



Department : BOTANY		
<i>Academic Year : 2020-21</i>		
Sr. No.	Programme Code	Name of the Programme
01.	103	B. Sc. (Honours) Botany

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S. No.	Name of the Students	Enrollment Number	Page No
1.	ANCHAL SAHU	GGV/18/3175	1-33
2.	ADITI ANANT	GGV/18/3016	1-23
3.	AADITYA SHARMA	GGV/18/3050	1-26
4.	AISHWARYA	GGV/18/3019	1-49
5.	AJEET GHRITLAHARE	GGV/18/3021	1-20
6.	ALISHA	GGV/18/3029	1-18
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8.	AMISHA SINGH	GGV/18/3032	1-43
9.	ANJALI BHARGAWA	GGV/18/3036	1-23
10.	ASTHA TIWARI	GGV/18/3009	1-34
11.	BASHANT KUMAR PRADHAN	GGV/18/3061	1-37
12.	CHHAYA KURRE	GGV/18/3075	1-24
13.	DEEPSHIKHA GAYAKWAD	GGV/18/3081	1-42
14.	DIPALI	GGV/18/3085	1-50
15.	HUNNY AGRAWAL	GGV/18/3099	1-40
16.	JYOTSANA CHANDRA	GGV/18/3109	1-51
17.	KAMINI JOLHE	GGV/18/3111	1-25
18.	KOPAL MISHRA	GGV/18/3116	1-21
19.	KUNAL KUMAR	GGV/18/3123	1-33
20.	MANISHA SHANDILYA	GGV/18/3139	1-24
21.	MUSKAN LAMBO	GGV/18/3153	1-45
22.	NEHA KASHYAP	GGV/18/3163	1-26
23.	NEHA PATEL	GGV/18/3164	1-32



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30.	PRIYANSH SINGH	GGV/18/3207	1-23
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32.	R.AKHILA	GGV/18/3213	1-39
33.	ROOPA PATEL	GGV/18/3233	1-54
34.	SAKSHI SINGH	GGV/18/3240	1-32
35.	SANDEEP PATEL	GGV/18/3242	1-26
36.	SHASHANK AGRAWAL	GGV/18/3255	1-30
37.	SHRADDHA CHANDRAKAR	GGV/18/3263	1-64
38.	SHRESHTH SHRI RATHA	GGV/18/3264	1-21
39.	SHRISHTI UIKE	GGV/18/3266	1-32
40.	SWETA BHASKAR	GGV/18/3277	1-26
41.	SIMRAN BARA	GGV/18/3282	1-27
42.	SUKRIT DAS	GGV/18/3294	1-32
43.	SUNITA	GGV/18/3299	1-21
44.	SURBHI SUMAN PATEL	GGV/18/3301	1-31
45.	SURAJ KURRE	GGV/18/3302	1-24
46.	TALAT NASREEN	GGV/18/3309	1-28
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53.	VINITA MANDAL	GGV/18/3337	1-21
54.	YAMINI KUMHAR	GGV/18/3340	1-57
55.	YOGENDRA PATEL	GGV/18/3342	1-39

Signature of the Head

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.)

MICROBIAL PRODUCTION OF BIOPLASTIC

A DISSERTATION

SUBMITTED FOR THE PARTIAL FULFILMENT OF

THE DEGREE OF

BACHELOR OF SCIENCE

IN

BOTANY (Hons.)



BY

AANCHAL SAHU

B. Sc. (VI SEMESTER)

(Enrolment No. GGV/18/3175, Roll No. 18203001)

UNDER THE SUPERVISION OF

DR. VINEET KUMAR ASSISTANT

PROFESSOR

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDALAYA

(A CENTRAL UNIVERSITY)

KONI, BILASPUR-495009, CHATTISGARH, INDIA

2021

Aanchal Sahu

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

Signature and Seal of the Head



CERTIFICATE

This is to certify that the dissertation work titled “**Microbial Production of Bioplastic**” is submitted by Aanchal Sahu bearing roll number 18203001 to the Department of Botany at Guru Ghasidas Vishwavidyalaya, Bilaspur in partial fulfillment of the requirements for the degree of Bachelor of Science in Botany (Hons.). This is a bonafide work carried out at Guru Ghasidas Vishwavidyalaya by her under my supervision. The contents of this description, in full or in parts, have not been submitted to any other institute or university for the award of any degree.

DR. VINEET KUMAR

Supervisor


Forwarded to the controller of examinations, GURU GHASIDAS VISHWAVIDYALAYA in partial fulfillment of the requirements of the Degree of Bachelor of Science in BOTANY (Hons.).

Date;

Place: Bilaspur

DR. S.K. SHAHI

Head, Department of Botany, GGV
Bilaspur, Chhattisgarh


विभागाध्यक्ष
Head
समस्यानि शास्त्र विभाग
Department of Botany
गुरु घासीदास विश्वविद्यालय (केन्द्रीय वि.वि.), बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.)
Signature and Seal of the Head



DECLARATION

I hereby declare that the work presented in this dissertation entitled “**MICROBIAL PRODUCTION OF BIOPLASTIC**” has been submitted in partials fulfilment of B.Sc. Botany (Hons.) was carried out in the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

The work was carried out by her under supervisor of DR. VINEET KUMAR, Assistant Professor in the Department of Botany at Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G). This project is original and it will be intellectual property of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

Place: BILASPUR

Date: 15/07/2021

AANCHAL SAHU

B.Sc. Botany (Hons.) VI Semester

Department of Botany,

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

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

Signature and Seal of the Head



ACKNOWLEDGEMENT

We would like to express my deepest appreciation to all those who provided me the possibility to complete this report. A special gratitude I give to my supervisor Dr. Vineet Kumar, Assistant Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, for their exemplary guidance, monitoring and constant encouragement throughout the course of this project. The blessing, help and guidance given by them time to time shall carry us a long way in the journey of life on which we are about to embark.

An endeavour over a period can be successful only with the advice and support of well-wishers. We take this opportunity to express our gratitude and appreciation to all those who encouraged us to complete our project. We are deeply indebted to Dr. Sushil Kumar Shahi, Head, Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur Chhattisgarh for offering such an Informative program, which imparts a deep knowledge to the students.

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AANCHAL SAHU

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.)



TABLE OF CONTENTS

CERTIFICATE	2
DECLARATION	3
ACKNOWLEDGEMENT.....	4
TABLE OF CONTENT	5
LIST OF FIGURE.....	6
LIST OF TABLES	7
ABSTRACT.....	8
INTRODUCTION.....	9
1: HISTORY OF BIOPLASTICS	11
1.1. What are Bioplastics Today?	11
1.2. Environmental Aspects of Plastics	11
2: THE LIFE CYCLE OF BIOPLASTIC	12
3: TYPES OF BIOPLASTICS	13
3.1. Polyhydroxyalkanoates	14
3.2. Polylactic Acid.....	15
3.3. Poly hydroxyl butyrate (PHB)	16
3.4. Bio based Additives	17
4: RECYCLING OF BIOPLASTICS.....	18
4.1. Macromolecular architecture of the inclusions.....	20
4.2. Industrial production	21
4.3. Microbial production.....	22
4.4. Bioplastic recovery from wastewater	22
4.5. Graphical abstract	23
4.6. WASTE MANAGEMENT AND RECOVERY OPTION.....	24
5: WHY THEY ARE IMPORTANT?	25
5.1. Biotechnological applications	25
5.2. Current Application of Bioplastic.....	25

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

“OCCURRENCE OF DRUG-RESISTANT BACTERIA



ON VEGETABLE SURFACES”

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

Award of Degree

Of

BACHELOR OF SCIENCE (BOTANY HONOURS)

At

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)



2020-2021

Supervised By:

Ms. Shivali Sharma

Assistant Professor
Department of Botany

GGV, Bilaspur (C.G.)

Submitted By:

Aditi Anant

Class- B.Sc. VI Semester
Enrolment No.- GGV/18/3016

Roll No.- 18203002

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

Signature and Seal of the Head



CERTIFICATE

This is certify that dissertation entitled “**OCCURRENCE OF DRUG-RESISTANT BACTERIA ON VEGETABLE SURFACES**”, is based on review of literature work done by **Aditi Anant** (Enrollment No.- GGV_18_3016) 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: 28/06/2021

Ms. Shivali Sharma

(Supervisor)

Assistant Professor

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: 28/06/2021

Prof. S.K. Shahi

Head, Botany Department

GGV, Bilaspur

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

DECLARATION

I, **Aditi Anant** hereby declare that the work present in the project work entitled “**OCCURRENCE OF DRUG-RESISTANT BACTERIA ON VEGETABLE SURFACES**” submitted for the partial fulfilment of B.Sc. in Botany Honours has been performed in the Dept. of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur under the supervision of **Ms. Shivali Sharma**, Assistant Professor, Dept. of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.).

The work presented in this project is original and remain intellectual property of Department of Botany, Guru Ghasidas Vishwavidyalaya, (C.G.).

The information presented in the dissertation report including data, table are original or duly credited. If any discrepancy, mistake or plagiarism found in the report, the responsibility for the same will be solely mine.

Place: Bilaspur

Date: 28/06/2021

Aditi Anant

B.SC. BOTANY (HONOURS)

Roll No.- 18203002



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

Signature and Seal of the Head



ACKNOWLEDGEMENT

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I wish to acknowledge **Dr. S.K. Shahi**, HOD, Dept. of Botany, GGV, Bilaspur (C.G.), who gave me opportunity to undergo project work.

I would like to thank **Dr. A.K. Dixit, Dr. S. K. Prajapati, Dr. S.K. Pandey, Dr. M. P. Shahi, Dr S. Shweta, Dr. V. N. Tripathi, Dr. Deepanker Yadav, Dr. R. K. Ahirwar, Dr. D. K. Patel, Dr. Vineet Kumar, Dr. Preeti Verma and Mr. Deepak kumar Singh** for their kind encouragement.

I would like to thank all my classmates and those who have directly or indirectly helped me to complete my work.



CONTENT- [Page No.]

[1.] Abstract [7] [2.]

Keywords [7] [3.]

Introduction [8]

[4.] Why do we need to consume fresh produce? [9] [5.]

Antibiotic Resistance in Bacteria [10]

[6] Multi-drug resistant (MDR) bacteria [11]

[7] Possible reasons behind antibiotic resistance in bacteria [12]

7.1 Inherent resistance (natural)

7.2 Acquired resistance

[8] Agriculture Sector- One of the culprits of spread of antibiotic-resistant bacteria:
[13-14]

8.1 Irrigation water

8.2 Misuse of antibiotics

8.3 Improper handling


8.4 Soil

Table- List of bacteria, isolated from vegetable surfaces, with their antibiotic
resistance profile. [15-19]

[9.] Discussion [20] [10.]

Conclusion [21] [11.]

Reference [22-23]


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



**GURU GHASIDAS
UNIVERSITY**

“PRESENCE OF DRUG-RESISTANT BACTERIA ON FRUIT SURFACES”

BY
ADITYA SHARMA
B.Sc. Botany HONOURS 6TH SEMESTER
ROLL NO.18203003
DEPARTMENT OF BOTANY

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

Award of Degree

Of

BACHELOR OF SCIENCE (BOTANY HONOURS)

**SUPERVISOR MISS.
SHIVALI SHARMA
(Assistant Professor)
DEPARTMENT OF BOTANY**

**GURU GHASIDAS UNIVERSITY
2020-2021**

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

Signature and Seal of the Head



CERTIFICATE

This is certify that dissertation entitled “**PRESENCE OF DRUG-RESISTANT BACTERIA ON FRUIT SURFACES**”, is based on review of literature work done by **Aditya Sharma** (Enrollment No.- **GGV/18/3050**) 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

Ms. Shivali Sharma
(Supervisor)
Assistant Professor

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

Place: Bilaspur

Prof. S.K. Shahi
Head, Botany Department
GGV, Bilaspur

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

Signature and Seal of the Head

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.)



DECLARATION

I, **Aditya Sharma** hereby declare that the work present in the project work entitled **“PRESENCE OF DRUG-RESISTANT BACTERIA ON FRUIT SURFACES”** submitted for the partial fulfilment of B.Sc. in Botany Honours has been performed in the Dept. of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur under the supervision of **Ms. Shivali Sharma**, Assistant Professor, Dept. of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.).

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The information presented in the dissertation report including data, table are original or duly credited. If any discrepancy, mistake or plagiarism found in the report, the responsibility for the same will be solely mine.

Place: Bilaspur

ADITYA SHARMA
B.SC. BOTANY (HONOURS)
Roll No.- 18203003
Enrollment No.- GGV/18/3050

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

Signature and Seal of the Head



ACKNOWLEDGEMENT

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CONTENT-	Page No.
[1.] Abstract.....	07
[2.] Keywords.....	07
[3.] Introduction.....	08-10
[4.] What are antibiotics ?.....	11
[5.] Threats of antibiotic resistance.....	11
[6.] How does bacteria acquire antibiotic resistance ?.....	12-13
6.1 types of resistance in bacteria	
6.1.1 inherent (natural) resistance	
6.1.2 acquired resistance	
6.1.2.1 vertical gene transfer	
6.1.2.2 horizontal gene transfer	
[7.] Use of antibiotics in agriculture and associated problems.....	14-15
[8.] Sources of contamination.....	16-17
8.1 pre-harvest sources	
8.2 post-harvest sources	
Table-1 showing list of bacteria isolated from fruit surfaces along with their antibiotic susceptibility.....	18-19
Table-2 showing List of pathogenic Bacteria with their effects in humans.....	20-21
[9.] Discussion.....	22
[10.] Conclusion.....	23
[11.] Reference.....	24-26

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

Signature and Seal of the Head



**POLLINATION ECOLOGY IN SUB-FAMILY
PAPILIONOIDEAE**

Dissertation Report

Submitted

For the partial fulfillment of the degree of

BACHELOR OF SCIENCE

IN

BOTANY



By

**AISHWARYA SAHU
ROLL NO. 18203004
2020-21**

Under the supervision of

**Dr. S. SHWETA
Assistant Professor of Botany**

**GURU GHASIDAS VISHWAVIDYALAYA
BILASPUR - 495009 (CHHATTISGARH)**

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

Signature and Seal of the Head



DEPARTMENT OF BOTANY

**GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR-495009
(CHHATTISGARH)**

(A central University established by the Act of Parliament 2009 NO.25 of 2009)

CERTIFICATE

This is to certify that the project report entitled “**Pollination ecology in subfamily Papilionoideae**” is an authentic record of work done by Aishwarya Sahu, student of B.Sc. (Hons.) Botany, Guru Ghasidas Vishwavidyalaya.

Place: Bilapur (Chhattisgarh)

Date:

Signature of Guide

Dr. S. Shweta

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

Signature and Seal of the Head



DECLARATION


I hereby declare that the work presented in the project dissertation entitled “**Pollination ecology in sub-family Papilionoideae**” submitted as partial fulfilment for B.Sc. Botany VI Semester, was carried out by me at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (Chhattisgarh).

The work presented in this project is original and I owe the sole responsibility for the entire content of this project including the manuscript, figures, tables and graphs.

Date:

Place: Bilaspur (Chhattisgarh)

Aishwarya Sahu
Signature of student


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



CONTENTS

	<i>Page No.</i>
<i>List of Tables</i>	<i>i</i>
<i>List of Figures</i>	<i>ii-iv</i>
<i>Abstract</i>	<i>v-vi</i>
1. Introduction	1
2. Morphology of Papilionaceous corolla	2
3. Pollination mechanism in Papilionoideae	3
4. Pollination vectors in Papilionoideae: Case studies	4
4.1 Entomophily (Insect pollination)	4
4.2 Ornithophily (Bird pollination)	31
4.3 Zoophily (Mammal pollination)	35
4.4 Psychophily (Butterfly pollination)	38
4.5 Myrmecophily (Ant pollination)	39
5. Significance of Present Study	40
6. Summary	41
7. Conclusions	43
8. References	

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

Signature and Seal of the Head



“Plant’s Resistance Against Bacterial Pathogens”

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

Award of Degree

Of

BACHELOR OF SCIENCE (BOTANY HONOURS)

At

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)



2020-2021

Supervised By:

Ms. Shivali Sharma
Assistant Professor
Department of Botany
GGV, Bilaspur (C.G.)

Submitted By:

Ajeet Dhritlahre
Class- B.Sc. VI Semester
EnrollmentNo.-GGV/18/2031
Roll No.- 18203005

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

Signature and Seal of the Head



CERTIFICATE

This is certify that dissertation entitled “**Plant’s Resistance Against Bacterial Pathogens**”, is based on review of literature work done by **Ajeet Dhritlahre** (Enrollment No.-GGV/18/2031) 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:

Ms. Shivali Sharma

(Supervisor)

Assistant Professor

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

Place: Bilaspur

Date:

Prof. S.K. Shahi

Head, Botany Department

GGV, Bilaspur

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

Signature and Seal of the Head



DECLARATION

I, **Ajeet Dhritlahre** hereby declare that the work present in the project work entitled “**Plant’s Resistance Against Bacterial Pathogens**” submitted for the partial fulfilment of B.Sc. in Botany Honours has been performed in the Dept. of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur under the supervision of **Ms. Shivali Sharma**, Assistant Professor, Dept. of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.).

