

Criterion-1: Curricular Aspects

Key Indicator – 1.3: Curriculum Enrichment Metric: 1.3.3

Programme: M.Sc. Botany

Syllabus	https://www.du.ac.in/uploads/RevisedSyllabi1/Annexure-		
	15.%20M.Sc.%20BOTANY-course scheme-		
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Annexure-I Sample Project Reports

Determining the Genetic and Epigenetic Basis of Adaptations in *Arabidopsis thaliana*



DISSERTATION REPORT

(MARCH, 2019)

23rd January to 15th March



Under the supervision of

Dr. Sandip Das

Associate professor

Department of Botany, University of Delhi

Submitted By:

M. Ancy Nianlamlun Zou

M.Sc.(F)Botany

- 1. Acknowledgement
- 2. Introduction
- 3. Review of Literature
- 4. Methodology
 - To prepare ½ MS (Murashige&Skoog) Media
 - > To sterilize seeds of Arabidopsis thaliana col-0
 - To grow A. thaliana seedlings on ¹/₂ MS media
 - > To plant A. thaliana seedlings in soil rite
 - Growing A. thaliana seeds in different concentrations of 5-azacytidine (0µm,25µm,50µm and 100µm)
 - To perform GUS Assay
 - Growing of A. *thaliana* seeds in different conditions of abiotic stress (Salt stress and osmotic stress)
 - To check the presence of RNA in samples through agarose gel electrophoresis
 - DNAase treatment of the extracted RNA
 - To check the presence of DNAase treated RNA through Agarose gel electrophoresis
 - ➤ Synthesis of cDNA using iScriptTM kit
 - To perform qRT-PCR (Quantitative real time polymerase chain reaction) using Actin as primers
 - To visualised the synthesised cDNA through Agarose gel electrophoresis
- 5. Result & Discussions
- 6. Conclusions
- 7. Limitations
- 8. Future prospects
- 9. References

'Abiotic stress responses/ tolerance in bryophyte'



Dissertation submitted to the University of Delhi in partial fulfilment of the degree of MASTER OF SCIENCE

2019

(ASENATH SHISHAK)

DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI-110007 INDIA

CERTIFICATE

This Dissertation, a mandatory paper of theoretical nature (BOT 409) titled "Abiotic stress /tolerance in bryophytes" is being submitted by me to the Department of Botany, University of Delhi as partial fulfilment of M.Sc. dissertation for evaluation by the examiners. I will be fully accountable for any kind of plagiarism if found in my dissertation, and that the teacher involved and the Department concerned shall not be held responsible for it.

(Signature of the candidate) (ASENATH SHISHAK) M.Sc BOTANY Semester IV – 2019 • Introduction

• Bryophytes

- General characteristics
- Distribution of bryophytes
- Habitat of bryophytes
- Ecological significance of bryophytes
- Biogeochemical cycle and water retention
- Bryophytes as indicators of pollution
- Bryophytes as indicators of climate change
- Effects of climate/environmental change
- Adaptive mechanisms/tolerance response
- Bryophyte model organism for research
- Aim/ Objectives
- Materials/methods
- Results
- Discussion
- Conclusion
- References

Epigenetics regulation of gene expression during abiotic stress and plant development

Dissertation submitted in the partial fulfillment of the degree of Master of Science in Botany



By JYOTI YADAV Roll No. 1720201

Department of Botany University of Delhi April, 2019

CERTIFICATE

This dissertation, a mandatory paper of theoretical nature (BOT409) titled "**Epigenetics regulation of gene expression during abiotic stress and plant development**" being submitted by me to the Department of Botany, University of Delhi as partial fulfillment of M.Sc. dissertation for evaluation by the examiners. I will be fully accountable for any kind of plagiarism in my dissertation, and that the teacher involved and the department concerned shall not be held responsible for it.

(Signature of candidate) (Jyoti Yadav) M.Sc Botany Semester 2019

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AUTONOMOUS AND TOUCH INDUCED MOVEMENTS IN FLORAL ORGANS OF ANGIOSPERMS

DISSERTATION SUBMITTED TO THE UNIVERSITY OF DELHI IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR DEGREE OF

MASTER OF SCIENCE

2019



JYOTI SHARMA

DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI-110007 INDIA

CERTIFICATE

It is certified that the dissertation report entitled **"AUTONOMOUS AND TOUCH INDUCED MOVEMENTS IN FLORAL ORGANS OF ANGIOSPERMS"** is a part of paper BOT 409 and a bonafide record of the work in partial fulfilment of the Degree of Masters in Botany by **Ms. JYOTI SHARMA** under my supervision in the Department of Botany, University of Delhi.

