Department : Botany		
Academic Year : 2022-2023		
Sr. No.	**Programme Code**	**Name of the Programme**
01.	311	M.Sc. Botany

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A

Dissertation report on

Antibacterial and antibiotic resistance modifying activity of the oil extracts against opportunistic microorganisms including multidrug resistant phenotypes

In partial fulfilment of the degree of

M.Sc. Botany IVth sem

(Session 2022-23)

Submitted by

ABHIJEET DASH

GGV/21/03701

21059101

Under the supervision of

Dr. Devendra Kumar Patel

Professor and Head

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This is to certify that dissertation entitled "**Antibacterial and antibiotic resistance modifying activity of the oil extracts against opportunistic microorganisms including multi-drug resistant phenotypes**" is based on original work done by **Mr. Abhijeet Dash**, (M.Sc. IVth Sem., Enrollment no-GGV/21/03701, Roll no-21059101) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.) and this has not previously formed the basis of the award of any degree, diploma, associate ship and any other similar title and it represent entirely an independent work on the part of the candidate.

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Prof. Devendra Kumar Patel

Dr. Devendra Kumar Patel
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Abstract

The escalating global threat of antibiotic resistance necessitates innovative approaches to combat opportunistic bacterial infections, especially those driven by multi-drug resistant phenotypes. This study explores the potential of oil extracts of dried mace of *M. fragrans* and fresh leaves of *C. citratus* as agents to counteract bacterial growth and antibiotic resistance. Antibiotic resistance of *E. coli* and *Pseudomonas* was checked through the implementation of a variety of antibiotic discs through disc diffusion assay. Subsequently, the antibacterial efficiency of the oil extracts of *M. fragrans* and *C. citratus* yielded befitting results which was confirmed through the application of well diffusion assay. Furthermore, the study delves into the capacity of M. *fragrans* extracts to modify antibiotic resistance in bacterial strains exhibiting multi-antibiotic-resistance. *M. fragrans* oil also demonstrated limited antifungal properties. This phenomenon suggests a potential synergistic relationship between oil extracts and conventional antibiotics, offering a strategy to mitigate the challenges posed by multi-drug resistant bacterial strains. The chemical constituents in *M. fragrans* seeds were analyzed using gas chromatographic-mass spectrometric (GC-MS) methods. The findings highlight the antibacterial prowess of these extracts and their capability to modulate antibiotic resistance, thus paving the way for further exploration of their clinical applications as adjunct therapies to conventional antibiotics.

Keywords: antibacterial, antifungal, *C. citratus*, GC-MS analysis, *M. fragrans*

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Bioactive secondary metabolites of an endophytic fungus *Pestalotiopsis sp.* isolated from *Phyllanthus embilca* L.

Dissertation Report

Submitted

For the partial fulfillment of the degree of

MASTER OF SCIENCE

IN

BOTANY

Submitted By

ADITI ANANT

ROLL. NO. 21059102

2022-23

Under the supervision of

Dr. Deepika Mahobiya

Department of Botany

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CERTIFICATE

This is to certify that the project report entitled **"Bioactive secondary metabolites of an endophytic fungus *Pestalotiopsis sp.* isolated from *Phyllanthus embilca* L."** is an authentic record of work done by **ADITI ANANT**, student of M.Sc. Botany under the guidance of **Dr. Deepika Mahobiya**, Assistant Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya.

Place: Bilaspur (Chhattisgarh)
Date: 21/08/23

Dr. Deepika Mahobhiya
Department of Botany
Guru Ghasidas Vishwavidyalaya
Bilaspur (Chhattisgarh)

Signature of Student

21.08.23
Signature of Supervisor

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IN SILICO APPROACH OF CYANOBACTERIAL BIOACTIVE COMPOUNDS AS POTENTIAL INHIBITORS OF CANCER INDUCING PROTEINS

Dissertation Report

Submitted
For the partial fulfillment of the degree of

MASTER OF SCIENCE
IN
BOTANY

By
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This is to certify that the dissertation entitled "Insilico approach of cynobacterial bioactive compounds as potential inhibitors of cancer inducing proteins" is based on the original work done by **Aishwarya Sahu, M.Sc. 4th semester**, Department of Botany, Guru GhasidasVishwavidyalaya, Koni, Bilaspur (C.G.) and this has not previously formed the basis for the award of any degree, diploma, associate-ship, fellowship, or any other similar title and its represents entirely an independent work of the candidate.

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Organic mulching of weed control (*Lycopersicon esculentum* Mill.)

Dissertation submitted

In partial fulfilment for degree of

M.Sc. in Botany

By

Alisha Tirkey

Under the supervision of

Dr. Neelima Meravi

Assistant Professor, Department of Botany

Guru Ghasidas Vishwavidyalaya

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2023

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Deciphering of Seed borne Fungi on Vigna radiata of Odisha

A Dissertation Reportfor the Fulfillment of the Degree

MASTER OF SCIENCEINBOTANY

By

Aliva Naik

Roll No.21059105

Under the Supervision of

Prof. Narendra Kumar Mishra

Professor

Department of Botany

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2021-2023

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CERTIFICATE

This is to certify that **Ms. Aliva Naik,** a student of M.Sc. Botany, IV semester has worked on a dissertation project entitled "**Deciphering of Seed borne Fungi on *Vigna radiata* of Odisha"** under the supervision of **Prof. Narendra Kumar Mishra,** Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur and this has not previously formed the basis of any degree, associateship, and any other similar title and it represents entirely an independent work on the part of the candidate.

