chinmoy Shyam, and [2*]Mitu De

[1] Undergraduate Student, Department of Botany, Gurudas College, Kol-54

[2]Associate Professor, Department of Botany, Gurudas College, Kolkata 54.

[*]Corresponding author: Email: mitu.botany@gurudas.education

Abstract

In the days of rapid urbanization, it has been seen that sacred sites or culturally protected sites are emerging as a form of conservation. These sacred sites provide the inextricable link between present society to the past in terms of biodiversity, culture, religious and ethnic heritage. This study is part of a student research project to document the sacred sites around Gurudas College that are protected based on the religious belief of the local community.

Keywords : biodiversity, conservation, ethnic heritage, local survey

Introduction:

Religious beliefs and rituals are very much inter-linked and intimately related to management of the ecosystems[1]. It has been seen that approaches to conserving biodiversity that are based on cultural and religious values are often much more sustainable than those based only on legislation or regulation[2] In the days of rapid urbanization it has been seen that sacred sites or