

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
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Academic Year : 2023-2024		
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**Properties of unmodified and modified biochar derived
from peanut shells and its effect on soil enzymatic activities**

A DESSERTATION REPORT

SUBMITTED

For the partial fulfilment of the degree

OF

MASTER OF SCIENCE

IN

BOTANY



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Abstract

This study investigates the production of unmodified and modified biochar using peanut shell waste and comparing its properties for use as a soil amendment and effect on soil enzymatic activities. Peanut shells were pyrolyzed at 500°C using muffle furnace to produce unmodified and gypsum modified biochar. The physicochemical with syntactic properties were assist through various analytical techniques, including proximate and ultimate analysis, surface area measurement, functional group identification, and surface morphology characterization. Results indicate that gypsum modification significantly altered the biochar's properties, including its yield, chemical composition, surface characteristics, and functional groups. The modified biochar demonstrated enhanced performance as a soil amendment compared to its unmodified counterpart, with notable influences on biochemical activity, except for dehydrogenase. This research contributes to the development of improved biochar-based soil amendments and highlights the potential of agricultural waste valorisation in sustainable soil management practices.

Keywords: soil; biochar; gypsum; enzymes; peanut.



**Dynamics of Extrafloral Nectar Production: A case study
of *Helicteres isora* L.**



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CONTENTS

	Page No.
List of Figures.....	i-ii
List of Tables.....	iii
Abstract.....	iv
1. Introduction	1-6
2. Material and Methods	7-8
2.1 Study sites	7
2.2 Study design	7
2.3 Statistical analysis.....	8
3. Results	9-22
3.1 Morphology of EFNs	9
3.2 EFN anatomy of different developmental stages.....	11
3.3 Nectar composition	14
3.4 Faunal diversity.....	18
3.5 Correlation of EFN nectar composition, faunal diversity and change in flower morphology	21
4. Discussion	23-28
4.1 Morphological diversity of extra floral nectaries in <i>Helicteres isora</i> ...	23
4.2 Developmental stages determine the functional attributes of EFN	24
4.3 Faunal diversity and the adaptive role of EFN.....	26
4.4 Physiology of nectar secretion.....	27
4.5 Correlation of EFNs and nectar production in flower.....	28
5. Conclusion	29
6. References.....	30-34



**ETHNOBOTANICAL STUDY OF MEDICINAL PLANTS USES IN
TREATMENT OF VARIOUS DISEASES BY THE TRIBAL
COMMUNITIES OF BILHA AND MASTURI BLOCK, DISTRICT
BILASPUR, CHHATTISGARH, INDIA**

A DISSERTATION REPORT

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S. No.	Content	Page No.
1.	Introduction	1-2
2.	Review of Literature	2-3
3.	Study area	4-6
4.	Methodology	6-7
5.	Result	8-53
6.	Discussion	53-54
7.	Conclusion	54-55
8.	References	56-58

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Formulation of a herbal toothpaste



A Dissertation Report for the Fulfillment of the Degree

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CONTENTS

<i>List of Tables</i>	06
<i>List of Figures</i>	07
<i>Abstract</i>	08
1. Introduction	09
2. Review of Literature	11
3. Material and Methods	19
4. Results	30
5. Discussion	38
6. Conclusion	39
7. Reference	40



Effect of gypsum modified biochar on bioavailability and enzyme activities in an arsenic contaminated soil

**A DISSERTATION REPORT SUBMITTED
For the partial fulfilment of the degree
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CONTENTS

S.NO	Topic	Page No.
1	Introduction	7
2	Review of literature	8
3	Material and Methods	10
4	Result and Discussion	15
5	Conclusion	22
6	References	23



Effect of salicylic acid priming on the seed germination and seedling growth of *Corchorus olitorius* L. in salt stress

DISSERTATION REPORT

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TABLE OF CONTENTS

Introduction.....	1-3
Materials.....	3
Methods.....	5-8
Experimental procedures.....	5
Seed germination and seedling assay.....	5-6
Biochemical Assay	6-8
Chlorophyll estimation.....	6
Proline estimation.....	6
Malondialdehyde (MDA) Assay.....	7-8
Results.....	8-14
Seed germination and seedling assay.....	8-11
Germination percentage.....	8-9
Measurement of Root length.....	10
Measurement of shoot length	10-11
Biochemical assay	11-13
Chlorophyll estimation.....	11-12
Proline estimation.....	12
Malondialdehyde (MDA) Assay.....	13
Discussion.....	13-15
Conclusion.....	15
Reference.....	16-20

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**ANALYSIS OF MONETARY DYNAMICS AND
MARKET EVOLUTION OF ORNAMENTAL
PLANTS INDUSTRY IN ATTABIRA**

**Dissertation Report Submitted for the partial fulfilment of the degree of
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TABLE OF CONTENTS