21/8/23

Signature of the Supervisor

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ABSTRACT:

The present study was conducted to study the total Mycobiota and its phytopathogenic potential on mung bean seeds of the Western Odisha region. The collected seed samples from 4 different districts (a total of 40 seed samples) were investigated for seed-borne fungal species. Two techniques agar plate and as well as blotter techniques were used for the isolation of Mycobiota from the seed sample. The two fungi, *Aspergillus niger*, and *Aspergenius flavus*, showed the highest percentage of occurrence by the unsterilized and sterilized method, in Bargarh district followed by Sambalpur, Sundargarh, and Nuapada, respectively. After 8-9 months of storage, it is clear that the stored seed of Vigna radiata is found to be associated with more than 14 fungus species and found that among those two *Aspergillus spp*., the most prevalent species was *A. flavus*, which was confirmed through molecular identification. The finding of our present study reveals that the fungal infestation in mung bean seeds results in lowering of total protein and carbohydrate content in the *A. flavus* and *A. niger* infected group. And the two *Aspergillus spp*., are involved in the production of aflatoxin B1, B2, and G1. These are associated with a reduction in seed germination and seedling vigor, which was clearly shown in our present study, also the toxins cause various disease conditions in humans when fungal-infected seeds are consumed. In view of the above harmful effects of fungal infection, preventive and diagnostic methods should be applied for the improvement of the dietary stored seed.

Keywords: *Vigan radiata, Aspergillus species*, Aflatoxin, Agar plate method, Blotting technique, Pure culture,

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SCREENING AND OPTIMIZATION OF DYE DEGRADING BACTERIA ISOLATED FROM TEXTILE INDUSTRY

A Dissertation Thesis

Submitted

In partial fulfillment of the requirement for the award of the degree of

Master of Science

In

Botany

By

AMAN BARIK

Enrolment No. GGV/19/3065

Roll No. 21059107

Under the Supervision of

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Professor in Botany

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This is to certify that dissertation entitled "**Screening and Optimization of Dye-Degrading Bacteria Isolated from Textile Industry**" is based on original work done by **Mr. Aman Barik,** (M.Sc. IVth Sem., Enrollment no-GGV/19/3065, Roll No. - 21059107) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.) and this has not previously formed the basis of the award of any degree, diploma, associate ship and any other similar title and it represent entirely an independent work on the part of the candidate.

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Place: Bilaspur
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Antimicrobial Effect of Tridax Procumbens on Different Microbes

A DISSERTATION REPORT
SUBMITTED FOR THE PARTIAL FULFILLMENT OF
THE DEGREE OF MASTER OF SCIENCE
IN BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

BY

Anisma Pattanayak

M.S.C 4th SEMESTER

ENROLLMENT NO-GGV/21/03704

ROLL NO-21059108

UNDER THE SUPERVISION OF

Dr. Preeti Verma

ASSISTANT PROFESSOR

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This is to certify that the dissertation **"Antimicrobial effect of *Tridax Procumbens* on Different Microbes",** is based on the review of literature work done by **Anisma Pattanayak** (Enrollment No.- GGV/21/03704) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G. and this has not previously formed the basis of the award of any degree, diploma, associateship and any other similar title and it represents entirely an independent work on the part of the candidate.

Place: Bilaspur
Date: 21/08/2023

21/08/2023
Dr. Preeti Verma (Supervisor)
Assistant professor

I recommend the project to be forwarded to the respective examiners for evaluation. I wish her all the success in her carrier and life.

Place: Bilaspur
Date:

21-08-23
Prof. Devendra Kumar Patel
Head of Botany Department
G.G.V, Bilaspur (C.G.)

Head
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Guru Ghasidas Vishwavidyalaya
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Koni, Bilaspur – 495009 (C.G.)

A

DISSERTATION

ON

"AN ECO-FRIENDLY PERSPECTIVE ON THE EXTRACTION AND USE OF NATURAL DYES ON NATURAL FIBRES"

FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD

OF

MASTER OF SCIENCE

IN

BOTANY

TO

GURU GHASIDAS VISWAVIDYALAYA, BILASPUR

BY

B P LIPSA

(ENROLLMENT NO. GGV/21/03076)

UNDER THE SUPERVISION OF

PROF. DEVENDRA KUMAR PATEL

PROFESSOR AND HEAD OF THE DEPARTMENT (BOTANY)

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CERTIFICATE

This is to certify that the dissertation report entitled **"AN ECO-FRIENDLY PERSPECTIVE ON THE EXTRACTION AND USE OF NATURAL DYES ON NATURAL FIBRES"** is based upon original work done by Ms. B P Lipsa, student of MSc. (Botany) of Department of Botany, Guru Ghasidas Viswavidyalaya, Koni, Bilaspur (C.G.) and this has not been previously formed the basis for the award of any degree, diploma, associate ship, fellowship or any other similar title and it represents entirely on independent work of the candidate.