The work presented in this project is original and remain intellectual property of Department of Botany, Guru Ghasidas Vishwavidyalaya, (C.G.).

The information presented in the dissertation report including data, table are original or duly credited. If any discrepancy, mistake or plagiarism found in the report, the responsibility for the same will be solely mine.


Place: Bilaspur

Date:

Ajeet Dhritlahre

B.SC. BOTANY (HONOURS)

Roll No.-18203005


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



ACKNOWLEDGEMENT

It is my great pleasure to express my sincere gratitude to my supervisor **Ms. Shivali Sharma**, Assistant professor, Department of Botany, GGV, Bilaspur (C.G.), under whose guidance the present project work has been completed. Her valuable time, valuable suggestions and selfless effort helped me a lot in completing the work.

I wish to acknowledge **Dr. S.K. Shahi**, HOD, Dept. of Botany, GGV, Bilaspur (C.G.), who gave me opportunity to undergo project work.

I would like to thank **Dr. A.K. Dixit, Dr. S. K. Prajapati, Dr. S.K. Pandey, Dr. M. P. Shahi, Dr S. Shweta, Dr. V. N. Tripathi, Dr. Deepanker Yadav, Dr. R. K. AHIRWAR, Dr. D. K. Patel, Dr. Vineet Kumar, Dr. Preeti Verma and Mr. Deepak kumar Singh** for their kind encouragement.

I would like to thank all my classmates and those who have directly or indirectly helped me to complete my work.



CONTENT-

1. ABSTRACT
2. KEYWORDS
3. INTRODUCTION
4. PLANT PATHOGENIC BACTERIA
5. DISEASE DEVELOPMENT
6. PLANT'S DEFENSE MECHANISMS
7. EXAMPLES SHOWING DISEASE RESISTANCE IN PLANTS
8. DISCUSSION
9. CONCLUSION
10. REFERENCE

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

Signature and Seal of the Head



“Interkingdom languages - communication between plant and beneficial bacteria”

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

Award of Degree

OF

BACHELOR OF SCIENCE IN BOTANY

At

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)



2020-2021

Supervised by:

Ms. Shivali Sharma

(supervisor)

Assistant Professor

Submitted By:

Alisha

Roll No. 18203007

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

Signature and Seal of the Head



CERTIFICATE

This is certify that dissertation entitled “**Interkingdom languages -communication between plant and beneficial bacteria** ”, is based on review of literature work done by **Alisha** (Enrollment No.-18203007) 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:

Ms. Shivali Sharma
(supervisor)
Assistant Professor

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:

Prof. S.K. Shahi
Head of Botany
Department
GGV, Bilaspur

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

Signature and Seal of the Head



DECLARATION

I, **Alisha**, hereby declare that the work present in the project work entitled “**Interkingdom languages -- communication between plant and beneficial bacteria**” submitted for the partial fulfilment of B.Sc. Botany has been performed in the Dept. of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur under the supervision of **Ms. Shivali Sharma**, Assistant Professor, Dept. of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.).

The work presented in this project dissertation is original and remain intellectual property of Department of Botany, Guru Ghasidas Vishwavidyalaya, (C.G.).

The information presented in the dissertation report including data, table are original or duly credited. If any discrepancy, mistake or plagiarism found in the report, the responsibility for the same will be solely mine.

Place: Bilaspur

Alisha

Date:

**Class-B.Sc.(VI Semester)
Roll no.- 18203007**

विभागाध्यक्ष
Head
समस्याति शास्त्र विभाग
Department of Botany
गुरु घासीदास विश्वविद्यालय (केन्द्रीय वि.वि.), बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.)
Signature and Seal of the Head

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.)

■



ACKNOWLEDGEMENT

It is my great pleasure to express my sincere gratitude to my supervisor **Ms. Shivali Sharma**, Assistant professor, Department of Botany, GGV, Bilaspur (C.G.), under whose guidance the present project work has been completed. Her valuable time, valuable suggestions and selfless effort helped me a lot in completing the work.

I wish to acknowledge **Dr. S.K. Shahi**, HOD, Dept of Botany, GGV, Bilaspur (C.G.), who gave me opportunity to undergo project work.

I would like to thank **Dr. A.K. Dixit, Dr. S.K. Prajapati, Dr. M.P. Shahi, Dr. S.K. Pandey, Dr. S. Shweta, Dr. V.N. Tripathi, Dr. Deepankar Yadav, Dr. R.K. Ahirwar, Dr D.K. Patel, Dr. Vineet Kumar, Dr. Preeti Verma and Mr. Deepak kumar singh** for their kind encouragement.

I would like to thank all my classmates and those who have directly and indirectly helped me to complete my work.



Content

- Abstract
- Keywords
- Introduction
- Types of environmental stresses in plants
- Plant growth promoting rhizobacteria (PGPR)
- PGPR in mitigation of various environmental stress
- Chemical signaling between plant and bacteria
- Plant-released substances
- PGPR-related molecules
- Discussion
- Conclusion
- Reference

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

Signature and Seal of the Head



A Dissertation on
MEDICINAL IMPORTANCE OF MURRAYA KOENIGII

SUBMITTED FOR PARTIAL FULFLMENT OF

THE DEGREE

OF

BACHELOR OF SCIENCE

INBOTANY

GURU GHASIDAS VISHWAVIDYALAYA



(A Central University)

BY

ALPANA MEET TIGGA

B. Sc (6 th SEMESTER)

(Enrollment No: GGV/18/3030, Roll No:18203008)

UNDER THE SUPERVISION OF

DR. DEVENDRA KUMAR PATEL

Associate Professor

DEPARTMENT OF BOTANY, GGV, BILASPUR, CG,2020-21

CERTIFICATE

This is to certify that dissertation entitled **MEDICINAL IMPORTANCE OF *MURRAYA KOENIGII*** submitted to the Department of BOTANY, GURU GHASIDAS VISHWAVIDYALAYA is a record of independent dissertation work carried out by ALPANA MEET TIGGA, for the degree of Bachelor of Science under my supervision and guidance. This has not been previously submitted for the award of any degree diploma or any other similar title.

DR. DEVENDRA KUMAR PATEL

Department of Botany

GGV, Bilaspur, C.G.

DATE:

PLACE: GGV, Bilaspur (C. G.)

DR. S. K. SHAHI

Head of the Department

Department of Botany

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

Signature and Seal of the Head



ACKNOWLEDGEMENTS

First and foremost, I express my deepest gratitude to my supervisor Dr. Devendra Kumar Patel, Associate Professor, Department of Botany, GGV, Bilaspur, C.G., India; whose inspiration, supervision and support and encouragement to complete my dissertation entitled **MEDICINAL IMPORTANCE OF *MURRAYA KOENIGII***. I also thank for his kindness, timely cooperation and guidance for this Dissertation. I would like to thank Dr S. K. Shahi, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C. G) for providing all the necessary facilities during the course of study. I would also like to thank Dr. A. K. Dixit, Dr. S. Prajapati, Dr. S. K. Pandey, Dr. V. N. Tripathi, Dr. R. K. Ahirwar, Dr. D. Yadav, Dr. S. Shweta, Dr. M. P. Shahi, Dr. Vineet Kumar, Dr. Preeti Verma, Mr. D. K. Singh and Ms. S. Sharma for giving me the real attitude of research. I am also thankful to all my classmates for sharing their literature and valuable assistance. Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, support and encouragement to give in this dissertation. Last but not least I convey my regards to all those who directly or indirectly contributed to the completion of this Dissertation.

ALPANA MEET TIGGA

B.Sc. Botany (hons.) 6th Semester

2020 - 21



DECLARATION

I hereby declare that the work presented in dissertation entitled **MEDICINAL IMPORTANCE OF MURRAYA KOENIGII** submitted for partial fulfillment of B. Sc. Botany was carried out by me under supervisor of Dr. Devendra Kumar Patel, Department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

The work in this Dissertation is original and will remain intellectual property of Department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

DATE:

PLACE: GGV, BILASPUR (C. G.)

ALPANA MEET TIGGA


BSC. 6th SEMESTER

ROLL NO: 18203008

DEPARTMENT OF BOTANY

GGV, BILASPUR (C.G)

2020-21


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

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.)



CONTENTS

S. NO.	TITLES	PAGE NO.
1.	Introduction	7
2.	History/Origin	7-8
3.	Scientific Classification	8
4.	Plant Profile/Botanical details -Morphology -Chromosome no. -Parts Used	9-11
5.	Chemical Components	12
6.	Cultivation and Collection	12-13
7.	Different forms of curry leaves spiced our daily life Fresh Dried Powdered Cooked	13-15
8.	Medicinal Values	16
9.	Uses Traditional uses Industrial uses	17-18
10.	Side Effects and Toxicity	18
11.	Conclusion	18
12.	Reference	19

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

Signature and Seal of the Head



HOW PLANTS DEFEND THEMSELVES AGAINST PATHOGENS

A DISSERTATION

Submitted in partial fulfillment of the degree of

BACHELOR OF SCIENCE IN BOTANY

TO
GURU GHASIDAS VISHWAVIDALAYA
(A Central University)

BY
AMISHA SINGH
B. Sc (VI SEMESTER)
(Reg. No : GGV/18/3032, Roll No:18203009)

PROJECT SUPERVISOR
Mr. DEEPAK KUMAR SINGH



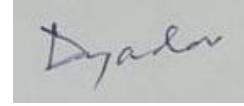
DEPARTMENT OF BOTANY
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)
2021

Signature of Head

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

CERTIFICATE

This is certify that dissertation entitled “**HOW PLANTS DEFEND THEMSELVES AGAINST PATHOGEN**” is a record of independent dissertation work carried out by **AMISHA SINGH** (Reg.No GGV/18/3032) Department of BOTANY, Guru Ghasidas Vishwayidyalaya, Koni, Bilaspur(C.G.) This has not been previously submitted for the award of any degree diploma or any other similar title.



Mr. DEEPAK KUMAR SINGH

(Project supervisor)

Place: Bilaspur

Date:

Forwarded to the controller of Examination Guru Ghasidas Vishwavidyalaya in partial fulfilment of the requirements of the degree of Bachelor of science in Botany.

Place: Bilaspur

Head of Department



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

Signature and Seal of the Head



**DEPARTMENT OF
BOTANY**

**GURU GHASIDAS
VISHWAVIDYALAYA**

**(A CENTRAL UNIVERSITY ESTABLISHED BY CENTRAL
UNIVERSITY ACT 2009)**

DECLARATION

I hereby declare that the work presented in this project dissertation entitled “**HOW PLANTS DEFEND THEMSELVES AGAINST PATHOGEN**” Submitted for partial fulfillment of B. Sc. Botany was carried out at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

The work was carried out by me under supervisor of Deepak kumar Singh, , Department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).The work in this project dissertation is original and will remain intellectual property of department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.)

Date:

Place: GGV BILASPUR

Amisha singh

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

Signature and Seal of the Head



ACKNOWLEDGEMENT

First and foremost, I express my deepest gratitude to my supervisor Deepak kumar Singh , Department of Botany, GGV, Bilaspur, C.G., India; whose inspiration, supervision and support and encouragement to complete my dissertation work entitled “**HOW PLANTS DEFEND THEMSELVES AGAINST PATHOGEN**” from preliminary to concluding level on this project. I also thank for his kindness, timely cooperation and guidance for this project.

I would like to thanks Dr S. K. Shahi, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C. G) for providing all the necessary facilities during the course of study.

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I am also thankful to all my classmates for sharing their literature and valuable assistance.

Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, kind support and encouragement to do my work more and more efficiently during the crucial times of the completion of the project.

Date:

Place:

Name: **Amisha Singh**

Roll No: 18203009

B. Sc. (DEPARTMENT OF BOTANY)

GURU GHASIDAS VISHWAVIDALAYA, KONI, BILASPUR (C.G.)



CONTENT:-

1. INTRODUCTION	8
2. SURVEIL LANCE AND DETECTION OF MICROBIAL PATHOGEN	9
3. BIOTROPIC AND NECROTROPIC PLANT PATHOGEN	11
4. BACTERIA	12
5. VIRUSES	13
6. FUNGI	13
7. PRIMMRY INNATE IMMUNITY IN PLANTS	14
8. EFFECTOR- TRIGGERED IMMUNITY	16
9. DEFENCE MECHANISM IN PLANT AGAINST PATHOGEN	
❖ STRUCTURAL DEFENCE	18
❖ CHEMICAL DEFENSE RESPONSES	23
10.INDUCED SYSTEMATIC RESISTANCE IN PLANTS	27
11.INNATE RESISTANCE	28
12.BASAL RESISTANCE AGAINST BACTERIA	28
13.RESISTANCE AGAINST PATHOGEN TOXINS	29
14.RATE- LIMITING RESISTANCE TO FUNGI	30
15.VIRAL PATHOGEN	30
16.PATHOGENESIS RELATED PROTEINS	33
17.CONCLUSIONS	36



**A REVIEW ON PHYTOCHEMICAL AND
PHARMACOLOGICAL PROPERTIES OF
*CALATOPIS PROCERA***

**A DISSERTATION
REPORT SUBMITTED
FOR THE PARTIAL
FULFILLMENT
OF THE
DEGREE OF
BACHELOR OF
SCIENCE**



By

**ANJALI
BHARGAVA**


Enrollment No GGV/18/3036; Roll No 18203010

UNDER THE SUPERVISION

**OF DR. MAMTA PATRA SHAHI
(ASSISTANT PROFESSOR)
DEPARTMENT OF BOTANY
GURU GHASIDAS VISHWAVIDYALAYA
BILASPUR- 495005(CG)**

2021

40


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



CERTIFICATE

This is to certify that dissertation entitled “A review on phytochemical and pharmacological properties of *Calotropis procera*” is based on review done by Anjali Bhargava (Enroll. No.- GGV/ 18/3036) Department of Botany, GuruGhasidasVishwavidyalaya, Bilaspur and this has not previously formed the basis of the award of any degree, diploma, associate ship or any other similar title and it represents entirely an independent work on the part of candidate.

PLACE:-
BILASPUR

DATE:- 14th July


**DR. MAMTA PATRA
SHAHI**

SUPERVISOR

Forwarded to the controller of examination Guru Ghasidas Vishwavidyalaya in the partial fulfilment of the degree of Bachelor of Science in Botany.

PLACE:-
BILASPUR DATE:-
14TH JULY

**DR. S. K.
SHAHI** Head of the
Department, GGV
Bilaspur (C.G.)
495009


विभागाध्यक्ष
Head
जनसंरक्षित शास्त्र विभाग
Department of Botany
गुरु घासीदास विश्वविद्यालय (केन्द्रीय वि.वि.), बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.)
Signature and Seal of the Head



DECLARATION

I hereby declare that the work presented in this project dissertation entitled “ A review on the **Phytochemical and Pharmacological properties of *Calotropis procera***” for partial fulfilment of the degree of Bachelor. Sc Botany was carried out at department of Botany ,GGV Bilaspur (C.G.)

The work was carried out by me under the supervision of Dr Mamta Patra Shahi assistant professor department of Botany , GGV Bilaspur (C.G.).

The work in this project dissertation is original and will remain intellectual property of department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (CG) .

PLACE:- BILASPUR


Name Anjali Bhargava

DATE:- 14th JULY

Semester B. Sc 6thsem

Department of Botany

Guru Ghasidas Vishwavidyalaya Bilaspur (CG)


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



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No words can suffice the efforts taken by my parents for the completion of my project. This work is an outcome of their blessing and constant moral support.

Finally I am thankful from my bottom of my heart to my classmates, Vinay , Talat who encouraged me at each step with great affection.


Last but not least I convey my regards to all those who directly or indirectly contribute to the successful completion of this project work.

Anjali Bhargava



Content

- Abstract
- Introduction
- Taxonomic position
- Phytochemical properties
- Pharmacological properties
- Other activities
- Toxicological studies
- Ethnobotanical uses
- Discussion
- Conclusion
- Reference


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



Water Pollution in India: An Outlook

A Dissertation Report

SUBMITTED ON THE PARTIAL FULFILMENT OF THE
DEGREE
OF
BACHELOR OF
SCIENCE IN
BOTANY



GURU GHASIDAS VISHWAVIDALAYA
(A Central University)

BY

AASTHA
TIWARI

B. Sc (VI SEMESTER)

(Enrollment No: GGV/18/3009, Roll No:18203011)

UNDER THE SUPERVISION OF
Mr. DEEPAK KUMAR SINGH

Department of BOTANY

GURU GHASIDAS VISHWAVIDALAYA, KONI, BILASPUR-
495009 CHHATTISGARH

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

Signature and Seal of the Head



Department of Botany
Guru Ghasidas Vishwavidyalaya
(A Central University established by Central University Act 2009 No. 25 of 2009)

CERTIFICATE

This is certifying that the dissertation entitled “*Water Pollution in India: An Outlook*” is based on the original work done by **Miss Aastha Tiwari, Department of Botany, Guru Ghasidas Vishwavidyalaya, Koni, Bilaspur 495009(C.G.)**, under my supervision and this has not previously formed the basis for the award of any degree, diploma, associate ship, fellowship or any other similar title and it represents entirely an independent work of the part of candidate.