CHAPTER NO.	CHAPTERS	PAGE NO.
1	Introduction	1-3
2	Review of Literature	4-8
3	Research Problem	9
4	Research Objective	9
5	Methodology	10-16
6	Survey Results and Analysis	17-24
7	Discussion	25-27
8	Conclusion	28
9	Future Trends	29
10	Reference	30-32



**Seed priming with Hydrogen Peroxide (H_2O_2)
mitigates salt stress in *Vigna radiata* L.**

**A Dissertation Report
Submitted For
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of
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TABLE OF CONTENT

S. No.	Content	Page No.
1	Introduction	1-3
2	Materials and methods	3-7
3	Results <ul style="list-style-type: none">• Seed germination assay<ul style="list-style-type: none">3.1. Seed germination percentage3.2. Root, shoot length and fresh weight• Biochemical assay<ul style="list-style-type: none">3.3. Total Chlorophyll content3.4. Total Proline content3.5. Total MDA content	7-11
4	Discussion	13-14
5	Conclusion	14-15
6	References	16-20



**Seed priming with salicylic acid improves seed
germination and seedling growth in *Spinach oleracea*
L. under salt stress**

Dissertation Report

**Submitted in the partial fulfilment of the degree of
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TABLE OF CONTENT

S. No.	Content	Page No.
1	Introduction	1-3
2	Materials and methods 2.1. Material collection 2.2. Experimental design and treatment details 2.3. Seed sterilization 2.4. Treatment for priming 2.5. Germination of seed on petriplates 2.6. Soil collection and seed sowing 2.7. Harvesting 2.8. Physiological study 2.8.1. Germination percentage 2.8.2. Root and shoot length 2.9. Biochemical assay 2.9.1. Estimation of chlorophyll and carotenoids 2.9.2. Estimation of proline 2.9.3. Estimation of malondialdehyde (MDA) 2.10. Data analysis	4-9
3	Results 3.1. Seed germination assay 3.1.1. Seed germination percentage 3.1.2. Root and shoot length 3.2. Biochemical assay 3.2.1. Chlorophyll content 3.2.2. Carotenoid content 3.2.3. Proline content 3.2.4. MDA content	9-15
4	Discussion	16-17
5	Conclusion	18
6	Reference	19-23



A

Dissertation on

Evaluation of Antibacterial Activity of Karela (*Momordica charantia*) dried Leaf Extract in Combination with Antibiotics Against *Escherichia coli* and *Staphylococcus aureus*.

Submitted for

Partial fulfillment of the requirement for the award of the degree of

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This is to certify that the dissertation entitled "**Evaluation of Antibacterial Activity of Karela (*Momordica charantia*) dried Leaf Extract in Combination with Antibiotics Against *Escherichia coli* and *Staphylococcus aureus***" is based on the original work done by **Dhananjay Kumar** who is a student of M.Sc. Botany, 4th semester, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.) India.

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INDEX

1. Abstract	6
2. Literature review	7-8
3. Introduction	9-10
4. Materials and Methods.....	11-16
5. Results.....	17-21
6. Discussion.....	22-24
7. Conclusion.....	25
8. Reference.....	26-27



**EFFECT OF FLY ASH AMENDMENT ON MORPHOLOGICAL AND
BIOCHEMICAL PARAMETER OF *Zea mays L.***

A DISSERTATION REPORT

SUBMITTED

For the partial fulfillment of the degree

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CONTENT

<i>Contents</i>	<i>Page No.</i>
List of tables.....	i
List of figures.....	ii
1. INTRODUCTION.....	1
2. MATERIALS & METHOD.....	4
3. RESULTS.....	8
4. DISCUSSION & CONCLUSION.....	20
5. REFERENCES.....	22



**ETHNOBOTANICAL SURVEY ON MEDICINAL PLANT USED BY THE
TRIBAL COMMUNITIES IN MASTURI AND BILHA BLOCK BILASPUR,
CHHATTISGARH, INDIA**

A DISSERTATION REPORT

SUBMITTED

For the fulfillment of the degree

Of

MASTER OF SCIENCE

IN

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S. NO.	CONTENTS	PAGE NO.
1.	Introduction	1-3
2.	Review of Literature	3-4
3.	Study area	5-6
4.	Methodology	6-8
5.	Result	9-48
6.	Discussion	48-49
7.	Conclusion	49-50
8.	References	51-53

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**Effect of exogenously applied indole-3-acetic acid in hydroponically grown
maize seedlings under zinc stress**