Date: 17.08.23

Place: Bilaspur

DKPatel 16.08.23

Signature of Supervisor

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Date: 17.08.23

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(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
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Barnawapara Wildlife Sanctuary Villages: Uncovering Ethnobotanical Wonders and Cultural Ecosystem Services in Balodabazar District, Chhattisgarh, India.

Dissertation Report

Submitted

For the partial fulfillment of the degree of

MASTER OF SCIENCE

IN BOTANY

By

BASANT KUMAR PRADHAN

ROLL. NO. 21059111

2022-23

Under the supervision of

Prof. Dr. A. K. Dixit

Department of Botany

GURU GHASIDAS VISHWAVIDYALAYA
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This is to certify that the project report entitled **"Barnawapara Wildlife Sanctuary Villages: Uncovering Ethnobotanical Wonders and Cultural Ecosystem Services in Balodabazar District, Chhattisgarh, India."** is an authentic record of work done by Basant Kumar Pradhan, student of M.Sc. Botany of Guru Ghasidas Vishwavidyalaya.

Place: Bilaspur (Chhattisgarh)

Date: 21/08/2023

Signature of Student 21/08/23

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Signature of Guide

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Head
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ABSTRACT

The Barnawapara Wildlife Sanctuary, nestled in Chhattisgarh's Balodabazar District, thrives as a habitat for diverse flora, fauna, and thriving human settlements. This study focuses on the villages around the sanctuary, investigating their ethnobotanical marvels and cultural ecosystem services. Particularly emphasizing ethnobotany, the research delves into local traditions, revealing reliance on plants for sustenance, medicine, crafts, and rituals. Through engagement and fieldwork, insights into the intricate human-nature relationship emerge. These findings underscore the immense cultural and ecological value villages contribute to the sanctuary. Recognizing these treasures and services becomes pivotal for conservation, resource management, and tradition preservation. The research establishes a foundation for future endeavors, fostering collaborations among communities, the Forest Department, and stakeholders to safeguard Chhattisgarh's rich ethnobotanical heritage. This compilation underscores the nexus of nature, culture, and human well-being in Chhattisgarh, spotlighting the Barnawapara Wildlife Sanctuary. It delves into ecosystem services, bridging nature's benefits and informed decisions. Ethnobotany's significance surfaces as it reflects locals' deep link with plant resources, aiding livelihoods and conservation. Cultural ecosystem services at the sanctuary embody spiritual enrichment, heritage preservation, aesthetics, inspiration, and education, cultivating harmony between nature and culture. The relationship between ethnobotany and these services emerges, centering on humans, plants, and environment. Ethnobotany's exploration aligns with ecosystem advantages, nurturing spiritual bonds and sustainability. This connection sustains practices and cultural value. In essence, these passages encapsulate an abstract highlighting Barnawapara's dual significance, spotlighting cultural and ecological wonders. Collaborative efforts, immersive research, and insights contribute to the fusion of ethnobotany and conservation, resonating with the balance between humanity and nature.

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ORGANIC MULCHING METHOD, AN EMERGING WATER SAVING TECHNIQUE

A DISSERTATION REPORT

SUBMITTED FOR THE PARTIAL FULFILLMENT OF THE DEGREE OF MASTER OF SCIENCE IN BOTANY

BY

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ENROLLMENT NO-GGV/21/03707

ROLL NO-21059112

UNDER THE SUPERVISION OF

DR. NEELIMA MERAVI

DEPARTMENT OF BOTANY

GGV, BILASPUR, (C.G.)

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDYALAYA, KONI

BILASPUR- 495009 (C.G.)

SESSION (2021-2023)

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EFFECT OF ACIDIFICATION ON POND ECOSYSTEM PRODUCTIVITY

A DISSERTATION REPORT

SUBMITTED FOR THE PARTIAL FULFILLMENT OF

THE DEGREE OF MASTER OF SCIENCE

IN BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

BY

CHITROTPALA KARNA

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A

Dissertation report on

Lichen based fabrication and characterization of silver nanoparticles and their use as potential antimicrobial agents

In partial fulfilment of the degree of

M.Sc. Botany IVth sem

(Session 2022-23)

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DEEPSHIKHA GAYAKWAD

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Under the supervision of

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Professor

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"Decolourization of synthetic dyes used in paper and textile industry by isolated *Pseudomonas aeruginosa* "

Dissertation Report

Submitted

. For the partial fulfillment of the degree of

MASTER OF SCIENCE

IN

BOTANY

Submitted By

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Under the supervision of

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Decolourization of synthetic dyes used in paper and textile industry by isolated *Pseudomonas aeruginosa*

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Study to find relation between plasmid and antibiotic resistance in mine's soil bacteria

Dissertation Report

Submitted

For the partial fulfillment of the degree of

MASTER OF SCIENCE

IN BOTANY

By

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ROLL NO. 21059116

2021-23

Under the supervision of

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Assistant Professor

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Place: Bilaspur

Date: 21/08/23

Dr. V. N. Tripathi
(Supervisor)

I recommend the Project Report to be forwarded to the respective examiners for evaluation. I wish her all the success in her carrier and life.