PROF. RAJESH TANDON

(Supervisor)

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Analysis of Sequence, Structural and Functional Divergence across MIRNA Precursor and Promoter Homologs



Dissertation submitted to UNIVERSITY OF DELHI

in partial fulfillment of the degree of

MASTERS OF SCIENCE

2019

TANVI SHARMA DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI- 110007 INDIA

CERTIFICATE

This Dissertation, a mandatory paper of theoretical nature (BOT 409) titled "Analysis of Sequence, Structural and Functional Divergence across MIRNA Precursor and Promoter Homologs" is being submitted by me to the Department of Botany, University of Delhi as partial fulfillment of M.Sc. dissertation for evaluation by the examiners. I will be fully accountable for any kind of plagiarism if found in my dissertation, and that the teacher involved and the Department concerned shall not be held responsible for it.

(Signature of the candidate) TANVI SHARMA M.Sc. BOTANY Semester IV - 2019

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THE INITIATION, ESTABLISHMENT, AND MAINTENANCE OF DORSIVENTRALITY AND POLARITY IN VARIOUS PLANT PARTS

DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR DEGREE OF

MASTER OF SCIENCE



DISHA BASERA DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI 110007, INDIA 2020

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POLLEN ALLELOPATHY

DISSERTATION SUBMITTED TO THE UNIVERSITY OF DELHI IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR DEGREE OF

MASTER OF SCIENCE

2020



ELAM LISHA DEVI

DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI-110007 INDIA

CERTIFICATE

It is certified that the dissertation report entitled **"POLLEN ALLELOPATHY"** is a part of paper BOT 409 and a bonafide record of the work in partial fulfilment of Degree of Masters in Botany by **Ms. Elam Lisha Devi** under my supervision in the Department of Botany, University of Delhi.

PROF. RAJESH TANDON

Supervisor

DECLARATION

I hereby declare that the experimental work embodied in this dissertation entitled **"POLLEN ALLELOPATHY"** has been carried out in the Department of Botany, University of Delhi under the supervision of **PROF. RAJESH TANDON** as a part of paper BOT 409 in partial fulfilment of Degree of Masters in Botany. This work is original and has not been published or submitted for publication in part or full for the award of any other degree in the Department or elsewhere.

ELAM LISHA DEVI

M.Sc. Botany

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Table 1

Data was created by review of literature and a table was created constituting of information such as pollen donor, pollen receipt, their way of pollination and the response. This data is labelled as in the given Table below.

Reference s	Pollen donor	Family	Pollen recipient	Family	Polli nator	Response	Region
Kanchan & Chandra, 1980	Parthenium hysterophorus	Asteraceae	Crotolaria pellida	Fabaceae	Wind	Fruit set	_
Morales and Traveset, 2008	Morus alba	Moraceae	Morus rubra	Moracee	Wind	Seed set	Canada
Jakobsson et al., 2008	Carpobrotus spp.	Aizoaceae	Asphodelus aestivus	Liliaceae	Same	Seed set	South Africa
Jakobsson et al., 2008	Carpobrotus spp.	Aizoaceae	Dorycnium hirsutum	Fabaceae	Same	Seed set	South Africa
Jakobsson et al., 2008	Carpobrotus spp.	Aizoaceae	Helichrysum stoechas	Asteraceae	Same	Seed set	South Africa
Inderjit and Keating, 1999	Parthenium hysterophorus	Asteraceae	Indigofera spicata Desmodium heterocarpon Tephrosia purpurea	(Fabaceae)	Wind	Fruit set and pollen germinati on	India
Inderjit and Keating, 1999; Ortega et al., 1988	Zea mays	Poaceae	Cassia jalapensis Citrullus lanatus Amaranthus leucocurpus	Fabaceae Cucurbitaceae Amaranthacea e	Wind	Radical growth	
Inderjit and Keating, 1999	Phleum pratense	Poaceae	38 target species	-	Wind	Pollen germinati on	Eastern Canada
Inderjit and Keating, 1999	Hieracium au- rantiacum, H. floribundum, and H. pratense	Asteraceae	Lotus corniculatum, Medicago sativa, Trifolium hybridum, T. repens, and Vicia cracca	Nelumbonace ae (Fabaceae	-	Seed set	-
Arceo- Gomez and Ashman, 2014	Helianthus exilis	Asteraceae	Mimulus guttatus	Phrymaceae	Bee	Pollen tube growth and seed set	Norther n Californ ia