**A DISSERTATION REPORT
SUBMITTED**

For the fulfillment of the degree

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CONTENTS

1. INTRODUCTION

2. REVIEW OF LITERATURE

3. MATERIAL AND METHODS

3.1 Plant material and Growth condition

3.2 Estimation of morphological attributes

3.2.1 Measurement of root and shoot length

3.2.2 Measurement of Fresh and dry weight

3.2.3 Leaf area estimation

3.2.4 Relative water content

3.3 Biochemical studies

3.3.1 Chlorophyll estimation

3.3.2 Phenol Estimation

3.3.3 Carbohydrate Estimation

3.3.4 Estimation of Nitrate

3.3.5 Estimation of Nitrite

3.3.6 Estimation of Ammonium

3.3.7 Estimation of Cysteine

3.3.8 Estimation of Malondialdehyde

3.3.9 Estimation of Hydrogen peroxide

4. RESULT

5. DISCUSSION

6. CONCLUSION

7. REFERENCES

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**PHYTOCHEMICAL ANALYSIS AND HEALTH BENEFITS OF
SELECTED MEDICINAL PLANT SPECIES**

**Dissertation
Submitted
For the partial fulfillment of the degree of
MASTER OF SCIENCE
IN
BOTANY**



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Contents

	Page.No.
ABSTRACT.....	01
1.INTRODUCTION.....	02
1.1 <i>Gymnema sylvestre</i> (Retz.) R.Br. ex Sm.....	03
1.2 <i>Moringa oleifera</i> Lam.	04
1.3 <i>Cinnamomum tamala</i> (Buch. - Ham.) T.Nees & C.H.Eberm.....	05
1.4 <i>Piper betle</i> L.	05
2. <u>OBJECTIVES OF THE STUDY</u>.....	07
3. <u>REVIEW OF LITERATURE</u>.....	08
3.1 Description of some phytochemicals.....	09
3.2 Health Benefits.....	10
4. <u>MATERIALS AND METHODS</u>.....	11
4.1 Estimation of moisture content of the leaves.....	11

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FORMULATION AND EVALUATION OF A HERBAL SOAP

A Dissertation Report for the Fulfillment of the Degree

MASTERS OF SCIENCE

IN

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CONTENTS

<i>List of Tables</i>	<i>i</i>
<i>List of Figures</i>	<i>ii</i>
<i>Abstract</i>	<i>iii</i>
1. Introduction	01
2. Review of Literature	03
3. Material and Methods	12
4. Results	21
5. Discussion	25
6. Conclusion	26
7. Reference	27



**ANTAGONIST EFFECT OF *TRICHODERMA* ISOLATE AND
IMPACT OF VAM FUNGI ON SEEDLING GROWTH**

A DISSERTATION REPORT

SUBMITTED

For the fulfilment of the degree

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CONTENTS

Page No.

1. INTRODUCTION.....	1
2. REVIEW OF LITERATURE	4
3. MATERIALS AND METHOD.....	6
3.1. Materials	6
3.2. Methods.....	6
3.2.1. Collection of soil Sample.....	6
3.2.2. Isolation of <i>Trichoderma</i> from collected sample.....	7
3.2.3. Inoculation	8
3.2.4. Antagonist effect of <i>Trichoderma</i> against <i>Alternaria ssp</i>	8
3.2.5. Comparison of isolate <i>Trichoderma</i>	8
3.2.6. Isolation of VAM fungi from collected soil sample.....	8
3.2.7. Effect of VAM on Seed germination	9
3.2.8. Pot trial of Maize seed germination	9
4. RESULT	10
4.1. Result of collected soil sample	10
4.2. Result of <i>Trichoderma</i> isolation.....	11
4.3. Microscopic result of <i>Trichoderma</i>	11
4.4. Antagonist effect of isolate <i>Trichoderma</i>	12
4.5. A comparative study of isolate <i>Trichoderma</i> with BPRL <i>Trichoderma</i>	17
4.6. Result of VAM spore isolation	19
4.7. Comparative Growth effect with control <i>Maize</i> plant	19
4.8. Association with <i>Maize</i> root	21
5. DISCUSSION.....	22
6. CONCLUSION.....	24
7. REFERENCE.....	25



A PROJECT REPORT

on

**“Studies of Physico-chemical status of anthropogenically
influenced ponds in GGV campus and its effect
on eutrophication”**

*A Dissertation report submitted for partial fulfillment of the
requirement for the Award of Degree of*

MASTERS OF SCIENCE IN BOTANY
AT

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CONTENTS

Page No.