Place: Bilaspur

Date: 21/08/23

21.08.23

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IMPACT OF RUSSIA UKRAINE WAR ON ENVIRONMENT

Dissertation Report

Submitted

For the partial fulfillment of the degree of

MASTER OF SCIENCE

IN

BOTANY

Submitted By

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A

Dissertation on

Effect of Water Stress on Seed Germination and early Seedling Growth of Spinach

(*Spinacia oleracea* L.)

Submitted for

Partial fulfilment of the requirement for the award of the degree of

Master of Science

in

Botany

By

Jyotsna Rani Sahoo
M.Sc. (IV Semester)
(Enrollment No - GGV/21/03712, Roll no - 21059119)

Under the Supervision of
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This is to certify that the dissertation entitled **"Effect of Water Stress on Seed Germination and early Seedling Growth of Spinach (*Spinacia oleracea* L.)"** is based on the original work done by **Jyotsna Rani Sahoo** who is a student of M.Sc. Botany, 4th semester, Guru Ghasidas Vishwavidyalaya (A Central University), Koni, Bilaspur (C.G). Further, this is also certified that the content of this work has been submitted or published for the award of any degree diploma or any other similar degree and represents entirely independent work done by her.

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(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर - 495009 (छ.ग.)

Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur – 495009 (C.G.)

Dynamics of Extra Floral Nectar Production: A case study of *Leucaena leucocephala* (Lam.) De Wit (Caesalpinioideae DC.)

Dissertation Report Submitted
for the partial fulfilment of the degree of

MASTER OF SCIENCE IN BOTANY

By

KUNAL KUMAR
ROLL NO: 21059120
2021-2023

Under the supervision of

Dr. S. SHWETA
Assistant Professor

GURU GHASIDAS VISHWAVIDYALAYA
BILASPUR – 495009 (C.G.)

गुरु घासीदास विश्वविद्यालय
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Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur – 495009 (C.G.)

CERTIFICATE

This is to certify that the project report entitled **"Dynamics of Extra Floral Nectar Production: A case study of *Leucaena leucocephala* (Lam.) De Wit (Caesalpinioideae DC.)"** is an authentic record of work done by Kunal Kumar student of M.Sc. Botany of this Vishwavidyalaya.

Date:

Place: Bilaspur (C.G)

21.08.23

Signature of H.O.D.

विभागाध्यक्ष
Head
वनस्पति शास्त्र विभाग
Department of Botany
गुरु घासीदास विश्वविद्यालय (केन्द्रीय वि.वि.), बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya (Central University), Bilaspur (C.G.)

21/8/2023

Signature of Guide

Dr. S. Shweta
Assistant Professor
Department of Botany
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Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur – 495009 (C.G.)

ISOLATION AND CHARACTERIZATION OF PGPR FROM DIFFERENT RHIZOSPHERE SOIL OF DIFFERENT CROPS FROM KALAHANDI, ODISHA

A DISSERTATION REPORT
SUBMITTED FOR THE PARTIAL FULFILLMENT OF
THE DEGREE OF MASTER OF SCIENCE
IN BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

BY

Nihar Ranjan Nayak
M.S.C 4th SEMESTER
ENROLLMENT NO-GGV/21/03714
ROLL NO-21059122
UNDER THE SUPERVISION OF

Dr. Preeti Verma
ASSISTANT PROFESSOR
DEPARTMENT OF BOTANY
GURU GHASIDAS VISHWAVIDYALAYA
KONI, BILASPUR-495009 (C.G)

गुरु घासीदास विश्वविद्यालय
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Guru Ghasidas Vishwavidyalaya
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Koni, Bilaspur – 495009 (C.G.)

CERTIFICATE

This is to certify that the dissertation **"Isolation and characterization of PGPR from different Rhizosphere soil of different crops from Kalahandi, Odisha"**, is based on the review of literature work done by **Nihar Ranjan Nayak** (Enrollment No.- GGV/21/03714) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G. and this has not previously formed the basis of the award of any degree, diploma, associate ship and any other similar title and it represent entirely an independent work on the part of the candidate.

Place: Bilaspur
Date: 21/08/2023

21/08/2023
Dr. Preeti Verma (Supervisor)
Assistant professor

I recommend the project to be forwarded to the respective examiners for evaluation. I wish her all the success in her carrier and life.

Place: Bilaspur
Date:

21.08.23
Prof. Devendra Kumar Patel
Head of Botany Department
G.G.V, Bilaspur (C.G.)

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गुरु घासीदास विश्वविद्यालय
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A SURVEY ON USAGE OF ETHENOMEDICINAL PLANTS FOR THE TREATMENT OF COMMON COLD AND INFLUENZA BY THE RURAL RESIDENCE OF BILASPUR DISTRICT, CHHATTISGARH

A DISSERTATION REPORT

SUBMITTED

For the fulfillment of the degree

of

MASTER OF SCIENCE

IN

BOTANY

By

OMPRAKASH BHOI

Roll no-21059124

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This is certified that "**A survey on usage of ethnomedicinal plants for the treatment of common cold and influenza by the rural residence of Bilaspur district, Chhattisgarh**" is based on the original work done by **"Omprakash Bhoi"** (Enrollment no.-GGV/21/03716) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur and this has not previously formed basis of award of any degree, diploma, associated ship and other similar title and it represent entirely an independent work of the candidate.