Da Silva and Sargent, 2011	Lythrum salicaria	Lythraceae	Decodon verticillatus	Lythraceae	Insec t	Seed set	North America
Thomson et al., 1982	Hieracium floribundum	Asteraceae	Diervilla lonicera	Caprifoliaceae	Bee	Seed set	Canada

Productivity evaluation and physicochemical characteristics of lotic and lentic water bodies in Delhi.



Dissertation submitted to the University of Delhi in partial fulfilment of the degree of MASTER OF SCIENCE in Botany 2020

HIBU ASUNG

DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI-110007 INDIA April, 2020

CERTIFICATE

This Dissertation, a mandatory paper of theoretical nature (BOT 409) titled **"Productivity evaluation and physicochemical characteristics of lotic and lentic water bodies in Delhi"** is being submitted by me to the Department of Botany, University of Delhi as partial fulfillment of M.Sc. dissertation for evaluation by the examiners. I will be fully accountable for any kind of plagiarism if found in my dissertation, and that the teacher involved and the Department concerned shall not be held responsible for it.

Dr. Ratul Baishya

Hibu Asung

M.Sc. Botany Semester IV – 2020

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"PLANT NEUROBIOLOGY"

DISSTERTATION SUBMITTED TO THE UNIVERSITY OF DELHI IN PARTIAL FULFILMENT FOR THE DEGREE OF

MASTER OF SCIENCE



MEGHA KHARI

M.Sc. (F) Botany

DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI-110007 INDIA

2020

DECLARATION

It is declared that the review work done embodied in this dissertation entitled "**PLANT NEUROBIOLOGY**" has been carried out and submitted as a part of paper BOT- 409 in partial fulfilment of the degree of M. Sc. Botany at Department of Botany, University Of Delhi, Delhi under the guidance of **Professor Vishnu Bhat**. This work is original and not been published or submitted for publication in part or full for the award of any other degree in the department elsewhere.

Date: 07-04-2020

MEGHA KHARI (Candidate)

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ELUCIDATING THE INFLUENCE OF MICROBIAL INOCULANTS ON SEED GERMINATION AND SEEDLING GROWTH IN *Albizia lebbeck* (L.) Benth.



Dissertation submitted to the

University of Delhi

in partial fulfillment of the degree of

MASTER OF SCIENCE

2020

NAGMA KHAN

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This Dissertation, a mandatory paper of theoretical nature (BOT 409) titled "Elucidating the effect of microbial inoculants on seed germination and seedling growth in *Albizia lebbeck* (L.) Benth." is being submitted by me to the Department of Botany, University of Delhi as partial fulfillment of M.Sc. Dissertation for evaluation by the examiners. I will be fully accountable for any kind of plagiarism if found in my dissertation, and that the teacher involved and the Department concerned shall not be held responsible for it.

Nagma khan M.Sc. Botany Semester IV -2020

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A case study on Phytoremediation of polluted waters of Delhi NCR using *Eichhornia crassipes* (Mart.) Solms



Dissertation submitted to the

University of Delhi

in partial fulfillment of the degree of

MASTER OF SCIENCE (IN BOTANY)

2020

Riya Rai

DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI-110007, INDIA
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Riya Rai

M.Sc. Botany Semester IV – 2020

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STATUS OF PHYSIOCHEMICAL PROPERTIES IN VARIOUS STAGES OF SEWAGE AND WATER TREAMENT PLANTS IN DELHI



Dissertation submitted to the

University of Delhi

In partial fulfilment of the degree of

MASTER OF SCIENCE (IN BOTANY)

2020

M. TOMUILIM TONTANG DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI-110007 INDIA

This Dissertation, a mandatory paper of theoretical nature (BOT 409) titled **"Elucidation of various nutrients and water quality parameter in different stages of water treatment plant."** is the record of the work done by me and being submitted to the Department of Botany, University of Delhi as partial fulfillment of M.Sc. dissertation for evaluation by the examiners. This dissertation has undergone plagiarism check using Urkund software and was within permissible limit (5%) and does not amount to plagiarism.