1. Introduction	1-4
2. Review of Literature	5-6
3. Materials and methods	7-16
3.1 Study area	7-11
3.2 Sample collection	12
3.2.1 Collection of water sample from pond	12
3.2.2 Collection of sediment sample from pond	12
3.3 Measurements	12-16
3.3.1 Determination of DO (Dissolved Oxygen) and BOD (Biological Oxygen Demand) in the pond water sample	13-14
3.3.2 Determination Of BOD	14
3.3.3 Determination of Chloride content in the pond water sample	14
3.3.4 Determination of Phosphate level in the pond water sample	14-15
3.3.5 Determination of Nitrate level in pond water sample	15
3.3.6 Determination of alkaline phosphatase (ALP) activity test	16
3.4 Statistical Analysis	16
4. Results	17-20
5. Discussion	21-23
6. Conclusion	24
7. Reference	25-31



A

Dissertation on

**PHYTOCHEMICAL SCREENING OF LEAFY
VEGETABLES CONSUMED IN SARANGARH (C.G.)
AND THEIR HEALTH BENEFITS**

Submitted for

Partial fulfillment of the requirement for the award of the degree of

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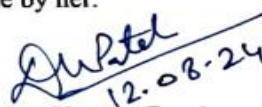


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INDEX

Contents	Page no.
ABSTRACT.....	
1. INTRODUCTION.....	1.
2. OBJECTIVE.....	3.
3. LITERATURE REVIEW.....	4.
3.1 Phytochemicals.....	5.
3.2 Health benefits.....	6.
4. MATERIALS AND METHODS.....	12.
4.1 Study area.....	12.
4.2 Collection and extraction.....	13.
4.3 Phytochemical test.....	13.
5. RESULT AND DISCUSSION.....	15.
6. PHOTOGRAPHS.....	23.
7. CONCLUSION.....	26.
8. REFERENCES.....	27.



**STUDY OF SIDEROPHORE PRODUCING BACTERIA IN
RHIZOSPHERE SOIL**

DISSERTATION REPORT

SUBMITTED

For the partial fulfilment of the degree

of

MASTER OF SCIENCE

IN BOTANY



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CONTENTS

<i>List of figures</i>	v
<i>List of table</i>	vi
<i>Abstract</i>	vii
<i>Key words</i>	vi
1. Introduction	1-4
2. Materials and method	5-10
3. Result and discussion	11-26
4. Conclusion and future perspective	27
5. References	28-31

LIST OF FIGURES

1. Types of Siderophore based on presence of functional group.....	2
2. Collection of soil sample with site location.....	5
3. CAS-LB agar Plate.....	7
4. Soil sample with saline.....	12
5. Mother culture plate after 24 h.....	12
6. Study of colony morphology using pie chart	15
7. CAS plate assay result after incubation.....	16
8. Siderophore status in isolates studied.....	19
9. Representative pictures of some bacterial culture for liquid assay before CAS treatment.....	20
10. Bacterial culture with CAS treatment and 20 minutes incubation.....	21
11. Result after CAS assay of selected isolates in 96- well plate.....	22
12. Selected siderophore positive isolates on Mac Conkey agar plate.....	23
13. Estimation of Quorum Sensing signal production in siderophore producing isolates.....	24
14. Ammonia production test on selected siderophore positive isolates.....	25
15. Auxin production test on selected siderophore positive isolates.....	25
16. Selected siderophore producing bacteria test on Pikovskaya agar.....	26
17. Selected siderophore producing bacteria test on Congo red agar.....	26

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DIVERSITY OF TREE SPECIES IN BILASPUR, CHHATTISGARH

A DISSERTATION REPORT
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CONTENTS

1. INTRODUCTION.....	
2. REVIEW OF LITERATURE.....	
3. MATERIAL AND METHODS.....	
4. RESULT AND DISCUSSION.....	
5. CONCLUSION.....	
6. REFERENCES.....	



A DISSERTATION REPORT ON

GREEN SYNTHESIS OF NANOPARTICLE USING *Cordia dichotoma* G. FROST.



SUBMITTED

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

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INDEX

S. No.	Title	Page no.
1.	Introduction	1-2
2.	Review of literature	3-4
3.	Material and Method	5-9
4.	Result	10-19
5.	Discussion	20-21
6.	Conclusion	22
7.	References	23-25

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FORMULATION AND EVALUATION OF LIQUID BASED HERBAL HAND WASH

A Dissertation Report for the Fulfillment of the Degree

MASTER OF SCIENCE BOTANY



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CONTENTS

List of Figures

List of Tables

Abstract

- 1. Introduction**
- 2. Review of literature**
- 3. Material and methods**
- 4. Result**
- 5. Discussion**
- 6. Conclusion**
- 7. Reference**

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**“ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS USED
BY THE BAIGA TRIBE IN TAKHATPUR BLOCK, BILASPUR,
CHHATTISGARH”**

DEPARTMENT OF BOTANY

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TABLE OF CONTENTS

S.N.	CHAPTER	PAGE NUMBER
1.	INTRODUCTION	01-02
2.	REVIEW OF LITERATURE	03
3.	STUDY AREA	04
4.	MAP OF STUDY AREA	05
5.	METHODOLOGY	06
6.	RESULT	08-47
7.	TABLE	48-50
8.	GRAPH	51-52
9.	PHOTO PLATE	53-54
10.	DISCUSSION	55
11.	CONCLUSION	56
12.	REFERENCE	57-59