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AN INVESTIGATION ON FUNGAL DETERIORATION OF *Lens culinaris* OF BILASPUR REGION AND MOLECULAR IDENTIFICATION OF DOMINANT FUNGAL SPECIES

A DISSERTATION REPORTSUBMITTED FOR THE PARTIAL FULFILLMENT OF

THE DEGREE OF MASTERS OF SCIENCE

IN BOTANY

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BY

PARUL BARIK

M.S.C 4TH SEMESTER

ENROLLMENT NO-GGV/21/03717: ROLL NO-21059125

UNDER THE SUPERVISION OF

Dr. NARENDRA KUMAR

DEPARTMENT OF BOTANY

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(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur – 495009 (C.G.)

CERTIFICATE

This is to certify that "An investigation on fungal deterioration of *Lens culinaris* of Bilaspur region and molecular identification of dominant fungal species" is based on the original work done by **"Parul Barik"** (Enrolment no: GGV/21/03717) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur and this has not previously formed basis of award of any degree, diploma, associated ship and other similar title and it represent entirely an independent work of the candidate.

Place: Bilaspur

Date:

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21/8/23

Dr. Narendra Kumar

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Dr. Narendra Kumar

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Place: Bilaspur

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Guru Ghasidas Vishwavidyalaya
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Biofilm formation in *Rhodococcus equi* under varying conditions: metal stress and glucose effect

Dissertation Report

Submitted

For the partial fulfillment of the degree of

MASTER OF SCIENCE

IN BOTANY

By

Prateeksha Yadav

ROLL NO. 21059127

2021-23

Under the supervision of

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Assistant Professor

GURU GHASIDAS VISHWAVIDYALAYA,

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CERTIFICATE

This is certified that dissertation entitled **"Biofilm formation in *Rhodococcus equi* under varying conditions: metal stress and glucose effect"**, is based on original work done by **Prateeksha Yadav** (Enrollment No. - GGV/21/03718) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G. and this has not previously formed the basis of the award of any degree, diploma, associate ship and any other similar title and it represents entirely an independent work on the part of the candidate.

Place: Bilaspur

Date: 21/8/23

Dr. V. N. Tripathi
(Supervisor)

I recommend the Project Report to be forwarded to the respective examiners for evaluation. I wish her all the success in her carrier and life.

Place: Bilaspur

Date: 21/8/23

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PRIMING *Vigna radiata* SEEDS WITH CALCIUM NITRATE ENHANCES TOLERANCE IN SALT STRESS CONDITION

A DISSERTATION WORK

SUBMITTED FOR THE PARTIAL FULFILLMENT OF THE DEGREE OF MASTER OF SCIENCE IN BOTANY

BY

PRATIKSHYA RANI CHAND

ENROLLMENT NO- GGV/21/03719

ROLL NO- 21059128

UNDER THE SUPERVISION OF

DR. DEEPANKER YADAV

ASSISTANT PROFESSOR

DEPARTMENT OF BOTANY, GGV, BILASPUR

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDYALAYA, KONI

BILASPUR- 495009 (C.G.)

SESSION (2021-2023)

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CERTIFICATE

This is to certify that the project entitled "**PRIMING *Vigna radiata* SEEDS WITH CALCIUM NITRATE ENHANCES TOLERANCE IN SALT STRESS CONDITION**" submitted to Guru Ghasidas Vishwavidyalaya in partial fulfillment of the requirements for the award of the degree of Master of Science in Botany is a Bonafide research work carried out by **Ms. Pratikshya Rani Chand M.SC IVth SEM GGV/21/03719, ROLL NO:21059128**, Department of Botany, Guru Ghasidas Vishwavidyalaya, under **Dr. Deepanker Yadav** (Assistant professor). I further certify that no part of this project has been submitted for any other degree or diploma in this University or any other University.

Date: 21.08.2023

Place: Bilaspur (C.G.)

Signature of guide

Dr. Deepanker Yadav

Date:

Place: Bilaspur (C.G.)

21.08.23

Signature of HOD

Prof. D. K. Patel

Head
Department of Botany
Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur

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Guru Ghasidas Vishwavidyalaya
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Enhancing Seed Germination and Seedling Growth in *Cucumis sativus* Under Salinity Stress through Hydrogen Peroxide and Sodium Nitroprusside Priming

DISSERTATION REPORT

SUBMITTED FOR THE PARTIAL FULFILLMENT OF THE DEGREE OF MASTER OF SCIENCE IN BOTANY

BY
R. AKHILA
M. SC (IV SEMESTER)
(ENROLLMENT NO: GGV/21/03721, ROLL NO: 21059130)

UNDER THE SUPERVISION OF
DR. DEEPANKER YADAV
ASSISTANT PROFESSOR
DEPARTMENT OF BOTANY, GGV, BILASPUR

DEPARTMENT OF BOTANY
GURU GHASIDAS VISHWAVIDYALAYA, KONI,
BILASPUR-495009(C.G.)
SESSION (2021-2023)

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Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur – 495009 (C.G.)