(DR. RATUL BAISHYA) Department of Botany Delhi University (M.TOMUILIM TONTANG)

M.Sc. Botany Semester IV – 2020

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DEVLOPMENTAL PLASTICITY IN PLANTS

Dissertation submitted to the

University of Delhi

In lieu of Paper BOT-Elective-4017

In Partial Fulfilment of the Degree of

Master of Science

2021



AKANSHA JAISWAL DEPARTMENT OF BOTANY DELHI UNIVERSITY DELHI-110007

This dissertation entitled "DEVLOPMENTAL PLASTICITY IN PLANTS" compiled under the mentorship of Prof. Vishnu Bhat, Department of Botany, University of Delhi, is being submitted to the University of Delhi in lieu of Paper BOT-Elective-4017 for the partial fulfilment of the degree of Master of Science in Botany.

I certify that this is an original work based on the review of literature, which has not been submitted for degree or diploma of this or any other University/Institution in India or abroad. If any kind of plagiarism is found in dissertation, I shall be solely responsible for it.

AKANSHA JAISWAL

M. Sc. Botany

(Semester IV - 2021)

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Phenotypic plasticity of aposporous embryo sac development in *Hieracium* praealtum

10. REFERENCES

DISSERTATION (BOT 409)

The world of sRNAs in plants- diversity, mechanism of action, and role during biotic and nutritional stresses: a review and *in-silico* analysis

UNIVERSITY OF DELHI

DEPARTMENT OF BOTANY



Submitted by:

Arzoo Dhankhar 19036745002

MSc Botany (Semester IV)

Supervised by:

Dr. Sandip Das

This is to certify that the dissertation work entitled "The world of sRNAs in plants- diversity, mechanism of action, and role during biotic and nutritional stresses: a review and *in-silico* analysis" submitted to the Department of Botany, University of Delhi, New Delhi, India in fulfilment of the requirement for the award of Master of Science in Botany, depict the original work carried out by Ms Arzoo Dhankhar under supervision of Dr. Sandip Das. This work has not been presented in any other university for the award of any degree.

Date: April 14, 2021

Dr. Sandip Das

Supervisor Associate Professor Department of Botany University of Delhi Delhi – 110007 India Prof. S.B. Babbar

Head of Department Department of Botany University of Delhi Delhi 110007 India

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w	URL: https://doi.org/10.1104/pp.19.00921 Fetched: 4/12/2021 12:51:00 PM	88	1
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SA	Review_Anushree_and_Shivaprasad_2017.docx Document Review_Anushree_and_Shivaprasad_2017.docx (D32092794)	88	1
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w	URL: https://doi.org/10.1093/nar/gkr319 Fetched: 4/12/2021 12:51:00 PM	88	1
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PLANT MIGRATION, EXTINCTION AND ADAPTIVE RESPONSES TO CLIMATE CHANGE



Dissertation submitted to the

University of Delhi

in partial fulfillment of the degree of

MASTER OF SCIENCE

2021

MUSKAAN GUPTA

(19068745003)

DEPARTMENT OF BOTANY

UNIVERSITY OF DELHI

DELHI-110007

INDIA

ACKNOWLEDGEMENT

This dissertation is an amalgamation of hard work, support and guidance of my mentor and blessings from god and my parents.

I would like to express my sincere gratitude to my esteemed supervisor Dr. Ratul Baishya, for his consistent support, encouragement, expert guidance which has been invaluable throughout the dissertation. His expertise, scientific temperament, balanced approach and meticulous scrutiny has proved to be very valuable which helped me to complete this dissertation to the best of my abilities.

> Muskaan Gupta M.Sc. Botany 19068745003 Semester IV-2021

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Latest Development in Carbon credit and Carbon capture and storage(CCS) in the World and in India

DISSERTATION SUBMITTED TO UNIVERSITY OF DELHI

2021



Subham Sai Nayak DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI-110007

This dissertation a mandatory paper titled **"Latest Development in Carbon credit and Carbon capture and storage(CCS) in the World and in India"** is being submitted by me to the Department of Botany, University of Delhi as partial fulfilment of the degree of Master of Science. I hereby declare that this is an original work based on a review of the literature and if any kind of plagiarism is found, I shall be solely responsible for it.