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**BIOPROSPECTION POTENTIAL OF PERICARP OF *CITRUS*
SINENSIS EO_s NANOEMULSION AGAINST FRUIT
SPOILAGE PATHOGEN**

A DISSERTATION REPORT

SUBMITTED

For the fulfilment of the degree

of

MASTER OF SCIENCE

IN

BOTANY



By

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CONTENTS

1. INTRODUCTION	1
2. REVIEW OF LITERATURE	3
3. MATERIALS AND METHODS	6
3.1 Materials	6
3.2. Methods	6
3.2.1. Collection and isolation of fungal pathogen from <i>Mangifera indica</i> fruits	6
3.2.2. Collection of pericarp of <i>Citrus sinensis</i> and Extraction of EOs	7
3.2.3. Characterization of EOs	8
3.2.3.1. Gas chromatography- mass spectrometry (GC/MS)	8
3.2.4. Preparation of Pericarp of <i>Citrus sinensis</i> EOs Nanoemulsion (PCsNE)	8
3.2.5. Characterization of PCsNE	8
3.2.5.1. Dynamic light scattering	8
3.2.5.2. Zeta potential measurements	9
3.2.5.3. Fourier-transform infrared spectroscopy (FTIR) analysis	9
3.2.6. Antifungal Activity of PCsNEs	9
3.2.6.1. Well diffusion method	10
4. RESULT	10
4.1. Gas chromatography- mass spectrometry (GC/MS) of EOs	11
4.2. Characterization of PCsNE	12
4.3. FTIR analysis of PCsNE	15
5. DISCUSSION	17
6. CONCLUSION	18
REFERENCE	



A

Dissertation on

**MEDICINAL PLANTS DISTRIBUTION IN PATNAGARH
BLOCK, ODISHA**

Submitted for

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

MASTER OF SCIENCE

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CONTENTS

1. INTRODUCTION.....	01
2. REVIEW OF LITERATURE.....	03
3. STUDY AREA.....	04
4. MATERIALS AND METHODS	07
5. RESULTS.....	08
6. DISSCUSSION.....	53
7. CONCLUSION.....	53
8. REFERENCES.....	54



**EFFECT OF FLY ASH AS SOIL AMENDMENT ON
SOME MORPHOLOGICAL AND BIOCHEMICAL
PARAMETERS OF
*Vigna mungo Linn.***

A DISSERTATION REPORT SUBMITTED
For the partial fulfillment of the
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Conrtent

S.NO	Chapter	Page No.
1.	Introduction	1-2
2.	Literature Survey	3-4
3.	Materials and methodology	5-12
4.	Result	13-18
5.	Discussion	19
6.	Conclusion	20
7	references	21

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**IMPACT OF ARTIFICIAL LIGHT ON PRODUCTIVITY OF AQUATIC
SYSTEM**

A dissertation report

**Submitted for the partial fulfillment of the degree of
Masters of Science in Botany**



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TABLE OF CONTENTS

1. Introduction	6
2. Literature review	9
3. Methodology	12
4. Result \ Discussion	15
5. Conclusion	20
6. References	21

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A DISSERTATION REPORT ON

"GREEN SYNTHESIS OF NANOFERTILIZER USING *Allium cepa*"



Submitted

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INDEX

S. No.	CONTENTS	PAGE NO.
1	INTRODUCTION	1-2
2.	REVIEW OF LITERATURE	3-4
3.	MATERIALS AND METHOD	5-9
4.	RESULT	10-20
5.	DISCUSSION	21-22
6.	CONCLUSION	23
7.	REFERENCES	24-26



A

Dissertation on

**ASSESSMENT OF MEDICINAL PLANTS DIVERSITY AND THEIR
THERAPEUTIC POTENTIALS IN THE BHEDEN RIVER BASIN,
JHARSUGUDA DISTRICT, ODISHA**

Submitted

For the partial fulfilment of the award of the degree of

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IN

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INDEX

S. No.	Contents	Page No.
1.	INTRODUCTION	1-4
2.	OBJECTIVES OF STUDY	5
3.	REVIEW OF LITERATURE	6-10
4.	METHODOLOGY	11
4.1.	Study Area	11-13
4.2.	Data Collection	14
5.	RESULTS	15-37
6.	DISCUSSIONS	45-46
7.	CONCLUSIONS	47
8.	REFERENCES	48-51