CERTIFICATE

This is to certify that the project entitled "**Enhancing Seed Germination and Seedling Growth in *Cucumis sativus* Under Salinity Stress through Hydrogen Peroxide and Sodium Nitroprusside Priming**" submitted to Guru Ghasidas Vishwavidyalaya in partial fulfillment of the requirements for the award of the degree of Masters of Science in Botany is a Bonafide research work carried out by **Ms. R. Akhila, M.Sc. IVth Semester GGV/21/03721, Roll No: 21059130**, Department of Botany, Guru Ghasidas Vishwavidyalaya, under the supervision of **Dr. Deepanker Yadav,** Assistant professor, Department Of Botany . I further certify that no part of this project has been submitted for any other degree or diploma in this University or any other University.

Date:
Place: Bilaspur (C.G.)

21.08.23

Signature of Head of the Dept.
Dr. D.K Patel

विभागाध्यक्ष
Head
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गुरु घासीदास विश्वविद्यालय (केन्द्रीय वि.वि.), बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.)

Date: 21-8-2023
Place: Bilaspur (C.G.)

Dyadav

Signature of Guide
Dr. Deepankar Yadav

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गुरु घासीदास विश्वविद्यालय
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Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur – 495009 (C.G.)

Antimicrobial potential of copper oxide nanoparticles synthesized by *Azadirachta indica* Leaf and their characterization.

Dissertation Report

Submitted

For the partial fulfillment of the degree of

MASTER OF SCIENCE

IN

BOTANY

Submitted By

SAIKAT JANA

ROLL. NO. 21059132

2022-23

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PROF. SUSHIL KUMAR SHAHI

Department of Botany

GURU GHASIDAS VISHWAVIDYALAYA
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CERTIFICATE

This is to certify that dissertation entitled **"Antimicrobial potential of copper oxide nanoparticles synthesized by *Azadirachta indica* Leaf and their characterization"** is based on original work done by **Saikat Jana,** (M.Sc. IV[th] Sem., Enrollment no- GGV/21/03723, Roll No. - 21059132) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.) and this has not previously formed the basis of the award of any degree, diploma, associate ship and any other similar title and it represent entirely an independent work on the part of the candidate.

21/8/2023

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Place: Bilaspur
Date:

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Koni, Bilaspur – 495009 (C.G.)

AN INVESTIGATION ON SEED MYCOFLORA OF *VIGNA MUNGO* IN BILASPUR REGION AND ITS PHYTOPATHOGENIC POTENTIAL

Dissertation Report Submitted for the partial fulfilment of the degree of

MASTER OF SCIENCE

IN

BOTANY

By

SAMANVAY SINGH

GGV/21/03724, Roll No. 21059133

2021-23

Under the Supervision of

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GURU GHASIDAS VISHWAVIDYALAYA

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Guru Ghasidas Vishwavidyalaya
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CERTIFICATE

This is to certify that the project report entitled **"An investigation on seed mycoflora of *Vigna mungo* in Bilaspur region and its phytopathogenic potential"** is an authentic record of work done by **Samanvay Singh,** Student of M.Sc. Botany in the Department of Botany of this Vishwavidyalaya.

Place: Bilaspur (Chhattisgarh)

Date: 21/08/23

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A SURVEY ON ETHNOMEDICINAL PLANTS TO CURE THE DERMATOLOGICAL DISEASES IN BILASPUR DISTRICT, CHHATTISGARH

A DISSERTATION REPORT
SUBMITTED
For the fulfillment of the degree
of
MASTER OF SCIENCE
IN
BOTANY

By
SAMBIT MAHAKUR
Roll no-21059134
Under the supervision of
Dr. Ramesh Kumar Ahirwar
Assistant Professor
DEPARTMENT OF BOTANY
GURU GHASIDAS VISHWAVIDYALAYA
BILASPUR (C.G.)
2023

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This is certified that "**A survey on ethnomedicinal plants to cure the dermatological diseases in bilaspur district, chhattisgarh**" is based on the original work done by **"Sambit Mahakur"** (Enrollment no.-GGV/21/03725) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur and this has not previously formed basis of award of any degree, diploma, associated ship and other similar title and it represent entirely an independent work of the candidate.

Place: Bilaspur

Date: 21/08/2023

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Date: 21/08/2023

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Guru Ghasidas Vishwavidyalaya
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HEAVY METAL RESISTANCE IN BACTERIA ISOLATED FROM BAILADILA IRON-ORE MINES, CHHATTISGARH

Dissertation Report

Submitted

For the partial fulfillment of the degree of

MASTER OF SCIENCE

IN BOTANY

By

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ROLL NO. 21059135; ENROLLMENT NO. GGV/18/3255

2021-23

Under the supervision of

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This is to certify that dissertation entitled **"Heavy metal resistance in bacteria isolated from Bailadila iron-ore mines, Chhattisgarh"**, is based on original work done by **Shashank Agrawal** (Enrollment No.- GGV/18/3255) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G. and this has not previously formed the basis of the award of any degree, diploma, associate ship and any other similar title and it represents entirely an independent work on the part of the candidate.