Mr. Deepak Kumar Singh

(Signature of supervisor)

Place: Bilaspur


Date:

Forwarded to the Controller of examination, Guru Ghasidas Vishwavidyalaya in partial fulfilment of the requirements of the degree of Bachelor of Science in Botany.

Place: Bilaspur

Date:

Head of Department


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



**Department of Botany
Guru Ghasidas Vishwavidyalaya**

(A Central University established by Central University Act 2009 No. 25 of 2009)

DECLARATION


I hereby declare that the work presented in this project dissertation. Review entitled **“Water Pollution in India: An Outlook”** submitted for the partial fulfilment of B.Sc. Botany as carried out at **Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)**.

The work presented in this project dissertation is original and will remain intellectual property of Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). The information presented in the dissertation report including data figure and pictures are original or duly credited. If any discrepancy, mistake or plagiarism found in the report. The responsibility for the same will be solely mine.

Date:
of student

Signature

Place


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



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Finally, I take this opportunity to express my gratitude and love to my parents and beloved family members, for their understanding me and for their kind support and encouragement to do my work more and more efficiently during the crucial times of the completion of the project.

Date: 10 July 2021



INDEX

S.No.	Content	Page No.
1	Introduction	6-8
2	Groundwater Pollution	8-9
3	River water Pollution	9-11
4	Water Pollution in some major rivers of India (Yamuna, Ganga)	11-13
5	Causes of Water Pollution Industrial effluents Sewage discharge Agriculture	13-20
6	Effects of water pollution Diseases Eutrophication in water bodies	21-24
7	Control of water pollution	25-26
8	Conclusion	27
9	References	28-29

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



**STUDY OF DIVERSITY IN LEGUME-RHIZOBIA
ASSOCIATION AND THEIR POSSIBLE EXPLOITATION
IN AGRICULTURE AND ECOSYSTEM IMPROVEMENT**

Dissertation Report

Submitted

For the partial fulfillment of the degree of

BACHELOR OF SCIENCE

IN

BOTANY




By

**BASANT KUMAR PRADHAN
ROLL NO. 18203012
2020-21**

Under the supervision of

**Dr. S. SHWETA
Assistant Professor of Botany**

**GURU GHASIDAS VISHWAVIDYALAYA
BILASPUR - 495009 (CHHATTISGARH)**


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



DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR-495009 (CHHATTISGARH)

(A central University established by the Act of Parliament 2009 NO.25 of 2009)

CERTIFICATE

This is to certify that the project report entitled “**Study of diversity in Legume-Rhizobia associations and their possible exploitation in agriculture and ecosystem improvement**” is an authentic record of work done by Basant Kumar Pradhan, student of B.Sc. (Hons.) Botany of Guru Ghasidas Vishwavidyalaya.

Place: Bilaspur (Chhattisgarh) Date:

Signature
Signature of Guide

Student

Dr. S. Shweta

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

Signature and Seal of the Head



DECLARATION


I hereby declare that the work presented in the projected dissertation entitled “**Study of diversity in Legume-Rhizobia associations and their possible exploitation in agriculture and ecosystem improvement**” submitted as partial fulfillment for B.Sc. (Hons.) Botany VI Semester, was carried out by me virtually at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (Chhattisgarh)

The work presented in this project is original and I owe the sole responsibility for the entire content of this project including the manuscript, figures, tables and graphs.

Date:

Place:

Basant Kumar Pradhan
Signature of Student


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



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I wish to express my heartfelt thanks and immense gratitude to all those who helped and encouraged me to complete my dissertation entitled “**Study of diversity in Legume-Rhizobia associations and their possible exploitation in agriculture and ecosystem improvement**”, as partial fulfilment of the degree of Bachelor of Science in Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

It is a great pleasure for me to pay earnest thanks and profound gratitude to my supervisor, Dr. S. Shweta, Assistant Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) for giving me an opportunity to work under her supervision at this esteemed University and for regular discussions on the topic.

I would like to thank Dr. S.K. Shahi, Head, department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) for providing all the necessary facilities during the course of this study and for constant encouragement and support. I owe my profound thanks to Dr. A.K. Dixit, Dr. D.K. Patel, Dr. S.K. Prajapati, Dr. S.K. Pandey, Dr. V.N. Tripathi, Dr. D.Yadav, Dr. R.K. Ahirvar, Dr. M.P. Shahi, Dr. Vineet Kumar, Dr. Preeti Verma, Mr. Deepak K. Singh and Miss. Shivali Sharma for their valuable suggestions. I would also like to extend my thanks to all the Ph.D. scholars who encouraged me during the course of this work.

Thanks, are also due to all the non-teaching faculty members of Department of Botany, Guru Ghasidas Vishwavidyalaya for providing me necessary support in the form of books, journals relevant literature pertaining to the study.

I am indebted to my parents, brothers and friends for their moral support and encouragement during the course of work.

Date:
Place: Bilaspur

Basant Kumar Pradhan
Department of Botany
Guru Ghasidas Vishwavidyalaya Koni,
Bilaspur (C.G.)



CONTENTS

	<i>Page No.</i>
List of Tables	<i>i</i>
List of Figures.....	<i>ii</i>
Abstract.....	<i>iii</i>
1. INTRODUCTION.....	1
2. RHIZOBIA : THE MICROSymbiont	3
3. RHIZOBIA : AN ASSEMBLAGE OR LEGUME NODULATING GENERA.....	4
4. PROMISCOUCITY AND SPECIFICITY	5
5. LEGUMES : THE MACROSymbiont	6
6. METHODS OF ENTRY OF RHIZOBIA INTO PLANT ROOTS	6
7. STEM NODULES.....	8
8. TYPES OF NODULES	9
9. MORPHOLOGY, SIZE AND NUMBER OF NODULES	11
10. FUNCTIONS OF NODULES	14
11. SIGNIFICANCE OF PRESENT WORK.....	17
12. SUMMARY.....	18
13. CONCLUSIONS.....	19
14. REFERENCES.....	21

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

Signature and Seal of the Head



Applications of microbes in reducing pollution: A Review

A

Dissertation Report

SUBMITTED ON THE PARTIAL FULFILMENT OF

THE DEGREE OF

BACHELOR OF SCIENCE

IN

DEPARTMENT OF BOTANY GURU

GHASIDAS VISHWAVIDYALAYA



SUBMITTED BY CHHAYA KURREY B.

Sc (VI SEMESTER)

(Enrollment No: GGV/18/3075 Roll Number : 18203013)

UNDER THE SUPERVISION OF

DR.PREETI VERMA

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDYALAYA,

KONI, BILASPUR-495009 (C.G.)

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



Acknowledgement

I wish to express my heartfelt thanks to immense Gratitude to all those who helped and encourage me to complete my dissertation entitled application of microbes reducing pollution a review for the degree of bachelor of science in botany GGV Bilaspur.

It great pleasure for me to pay earnest thanks and profound gratitude to my supervisor **Dr.Preeti Verma** Department of Botany Guru GhasidasUniversity Bilaspur for giving me an opportunity to work under her supervision at this esteemed university. It has been a memorable experience For me under the work his guidance.

I would like to thanks **Dr. S.K shahi** heads of departments of Botany Guru Ghasidas University Bilaspur Providing all the necessary facilities during the course of study and for constant encouragement and Support I own my profound thanks to Dr.AK Dixit ,Dr.D.K Patel,Dr.SK prajapti ,Dr.VN tripathi ,Dr.S.Sweta ,Dr.S.K Pandey, Dr.depankeryadav ,Dr.MP shahi ,Dr.RK Ahirwar,Dr.veneet Kumar ,Dr. Deepak Singh, Dr.Shivali Sharma , for their valuable suggestions. I would also tanks to all the PhD.schloers who encouraged me during the course.

Thanks to also due to non teaching faculties member of department of Botany Guru Ghasidas University providing the necessary support in from of book and journal of this study .

I am at indebted to my parents brother sister and friend for their moral support and encouragement during the course of work my dissertation.

..

Submitted by
Chhaya kurrey Department
Botany Gurus Ghasidas University



CERTIFICATE

This is certify that entitle “**Application of microbes in reducing pollution: A Review**” is based on the original work done by “**Chhaya Kurrey**” (Enrollment no.-GGV/18/3075) Department of Botany, Guru GhasidasVishwavidyalaya, 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.

Dr. Preeti Verma

Project Supervisor

Forwarded to the controller of examinations, Guru GhasidasVishwavidyalaya in partial fulfillment of the requirements of the degree of Bachelor of Science in Botany.

Place: Bilaspur

Date:

Dr. S.K Shahi

Head of Botany Department

Guru Ghasidas Vishwavidyalaya

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

Signature and Seal of the Head




Declaration

I hereby declare that the work presented in this project dissertation entitled “**Application of microbes in reducing pollution: A Review**” submitted for the partial fulfillment of Bsc.Botany of carried out at Department of Botany Guru Ghasidas University Bilaspur (CG)

The work was carried out by me under the supervisor Dr.preeti Verma Department of Botany Guru Ghasidas University Bilaspur CG.

The work in this project dissertation is original and will remain intellectual property of Department of Botany Guru Ghasidas University Bilaspur.

Chhaya kurrey
Department of Botany
Place -Bilaspur


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

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.)

SOME ETHNOMEDICINAL PLANT USED BY TRIBES OF MAHASAMUND

DISTRICT, CHHATTISGARH: A REVIEW



A Dissertation Report Submitted

FOR THE PARTIAL FULFILLMENT OF THE DEGREE OF

BACHELOR OF SCIENCE

DEPARTMENT OF BOTANY BY

DEEPSHIKHA GAYAKWAD

GGV/18/3081, Roll No.18203014

Under the supervision of

Dr. RAMESH KUMAR AHIRWAR

Assistant Professor Department of Botany

Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, INDIA

2021

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

Signature and Seal of the Head



CERTIFICATE

This is to certify that dissertation entitled “**Some Ethnomedicinal Plant used by Tribes of Mahasamund District, Chhattisgarh: A Review**” is based in the original work done by DEEPSHIKHA GAYAKWAD (Enroll. No.GGV/18/3081), Department of Botany, Guru Ghasidas Vishwavidyalaya and this has not previously formed the award of any degree, diploma, associate ship or any other similar title and represents entirely an independent work on the part of the candidate.

Place: Bilaspur

Dr. Ramesh Kumar Ahirwar

Date:

Name of the Supervisor

Forward to the controller of examination, Guru Ghasidas Vishwavidyalaya in partial fulfilment of the degree of Bachelor of Science in Botany.

Place: Bilaspur

Dr. S. K. Shahi

Date:

Head of the department

Department of Botany

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

Signature and Seal of the Head



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I express my deepest gratitude to all those who help and encouraged me to complete my dissertation work entitled “Some Ethnomedicinal Plant used by Tribes of Mahasamund District, Chhattisgarh: A Review” for the degree of bachelor in science in botany, Centre of advance study in Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

I am heartily thankful to my mentor, Dr. Ramesh Kumar Ahirwar whose encouragement, supervision and support from the beginning to the concluding of this dissertation work, help me to give my best attention and performance in this work.

I would like to thanks Dr. S.K Shahi, Head of Department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.) for providing all the necessary facilities during the course of study. I would like to thank Dr. A.K. Dixit, Dr. D. K. Patel, Dr. S. K. Prajapati, Dr. S.K. Pandey, Dr. V. N. Tripathi, Dr. Deepanker Yadav, Dr S. Sweta, Dr. M. P. Shahi, Dr. Vineet Kumar, Dr. Preeti Verma, Miss. Shivali Sharma and Mr. Deepak Kumar Singh for their kind encouragement.

I am also thankful to all my classmates for sharing their literature and valuable assistance. Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understandings, support and encouragement to give my best effort in this dissertation.

Deepshikha Gayakwad



DECLARATION

I hereby declare that the work presented in the dissertation report entitled “**Some Ethnomedicinal Plant used by Tribes of Mahasamund District, Chhattisgarh: A Review**” submitted as partial fulfilment of B.Sc. Botany VI Semester, was carried out by me at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

The work presented in this project is original and will be intellectual property of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). The information presented in this report including, pictures in report, the responsibility for the same will be solely mine.

Deepshikha Gayakwad,

Roll No.: 18203014

B. Sc. VI SEM, Dept. of Botany

GGV, Bilaspur (C.G.)

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

Signature and Seal of the Head



CONTENTS

1. Introduction	1
2. Tribes of Mahasamund area	2-4
3. a. Ethno medicinal plants	4-26
b. <i>Ocimum sanctum L.</i>	
c. <i>Zingiber officinale R.</i>	
d. <i>Aegle marmelos L.</i>	
e. <i>Azadirachta Indica A. Juss.</i>	
f. <i>Lawsonia inermis L.</i>	
g. <i>Piper nigrum L.</i>	
h. <i>Datura stramonium L.</i>	
4. Conclusion	26
5. Reference	27-28
6. Photographs	29-36

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

Signature and Seal of the Head



SIGNIFICANCE OF PLANT ARCHITECTURE

Dissertation Report

Submitted

For the partial fulfillment of the degree of

BACHELOR OF SCIENCE

IN

BOTANY



By

DIPALI

**ROLL NO. 18203 015
2020-21**

Under the supervision of

Dr. S. SHWETA

Assistant Professor of Botany

**GURU GHASIDAS VISHWAVIDYALAYA
BILASPUR - 495009 (CHHATTISGARH)**

**विभागाध्यक्ष
Head**

**वनस्पति शास्त्र विभाग
Department of Botany**

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



DEPARTMENT OF BOTANY

**GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR-495009
(CHHATTISGARH)**

(A central University established by the Act of Parliament 2009 NO.25 of 2009)

CERTIFICATE

This is to certify that the project report entitled “**Significance of Plant Architecture**” is an authentic record of work done by Dipali Student of B.Sc. Botany (Hons.) in the Department of Botany of this Vishwavidyalaya.

Place: Bilapur (Chhattisgarh) Date:

Signature of Guide
Dr. S. Shweta

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

Signature and Seal of the Head



DECLARATION

I hereby declare that the work presented in the projected dissertation entitled “**Significance of Plant Architecture**” submitted as partial fulfillment of B.Sc. (Hons.) Botany VI Semester, was carried out by me at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (Chhattisgarh)

I owe the sole responsibility for the entire content of this project including the manuscript, figures and tables.

Date:

Place: Bilaspur (Chhattisgarh)

DIPALI
Signature of student

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

Signature and Seal of the Head



CONTENTS

	<i>Page No.</i>
<i>List of Figures</i>	<i>i-ii</i>
<i>Abstract</i>	<i>iii</i>
1. Introduction	1
2. Interactions amongst organisms	5
2.1 Symbiotic Interactions	5
2.2 Micro-Habitats On Plants Providing Space For Interaction.....	5
3. Root Architecture	7
3.1 Foraging of Entomopathogenic Nematodes	7
4. Leaf Architecture	9
4.1 Foraging Of Lady Bird Beetles Attacking Wheat Aphid.	9
4.2 Feeding Preferance Of Herbivore Insects	10
4.3 Insects Feeding On Toxic Plants	12
5. Stem Architecture	13
5.1 Herbivore Insects“ Oviposition And Parasitism	13
5.2 Galls on Plants: A Shelter For Insects	14
5.3 Influence of Insect Herbivore Assemblages	15
5.4 Plant Shelters For Insects	17
6. Inflorescence Architecture	19
6.1 Influence of Pollinator“s Behaviour and mating In Orchidaceae.....	19
6.2 Plants Provide Food For Insects	20
7. Discussion	27
8. Significance of the present study	30
9. Summary	30
10. Conclusions	31
11. References	

Sunil K. Mehta

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

Signature and Seal of the Head



**FOOD POISONING CAUSED BY THE
BACTERIA**

A Dissertation

Submitted in partial fulfillment of the degree of

**BACHELOR OF SCIENCE IN
BOTANY**

TO

GURU GHASIDAS VISWAVIDYALAYA
(A Central University)

BY

HUNNY AGRAWAL

B. Sc (VI SEMESTER)

(Reg. No: GGV/18/3099, Roll. No: 18203016)

Project supervisor

Mr. DEEPAK KUMAR SINGH



Department of Botany
Guru Ghasidas Vishwavidyalay

Bilaspur(C.G.) 2021

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

Signature and Seal of the Head



DEPARTMENT OF BOTANY

GURU GHASIDAS VISWAVIDYALAYA

(A CENTRAL UNIVERSITY ESTABLISHED BY CENTRAL UNIVERSITY ACT 2009)

CERTIFICATE

This is certify that dissertation entitled “**FOOD POISONING CAUSED BY THEBACTERIA**” submitted to the Department of BOTANY, GGV is a record of independent dissertation work carried out by **Hunny Agrawal**, for the degree of Bachelor of Science under my supervision and guidance. This has not been previously submitted for the award of any degree, diploma or any other similar title.

Mr. DEEPAK KUMAR SINGH

(Project supervisor)

Place: Bilaspur

Date:

Forwarded to the controller of Examination Guru Ghasidas Vishwavidyalaya in partial fulfilment of the requirements of the degree of Bachelor of science in Botany.