**Comprehensive Analysis of EPS Extraction, composition,
and impact of various surfaces on *Rhodococcus equi*
Biofilm**

Dissertation report

Submitted

For the partial fulfilment of the degree

of

MASTER OF SCIENCE

IN BOTANY



By

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CONTENT

List of Tables.....	vi
List of Figures.....	vi
Abstract.....	vii
Key words	vii
1. INTRODUCTION	1
2. REVIEW OF LITERATURE	5
3. MATERIALS ANDMETHOD	8
4. RESULT	12
5. DISCUSSION AND CONCLUSION.....	21
6. REFERENCES	23

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"Effect of glycine betaine on physio-morphological attributes of eggplant seedlings under cadmium stress"

A DISSERTATION REPORT
SUBMITTED
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CONTENTS

1. INTRODUCTION

2. REVIEW OF LITERATURE

3. MATERIAL AND METHODS

3.1 Plant material and Growth condition

3.2 Experimental setup

3.2.1 Cd and glycine betaine (GB) treatment

3.2.2 Estimation of growth attributes and photosynthetic pigments

3.2.3 Germination percentage

3.2.4 Fresh weight

3.2.5 Dry weight

3.2.6 Measurement of root and shoot length

3.2.7 Leaf area

3.2.8 Relative water content

3.3 Biochemical studies

3.3.1 Chlorophyll estimation

3.3.2 Protein Estimation

3.3.3 Phenol Estimation

3.3.4 Estimation of Hydrogen peroxide

3.3.5 Estimation of Malondialdehyde

4. RESULT

5. DISCUSSION

6. CONCLUSION

7. REFERENCES

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**ETHNOBOTANICAL STUDY OF MEDICINAL
PLANTS USED BY TRIBES OF MAINPAT,
SURGUJA, CHHATTISGARH**

Dissertation Report

Submitted

For the partial fulfillment of the degree of

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CONTENTS

Contents	Page No.
<i>List of Tables</i>	<i>i</i>
<i>List of Figures</i>	<i>ii</i>
<i>Abstract</i>	<i>iii</i>
1. INTRODUCTION.....	1
1.1 Aim & objectives.....	3
2. LITERATURE REVIEW.....	4
2.1 Historical account of Mainpat.....	7
2.2 Physiography.....	8
2.3 Climatology.....	9
2.4 Tribes of Mainpat & Socio-economic Status.....	10
3. MATERIAL AND METHODS.....	13
3.1 Area of study/survey.....	13
3.2 Data collection.....	14
3.3 Duration of work.....	17
3.4 Data analysis.....	17
3.5 Miscellaneous.....	17
4. RESULT & DISCUSSION.....	19
4.1 Photographs of plant species.....	36
4.2 Photographs of tribes/Photographs of researcher with informants/tribes.....	40
5. CONCLUSION.....	42
5.1 Bibliography.....	43

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**A STUDY ON PHYTOCHEMICAL ANALYSIS AND
ANTIMICROBIAL POTENTIAL OF *PITHECELLOBIUM
DULCE***

A dissertation report
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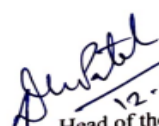
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CONTENT

	Page No.
1. INTRODUCTION.....	1
2. REVIEW OF LITERATURE	4
3. MATERIALS AND METHODS	6
3.1. MATERIALS.....	6
3.2. METHODS.....	8
3.2.1. COLLECTION OF PLANT MATERIALS.....	8
3.2.2. PREPARATION OF PLANT EXTRACT.....	9
3.3. PRELIMINARY PHYTOCHEMICAL ANALYSIS.....	10
3.5. ANTIFUNGAL ACTIVITY TEST OF SOLVANT EXTRACT.....	13
3.6. ANTIBACTERIAL ANALYSIS OF PITHECELLOBIUM DULCE PLANT EXTRACT	13
3.6.5. WELL DIFFUSION.....	14
3.7. ANTIFUNGAL ANALYSIS THROUGH PITHECELLOBIUM DULCE PLANT EXTRACT.....	15
3.7.6. WELL DIFFUSION.....	16
4. RESULT.....	18
4.1. RESULT OF PHYTOCHEMICAL SCREENING.....	18
4.2. ANTIMICROBIAL ACTIVITY.....	19
4.2.1. ANTIBACTERIAL TEST.....	19
4.2.2. ANTIFUNGAL TEST.....	24
5. DISSCUSION.....	28
6. CONCLUSION.....	30
7. REFERENCE.....	31

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**A survey on Ethnomedicinal plants to cure the cold and flu diseases
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CONTENTS

PARTICULARS	PAGE NO.
ABSTRACT-----	01
INTRODUCTION-----	02
REVIEW OF LITERATURE-----	05
STUDY SITE-----	06
MATERIALS AND METHOD-----	08
RESULTS-----	09
DISCUSSION-----	44
CONCLUSION-----	44
REFERENCE-----	45