Prof. Ratul Baishya Supervisor Department of Botany University of Delhi Delhi-110007 Prof. S.B Babbar H.O.D Department of Botany University of Delhi Delhi-110007

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A DEEP DIVE OF THE MORPHOLOGICAL VARIATION WITH THE AID OF MOLECULAR ANALYSIS AND MOLECULAR EVOLUTION OF MIRNA156 GENE ACROSS THE MEMBERS OF BRASSICACEAE



Dissertation submitted to UNIVERSITY OF DELHI In partial fulfilment of the degree of MASTERS OF SCIENCE 2022

> BYONKESH NONGTHONGBAM DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI – 110007 INDIA

SHADOWS OF DATA COLLECTION AND STUDY SITE

















This Dissertation, a mandatory paper of theoretical nature (Paper code: 221602417) titled "A deep dive of the morphological variation with the aid of molecular analysis and molecular evolution of *MIRNA156* gene across the members of Brassicaceae" is the record of the work, performed by Byonkesh Nongthongbam and being submitted to the Department of Botany, University of Delhi as partial fulfilment of M.Sc. Dissertation for evaluation by the Examiners. This work is original and its plagiarism percentage has found to be within the permissible limit according to plagiarism checker Ouriginal software.

(Signature of Supervisor) Prof. Sandip Das Department of Botany Delhi University Signature of Candidate: Byonkesh Nongthongbam M.Sc. Botany Semester IV, Department of Botany Roll Number: 20025745003

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SOME INSIGHTS INTO THE ENDOSPERM AND EMBRYO INTERACTIONS AND THEIR COORDINATION



by

Kanika Thakur

(20047745011)

under the supervision of

Dr. Vishnu Bhat

Department of Botany

University of Delhi

This dissertation is Submitted to University of Delhi in partial fulfilment for the award of Post Graduate degree in Botany

I am submitting this dissertation, an obligatory theoretical paper titled "**Some Insights into the Embryo-Endosperm Interactions and Their Coordination**," to the Department of Botany, University of Delhi, as part of my M.Sc. Dissertation for review by the examiners. If plagiarism is discovered in my dissertation, I will be considered totally responsible, and neither the instructor nor the department concerned will be held liable.

(Signature of student) Kanika Thakur M.Sc Botany Semester IV, 2022

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To study the conservation and diversification of MIR159 family and basis of MIR159/MIR319 homology across land plants.

Dissertation submitted to the University of Delhi in partial fulfilment of the requirements

for the degree of

MASTER OF SCIENCE

in

BOTANY

MAY 2022



PRIYA SINGH KUSHWAHA

Plant Biology Laboratory Department of Botany University of Delhi Delhi-110007 India

This is to certify that the entitled "To study the conservation and diversification of MIR159 family and basis of MIR159/MIR319 homology across land plants" submitted to the Department of Botany, University of Delhi, New Delhi, India, in fulfilment of the requirement for the award of Master of Science, comprises the dissertation work of Priya Singh Kushwaha (batch 2020-2022) under the supervision of Dr. Sandip Das.

Dr. Sandeep Das Supervisor Associate Professor Department of Botany University of Delhi Delhi-110007, India Dr. Suman Lakhanpaul Professor Head of the department Department of Botany University of Delhi Delhi-110007, India

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Tracing the origin of double fertilisation

DISSERTATION SUBMITTED TO THE UNIVERSITY OF DELHI IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE

2021-2023



RADHIKA RAJ M.Sc. (F) BOTANY DEPARTMENT OF BOTANY UNIVERSITY OF DELHI DELHI- 110007 INDIA

This is to certify that the work represented in the dissertation entitled **"Tracing the origin of double fertilisation"** was conducted under the guidance of Prof. Shailendra Goel at Department of Botany, University of Delhi.

This work is original and has not been submitted in parts or in full for the award of any other degree or diploma to any university.

April 24, 2023

RADHIKA RAJ (Candidate)

Prof. Suman Lakhan paul (Head of Department)

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DEPARTMENT OF BOTANY, UNIVERSITY OF DELHI M.Sc. Semester IV- 2019

BOT- 405: Agricultural Ecology & BOT - 406: Advanced Plant Systematics

One full day field trip to agriculture fields in Ibrahimpur, Bakhtawarpur Village, Delhi

Dated: 14-01-2019 🗸

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19	1720216	SHRESHTHA YADAV	Spisningt
21		Dr. Ratul Baishya	2 Barthe
22		Prof. P.L. Uniyal	And:
26		Bharat Bhushan (Lab Staff)	
27		S.P. Singh (Lab Staff) a oll Allan	Fed
29		Renn Puri	Kumpun
29		Struite Kesana Shouts n	BASTI
It lead	~	डाo रतुल वैश्य / Dr. Ratul Baishya सहायक प्राव्यापक / Assistant Professo वनस्पति विज्ञान विभाग Department of Botany	P.