Place: Bilaspur

Date:

Head of Department


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

Signature and Seal of the Head



DEPARTMENT OF BOTANY

GURU GHASIDAS VISWAVIDYALAYA

(A CENTRAL UNIVERSITY ESTABLISHED BY CENTRAL UNIVERSITY ACT 2009)

DECLARATION

I hereby declare that the work presented in this project dissertation entitled "**FOOD POISONING CAUSED BY THE BACTERIA**" Submitted for partial fulfillment of B. Sc. Botany was carried out at Department of Botany, Guru Ghasidas Viswavidyalaya, Bilaspur (C.G.).

The work was carried out by me under supervision of Mr. Deepak Singh, Department of Botany, Guru Ghasidas Viswavidyalaya Bilaspur (C.G.). The work in this project dissertation is original and will remain intellectual property of Department of Botany, Guru Ghasidas Viswavidyalaya Bilaspur (C.G.).

Date:

Hunny Agrawal

Place: GGV BILASPUR


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

Signature and Seal of the Head



ACKNOWLEDGEMENT

First and foremost, I express by deepest gratitude to my supervisor Mr. Deepak Singh, Department of Botany, GGV, Bilaspur, C.G., India; whose inspiration, supervision and support and encouragement to complete my dissertation workentitled “**FOOD POISONING CAUSED BY THE BACTERIA**” from preliminary toconcluding level on this project. I also thank for his kindness, timely cooperationand guidance for this project.

I would like to thanks Mr. S.K. Shahi, Head of the Department of Botany, GuruGhasidas Viswavidyalaya, Bilaspur (C.G.) for providing all the necessary facilitiesduring the course of study.

Special thanks to all my teachers in the department, namely Dr. A.K Dixit, Dr. D.KPandey, Dr. S.K Pandey, Dr. S.K Prajapati, Dr. S. Shweta, Dr. D Yadav, Dr. R.K Ahirwar,and all the faculties of the department for their guidance and encouragement during the study.

I am also thankful to all my classmates for sharing their literature and valuable assistance.

Finally, yet importantly, I take this oppurtunity to express my gratitude and lovetowards my parents and beloved family members, for their understanding,support and encouragement to give in this dissertation.

Date:

Plap

e:

Name: Hunny

Agrawal Roll.No:

1820301

6

B. Sc (DEPARTMENT OF BOTANY)

GURU GHASIDAS VISWAVIDYALAYA, KONI, BILASPUR (C.G.)

CONTENT



S.NO	TOP-ICS	PAGE.NO
1	Introduction	8-11
2	Biochemical Properties of Bacteria	12-14
3	Growth and Survival Characteristics	15-16
4	Mode of Transmission	17-18
5	Materials and Method for testing the Bacteria	19-20
6	Biochemical Tests	21-27
7	Results and Discussion	28-29
8	Control Measures	30-32
9	Conclusion	33
10	References	34-40

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



PRODUCTION AND SYNTHESIS OF EXOPOLYSACCHARIDES BY DIFFERENT MICROORGANISMS

A Dissertation Report
SUBMITTED
FOR THE PARTIAL FULFILLMENT OF THE
DEGREE OF
BACHELOR OF SCIENCE
IN
BOTANY



By

JYOTSNA CHANDRA

Enrollment No - GGV/18/3109

Roll No - 18203017

Under the supervision of

DR. SUSHIL KUMAR SHAHI

Associate Professor

Botany Department, GGV, Bilaspur

DEPARTMENT OF BOTANY
GURU GHASIDAS VISHWAVIDYAL

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

Signature and Seal of the Head



CERTIFICATE

This is to certify that dissertation entitled „**Production and Synthesis of exopolysaccharides by different microorganisms**“ is based on review done by JYOTSNA CHANDRA (Enrollment no – GGV/18/3109) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur 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:

Dr. S. K. Shahi

(Supervisor)

Botany Department,
GGV, Bilaspur

Forwarded to the controller of examination, Guru Ghasidas Vishwavidyalaya, Bilaspur in partial fulfillment of the degree of Bachelor of Science in Botany.

Place : Bilaspur

Date :

Dr Sushil kumar Shahi

Head, Botany department

GGV, Bilaspur

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

Signature and Seal of the Head



DECLARATION

I here declare that the work presented in this project dissertation entitled **‘Production and synthesis of exopolysaccharides by different microorganisms’** submitted for partial fulfillment of B. Sc Botany was carried out at Department of Botany , Guru Ghasidas Vishwavidyalaya , Bilaspur (C.G) .

The work was carried out by me under the supervision of **Dr. S.K. Shahi**, Associate Professor , Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G). The work in this project dissertation is original and will remain intellectual property of department of Botany , Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

Date:

Place: Bilaspur (C.G.)

Jyotsna Chandra

B.Sc. VI Semester

Department of Botany

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.)



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

Signature and Seal of the Head



ACKNOWLEDGEMENT

With the utmost appreciation, I would like to concede respected supervisors **Dr. S.K. Shahi** for their guidance, selfless efforts, sparing their precious time for guidance and supervision and always being ready for pointing out mistakes and giving suggestions to improve them.

I am highly thankful to Honorable Dr. SK Shahi, Head of Botany & Dean of Life Science, GGV, Bilaspur for his dedication towards the pursue of knowledge and readiness to instill the same.

Special thanks to the teachers in the Department, namely, Dr. .A.K. Dixit, Dr. S.K. Prajapati, Dr. S.K. Pandey, Dr. VN .Tripathi, Dr. M.P. Shahi, Dr. S. Shweta, Dr. Deepanker Yadav, Dr. R. K. Ahirwar, Dr. D. K. Patel, Dr. Vineet Kumar, Mr. Deepak Singh, Ms. Shivali Sharma for encouragement during the study.

I am also like to thanks the lab technician and librarian Mr Naresh Chandraker & Nirmalkar for help in making this project a successful one.

No words can suffice the efforts taken by my parents for the completion of my project. This work is an outcome of their blessing & constant moral support.

Finally, I am thankful from the bottom of my heart to my classmates Kamni Jolhe and Sukrit Das who encouraged me at each step with great affection.

Finally, I convey my regards to all those who directly or indirectly contributed to the successful completion of this project work.

Jyotsna Chandra



CONTENT

1. Introduction

1.1 Extracellular polymeric substances

1.2 Characteristic of Extracellular polymeric substances

2. Review of literature

2.1 Exopolysaccharides

2.2 Classification of Exopolysaccharides

2.3 Types of Exopolysaccharides

3. Objective

4. Materials and Methods

4.1 EPS production

4.2 Production of Xanthan gum by *Xanthomonas campestris*.

4.2.1 Xanthan gum shape and structure

4.2.2 Xanthan gum production

4.3 Parameters affecting in production of Xanthan gum.

4.3.1 Effect of carbon re-assesses.

4.3.2 Effect of nitrogen re-assesses.

4.3.3 Effect of temperature.

4.3.4 Effects of pH.

4.3.5 Effects of mass switch charge.

4.4 Xanthan gum biosynthesis.

4.5 Properties of Xanthan gum.

4.6 Applications of Xanthan gum

4.6.1 Industrial production

4.6.2 Personal care applications

4.6.3 Pharmaceutical applications

4.6.4 Food production

4.6.5 Dairy preparation

4.6.6 Bakery merchandise

4.6.7 Beverages

4.7 Pullulan production by *Aureobasidium pullulan* .

4.7.1 Isolation and Identification of microorganism



4.7.2 Preparation of inoculum

4.7.3 Production and biosynthesis of pullulan by *Aureobasidium*

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

Signature and Seal of the Head



pullulan .

4.8 Biosynthesis of pullulan

4.8.1 Morphology of *Aureobasidium pullulan* by its synthesis.

4.8.2 Mechanisms of pullulan synthesis.

4.9 Production of pullulan by fermentation.

4.9.1 Upstream processing

4.9.2 Downstream processing

4.10 Characteristics features of Pullulan.

4.11 Applications of pullulan

4.11.1 Food sectors

4.11.2 Pharmaceutical sectors

4.11.3 Production of single-cell protein(SCP)

5. Results

5.1 Analysis of Xanthan gum production

5.2 commercialization and need of Xanthan gum.

5.3 Analysis of pullulan production

5.4 commercialization and need of Pullulan.

6. Discussion

6.1 On Xanthan gum

6.2 On Pullulan

7. Conclusion

8. References

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

Signature and Seal of the Head



PRODUCTION OF BIOPOLYMERS FROM MICROORGANISMS

A Dissertation Report

SUBMITTED

FOR THE PARTIAL FULFILMENT OF THE

DEGREE OF

BACHELOR OF SCIENCE

IN

BOTANY



By

KAMNI JOLHE

Enrolment No.-GGV/18/3111 Roll No.-18203018

Under the supervision of

DR. SUSHIL KUMAR SHAHI

Associate Professor

Botany Department, GGV, Bilaspur

DEPARTMENT OF BOTANY GUR
GHASIDAS VISHWAVIDYALAYA
BILASPUR-495005 (CG) 202

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

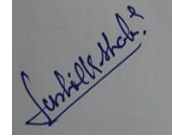
Signature and Seal of the Head

CERTIFICATE

This is to certify that dissertation entitled '**PRODUCTION OF BIOPOLYMERS FROM MICROORGANISMS**' is based on review done by **KAMNI JOLHE (Enrollment no- GGV/18/3111)** Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur 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:



Dr. S. K. Shahi

Name of supervisor.
Botany Department,
GGV, Bilaspur

Forwarded to the controller of examination, Guru Ghasidas Vishwavidyalaya, Bilaspur in partial fulfillment of the degree of Bachelor of Science in Botany.

Place: Bilaspur

Date:

Dr. Sushil Kumar Shahi
Head, Botany Department
GGV, Bilaspur



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

Signature and Seal of the Head

DECLARATION

I here declare that the work presented in this project dissertation entitled '**PRODUCTION OF BIOPOLYMER FROM MICROORGANISMS**' submitted for partial fulfillment of B.Sc Botany was carried out at Department of Botany , Guru Ghasidas Vishwavidyalaya , Bilaspur (C.G) .

The work was carried out by me under the supervision of **Dr. S.K. Shahi**, Associate Professor , Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G). The work in this project dissertation is original and will remain intellectual property of department of Botany , Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

Date:
JOLHE
Place: Bilaspur (C.G)
semester

KAMNI
B.Sc VI

Department of
Botany, GGV
Bilaspur (C.G)



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

Signature and Seal of the Head

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Finally I am thankful from the bottom of my heart to my classmates (**Sukrit dDs Dnd** (**JyotsDnD** who encouraged me at each step with great affection.


Last but not least I convey my regards to all those who directly or indirectly contributed to the successful completion of this project work.

(Kamni Jolhe)



CONTENTS

1. introduction
2. Article Review
3. Materials and Method
 - 3.1 Function and Synthesis of Biopolymers
 - 3.2 Production of Biopolymers.
 - 3.3 Intracellular versus extracellular production of biopolymers
 - 3.4 Genetically Engineered Biopolymer Production System
 - 3.5 Genetic Engineering and Biopolymer Techniques
 - 3.6 Bacterial Cellulose
4. Results and discussion
5. Conclusion
6. Reference


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



A Dissertation Report

Topic- IMPACT OF COAL MINE ON GROUND

WATER QUALITY

Submitted in partial

Fulfilment of B.sc 6th semester



Session - 2020-2021

Submitted to-

Santosh kumar Prajapati

Assistant professor

DEPARTMENT OF BOTANY

Submitted by- Dr.

KOPAL MISHRA

B.sc Botany (hons). 6th semester

ROLLNO- 18203019

Enrolment no

6

Address- GURU GHASIDAS VISHWAVIDYALAYA Koni,
Bilaspur ,Chhattisgarh ,India,495009

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

Signature and Seal of the Head



CERTIFICATE

This is certify that dissertation entitled “**IMPACT OF COAL MINES ON GROUND WATER QUALITY** ”submitted to the Department of BOTANY, GGVSU is a record of independent dissertation work carried out by **KOPAL MISHRA** , for the degree of Bachelor of Science under my supervision and guidance. This has not been previously submitted for the award of any degree diploma or any other similar title.

Dr. SANTOSH KUMAR PRAJAPATI
Assistant Professor
Department of Botany
GGVSU, Bilaspur C.G.

Date:

Place: BILASPUR

Dr. S. K. SHAHI
Head of Department of Botany
GGVSU Bilaspur C.G.

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

Signature and Seal of the Head



Declaration

I, **KOPAL MISHRA** , Roll no. 18203019 hereby declare that this report , which I submit in the Department of Botany , Guru Ghasidas Vishwavidyalaya is part of my course and is my own personal effort. I'm Glad to submit this seminar work this certify that the paper is an original piece of work and the borrowed ideas and text have been duly acknowledged.

I, Kopal Mishra holds responsibility for the content presented in dissertation.

KOPAL MISHRA

B.sc BOTANY 6th SEMESTER

DEPARTMENT OF BOTANY

GGV, BILASPUR (C. G.)

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

Signature and Seal of the Head



Acknowledgment

I wish to express my deep gratitude and sincere thanks to Dr. Santosh kumar Prajapati, Assistant Professor, Department of Botany, GGV, Bilaspur, C.G., for encouragement & for all the facilities he provided for this project work. I sincerely appreciate this magnanimity by taking me into his fold for which I shall remain indebted to him. I sincerely extend my hearty thanks to him for guiding me for the successful completion of this project. I take this opportunity to express my deep sense of gratitude for his invaluable guidance, constant encouragement, immense motivation, which has sustained my efforts at all the stages of this project work.

I would like to express my gratitude to Dr. S. K. Shahi, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C. G), for providing all necessary facilities throughout my studies.

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Index

S.no	topic	Page no
1.	Introduction and history	1-2
2.	Typed of coal mines and their impact	2-8
3.	Source of water pollution	8-11
4.	Pollutants	11-12
5.	Water quality in non acidic coal field	12-13
6.	Physio-chemical characteristics of water	13-14
7.	Ground water in mining area ,impact of coal mine on ground water and legal aspects	14-16
8.	Impact of ground water on Ground water quality of Dhanbad district, Jharkhand	16-17
9.	Ground water quality	17-18
10.	Preventive measures for avoiding ground water contamination	18-19
11.	Impact of coal mine on environment and health	19-20
12.	Mine waste management	20-23
13.	conclusion	23-24



14.

Reference

24-26

Jadhav Moh.

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

Signature and Seal of the Head



Microbiology of Wastewater Treatment

A Dissertation Report
SUBMITTED ON THE PARTIAL FULFILMENT OF
THE DEGREE
OF
BACHELOR OF SCIENCE
IN



By

GURU GHASIDAS VISHWAVIDYALAYA
A CENTAL UNIVERSITY

Kunal kumar

Enrollment No -

GGV/18/3123

Roll No - 18203020

Under the supervision of

Mr. DEEPAK KUMAR SINGH
DEPARTMENT OF BOTANY GURU
GHASIDAS VISHWAVIDYALAYA
BILASPUR-495005 (CG) 2021

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

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.)



Department of Botany
Guru Ghasidas Vishwavidyalaya
(A Central University established by Central University Act 2009 No. 25 of 2009)

CERTIFICATE

This is certifying that the dissertation entitled “**Microbiology of Wastewater Treatment**” is based on the original work done by Mr. Kunal Kumar, Department of Botany, Guru Ghasidas Vishwavidyalaya, Koni, Bilaspur 495009(C.G.), under my supervision and this has not previously formed the basis for the award of any degree, diploma, associate ship, fellowship or any other similar title and it represents entirely an independent work of the candidate.

Mr. Deepak Kumar Singh

(Signature of supervisor)

Place: Bilaspur

Date:

Forwarded to the Controller of examination, Guru Ghasidas Vishwavidyalaya in partial

fulfilment of the requirements of the degree of Bachelor of Science in

Botany. Place: Bilaspur

Date:

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

Signature and Seal of the Head



Department of Botany
Guru Ghasidas Vishwavidyalaya

(A Central University established by Central University Act 2009 No. 25 of 2009)

DECLARATION

I hereby declare that the work presented in this project dissertation. Review entitled “**Microbiology of Wastewater Treatment**” submitted for the partial fulfilment of B.Sc. Botany as carried out at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

The work presented in this project dissertation is original and will remain intellectual property of Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). The information presented in the dissertation report including data figure and pictures are original or duly credited. If any discrepancy, mistake or plagiarism found in the report. The responsibility for the same will be solely mine.

Date: 10 July 21
student

Place: Bilaspur

Signature of

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



ACKNOWLEDGEMENT

First and foremost, I express my deepest gratitude to Mr. Deepak Kumar Singh, my supervisor, for giving me this outrageous opportunity to work under him, and for regular discussion on the topic.

I also deep heartedly thankful to our Head of the department Dr. S. K. Shahi for providing all the necessary facility which helped me in compiling my dissertation work.