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**A
Dissertation on**

**ETHNORELIGIOUS PLANTS USED BY ORAM COMMUNITY OF RASRAJPUR
VILLAGE, SUNDARGARH DISTRICT, ODISHA**

Submitted for

Partial fulfilment of the requirement for the award of the Degree of

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IN

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INDEX

S. No.	Contents	Page Number
	ABSTRACT	
1	INTRODUCTION	1 - 2
2	REVIEW OF LITERATURE	3 - 5
2.1	International research	3
2.2	National	3 - 4
2.3	Inside Odisha	4 - 5
3	MATERIAL & METHODS	6 - 7
3.1	Study location	6
3.2	Data collection	7
3.3	Approach & Data Collection Methodology	7
4	RESULT AND DISCUSSION	8 - 21
4.1	Medicinal value of plants	9 - 11
4.2	Religious value of plants	12 - 21
4.3	Distribution of plants all over India	27 - 28
5	CONCLUSION	30
6	REFERENCES	31 - 32



**Effect of modified and unmodified peanut biochar on the
growth of *Vigna radiata* under arsenic stress**

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Contents

S. No.	Topic	Page No.
1	Introduction	7
2	Review of Literature	8-9
3	Material and Methods	9-15
4	Result and Discussion	15-31
5	Conclusion	32
6	References	33-40

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INDIGENOUS WISDOM: EXPLORING THE MEDICINAL POTENTIAL OF WILD FOOD PLANTS IN KALAHANDI'S RURAL COMMUNITIES OF ODISHA

**Dissertation Report Submitted for the partial fulfilment of the degree of
MASTER OF SCIENCE IN BOTANY**



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CONTENTS

Chapter no.	Chapters	Page no.
1	Introduction	1-3
2	Review of Literature	4-8
3	Research Problems	9
4	Research Objectives	10
5	Material and Methods	11-19
6	Survey Result and Analysis	20-33
7	Market growth and Potential	34-35
8	Policies Cooperation and Implementation	36-37
9	Discussion	38-40
10	Conclusion	41
11	References	42-46



**A SURVEY ON USAGE OF ETHNOMEDICINAL PLANTS FOR THE
TREATMENT OF COMMON COLD AND INFLUENZA BY THE RURAL
RECEDENCY OF MUNGELI DISTRICT, CHHATTISGARH**

**A DISSERTATION REPORT
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For the fulfilment of the degree
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INDEX

CONTENTS	PAGE NO.
1. INTRODUCTION.....	1-3
2. OBJECTIVE.....	4
3. REVIEW OF LITERATURE.....	5
4. METHODOLOGY	6
5. STUDY AREA	7-8
6. RESULT.....	9-51
7. DISCUSSION.....	52
8. CONCLUSION.....	52
9. REFERENCES.....	53-54

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Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
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**LEAF VENATION ANALYSIS OF SOME SPECIES OF
CROTALARIA L. (Leguminosae: Papilionoideae: *Crotalaria*)**

Dissertation Report Submitted
for the partial fulfilment of the degree of



MASTER OF SCIENCE IN BOTANY

By

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2022-2024

Under the supervision of

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ASSISTANT PROFESSOR
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CONTENTS

	<i>Page No.</i>
<i>List of Figures</i>	<i>i</i>
<i>List of Tables</i>	<i>ii</i>
<i>Abstract</i>	<i>iii</i>
1. Introduction	1-5
2. Material and Methods	6
3. Results	7-24
3.1 Data of studied species	7
3.2 Morphological features	9
3.3 Venation analysis	12
4. Discussion	25-27
4.1 Leaf venation analysis	25
4.2 Morphological feature of <i>Crotalaria</i>	25
4.3 Anatomical variation in leaf venation pattern	26
5. Conclusion	28-29
6. References	30



**A STUDY ON PHYTOCHEMICAL ANALYSIS AND ANTIMICROBIAL
POTENTIAL OF *Gmelina arborea***

A Dissertation Report submitted for the partial fulfilment of the requirement of the

Award of Degree

OF

MASTER OF SCIENCE IN BOTANY

At

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)



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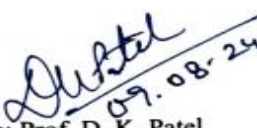
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Index

CHAPTER	TITLE	PAGE NO.
1	INTRODUCTION	7- 8
2	REVIEW OF LITERATURE	9- 10
3	MATERIAL AND METHOD	11 - 14
4	Media Preparation	15 -16
5	Sample collection	17-18
6	Phytochemical screening	19
7	RESULT	20 - 28
8	DISCUSSION	29
9	CONCLUSION	30
10	REFERENCES	31-33

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**ETHNOBOTANICAL PRACTICES IN
ALCOHOLIC BEVERAGES PREPARATION
AMONG TRIBAL COMMUNITIES OF KORAPUT
REGION**