Place: Bilaspur

Date:

Dr. V. N. Tripathi
(Supervisor)

I recommend the Project Report to be forwarded to the respective examiners for evaluation. I wish her all the success in her carrier and life.

Place: Bilaspur

Date: 21.08.23

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EVALUATION OF ISOTHERM MODELS FOR THE SORPTION PROPERTIES OF BIOCHAR IN CADMIUM CONTAMINATED SOIL

A DISSERTATION REPORT

SUBMITTED

For the partial fulfillment of the degree

OF

MASTER OF SCIENCE

IN

BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

By

SNEHASHREE PATEL

M.Sc. 4TH SEMESTER

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Investigation of modulatory potential of angiogenesis and anti-angiogenesis activity of *Emblica officinalis, Alstonia scholaris* and *Solanum xanthocarpum*

Dissertation Report Submitted for the partial fulfilment of the degree of

MASTER OF SCIENCE IN BOTANY

By

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Phytochemical Analysis and Antimicrobial Activity of the Selected Xerophytic Plants

Dissertation Report

Submitted

For the partial fulfillment of the degree of

MASTER OF SCIENCE

IN

BOTANY

Submitted By

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STUDIES ON THE VARIATIONS IN THE EPIDERMAI FEATURES OF *CROTALARIA* SPECIES AND THEIR TAXONOMIC AND ADAPTIVE SIGNIFICANCE

Dissertation Report Submitted
for the partial fulfilment of the degree of

MASTER OF SCIENCE IN BOTANY

By

SUNITI SAHU
M.Sc. IV Semester Botany
(Roll No.21059140)
2021-2023

Under the supervision of

Dr. S. SHWETA
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Date: 21.08.23
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AMENDMENT EFFECT OF BIOCHAR AND COMPOST ON SOIL QUALITY AND PLANT GROWTH

A DISSERTATION REPORT

SUBMITTED

For the partial fulfillment of the degree

OF

MASTER OF SCIENCE

IN

BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

By

SWARNA MANJARI MISHRA

M.S.c 4TH SEMESTER

ENROLLMENT NO-GGV/21/03730: ROLL NO-21059141

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This is to certify that **"Amendment effect of biochar and compost on soil quality and plant growth"** is based on the original work done by "Swarna Manjari Mishra" (Enrolment no: GGV/21/03730), Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur and this has not previously formed basis of award of any degree, diploma, associated ship and other similar title and it represents entirely an independent work of the candidate.

Place: Bilaspur

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Abstract

Biochar is an organic carbon-based environment friendly product. It is known globally for its soil conditioning properties and increasing plant productivity. The aim of this study was to investigate the effect of biochar and compost at different amendment rates (0%, 1% and 2%) in soil and plant. The application of biochar and compost alone and in combination were studied to determine the effect of biochar in soil and plant growth in potting experiment. The result showed that biochar in combination with compost at 2% amendment rate was beneficial for increasing soil functioning and plant productivity. Biochar addition helped in increasing pH of soil in all the treatments. The plant morphology, chlorophyll content, showed maximum increase in biochar + compost combination as compared to biochar or compost alone. Catalase activity and proline content showed no significant difference indicating absence of any stress due to amendment. It can be suggested that biochar in combination with compost showed positive impact on plant growth and soil functioning. However, more studies under field conditions are required in future to understand the combined application of biochar and compost more effectively.

Keywords: Soil; Biochar; Plant; Compost; germination; growth

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EFFECT OF DIFFERENT CHEMICAL PRIMING ON PLANT SEED GERMINATION AND SEEDLING GROWTH OF *Citrullus lanatus*

A DISSERTATION WORK

SUBMITTED FOR THE PARTIAL FULFILMENT OF THE DEGREE OF MASTER OF SCIENCE IN BOTANY

BY

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GGV/21/03731, ROLL NO.-21059143

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DEPARTMENT OF BOTANY
GURU GHASIDAS VISHWAVIDYALAYA
BILASPUR - 495009(C.G.)
SESSION (2021-2023)

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर – 495009 (छ.ग.)

Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur – 495009 (C.G.)

CERTIFICATE

This is to certify that I, **Tapash Ranjan Sahoo**, student of M.Sc. IV[th] Semester (Botany) of the Department of Botany session 2021-2023, **Roll No. 21059143**, **GGV/21/03731**, have carried out a dissertation report entitled "**Effect of different chemical priming on plant seed germination and plant seedling growth of *Citrullus lanatus***" under the guidance of **Dr. Deepanker Yadav** from the **Department of Botany, GGV Bilaspur (C.G)**. This is an original work carried out by me and the report has not been submitted to any other University for the award of any degree or diploma.