I also like to thank all my teachers including Dr. A. K. Dixit, Dr. D. K. Patel, Dr. S.K. Prajapati, Dr. S. K. Pandey, Dr. V.N. Tripathi, Dr. D. Yadav, Dr. R.K. Ahirvar, Dr. Shweta Subramaniam, Dr. Mamta Patra Shahi, Dr. Preeti Verma, Ms. Shivali Sharma, and Dr. Vineet Kumar for their valuable suggestions. I would also like to extend my thanks to all the research scholars who encouraged me during the course of this work.

I am also thankful to all my fellow mates who supported me during the entire dissertation work. Thanks, are also due to all the non-teaching faculty members of Department of Botany, Guru Ghasidas Vishwavidyalaya for providing me necessary support in form of books and journals for this study.

Finally, I take this opportunity to express my gratitude and love to my parents and beloved family members, for their understanding me and for their kind support and encouragement to do my work more and more efficiently during the crucial times of the completion of the project.


Date: 10 July 2021
Kumar

Kunal



Contents

1. Abstract	1
2. Introduction.....	2
3. Wastewater treatment options.....	4
3.1. Physical	4
3.2. Chemical.....	4
3.3. Biological.....	4
4. Steps involved in treatment of wastewater.....	4
i. Preliminary treatment/ pre-treatment.....	4
ii. Primary treatment.....	5
iii. Secondary treatment.....	6
iv. Secondary clarification.....	6
v. Tertiary / advanced treatments.....	7
5. Biological treatment options.....	10
i. Aerobic.....	11
a. Suspended cell system.....	11
Activated sludge process-ASP.....	11
b. Attached cell system.....	17
Tracing filter –TF.....	18
Rotatory biological container-RBC.....	19
ii. Anaerobic	20
Up flow anaerobic sludge blanket-UASB2.....	20
Anaerobic filter –AF.....	21
6. Biological removal of nitrogen.....	
7. Biological removal of phosphorus.....	23


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



8. Conclusion.....	25
9. References.....	26

Harmful Cyanobacteria: cyanotoxins

A Dissertation
Report

SUBMITTED ON THE PARTIAL FULFILMENT OF THE DEGREE OF
BACHELOR OF SCIENCE

IN
BOTANY



GURU GHASIDASVISHWAVIDALAYA
(A Central University)

BY

MANISHA SHANDILYA

B. Sc (VI SEMESTER)

(Enrollment No: GGV/18/3139, Roll No:18203021)

UNDER THE SUPERVISION OF

**Mr. DEEPAK KUMAR
SINGH**

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.)

Department of BOTANY
GURU GHASIDAS VISHWAVIDALAYA, KONI,
BILASPUR-495009 CHHATTISGARH



Department of
Botany
Guru Ghasidas Vishwavidyalaya
(A Central University established by Central University Act 2009 No. 25 of
2009)

CERTIFICATE

This is certify that the dissertation entitled “**Harmful Cyanobacteria Cyanotoxin** ” is based on the original work done by Ms. Manisha shandilya, Department of Botany, Guru Ghasidas Vishwayidyalaya, Koni, Bilaspur 495009(C.G.), under my ision and this has not super previously formed the basis for the award of any degree, diploma, associate ship, fellowship or any other similar title and it represents entirely an independent work of the part of candidate.

M .deepak Kumar
singh

(Signature of supervisor)

Place: Bilaspur

Date

Forwa ed to the Controller of examination, Guru Ghasidas Vishwayidyalaya in pat ial r fulfilment of the requirements of the degree of Bachelor of Science in Botany.

Place: Bilaspur

Date

Head

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

Signature and Seal of the Head



Department of
Botany
Guru Ghasidas Vishwavidyalaya

(A Central
University

established by Central
University

Act 2009 No. 25 of 2009)

DECLARATION

I hereby declare that the work presented in this project dissertation. Review entitled “Harmful Cyanobacteria Cyanotoxin” submitted for the partial fulfilment of B.Sc. Botany as carried out at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

The work presented in this project dissertation is original and will remain intellectual property of Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). The information presented in the dissertation report including data figure and pictures are original or duly credited. If any discrepancy, mistake or plagiarism found in the report. The responsibility for the same will be solely mine.

Date:
Place

Signature of student

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

Signature and Seal of the Head



ACKNOWLEDGEMENT

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Date:

Manisha shandilya



INDEX

S.No.	Content	Page No.
1	Introduction	6
2	Cyanobacteria as harmful algal blooms	7
3	Harmful effects of cyanobacterial blooms	8
4	Occurance of toxic cyanobacteria	8
5	Environmental role in toxic production	9-12
6	Classification of cyanotoxin	13-16
7	Exposure routes and health effects of toxins	17
8	Bioaccumulation	17
9	Bioassay method to identify the presence of cyanotoxin in water	18
10	ELISA	18-19
11	Cyanotoxin and bloom management and strate	19
12	conclusion	20
13	reference	21-23

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



A dissertation report on
HISTORY OF PANDEMICS
SUBMITTED ON THE PARTIAL FULFILMENT OF
THE DEGREE OF
BACHELOR OF SCIENCE
IN
BOTANY



GURU GHASIDAS VISHWAVIDYALAYA

(A central university)

BY

MUSKAN LAMBO

B.Sc. (Hons) BOTANY (VI SEMESTER)

(Enrollment no. - GGV/18/3153, Roll no. - 18203022)

UNDER THE SUPERVISION OF

DR. V. N. TRIPATHI

Assistant Professor

Department of BOTANY

**GURU GHASIDAS UNIVERSITY, KONI
495009, CHHATTISGARH**

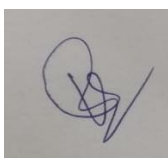
विभागाध्यक्ष
Head
वनस्पति शास्त्र विभाग
Department of Botany

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

Signature and Seal of the Head

CERTIFICATE

This is to certify that the dissertation entitled “**HISTORY OF PANDEMICS**” submitted to the Department of BOTANY, GGV is a record of independent dissertation work carried out by Muskan Lambo, for the degree of Bachelor of Science under my supervision and guidance. This has not been previously submitted for the award of any degree diploma or any other similar title.



DR. V. N. TRIPATHI


Assistant professor

Department of Botany

GGV, Bilaspur (C.G.)

Date: 14 July, 2021

Place: Bilaspur



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

Signature and Seal of the Head

DR. S. K. SHAHI

Head of Department

(BOTANY) GGV,

Bilaspur (C.G.)



DECLARATION


I hereby declare that the work presented in this dissertation entitled “**HISTORY OF PANDEMICS**” Submitted for partial fulfilment of the degree of Bachelor of Science in Botany at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

The work was carried out by me under the supervision of Dr. V. N. Tripathi, Assistant professor, Department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

The work in this dissertation is original or duly credited. If any discrepancy, mistakes or plagiarism found in this report, then the responsibility will be solely mine. This dissertation report will remain as the intellectual property of department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

Date: 14 July, 2021

Place: BILASPUR


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

MUSKAN LAMBO
B. Sc. VI SEMESTER
DEPARTMENT OF BOTANY
GGV, BILASPUR (C. G)



ACKNOWLEDGEMENT

First and foremost, I express my deepest gratitude to my supervisor Dr. V. N. Tripathi, Assistant Professor, Department of Botany, GGV, Bilaspur, C.G., India; whose supervision, support and encouragement helped me to complete my dissertation work entitled “**HISTORY OF PANDEMICS**” from preliminary to concluding level on this project. I also thank for his kindness, timely cooperation and guidance for this project.

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Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, support and encouragement to give in this dissertation.

Date: 14 July, 2021

Place: Bilaspur

Name: Muskan Lambo

Roll No: 18203022

B. Sc. (hons), VI semester (DEPARTMENT OF BOTANY)

GURU GHASIDAS VISHWAVIDALAYA, KONI, BILASPUR



TABLE OF CONTENT

SERIAL NO.	TOPIC	PAGE NUMBER
1	ABSTRACT	7
2	INTRODUCTION	8
3	WHAT IS PANDEMIC	9-10
4	WHAT ARE SPORADIC, ENDEMIC, OUTBREAK AND EPIDEMIC	11-12
5	FEATURES OF PANDEMIC	13-15
6	ORIGIN OF PANDEMICS CROSS-SPECIES TRANSMISSION FACTORS RESPONSIBLE FOR THE RECURRENCE OF INFECTIOUS DISEASES	16-19
7	PANDEMICS THAT CHANGED HISTORY	20
8	THE PLAGUE PANDEMIC	21-25
9	CHOLERA PANDEMICS	26-29
10	SPANISH FLU PANDEMIC	30-33
11	COVID-19 PANDEMIC	34-39
12	CONCLUSION	
13	REFERENCE	

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



A Dissertation on

Medicinal Importance of *Withania somnifera*

SUBMITTED BY PARTIAL FULFILMENT OF THE DEGREE OF
BACHELOR OF SCIENCE

IN BOTANY



by

NEHA KASHYAP B.Sc. (VI
SEMESTER) (Enrollment No:
GGV/18/3163) Roll no -
18203023

UNDER THE SUPERVISION OF

DR. D. K. PATEL Associate
Professor Department of
BOTANY

GURGHASIDAS VISHWAVIDYALAYA, BILA

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

Signature and Seal of the Head



CERTIFICATE

This is to certify that the project entitled “**M e d i c i n a l**
I m p o r t a n c e o f *Withania somnifera*” submitted to **Guru Ghasidas**
Vishwavidyalaya in partial fulfillment of degree of **Bachelor of Science in**
Botany is carried out by **Ms. NEHA KASHYAP, B. Sc. VI SEM, B o t a n y**
ROLL NO: 18203023, Department of Botany, Guru Ghasidas Vishwavidyalaya ,
under my supervision. I further certify that no part of this project has
been submitted for any other degree or diploma in this University or
other University.

Dr. D. K. PATEL

Department of Botany

GGV , Bilaspur C. G.

- **Date –**
- **Place– GGV Bilaspur**

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

Signature and Seal of the Head

DECLARATION

I hereby declare that the work shown in the dissertation entitled “Medicinal importance of *Withania somnifera* ” submitted for partial fulfillment of B.Sc.BotanyVI Semester, was carried out by me.

The work presented in this Dissertation is original. I owe the sole responsibility for the entire information presented in this file counting the text, pictures, Structure and tables.

Date:

Place: Bilaspur

NEHA

KASHYAP B.Sc VI

SEMESTER

DEPARTMENT OF

BOTANY GGV,

BILASPUR (C.G.)



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



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It is a great pleasure for me to pay earnest thanks and profound gratitude to my supervisor, Dr. D. K.Patel, Assistant Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) for giving me an opportunity to work under his supervision at this esteemed University and for regular discussions on the topic.

I would like to thank Dr. S. K. Shahi, Head of Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) for providing all the necessary facilities during the course of this study and for constant encouragement and support. I owe my profound thanks to Dr. A. K. Dixit, Dr. S.K. Prajapati, Dr. S. K. Pandey, Dr. V.N. Tripathi, Dr. D. Yadav, Dr. R.K. Ahirvar, Dr. Vineeta Dixit, Dr. Mamta Patra Shahi, Dr. Vineet and Mr deepak singh for their valuable suggestions. I would also like to extend my thanks to all the research scholars who encouraged me during the course of this work. .

I am indebted to my parents, brothers and friends for their moral support and encouragement during the course of work on my dissertation.

Date:

Neha Kashyap

Department of Botany
Guru Ghasidas Vishwavidyalaya
Koni, Bilaspur (C.G.)



CONTENTS

1. ABSTRACT	6
2. INTRODUCTION	7-8
3. PLANT DESCRIPTION.....	8
4. TAXONOMICAL CLASSIFICATION.....	8
7. DISTRIBUTION.....	9
8. CULTIVATION OF ASHWAGANDHA.....	9-10
10.MORPHOLOGICAL CHARACTERSTIC.....	11-13
11.CHEMICAL COMPOSITION	14
12.CHEMICAL STRUCTURE	15-18
13 MEDICINAL USES	18-23
14 CONCLUSION	23-24
15.REFERENCES	

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

Signature and Seal of the Head



**A REVIEW ON MEDICINAL AND PHARMACOLOGICAL
PROPERTIES OF *ANDROGRAPHIS PANICULATA***

**A Dissertation Report
SUBMITTED
FOR THE PARTIAL FULFILMENT OF THE DEGREE
OF
BACHELOR OF SCIENCE
IN
BOTANY**



BY

NEHA PATEL

Enrollment GGV\18\3164, Roll No 18203024

Under the supervision of

DR. MAMTA PATRA SHAHI

Assistant Professor
Botany Department, GGV, Bilaspur

**DEPARTMENT OF BOTANY
GHASIDAS VISHWAVIDYALAYA
BILASPUR-495005 (CG)
2021**

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

Signature and Seal of the Head

CERTIFICATE

This is to certify that dissertation entitled 'A REVIEW ON MEDICINAL AND PHARMACOLOGICAL PROPERTIES OF *ANDROGRAPHIS PANICULATA*' is based on review done by Neha Patel (Enrollment no GGV\18\3164) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur 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

Dr. MP Shahi
Name of Supervisor
Botany Department,
GGV, Bilaspur

Forwarded to the controller of examination, Guru Ghasidas Vishwavidyalaya, Bilaspur in partial fulfillment of the degree of Bachelor of Science in Botany.

Place: Bilaspur

Date:

Dr. Sushil Kumar Shahi
Head, Botany Department
GGV, Bilaspur



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

DECLARATION

I here declare that the work presented in this project dissertation entitled ‘**A REVIEW ON MEDICINAL AND PHARMACOLOGICAL PROPERTIES OF *ANDROGRAPHIS PANICULATA*** ’ submitted for partial fulfillment of B.Sc Botany was carried out at Department of Botany , Guru Ghasidas Vishwavidyalaya , Bilaspur (C.G) .

The work was carried out by me under the supervision of **Dr. MP Shahi**, Assistant Professor , Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G). The work in this project dissertation is original and will remain intellectual property of department of Botany , Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

Date:

Place: Bilaspur (C.G)

Neha Patel

B.Sc VI semester

Department of Botany

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G)



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

Signature and Seal of the Head



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Special thanks to the teachers in the Department, namely, Dr. .A.K. Dixit, Dr.D.K.Patel, Dr. S.K. Prajapati, Dr. S.K. Pandey, Dr. V.N .Tripathi, Dr. R.K. Ahirwar, Dr. D. Yadav, Dr. S. Shweta, Dr. Vineet Kumar, Dr. Preeti Verma, Mr. Deepak k Singh, Ms. Shivali Sharma for encouragement during the study.

I am also like to thanks the lab technician and librarian Mr Naresh Chandraker & Nirmalkar for help in making this projects a successful one.

No words can suffice the efforts taken by my parents for the completion of my project. This work is an outcome of their blessing & constant moral support.

Finally I am thankful from the bottom of my heart to my classmates Rupa Patel and Vinay Naik who encouraged me at each step with great affection.

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Neha Patel B.Sc VI semester

Department of Botany



CONTENTS:

S.no	TOPIC	PAGE NO.
01.	INTRODUCTION	6
02.	PLANT DESCRIPTION	7-9
03.	PHYTOCHEMICAL CONSTITUENTS	10-15
04.	TRADITIONAL USES IN DIFFERENT TRADITIONAL MEDICINE SYSTEM	16
05.	PHARMACOLOGY STUDIES	21
06.	COMMERCIALY AVAILABLE PRODUCTS	22-23
07.	RECENT RESEARCH AND FINDINGS	23
08.	DISCUSSION	23
09.	CONCLUSION	24
10.	REFERENCE	24-30

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

Signature and Seal of the Head



A dissertation report on
THE APPLICATION OF BACTERIAL MOLECULAR
GENETICS FOR PLANT DEVELOPMENT
SUBMITTED ON THE PARTIAL FULFILMENT OF
THE DEGREE OF
BACHELOR OF SCIENCE
IN
BOTANY



GURU GHASIDAS VISHWAVIDYALAYA
(A central university)

BY

Nikita Khuntia

B.Sc. (Hons) BOTANY (VI SEMESTER)

(Enrollment no. – GGV/18/3169, Roll no. -18203025)

UNDER THE SUPERVISION OF

DR. V. N. TRIPATHI

Assistant Professor

Department of BOTANY

GURU GHASIDAS UNIVERSITY, KONI,
495009, CHHATTISGARH

Nikita Khuntia

R-

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

Signature and Seal of the Head



CERTIFICATE

This is to certify that the dissertation entitled “The application of Bacterial molecular genetics for plant development” submitted to the Department of BOTANY, GGV is a record of independent dissertation work carried out by Nikita Khuntia, for the degree of Bachelor of Science under my supervision and guidance. This has not been previously submitted for the award of any degree diploma or any other similar title.

DR. V. N. TRIPATHI
Assistant professor
Department of Botany
GGV, Bilaspur (C.G.)

Date: 14th July 2021
Place: BILASPUR

DR. S. K. SHAHI
Head of Department
(BOTANY) GGV,
Bilaspur (C.G.)