JNIVERSITY OF DELHI DEPARTMENT OF BOTANY FACULTY OF SCIENCE

NORTH CAMPUS, DELHI-110007 (INDIA)

Dr. RATUL BAISHYA Assistant Professor & Principal Investigator DST-SERB Research Project ☎ +91-11-27667573 +91-11-27667725Ext. 1420
Fax: +91-11-27667829
Mobile:+919910807343
E-mail: rbaishyadu@gmail.com rbaishya@botany.du.ac.in

10nd January, 2020

Head Department of Botany University of Delhi Delhi-110007

Subject: Field visit to agricultural fields in Bawana and adjoining areas in Delhi

Dear Sir,

We are taking the students of BOT 304 for agricultural sample collection on the 13th January, 2020. This is a regular field trip every year for students of Agroecology where students get to see the agro-diversity of cultivated crop species in and around Delhi and interact with the farmers. The samples collected by the students would be used for nutrient analysis throughout the semester.

We therefore request you to make necessary travel arrangement for the upcoming field trip.

Thanking you,

Sincerely yours,

(Dr. Ratul Baishya)

Enclosed: List of Students and staff

डा॰ रतुल बैश्य / Dr. Ratul Baishya सहायक प्राध्यापक/Assistant Professor यत्तरपति विज्ञान विभाग Department of Botany दिल्ली विश्वविद्यालय/Universify of Delhl विल्ली-110007/Delhl-110007 Approved and recommended

(Head, Department of Botany)

भोफोसर के. एस. राव Professor K. S. Rao बिभागाध्यस, वनस्यति विज्ञान विभाग Head, Cepartment of Botany बिस्ती विस्वविद्यालय/University of Deini बिस्ती-1 10007/Deini-110007

्रजा॰ रतुल येश्य / Dr. Ratul Baishya सहायक प्राच्यापक /Assistant Professor वनरपति विज्ञान विभाग Department of Bolany दिल्ली विथवरियालय/University of Delhi दिल्ली-110007 / Delhi-110007

Department of Botany, University of Delhi

M.Sc Part II, Semester III

Botanical Excursion to Manila, Almora (Uttarakhand) 8.10.2018 to 13.10.2018

Statement of Expenditure

S.No.	Items	Bill details	Expenditure (Rs)
1.	Local Travel expenditure of 40 members (38 M.Sc. students, One Research Scholar and one teacher) on hiring of two mini buses for travelling from Ramnagar to Manila (Almora) (Uttarakhand)	Bill No 043 dated 16.10.2018 (Hans India Tour, A- 15&16Kh, No 45/10 Sadatpur, Karawal Nagar, Delhi Bus No DL 1PC 6041	Rs 14,700
2	Accommodation for 40 members for one day at Corbett Roop Resort, Mohan, Ramnagar on 9.10.2018	Corbett Roop Resort, Mohan (uttarakhand) Bill No. 3391 dated 10.10.2018	Rs 14,560/-
3	Accommodation for 40 members for two day at Govt. Tourist Rest House Holiday Home, Manila (Almora) on 10 to 11.10.2018	Govt. Tourist Rest House Holiday Home, Manila (Almora Uttarakhand Bill No. 026 dated 12.10.2018	Rs 5,700/-
4	Food (Lunch) Charges for 40 members at Nanak Restaurent, Nainital on 12.10.2018	Nanak Restaurent, Nainital Bill No V008162 dated 12.10.2018	Rs 7,571/-
4	Food (Dinner) Charges for 40 members at Gill Brothers Dhaba, Bajpur, Uttarkahand on 12.10.2018	Gill Brothers Dhaba, Bajpur, Uttarkahand Bill No. 06 dated 12.10.2018	Rs 4,920/-
	Total		Rs 47,451

annal

Karuna Śharma Student Representative Department of Botany University Of Delhi, Delhi 110007 Forty seven thouand four hundred fifty one only