PLACE: BILASPUR
DATE: 21 / 08 /2023

Dr. Deepanker Yadav
Assistant Professor
(Supervisor)
Department of Botany
Guru Ghasidas Vishwavidyalaya, Bilaspur(C.G)

PLACE: BILASPUR
DATE: 21 / 08 / 2023

21.08.23

Prof. Devendra Kumar Patel
Head of the Department
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Head
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'Typha latifolia As A Sustainable Approach For Heavy Metal Phytoremediation And Bioaccumulation'

Dissertation Report

Submitted

For the partial fulfillment of the degree of

MASTER OF SCIENCE

IN

BOTANY

By

USHMA SEN

21059144

2022-23

Under the supervision of

Mr. VIVEK PATEL

Department of Botany

GURU GHASIDAS VISHWAVIDYALAYA
BILASPUR – 495009 (CHHATTISGARH)

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CERTIFICATE

This is to certify that the project report entitled **"Typha latifolia as a sustainable approach for phytoremediation and bioaccumulation ."** is an authentic record of work done by **Ushma Sen,** a student of M.Sc. Botany of Guru Ghasidas Vishwavidyalaya.

Place: Bilaspur (Chhattisgarh)

Date: 21.08.23

Signature of Student

VKpatel
Signature of Guide
VIVEK KUMAR PATEL

Prof. Devendra kumar Patel
Professor & Head
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GGV Bilaspur (C.G)
21.08.2023

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Abstract

The majority of Par Pond's coastline, which serves as a cooling reservoir for the reactors of the Savannah River Plant near Aiken, South Carolina, is covered with *T. latifolia*. The flow of hot water from one end of the pond to the other creates a thermal gradient. To ascertain the biochemical and morphological effects of temperature on *Typha latifolia* clones coming from various points along this thermal gradient, this study was conducted. According to the research, "hot" and "cold" end plants respond to temperature in a comparable way. Forty-eight rhizome plants were transplanted into tanks at 20 C and 30 C from both ends of Par Pond. Total levels of malic dehydrogenase activity, proportions of mitochondrially bound MDH and growth rates were significantly different in plants grown However, no discernible changes were found between people from the "hot" and "cold" ends inside each of the two tanks. In the publication, it is explored how these data relate to assumptions about quantitative methods of enzyme adaptation.

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BIOCHAR AS AMENDMENT FOR DECREASING CADMIUM CONTAMINATION IN SOIL

A DISSERTATION REPORT

SUBMITTED FOR THE PARTIAL FULFILLMENT OF

THE DEGREE OF MASTER OF SCIENCE

IN BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

BY

SHIBANI CHOUDHURY

M.S.C 4TH SEMESTER

ENROLLMENT NO-GGV/21/03732; ROLL NO-21059145

UNDER THE SUPERVISION OF

Dr. SUDHIR KUMAR PANDEY

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

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(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
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This is to certify that "Biochar as amendment for decreasing cadmium contamination in soil" is based on the original work done by "Shibani Choudhury" (Enrolment no: GGV/21/03732), Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur and this has not previously formed basis of award of any degree, diploma, associated ship and other similar title and it represents entirely an independent work of the candidate.

Dr. Sudhir Kumar Pandey
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Place: Bilaspur

Date: 21.8.23

Supervisor

Dr. S.K. Pandey

Associate Professor

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Forwarded to the controller of examinations, Guru Ghasidas Vishwavidyalaya in partial fulfilment of the requirements of the degree of Master of Science in Botany.

21.08.23

Place: Bilaspur

Date: 21.08.23

Prof. D.K. Patel

Head of Department of Botany

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Guru Ghasidas Vishwavidyalaya
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Koni, Bilaspur – 495009 (C.G.)

A

DISSERTATION

ON

"AN ECO-FRIENDLY PERSPECTIVE ON THE EXTRACTION AND USE OF NATURAL DYES ON NATURAL FIBRES"

FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD

OF

MASTER OF SCIENCE

IN

BOTANY

TO

GURU GHASIDAS VISWAVIDYALAYA, BILASPUR

BY

B P LIPSA

(ENROLLMENT NO. GGV/21/03076)

UNDER THE SUPERVISION OF

PROF. DEVENDRA KUMAR PATEL

PROFESSOR AND HEAD OF THE DEPARTMENT (BOTANY)

GURU GHASIDAS VISWAVIDYALAYA (A CENTRAL UNIVERSITY)

BILASPUR (C.G., -495009)

2022-2023

गुरु घासीदास विश्वविद्यालय
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CERTIFICATE

This is to certify that the dissertation report entitled **"AN ECO-FRIENDLY PERSPECTIVE ON THE EXTRACTION AND USE OF NATURAL DYES ON NATURAL FIBRES"** is based upon original work done by Ms. B P Lipsa, student of MSc. (Botany) of Department of Botany, Guru Ghasidas Viswavidyalaya, Koni, Bilaspur (C.G.) and this has not been previously formed the basis for the award of any degree, diploma, associate ship, fellowship or any other similar title and it represents entirely on independent work of the candidate.

Date: 17.08.23

Place: Bilaspur

16.08.23

Signature of Supervisor
Dr. Devendra Kumar Patel
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Date: 17.08.23

Place: Bilaspur

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