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

DECLARATION

I hereby declare that the work presented in this dissertation entitled “The application of Bacterial molecular genetics for plant development” Submitted for partial fulfilment of the degree of Bachelor of Science in Botany at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)


The work was carried out by me under the supervision of Dr. V. N. Tripathi, Assistant professor, Department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

The work in this dissertation is original or duly credited. If any discrepancy, mistakes, or plagiarism found in this report, then the responsibility will be solely mine. This dissertation report will remain as the intellectual property of department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

Date: 14th July 2021

Place: BILASPUR

NIKITA KHUNTIA
B. Sc. VI SEMESTER
DEPARTMENT OF BOTANY
GGV, BILASPUR (C. G)



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

Signature and Seal of the Head



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First and foremost, I express my deepest gratitude to my supervisor Dr.V. N Tripathi Assistant Professor, Department of Botany, GGV, Bilaspur, C.G., India; whose inspiration, supervision and support and encouragement to complete my dissertation work entitled “THE APPLICATION OF BACTERIAL MOLECULAR GENETICS FOR PLANT DEVELOPMENT” from preliminary to concluding level on this project. I also thank for his kindness, timely cooperation, and guidance for this project.

I would like to thank Dr S. K. Shahi, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C. G) for providing all the necessary facilities during study.

Special thanks to my all teachers in the department, namely Dr. A. K Dixit, Dr. D. K Pandey, Dr. S.K. Pandey, Dr. S. K Prajapati, Dr. S. Shweta, Dr. D Yadav, Dr. R. K Ahirwar, Dr. D.K. Patel, Dr. Vineet Kumar, Dr. S.K Shahi, Dr. M.P. Shahi, Dr. Preeti Verma, Mr. Deepak K Singh, Miss Shivali Sharma and all the faculties of the department for their guidance and encouragement during the study.

I am also thankful to all my classmates for sharing their literature and valuable assistance.

Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, support, and encouragement to give in this dissertation.

Date: 14th July 2021

Place: BILASPUR

Name: Nikita Khuntia

Roll No: 18203025

B. Sc. (DEPARTMENT OF BOTANY)

GURU GHASIDAS VISHWAVIDALAYA, KONI, BILASPUR



<u>SERIAL NO.</u>	<u>TOPIC</u>	<u>PAGE</u>
1	<u>ABSTRACT, KEYWORDS, INTRODUCTION</u>	7
2	<u>Classical and Molecular Genetics Concept</u>	7-8
3	<u>THE AGROBACTERIUM TUMIFACIENS-PLANT BIOLOGY AND T-DNA TRANSFORMATION</u>	<u>8-16</u>
4	<u>BACILLUS THURINGIENSIS, MODE OF ACTION Bt, Bt CROPS, Bt MAIZE, Bt COTTON</u>	<u>17-21</u>
<u>5</u>	<u>CONCLUSION</u>	<u>22</u>
<u>6</u>	<u>REFERENCES</u>	<u>23-26</u>

Sanjiv K. Moh.

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

Signature and Seal of the Head



**“APPLICATIONS OF MICROBES IN IMPROVING CROP YIELD”:A
REVIEW**

A Dissertation Report

SUBMITTED FOR THE PARTIALFULFILLMENT

OF THE DEGREE

OF BACHELOR OF SCIENCE

IN

BOTANY



GURUGHASIDASVISHWAVIDYALAY

A (A Central University)

By

OMKAR DARSHAN

B.Sc.(VI SEMESTER)

(Enrollment No: GGV/18/3174, Roll No: 18203026)

UNDER THE SUPERVISION OF

**Dr. PREETI
VERMA**

Department of BOTANY

**GURU GHASIDAS VISHWAVIDYALAYA,
495009(C.G.)**

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

Signature and Seal of the Head



CERTIFICATE

THIS TO CERTIFY THAT THE DISSERATATION ENTITLED “APPLICATION OF MICROBES IN IMPROVING CROP YIELD:A REVIEW” IS BASED ON THE ORIGINAL WORK DONE BY “OMKAR DARSHAN”

[ENROLL.NO.GGV/18/3174] DEPARTMENT OF BOTANY,

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR(C.G)AND THIS HAS NOT PREVIOUSLY

FORMED BASIS OF AWARD OF ANY DEGREE, DIPLOMA, ASSOCIATIONSHIP AND SIMILAR OTHER TITLES AND IT PRESENT ENTIRELY ON THEINDEPENDENT WORK DONE BT THE CANDIDATE

DR.PREETI VERMA

(MENTOR)

Forwarded to the controller of examinations, Guru Ghasidas vishwavidyalaya in partial fulfillment of the requirements of degree of “bachelor of science in botany.

Place : Bilaspur

Dr. S.K. SHAHI

Date:

HEAD

Department: Botany

DEPARMENTOF BOTANY

GGV

BILASPUR(CHHATISGARH)

विभागाध्यक्ष
Head

वनस्पति शास्त्र विभाग
Department of Botany

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



DECLARATION

I hereby declare that the work presented on this Dissertation entitled “APPLICATION OF MICROBES IN IMPROVING CROP YIELD: A REVIEW” submitted for the, partial fulfillment of B.Sc. BOTANY was carried out at Department of Botany Guru Ghasidas Vishwavidyalaya, Bilaspur Chhatisgarh.

This dissertation work was carried out by me under the supervision of **Dr. PREETI VERMA** Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

The work in this project is original and will remain intellectual property for the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhatisgarh.

Place:
BILASPUR

Date:

OMKAR
DARSHAN B.Sc.
[VI Semester]
Department Of Botany
GGV,BILASPUR(C.
G.)

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

Signature and Seal of the Head



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It's a great pleasure for me to pay earnest thanks and profound to my Mentor/Supervisor Dr. PREETI VERMA, Department Of Botany Guru Ghasidas Vishwavidyalaya , Bilaspur (C.G.)

I would like to thank Dr. S.K. SHAHI Head of the department of Biology Guru Ghasidas Vishwavidyalaya.

I am also thankful to all the faculty members of Department of Botany Guru Ghasidas Vishwavidyalaya for providing me with necessity books and journals for my project.

**OMKAR
DARSHAN
BOTANY(VI
SEMESTER)**



INDEX

Title (Page Number)

1.ABSTRACT (7)

2.INTRODUCTION (8-9)

3.REVIEW OF THE LITERATURE (10-14)

3.1(11)

3.2. (11)

3.3. (12)

3.3.1. (12)

3.3.2. (12)

3.3.3(12)

3.3.4. (13)

3.3.5. (13)

3.3.6. (14)

3.3.7 (14)

CONCLUSION (15)

REFERENCES (16-17)

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

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.)

STUDIES OF INVASIVE PLANTS IN INDIA: A REVIEW

A Dissertation Report
SUBMITTED FOR THE PARTIAL
FULFILLMENT OF THE DEGREE

BACHELOR OF
SCIENCE IN
BOTANY



GURUGHASIDASVISHWAVIDYALAY

A (A Central University)

By
POOJA KASHYAP

B.Sc. VI

SEMESTER

Enrollment No- GGV/18/3185; Roll No-18203027

UNDER THE SUPERVISION

OF Dr. PREETI VERMA

Department of BOTANY

GURU GHASIDAS
VISHWAVIDYALAYA
KONI, BILASPUR-495009(C.G.)

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

Signature and Seal of the Head



CERTIFICATE

This is certify that entitle “**Studies of Invasion Plant in India: A Review**” is based on the original work done by “**POOJA KASHYAP**” (Enrollment no.-GGV/18/3185) Department of Botany, Guru GhasidasVishwavidyalaya, 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.

Dr. PREETI VERMA
(Project supervisor)

Forwarded to the controller of examinations, Guru GhasidasVishwavidyalaya in partial fulfillment of the requirements of the degree of Bachelor of Science in Botany.

Place:

BILASPUR Date:

Dr. S.K. SHAHI
Head of Department of
Botany
Guru
GhasidasVishwavidyalayaBilaspur
(C.G.)

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

Signature and Seal of the Head



DECLARATION

I hereby declare that the work presented in this project dissertation entitled “**STUDIES OF INVASIVE PLANTS IN INDIA: A REVIEW**” submitter for partial fulfillment of B.Sc. Botany was carried out at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

The work was carried out by me under the supervision of Dr. PREETI VERMA Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).


The work in this project dissertation is original and will remain intellectual property of Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

Place:

BILASPUR Date:

**POOJA
KASHYAP**

**Department of Botany
GGV, Bilaspur
(C.G.)**


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



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I wish to express my heartfelt thanks and immense gratitude to all those who helped and encourage me to complete my dissertation entitled “**Studies of Invasive plants in India: A Review**” for the degree of Bachelor of Science in Botany, GGV, Bilaspur (C.G.).

It's a great pleasure for me to pay earnest thanks and profound gratitude to my supervisor **Dr. PREETI VERMA**, Department of Botany, GGV, Bilaspur for giving me an opportunity to work under her supervision at this esteemed university. It has been a memorable experience for me to work under his guidance.

I would like to thanks **Dr. S.K. SHAHI**, Head of Department of Botany, Guru GhasidasVishwavidyalaya, Bilaspur (C.G.) for providing all the necessary facilities during the course of study, and I would like to extend my special thanks to **PREETI VERMA** who gave me the real attitude of research.

I am also thankful to all the faculty members of Department of Botany, Guru GhasidasVishwavidyalaya for providing me necessary Books and journals for the study.

I am at loss of words for the moral support, encouragement and help providing by my parents, Brothers and friends during the whole course of my dissertation.

Place:

BILASPUR Date:

Pooja

Kashyap

**Department of Botany GGV,
Bilaspur(C.G.)**



CONTEN		
S.L No.	TOPICS	PAGE NO.
1	INTRODUCTION	8-9
2	PROPERTY OF INVASIVE PLANTS	10-19
3	FLORISTIC STUDY OF INVASIVE PLANTS IN INDIA (METHODOLOG	20-21
4	PHYTOCHEMICALS STUDY OF INVASIVE PLANT IN INDIA (METHODOLOGY)	22-22
5	CONCLUSION	23-25
6	REFERENCES	26-30

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

Signature and Seal of the Head



A Dissertation on

Medicinal Importance of *Azadirachta indica*

Submitted

FOR THE PARTIAL FULFILLMENT OF THE DEGREE

OF

BACHELOR OF SCIENCE

BOTANY HONOUR'S



BY

PRAKRITI SINGH

GGV/18/3193, ROLL NO. 18203028

Under the supervision of

Dr. DEVENDRA KUMAR PATEL

Department of Botany, GGV, Bilaspur, (C.G) 2020-21

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



CERTIFICATE

This is to certify that dissertation entitled “Medicinal Importance of *Azadirachta indica*” done by Prakriti Singh Enroll. No. GGV/18/3193, Department of Botany, GGV and has formed the award of any degree, diploma, associate ship and that represents entirely as an independent work of candidate.

Place: GGV, Bilaspur

Dr. Devendra Kumar Patel.
Associate Professor

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

Signature and Seal of the Head

Dr. S. K. Shahi
HOD
Botany



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I am thankful to all those who help and encouraged me in my dissertation work entitled Medicinal Importance of *Azadirachta indica* for the degree of B.Sc. HONOURS in botany, at GGV Bilaspur (Chhattisgarh).

I Would like to thank my supervisor Dr. Devendra Kumar Patel, whose support helped me to complete my work; and also helps me to give the best performance in this review work.

I would like to thanks Dr. S.K Shahi, (HOD) of Botany, GGV Bilaspur (C.G) for providing all the facilities during the study course. I will also like to thank to Dr. A.K Dixit, Dr. S. Shweta, MsShivaliSharma, Dr. S.K Pandey, Dr. Vinita Dixit, Dr. D Yadav, Dr. Vineet Kumar and all faculties of the department for their guidance and support.

I would like to thank my friends for their valuable assistance and support, encouragement so that I would give my best effort in my work.

Place: Bilaspur

Prakriti Singh,

Roll no.: 18203028

B.Sc. Botany honour's - VI SEM, GGV, BILASPUR, Chhattisgarh, Pin - 495009



DECLARATION

I hereby declare that the dissertation entitled “Medicinal Importance of *Azadirachta indica* submitted as partial fulfillment of B.Sc. Botany Honour's -semester VI, has been done by me under the supervision of Dr. Devendra Kumar Patel.

The Dissertation presented, is original and will be intellectual property of the Botany Department, GGV, Bilaspur, Chhattisgarh.

Prakriti Singh,

Roll no.: 18203028

B.Sc. Botany -VI SEM GGV, Bilaspur



CONTENTS

S. NO.	Titles	Page No.
1.	INTRODUCTION	7
2.	REVIEW OF LITERATURE	7-8
3.	PLANT PROFILE/BOTANICAL DETAILS	8-10
4.	CHEMICAL COMPOSITION	11
5.	TRADITIONAL USES	12
6.	CONSERVATION STATUS	13
7.	SUMMARY/CONCLUSION	14
8.	REFERENCES	14

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

Signature and Seal of the Head



**CONSERVATION AND RECOVERY OF ENDANGERED
PLANT SPECIES**

Dissertation

Submitted

For the partial fulfillment of the degree of

**BACHELOR OF
SCIENCE IN
BOTANY**



By

PRANAY DEWANGAN

**ENROLLMENT NO: GGV/18/3194, ROLL NO: 18203029
2020-21**

Under the supervision of

Dr. S. K. PANDEY

Assistant Professor, Department of Botany

**GURU GHASIDAS VISHWAVIDYALAYA,
BILASPUR - 495009 (C.G.)**

Sushille Moh. S.



DEPARTMENT OF BOTANY

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

(A central University established by the Act of Parliament 2009 NO.25 OF 2009)

CERTIFICATE

This is to certify that the Dissertation report entitled “Conservation and Recovery of Endangered Plant Species” is an authentic record of work done by PRANAY DEWANGAN student of B. Sc.VI SEM in the Department of Botany of this Vishwavidyalaya.

Place: Bilaspur (C.G) Date:

Signature of Supervisor
Dr. S. K. Pandey

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



DECLARATION

I hereby declare that the work presented in the dissertation report entitled “Conservation and Recovery of Endangered Plant Species” submitted as partial fulfillment for B.Sc. Botany VI Semester, was carried out by me at the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

The work presented in this project is original and I solely owe the responsibility for the entire information presented in this report including, the text, pictures in report, diagrams and photographs.

Date: 05/07/2021
Place: Bilaspur (C.G.)

Sumitted By:
Pranay Dewangan
Roll No. : 18203029
B.Sc. VI Sem.
Department of Botany
Guru Ghasidas Vishwavidyalaya
Koni, Bilaspur C.G.

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

Signature and Seal of the Head



ACKNOWLEDGEMENT

I express my deepest gratitude to all those who help and encouraged me to complete my dissertation work entitled **Conservation and Recovery of Endangered Plant Species**, for the degree of Bachelor in Science in Botany, Centre of Advanced Study in Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

I am heartily thankful to my mentor, Dr. S. K. Pandey whose encouragement, supervision and support from the beginning to the concluding of this dissertation work, helped me to give my best performance in this work.

I would like to thank Dr. S.K. Shahi, Head of Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) for providing all the necessary facilities during the course of study. I am also thankful to Dr. A.K. Dixit, Dr. D. K. Patel, Dr. S.K. Prajapati, Dr. V.N. Tripathi, Dr. D. Yadav, Dr. S. Shweta, Dr. R.K. Ahirvar, Dr. Mamta Patra Shahi, Dr. Vineet Kumar, Dr. Preeti Verma, Mr. Deepak K Singh and Ms. Shivali Sharma of the department for their guidance and support.

I am also thankful to all my classmates for sharing their literature and valuable assistance. Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, support and encouragement to give my best effort in this dissertation.

Date: 05/07/2021

Place: Bilaspur (C.G.)