Anshul Dhyani Research Scholar Department of Botany University Of Delhi, Delhi 110 007

23/10/2018 P L Uniyal Professor Department of Botany University Of Delhi Delhi 110 007 Dr. PREM L. UNIYAL Professor Department of Botany University of Delhi Delhi-110007 (India)

Department of Botany, University of Delhi

M.Sc Part II, Semester IV

Botanical Excursion to Kasol and Manali (Himachal Pradesh) 18.2.2020 to 22.2.2020

Statement of Expenditure

1		Bill details	Expenditure (Rs)
1.	Local Travel expenditure of 40 members (25 M.Sc. students, two teachers) on hiring of mini bus for travelling from Kasol (Kullu) to Manali (Himachal Predesh)	Bill No 210 dated 28.2.2020 (Hans India Tour, A- 15&16Kh, No 45/10 Sadatpur, Karawal Nagar, Delhi Bus No LIK08 4061	Rs 13,650/-
2	Accommodation for 27 members for one day at Kasol Camp (Kullu), on 19.2.2020	Kasol Camps, Bill No. 1214 dated	Rs 13,440/-
3	Food Bill 27 members for one day at Lord Residency, Naggar Road, Manali on 20.2.2020	Lord Residency, Left Bank, Naggar Road, Manali (HP) Bill No.726/19-20 dated 21.2.2020	Rs 11,424/-
4	Food (Dinner) Charges for 27 members at Hotel River Bank, Mandi, (HP) on 21.2.2020	Hotel River Bank, Mandi (HP) Bill No. 55825 dated 21.2.2020	Rs 5250/-
	Total		43,764/-

(Rupees Forty three thousand seven hundred sixty four only)

Gamen

Gaurav Student Representative Department of Botany University Of Delhi, Delhi 110007

Reeya Dahiya

Student Representative Department of Botany University Of Delhi Delhi 110007

ghu

Shruti Kasana Guest Faculty Department of Botany University Of Delhi, Delhi 110 007

P L Unival Professor

Dr. PREM L. UNIYAL Professor Department of Botany University of Delhi Delhi-110007 (India)

Botanical Excursion of M.Sc. Botany Sem III to Lahul Valley, Himachal Pradesh 15.10.22 to 19.10.22

SN	Date	Item		
1	15.10.2022	Food Bill for 36	Bill Details	Expenditure
		Members of the	Bill No 138814 dated 15.10.2022	4279/-
		group (dinner)	G T Road Muthal Series	
2	16.10.2022	Breakfast for 36	Bill No 1876 data d 16 10 2022	
		members of the group	Hotel River Bank Souli VI 1 V 1	4914/-
	CHANCEN	Broup	road Mandi	
3	17.10.2022	Accommodation for	Bill No 725/22 23 deted 17 10 2022	
		36 members of the	Hotel Lord Residency Loft Dark	18,816/-
		group for two Nights	Naggar Road Manali	
	-	(16 and 17 Oct 2022)	88- Hour, Manan	
4	17.10.2022	Food Bill (Lunch and	Bill No 1670/22-23 dated 15 10 2022	10.000/
		Dinner) for 36	Park Café restaurant	18,000/-
5	10 10 2022	members of the group	Naggar Road, Manali	
5	18.10.2022	Travel Bill for the	Bill No 421 dated 18.10.2022	10 500/
		Visit to ICAR	Hans India Tour, A-15-16, Panchavat	10,500/-
		Regional Station and	Ghar, Karawal Nagar, New Delhi	
		GB Pant Institute,		
		Nullu and back to		
6	18 10 2022	Dinner for 26	DUIN	
Ť	. 5.10.2022	members of the area	Bill No 1877 dated 18.10.2022	6615/-
		members of the group	Hotel River Bank, Sauli Khad, Kullu	
		and the particular	road, Mandi	
Total				
	10(a)			63124/-

Statement of Expenditure

The group made own arrangement for travelling from Delhi to Manali and Back to Delhi

Bandana

Student Excursion Representative Department of Botany University of Delhi

Arnti Dr Shruti Kasana

Assistant Professor Department of Botany University of Delhi

PLUniyal 23/10/2028

Professor Department of Botany University of Delhi

Dr. PREM L. UNITAL Senior Professor Department of Botany University of Delhi Delhi-110007 (India)