**Dissertation Report Submitted for the partial fulfillment of the degree of
MASTER OF SCIENCE IN BOTANY**



By

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CONTENTS

S.NO.	Contents	Page No.
	<i>List of Tables.....</i>	i
	<i>List of Figures.....</i>	ii
	<i>Key words</i>	iii
1	ABSTRACT	1
2	INTRODUCTION	2
3	REVIEW OF LITERATURE	5
	3.1 International	5
	3.2 National	8
	3.3 Regional	10
4	RESEARCH PROBLEM	11
	4.1 Ethnobotanical Wonders	11
	4.2 Cultural Significance of alcohol	12
	4.3 Economic Assessment of Alcohol Production	12
	4.4 Documentation and Preservation of Traditional Knowledge	12
5	RESEARCH OBJECTIVES	13
6	MATERIAL AND METHODS	15
	5.1 Study Location	15
	5.2 Data Collection	17
	5.3 Approach and Data Collection Methodology	17
7	SURVEY RESULT AND ANALYSIS	25
	7.1 Types of Alcoholic Beverages	25
	7.2 Alcoholic Juice	25
	7.3 Fermented Alcoholic Beverages	29
	7.4 Distilled Alcoholic Beverages	33
	7.5 Cultural Significance of Alcoholic Beverages	36
	7.6 Economic Impact on Society	38
8	DISCUSION	44
9	CONCLUSION AND SUGGESTION	48
10	REFERENCES	50



**Dynamics of Floral Nectar Production: A case study of
Helicteres isora L.**



Dissertation Report Submitted
for the partial fulfilment of the degree of



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CONTENTS

	Page No.
List of Figures	i-ii
List of Tables	iii
Abstract	iv
1. Introduction	1-4
2. Material and Methods	5-7
2.1 Study sites	5
2.2 Study design	5
2.3 Statistical analysis	6
3. Results	8-18
3.1 Morphology of <i>Helicteres isora</i>	8
3.2 Anatomy of floral nectary	10
3.3 Nectar composition	11
3.4 Faunal diversity	15
3.5 Correlation of flower color change, faunal diversity and EFN secretion	18
4. Discussion	20-25
4.1 Morphology of flower and floral nectaries	20
4.2 Anatomical variations of green flower nectary and red flower nectary	21
4.3 Faunal diversity and the adaptive role of FN	21
4.4 Physiology of nectar secretion	22
4.5 Correlation between Flower morphology, EFNs secretion and faunal diversity	23
5. Conclusion	25
6. References	26-28



Aquatic acidification and its effect on productivity

A dissertation report submitted for the partial fulfilment of the degree
of the master of science in botany



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CONTENT

S.NO.	CONTENT	PAGE NO.
1	INTRODUCTION	7
2	MATERIAL AND METHOD	10
3	RESULT	13
4	DISCUSSION	17
5	CONCLUSION	18
6	REFERENCES	19

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**EXPLORING ETHNOMEDICINAL PLANTS USED BY THE BAIGA
TRIBE IN KOTA BLOCK, BILASPUR, CHHATTISGARH, INDIA**

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



**SUBMITTED BY
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TABLE OF CONTENTS

S. No.	CHAPTERS	PAGE NO.
1	INTRODUCTION	1-2
2	REVIEW OF LITRETURE	3
3	STUDY AREA	4
4	MAP OF STUDY AREA	5
5	METHODOLOGY	6
6	RESULT	7-42
7	TABLE	43-46
8	ANALYSIS OF DATA	47-49
9	DISCUSSION	50
10	CONCLUSION	51
11	REFERENCES	52-55

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**Study of quorum sensing signalling genes in rhizospheric
bacteria**

DISSERTATION REPORT

SUBMITTED

For the partial fulfilment of the degree

of

MASTER OF SCIENCE

IN BOTANY



BY

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Under the supervision of

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CONTENTS

S. No.	Topic	Page No.
1	Introduction	1-5
2	Materials and methods	6-13
3	Result and discussion	13-26
4	Conclusion	26-27
5	References	28-31

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**A study to understand the role of salicylic acid
priming to mitigate salt stress in *Vigna unguiculata* L.**

**A Dissertation Report
Submitted For
The Partial Fulfillment of The Degree
of
Masters of Science
in
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TABLE OF CONTENT

S. No.	Content	Page No.
1.	Introduction	1-2
2.	Materials and methods	2-5
3.	Results 3.1. Physiological studies 3.1.1. Seed germination percentage 3.1.2. Root and shoot length 3.2. Biochemical studies 3.2.1. Chlorophyll content 3.2.2. Total proline content 3.2.3. Total MDA content	7-11
4.	Discussion	12-13
5.	Conclusion	13-14
6.	References	15-19