Submitted by: Pranay Dewangan

Roll no : 18203029

B. Sc. VI SEM (Department of Botany)
Guru Ghasidas Vishwavidyalaya, Koni,
Bilaspur (C.G)



CONTENTS

1. INTRODUCTION	2
2. Some famous endangered plant species in India which required too much attention	3
2.1 <i>Amentotaxus assamica</i>	3
2.2 <i>Ilex khasiana</i>	3
2.3 <i>Diospyros celebica</i>	4
2.4 <i>Pterocarpus santalinus</i>	4
2.5 <i>Chlorophytum tuberosum</i>	5
2.6 <i>Kingiodendron pinnatum</i>	5
2.7 <i>Actinodaphne lawsonii</i>	6
3. Some vulnerable and endangered plant species of Chhattisgarh	7
4. What type of species must be conserved and recovered?	8
5. Methods for conservation and recovery of endangered plant species	9
5.1 Ex-situ conservation	9
5.1.1 Botanical garden	9
5.1.2 Seed bank	9
5.1.3 In-vitro storage	9
5.1.4 In-vitro conservation	9
5.1.4.1 Organogenesis	10
5.1.4.2 Somatic embryogenesis	10
5.1.4.3 Micro-propagation	10
5.2 In-situ conservation	10
5.2.1 Strict nature reserve (SNR)	10
5.2.2 Games reserves	10



5.2.3 National parks	10
6. Planning for the conservation of the plant species	11
6.1 Preparation	12
6.2 Review status and collection of information	12
6.3 Build a vision and goals	12
6.4 Analysis threats, set objectives and performance indicators	12
6.5 Planning actions	12
6.6 Implement and monitor actions	13
6.7 Evaluation and adaptation	13
6.8 Learn and communicate	13
6.9 Revisit planning	14
7. Planning for the recovery of the plant species	16
7.1 Community level	16
7.2 Species level	17
7.2.1 Species reintroduction	17
7.2.1.1 Reintroduction within ancient array	17
7.2.1.2 Improvement plantation	
7.2.1.3 Reintroduction of a species outside the recognized site	17
7.2.2 Survival problems in reintroduction of species	18
7.2.4.1 Getting population size	18
7.2.4.2 Biological interaction	19
7.2.4.3 Genetic improvement	19
7.2.4.4 Restoration	19
8. Intrinsic and extrinsic factor for threatened and endangered species	20



9. Recovery programs in India	21
9.1 Threatened plant species of India listed in IUCN red list	23
10. Recovery programs by department of Biotechnology, Government of India	24
10.1 Threatened plant conservation protocol	25
11. Monitoring of the recovery program	26
12. Small steps we can do to protect the endangered plant species	27
12.1 Protection of a plant in a village of Gujrat by local people	28
13. Conclusion and summary	29
14. Reference	30

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

Signature and Seal of the Head



EFFECTS OF OZONE ON FOREST

A Dissertation Report

SUBMITTED ON THE PARTIAL FULFILMENT OF

THE DEGREE OF

BACHELOR OF SCIENCE IN

BOTANY



GURU GHASIDAS VISHWAVIDALAYA

(A Central University)

BY

PRIYANKA RAI

B. Sc (VI SEMESTER)

(Enrollment No: GGV/18/3204, Roll No: 18203030)

UNDER THE SUPERVISION OF

Dr Santosh Kumar Prajapati
Assistant Professor Department
of BOTANY

GURU GHASIDAS VISHWAVIDALAYA, KONI, B
CHHATTISGARH


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



CERTIFICATE

This is certify that dissertation entitled “EFFECTS OF OZONE ON FOREST” submitted to the Department of BOTANY, GGV is a record of independent dissertation work carried out by **Priyanka rai**, for the degree of Bachelor of Science under my supervision and guidance. This has been not previously submitted for the award of any degree diploma or any other similar title.

Dr SANTOSH KUMAR PRAJAPATI
Assistant Professor
Department of Botany
GGV, Bilaspur C.G.

Date: 02/07/2021

Place: BILASPUR

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

Dr S. K. SHAHI
Head of Department of Botany
GGV, Bilaspur C.G.



DECLARATION

I thus declare that the work presented in my project dissertation titled "EFFECT OF OZONE ON FORESTS" submitted for partial fulfilment of B. Sc. Botany was done at the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)


I worked under the supervision of Dr. S. Prajapati, associate professor in the Department of Botany at Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

The work in this project dissertation is unique and will remain the intellectual property of the department of Botany at Guru Ghasidas Vishwavidyalaya Bilaspur(C.G.).

I, Priyanka rai holds responsibility for the content presented in dissertation.

Date: 02/07/2021

Place: BILASPUR


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

PRIYANKA RAI
B. Sc. VI SEMESTER
DEPARTMENT OF BOTANY
GGV, BILASPUR (C. G)



ACKNOWLEDGEMENT

First and foremost, I would like to express my heartfelt gratitude to my supervisor, Dr. S. Prajapati, Associate Professor, Department of Botany, GGVSU, Bilaspur, C.G., India, for his inspiration, supervision, and support and encouragement in completing my dissertation work titled “EFFECT OF OZONE ON FORESTS” from the preliminary to the final stage of this project. I'd also like to thank him for his friendliness, prompt collaboration, and project direction.

I would like to express my gratitude to Dr. S. K. Shahi, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C. G), for providing all necessary facilities throughout my studies.

Finally, and most significantly, I would want to convey my thanks and love to my parents and other loved ones for their understanding, support, and encouragement in writing this dissertation.

Date: 02/07/2021

Place: Bilaspur

Name: Priyanka rai

Roll No: 18203030

B. Sc. (DEPARTMENT OF BOTANY)

GURU GHASIDAS VISHWAVIDALAYA, KONI, BILASPUR



TABLE OF CONTENT

SERIAL NUMBER	TOPIC	PAGE NUMBER
01.	INTRODUCTION & HISTORY	1-5
02.	FORMATION OF OZONE	5-9
03.	EFFECTS OF GROUND LEVEL OZONE	9-18
04.	EFFECTS OF STRATOSPHERIC OZONE	18-24
05.	OZONE-DAMAGE SYMPTOMS & DAIGNOSIS IN PLANTS	24-31
06.	OZONE-SENSITIVE PLANTS	32-36
07.	CONTROL MEASURES AND SOLUTIONS	36-38
08.	DISCUSSION AND CONCLUSION	38-40
09.	REFRENCES	40-41

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

Signature and Seal of the Head



ROLE OF BACTERIA TO PROVIDE ABIOTIC STRESS RELIEF IN PLANTS

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

THE AWARD OF DEGREE

Of

BACHELOR OF SCIENCE IN BOTANY

At

GURU GHASIDAS VISHWAVIDALAYA, BILASPUR, C.G.



2020-2021

SUBMITTED BY

PRIYANSH SINGH

B. Sc VI Semester

(Roll No:18203031)

UNDER THE SUPERVISION OF

Ms. Shivali Sharma Assistant

Professor

Department of botany, GGV, Bilaspur (C.G.)

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

Signature and Seal of the Head

CERTIFICATE

This is to certify that dissertation entitled “**Role of bacteria to provide abiotic stress relief in plants**” submitted to the Department of Botany, GGV is a record of independent dissertation work done by **PRIYANSH SINGH**, for the degree of Bachelor of Science under my supervision and guidance. This has not been previously submitted for the award of any degree diploma or any other similar title.

To the best of my knowledge and belief this dissertation is done by the candidate.

Place: Bilaspur


Ms. Shivali Sharma
(Supervisor)
Assistant Professor
Department of Botany,
GGV, Bilaspur C.G.

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

Place: Bilaspur

Prof. S.K. Shahi

Head, Botany Department
GGV, Bilaspur



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

Signature and Seal of the Head



DECLARATION

I, **PRIYANSH SINGH**, declare that the work present in the project entitled, “**Role of bacteria to provide abiotic stress relief in plants**” submitted for the partial fulfilment of B.Sc. in Botany Honours, has been performed in the Department of Botany, GGU, Bilaspur under the supervision of **Ms. Shivali Sharma**, Assistant Professor, Dept. of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.).

The project work will remain intellectual property of department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

The information presented in the dissertation report including data, table are original or duly credited. If any discrepancy, mistake or plagiarism found in the report, the responsibility for the same will be solely mine.

Place: Bilaspur

Date: _____

PRIYANSH SINGH B.

Sc. VI SEMESTER

BOTANY HONOURS

Roll No:18203031

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

Signature and Seal of the Head



ACKNOWLEDGEMENT

First and foremost, I express my deepest gratitude to my supervisor **Ms. Shivali Sharma**, Assistant Professor, Department of Botany, GGV, Bilaspur, C.G., India; for her inspiration, supervision, support and encouragement to complete my dissertation work entitled “**Role of bacteria to provide abiotic stress relief in plants**” from preliminary to concluding level on this project. I also thank for her kindness, timely cooperation and guidance for this project.

I would like to thank Dr S. K. Shahi, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C. G) for providing all the necessary facilities during the course of study.

Special thanks to my all teachers in the department, namely Dr. A. K Dixit, Dr. S.K. Pandey, Dr. S. K. Prajapati, Dr. M. P. Shahi, Dr. V.N. Tripathi, Dr. S. Shweta, Dr. Deepanker Yadav, Dr. R. K. Ahirwar, Dr. D. K. Patel, Dr. Vineet Kumar, Dr. Preeti Verma and Mr. Deepak Kumar Singh for their guidance and encouragement during the study.

I am also thankful to all my classmates for sharing their literature and valuable assistance.

Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, support and encouragement to give in this dissertation.



<u>CONTENT:</u>	[PAGE NO.]
[1] Abstract	[7] [2]
Keywords	[7]
[3] Introduction	[8]
[4] Sustainable agriculture	[9]
[5] Plants and Environmental stress	[10]
5.1 Types of stress	[10]
5.1.1 Biotic stress	[10]
5.1.2 Abiotic stress	[11-12]
[6] Plant Growth Promoting Bacteria	[12]
Table- List of Plant growth promoting bacteria (PGPB) with their beneficial impact on plants in context of abiotic stress.	[13-15]
[7] Role of PGPB to mitigate abiotic stress in plants:	[16-19]
7.1 Chilling resistance in plants	[16]
7.2 PGPR as Biofertilizers	[17]
7.3 Drought resistance	[18]
7.4 Heat tolerance	[18]
7.5 Salinity Tolerance	[18-19]
[8] Discussion	[20] [9]
Conclusion	[21]
[10] Reference	[22-23]

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

Signature and Seal of the Head



A review: on the effect of drought stress on the yield and growth of chickpea (*Cicer arietinum*)

A DISSERTATION WORK

Submitted in the partial fulfillment of the requirements for the award of the degree of
BACHELOR OF SCIENCE



IN

DEPARTMENT OF BOTANY

BY

PUSHPRAJ SINGH, BSc 6th SEM

ENROLLMENT NO. - GGV/18/3211, ROLLNO. 18203032

Under the supervision of

Dr. DEEPANKER YADAV

Assistant Professor, Department of Botany

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR

BILASPUR - 495009, (CG)

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR - 495009 (C.G.)

(A central University established by the Act of Parliament 2009 NO.:

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

Signature and Seal of the Head



CERTIFICATE

This is to verify that PUSHPRAJ SINGH, Enrolment No.- GGV/18/3211, ROLLNO. 18203032 has carried out her B.Sc. Botany's dissertation work entitled "A review: on the effect of drought stress on the yield and growth of chickpea (Cicer arietinum)" under the supervision of Dr. Deepanker Yadav towards the partial fulfilment of the degree of Bachelor of Science in Botany. The work presented in the project report is original and has not been submitted anywhere else for or any other degree.

Date: 16/07/2021
Shahi

Place: BILASPUR (C.G.)

Dr. Deepanker Yadav

Supervisor

Dr. S. K.

Head

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

Signature and Seal of the Head



DECLARATI
ON

I declare that the work presented in this thesis, “A review: on the effect of drought stress on the yield and growth of chickpea (*Cicer arietinum*)” submitted in partial fulfillment of B.sc. Botany has been carried out at the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

The work presented in this thesis is original and will remain the intellectual property of Guru Ghasidas University, Bilaspur (C.G). The information presented in this dissertation report, including data, figures, and pictures, are original and duly credited. If any discrepancy, mistake, or plagiarism is found in this report, the responsibility for the same will be solely mine.

Date: 15/07/2021.

Place—

BILASPUR(C.G.)

Submitted By:

Pushpraj Singh

Roll No. : 18203032

B.Sc. VI Sem.

Department of Botany

Guru Ghasidas Vishwavidyalaya

Koni, Bilaspur C.G.

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



ACKNOWLEDGEMENT

I express my deepest gratitude to all those who help and encouraged me to complete my dissertation work entitled Effect of drought stress on the yield and growth of chick pea, for the degree of Bachelor in Science in Botany, Centre of Advance Study in Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

I am heartily thankful to my mentor, Dr. Deepanker Yadav whose encouragement, supervision and support from the beginning to the concluding of this dissertation work, helped me to give my best performance in this work. I would like to thank Dr. S.K. Shahi, Head of Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) for providing all the necessary facilities and thankful to Dr. A.K. Dixit, Dr. D.K. Patel, Dr. S.K. Prajapati, Dr. V.N. Tripathi, Dr. D. Yadav, Dr. S. Shweta, Dr. R.K. Ahirvar, Dr. Mamta Patra Shahi, Dr. Vineet Kumar, Dr. Preeti Verma, Mr. Deepak K Singh and Ms. Shivali Sharma of the department for their guidance and support.

I am also thankful to all my classmates for sharing their literature and valuable assistance. Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, support and encouragement to give my best effort in this dissertation.

Date: 05/07/2021

Place: Bilaspur (CG).

by: Pushpraj Singh

Roll no : 18203029
B. Sc. VI SEM
(Department of Botany)
Guru Ghasidas Vishwavidyalaya, Koni, Bilaspur (C.G.)



CONTENTS

1. INTRODUCTION

2. The origin and common characteristics of chickpea ... 3
Species of chickpea 5
4. Major factors limiting the production of chickpea ... 8
- 5 What is Drought Pressure ...
- 6 Drought resistance in chick pea ...
7. Physical means of resisting the pressure of drought in chick pea ... 11
8. Chemical Remedies for Drought Pressure on Chicken Pea ... 12
9. Genomic ways to withstand the pressure of drought in chick pea ...
10. Breeding process to withstand the pressure of drought on chick pea ... 14

4. CONCLUSION

5. REFERENCE

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

Signature and Seal of the Head



HERBAL MEDICATION OF CORONA DISEASE

Dissertation Report

Submitted

For the partial fulfillment of the degree of

BACHELOR OF SCIENCE

IN

BOTANY



GHASIDAS VISHWAVIDALAYA

(A Central University)

BY

R. AKHILA

B. Sc (VI SEMESTER)

(Enrollment No: GGV/18/3213, Roll No: 18203033)

UNDER THE SUPERVISION OF

Dr. Ashwini Kumar Dixit Associate

professor Department of BOTANY

GURU GHASIDAS VISHWAVIDALAYA, KONI, BILASPU

CHHATTISGARH

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

Signature and Seal of the Head



DEPARTMENT OF BOTANY
GURU GHASIDAS VISHWAVIDYALAYA,
BILASPUR – 495009 (C.G.)

(A central University established by the Act of Parliament 2009
NO.25 OF 2009)

CERTIFICATE

This is to certify that the project entitled “HERBAL MEDICATION OF CORONA DISEASE” submitted to Guru Ghasidas Vishwavidyalaya in partial fulfillment of the requirements for the award of the degree of Bachelor of Science in Botany is a Bonafide research work carried out by Ms. R. AKHILA, III B.Sc. GGV/18/3213, ROLL NO:

18203033, Department of Botany, Guru Ghasidas Vishwavidyalaya, under Dr. Ashwini Kumar Dixit, Associate professor guidance and supervision. 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: 16th JUNE, 2021

Place: Bilaspur (C.G.)

Dr. Ashwini Kumar Dixit
Signature of guide

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.)

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.)



DECLARATION

I hereby declare that the work presented in this project dissertation entitled “HERBAL MEDICATION OF CORONA DISEASE” Submitted for partial fulfillment of B. Sc. Botany was carried out at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

The work was carried out by me under supervisor of Dr. Ashwini Kumar Dixit, Associate Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

The work in this project dissertation is original and will remain intellectual property of department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

Date: 16/06/2021

Place: BILASPUR

R.AKHILA B. Sc. VI SEMESTER DEPARTMENT OF BOTANY GGV, BILASPUR
(C. G)



ACKNOWLEDGEMEN

T

First and foremost, I express my deepest gratitude to my supervisor Dr. Ashwini Kumar Dixit, Associate Professor, Department of Botany, GGV, Bilaspur, C.G., India; whose inspiration, supervision and support and encouragement to complete my dissertation work entitled “HERBAL MEDICATION OF CORONA DISEASE” from preliminary to concluding level on this project. I also thank for his kindness, timely cooperation and guidance for this project.

I would like to thanks Dr S. K. Shahi, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C. G) for providing all the necessary facilities during the course of study.

Special thanks to my all teachers in the department, namely Dr. S. K. Prajapati, Dr. S.K. Pandey, Dr. V.N. Tripathi, Dr. S. Shweta, Dr. D.K. Patel, Dr. R.K. Ahirwar, Dr. D. Yadav, Dr. M.P. Shahi, Dr. Vineet Kumar, Dr. Preeti Verma, Mr. Deepak K Singh, Ms. Shivali Sharma and all the faculties of the department for their guidance and encouragement during the study.

I am also thankful to all my classmates for sharing their literature and valuable assistance.

Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, support and encouragement to give in this dissertation.

Date: 16/06/2021

Place: bilaspur Name:

r. akhila Roll No:

18702022



Content

- 1 INTRODUCTION
- 1.1 INFECTION AND ITS CAUSES
- 1.2 CORONA VIRUSES
- 2 HOW DO VARIANTS HAPPEN?
- 3 CLASSIFICATION OF CORONAVIRUS
- 4 STRUCTURE OF CORONAVIRUS
DO VARIANTS HAPPEN?
- 4.1 STRUCTURAL PROTEIN
- 4.2 NON-STRUCTURAL PROTEIN
- 5 FUNCTION OF PROTEINS
- 5.1 SPIKE GLYCOPROTEIN
- 5.2 THE RNA-DEPENDENT RNA POLYMERASE (RDRP)
- 5.3 THE MAIN PROTEASE
- 6 INVASION MECHANISM
- 7 DISEASE SPECTRUM
- 8 TRANSMISSION DYNAMICS
- 9 IMPACT OF CORONAVIRUS
- 9.1 NEGATIVE IMPACT
- 9.2 POSITIVE IMPACT
- 10 TARGETED THERAPY
- 11 MEDICINAL PLANTS AND THEIR THERAPEUTIC
VALUES
- 12 INTERPRETATION
- 13 CONCLUSION THERAPEUTIC VALUES

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



A REVIEW ON MEDICINAL PROPERTIES OF
Tinospora cordifolia

A DISSERTATION REPORT
SUBMITTED

FOR THE PARTIAL FULFILLMENT OF THE DEGREE
OF
BACHELOR OF SCIENCE

In



BOTANY

BY

RUPA PATEL

Enrolment No- GGV/18/3233 Roll No18203034

Under the supervision of

DR. MAMTA PATRA

Sushil kumar SHAHI Assistant

Professor DEPARTMENT OF

BOTANY

GURU GHASIDAS VISHWAVI

BILASPUR- 163 495005 (C

विभागाध्यक्ष
Head
समस्याति शास्त्र विभाग
Department of Botany

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

Signature and Seal of the Head

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.)

2021



CERTIFICATE

This is to certify that dissertation entitled "A review on medicinal properties of *Tinospora cordifolia*" is based on review done By Rupa Patel (Roll No. 18203034, Enroll. No. GGV/18/3233), Department of Botany, Guru Ghasidas Vishwavidyalaya and this has not previously formed the basis of the award of any degree, diploma, associate ship or Any other similar title and represents entirely an independent work on the part of the Candidate.


Place: Bilaspur.

Date: 15 July 2021

Dr. Mamta Patra Shahi

Department of Botany

GGV, Bilaspur


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

ACKNOWLEDGEMENT

With the utmost appreciation, I would like to concede respected supervisors Dr. Mamta Patra Shahi for their guidance, selfless efforts, sparing their precious time for guidance and supervision and always being ready for pointing out mistakes and giving suggestions to improve them.

I am highly thankful to honourable Dr. S.K. Shahi, Head of Botany & Dean of Life Science, GGV, Bilaspur for his dedication towards the pursue of knowledge and readiness to instill the same.

Special thanks to the teachers in the Department, namely, Dr. .A.K. Dixit, Dr. S.K. Prajapati, Dr. S.K. Pandey, Dr. VN .Tripathi, Dr.D.K. Patel, Dr. S.K.Prajapati, Dr. A.K. Ahirwar, Dr. D. Yadav, Dr. S.Shweta, Dr. V. Kumar, Dr. P. Verma, Mr. D.K. Singh, Miss. S. Sharma, and otheralso for encouragement during the study.

I am also like to thanks the lab technician and librarian Mr Naresh Chandraker and Nirmalkar for help in making this projects a successful one.

No words can suffice the efforts taken by my parents for the completion of my project. This work is an outcome of their blessing & constant moral support.

Finally I am thankful from the bottom of my heart to my classmates (Neha, Talat, Vinay , Anjali) who encouraged me at each step with great affection.

Last but not least I convey my regards to all those who directly or indirectly contributed to the successful completion of this project work.

Rupa Patel

DECLARATION

I here declare that the work presented in this project dissertation entitled “**A review on medicinal properties of *Tinospora cordifolia***” submitted for partial fulfilment of B.Sc Botany was carried out at Department of Botany , Guru Ghasidas Vishwavidyalaya , Bilaspur (C.G) .

The work was carried out by me under the supervision of **Dr. M.P. Shahi**, Assistant Professor , Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G). The work in this project dissertation is original and will remain intellectual property of department of Botany , Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

Date: 15 July 2021.

Place: Bilaspur (C.G)

Rupa Patel

B.Sc VI semester

Department of Botany

GuruGhasidas Vishwavidyalaya

Bilaspur (C.G)



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

Signature and Seal of the Head

Table of Contents:

Content	Page no.
Abstract	7
Introductions	8
Vernacular names	9
<i>Tinosporacordifolia</i> classification	10
Distribution	10
Growth requirement	10
Botanical description	10
Root	11
Stem	12
Leaves	13
Flower	14
Fruit	15
Seeds	15
Neem guduchi	16
Microscopic description	17
Species of <i>Tinospora</i>	18-22
Nutritional composition	23
Traditional medicine and cultural use of <i>Tinospora cordifolia</i>	24
Physiological action of <i>Tinospora cordifolia</i>	25-27
Structure of chemical constituents of <i>Tinospora cordifolia</i>	28-29
Medicinal use	30
<i>Tinosporacordifolia</i> their therapeutic use	30-32
Research based on <i>Tinospora cordifolia</i> against COVID-19	32-33
Therapeutically market products and their biological role	34
New work done on <i>Tinospora cordifolia</i> by several scientist & r	35-40
Discussions	41
Conclusion	42



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

Signature and Seal of the Head



A dissertation report on
**HOW DO PLANT INTERACT WITH THEIR ENVIRONMENT AND
WITH EACH OTHER**
SUBMITTED ON THE PARTIAL FULFILMENT OF
THE DEGREE OF
BACHELOR OF SCIENCE
IN
BOTANY



GURU GHASIDAS VISHWAVIDYALAYA

(A central university)

BY

Sakshi singh

B.Sc. (Hons) BOTANY (VI SEMESTER)

(Enrollment no. – GGV/18/3240, Roll no. - 18203035)

UNDER THE SUPERVISION OF

DR. V. N. TRIPATHI

Assistant Professor

Department of BOTANY

**GURU GHASIDAS UNIVERSITY, KONI, I
CHHATTISGARH**

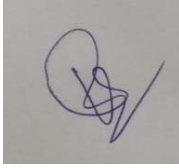
विभागाध्यक्ष
Head
वनस्पति शास्त्र विभाग
Department of Botany
गुरु घासीदास विश्वविद्यालय (केन्द्रीय वि.वि.), बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.)

Signature and Seal of the Head



CERTIFICATE

This is to certify that dissertation entitled “How do plants interact with their environment and with each other” submitted to the Department of BOTANY ,GGV is a record of independent dissertation work carried out by Sakshi singh, for the degree of Bachelor of Science under my supervision and guidance. This has not been previously submitted for the award of any degree diploma or any other similar title.



DR. V.N. TRIPATHI

Assistant professor

Department of Botany

GGV, Bilaspur (C.G.)

Date: 14/07/2021

Place: BILASPUR

DR. S. K. SHAHI

Head of Department

(BOTANY)

GGV, BILASPUR (C.G.)

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

Signature and Seal of the Head



DECLARATION


I hereby declare that the work presented in the dissertation entitled “**How do plants interact with their environment and with each other**” submitted for partial fulfillment of the degree of Bachelor of Science in Botany at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

The work was carried out by me under the supervision of Dr. V. N. Tripathi, Assistant professor, Department of Botany, Guru Ghasidas Vishwavidyalaya (C.G.).

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Date: 14/07/2021

Place:
BILASPUR


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

Sakshi singh

B. Sc. VI SEMESTER

DEPARTMENT OF



BOTANY GGV,

BILASPUR (C.G.)

ACKNOWLEDGEMENT

With the out most appreciation, I would like to concede respected supervisor **Dr. Vibhay Nath Tripathi** for his guidance, selfless effort , sparing his precious time for guidance and supervision and always being ready for pointing out mistakes and giving suggestion to improve them .

I am also grateful to Head of Department. **Dr. S.K Shahi** for his dedication towards the pursue of knowledge and readiness to instill the same in his student has always been encouraging .

Special thanks to the teachers in the department, namely Dr. D.K. Patel, Dr. A.K. Dixit, Dr. S.K. Pandey, Dr. S.K. Prajapati, Dr. S. Shweta, Dr. D. Yadav, Dr. R.K. Ahirwar, Dr. Vineet kumar, Miss Shivali sharma, Mr. D.K singh for their endless support, encouragement during the studies.

I am also thankful to all my classmates for sharing their literature and valuable assistance.

Last but not least I convey my regards to all those who directly or indirectly contributed to the successful completion of this project work.

Sakshi singh



CONTENT

Abstract

Introduction

Plants interaction with the environment

Plant-plant interaction

Above plant interaction (induced response to herbivores, systemic induction, hormones)

Below ground interaction (root detection, kin recognition, chemicals secreted, Mycorrhizal associations, RNAs)

Conclusions

Future perspective

Reference

A handwritten signature in black ink, reading 'Sunil K. Shukla', is written over a white rectangular background.

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

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.)



Plant-Pathogen interaction

How does the pathogenic bacteria invade the host plant?

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

Award of Degree

Of

BACHELOR OF SCIENCE (BOTANY HONOURS)

At

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)



2020-2021

Supervised By:

Ms. Shivali Sharma
Assistant Professor
Department of Botany
GGV, Bilaspur (C.G.)

Submitted By:

Sandeep Patel
Class- B.Sc. VI Semester
Enrolment No.- GGV/18/3242
Roll No.- 18203036

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

Signature and Seal of the Head



CERTIFICATE

This is certify that dissertation entitled **Plant-Pathogen interaction – How does the pathogenic bacteria invade the host plant?** is based on review of literature work done by **Sandeep Patel** (Enrollment No.- GGV/18/3242) 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 of the candidate.

Place: Bilaspur

Date:

Ms. Shivali Sharma
(Supervisor)

Assistant Professor

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

Place: Bilaspur

Date:

Prof. S.K. Shahi
Head, Botany Department
GGV, Bilaspur

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



DECLARATION

I, **Sandeep Patel** hereby declare that the work present in the project work entitled **Plant-Pathogen interaction – How does the pathogenic bacteria invade the host plant?** submitted for the partial fulfilment of B.Sc. in Botany Honours has been performed in the Dept. of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur under the supervision of **Ms. Shivali Sharma**, Assistant Professor, Dept. of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.).

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Place: Bilaspur

Date:

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

Signature and Seal of the Head

SANDEEP PATEL

B.SC. BOTANY (HONOURS)

Roll No.- 18203036



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It is my great pleasure to express my sincere gratitude to my supervisor **Ms. Shivali Sharma**, Assistant professor, Department of Botany, GGV, Bilaspur (C.G.), under whose guidance the present project work has been completed. Her valuable time, valuable suggestions and selfless effort helped me a lot in completing the work.

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I would like to thank all my classmates and those who have directly or indirectly helped me to complete my work.




CONTENT-

[1] ABSTRACT	08
[2] KEYWORD	08
[3] INTRODUCTION	09
[4] PLANT-PATHOGENIC BACTERIA	10
4.1 Biotrophs	
4.2 Necrotrophs	
4.3 Hemi-biotrophs	
[5] DISEASE CYCLE (With special mention to bacteria)	11-12
5.1 Inoculation	
5.2 Host recognition	
5.3 Penetration / Entry	
5.4 Infection	
5.5 Reproduction	
5.6 Symptoms	
5.7 Survival	
5.8 Dissemination	
[6] PLANT-PATHOGEN INTERACTION	13
[7] SECRETION SYSTEMS IN BACTERIA	14-15
7.1 The type II secretion system (T2SS)	
7.2 The type III secretion system (T3SS)	
7.3 The type IV secretion system (T4SS)	
[8] VIRULENCE FACTORS IN BACTERIA	15-16
[9] HOW BACTERIA INVADE PLANTS	16-22
9.1 Activation of Host transporter proteins	



9.2 Cell wall degradation	
9.3 Avoid PRR mediated detection	
9.4 Modification of phytohormone to fail defense response	
9.4.1 Effect on Auxin	
9.4.2 Effect on Jasmonic acid	
9.4.3 Effect on Ethylene	
9.4.4 Effect on Cytokinin	
9.4.5 Effect on Brassinosteroids	
9.5 Molecular mimicry by type III effectors	
9.6 Manipulation of growth hormone homeostasis to enhance nutrient uptake	
9.7 Manipulation of growth hormones by effectors to increase dispersion	
9.8 Use of secretion system in disease development	
10.	
DISCUSSION.....	23
11.	
CONCLUSION	24
12- REFERENCE	25-
26	


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



**“GENETICALLY MODIFIED PLANTS”- A
REVEIW A Dissertation Report
SUBMITTED FOR THE PARTIAL FULFILMENT
OF THE DEGREE
OF
BACHELOR OF SCIENCE(HONS.)
IN
BOTANY**



**GURU GHASIDAS VISHWAVIDYALAYA
(A Central University)**

By

**SHASHANK AGRAWAL B.Sc.
(hons.) VI SEMESTER**

(Enrollment no.- GGV/18/3255, Roll No.- 18203038)

**UNDER THE SUPERVISION OF
DR. A. K. DIXIT ASSOCIATE
PROFESSOR DEPARTMENT
OF BOTANY**

**GURU GHASIDAS VISHWAVIDYALAYA
495009(C.G.)**

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

Signature and Seal of the Head



DEPARTMENT OF BOTANY
GURU GHASIDAS VISWAVIDYALAYA

(A central university established by the act of parliament 2009)

CERTIFICATE

This is to certify that dissertation report entitled “**GENETICALLY MODIFIED PLANTS**” submitted for the partial fulfilment of the degree of Bachelor of science(hons.) in botany is based on the original work done by **SHASHANK AGRAWAL**, student of B.Sc. (Hons.) in botany VI semester at department of botany ,Roll no.:18203038, Enrollment no.: GGV/18/3255. This has not been previously submitted for the award of any degree diploma or any other similar title.

Place: Bilaspur
Date:

Dr. A.K DIXIT
ASSOCIATE PROFESSOR
Department of Botany
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.)

Forwarded to the controller of Examination Guru Ghasidas Vishwavidyalaya in partial fulfilment of the requirements of the degree of Bachelor of science in Botany.

Place: Bilaspur
Date:

Dr. S.K SHAHI
Head
Department of Botany
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.)

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

Signature and Seal of the Head



DECLARATION

I hereby declare that the work presented in this project dissertation entitled "**GENETICALLY MODIFIED PLANTS**" Submitted for partial fulfilment of the degree of Bachelor of science(hons.) in botany was carried out at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

The work was carried out by me under supervision of **Dr. A.K DIXIT**, Associate professor, Department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

The work in this project dissertation is original and will remain intellectual property of Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).


Place: Bilaspur

Shashank Agrawal

Date:

B.Sc. (hons.) VI Semester

**Department of botany
GGV**


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



ACKNOWLEDGEMENT

First and foremost, I express by deepest gratitude to my supervisor **Dr. A.K DIXIT**, Associate professor, Department of Botany, GGV, Bilaspur, C.G., India; whose inspiration, supervision and support and encouragement to complete my dissertation work entitled “**GENETICALLY MODIFIED PLANTS**” from preliminary to concluding level on this project. I also thank for his kindness, timely cooperation and guidance for this project.

I express my deepest gratitude to **Dr. S.K. SHAHI**, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G., for granting permission and providing me a good environment to complete my project successfully on project work.

I am also thankful to all my teachers for their encouragement and suggestions which helped me to perform my review work well.

I would like to express my gratitude and love to my family and friends for their understanding, supporting, guiding and motivating me.

Place: Bilaspur

Shashank Agrawal

Date:

B.Sc. (hons.) VI Semester

Department of botany

GGV Bilaspur



Contents

1. Abstract
2. Introduction
3. History
4. Statistics of production of GM plants globally
5. Techniques of genetic modifications
 - 5.1. Microbial vectors
 - 5.2. Microprojectile Bombardment
 - 5.3. Electroporation
 - 5.4. Microinjection
 - 5.5. Transposons or Transposable Elements
 - 5.6. CRISPR-Cas
6. Types of genetically modified plants
 - 6.1. Herbicide resistant GM plants
 - 6.2. Insects pests resistant GM plants.
 - 6.3. Stress tolerant GM plants
 - 6.4. Disease resistant GM plants
 - 6.5. Nutritionally enhanced GM plants
7. Genetically modified plants
8. Limitations of genetically modified plants
 - 8.1. Environmental concerns
 - 8.2. Concerns about human health and nutrition
 - 8.3. Loss of biodiversity
 - 8.4. Economic concerns
 - 8.5. Ethical concerns
9. Future aspects
10. Conclusion

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

Signature and Seal of the Head



**PHYTOREMEDIATION OF SOIL
CONTAMINATED WITH METALS AT MINING
AREAS: A REVIEW**

**A DISSERTATION SUBMITTED
FOR THE PARTIAL FULFILMENT OF THE DEGREE OF
BACHELOR OF SCIENCE**

IN

BOTANY (Hons.)



BY

SHRADHA CHANDRAKAR

B. Sc (VI SEMESTER)

(Enrollment No. GGV/18/3263, Roll No. 18203039)

UNDER THE SUPERVISION OF

DR. VINEET KUMAR ASSISTANT

PROFESSOR

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDALAYA,

(A CENTRAL UNIVERSITY

KONI, BILASPUR-495009, CHATTI

Sushille Moh.

विभागाध्यक्ष

Head

वनस्पति शास्त्र विभाग

Department of Botany

गुरु घासीदास विश्वविद्यालय (केन्द्रीय वि.वि.), बिलासपुर (छ.ग.)

Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.)



CERTIFICATE

This is to certify that the dissertation report entitled “**PHYTOREMEDIATION OF SOIL CONTAMINATED WITH METALS AT MINING AREAS: A REVIEW**” submitted by Shradha Chandrakar is based on the review work carried out under the supervision of Dr. Vineet Kumar, Assistant Professor in the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh. This is an original report and has not been previously submitted in part or full for the award of any other degree or diploma to this or any other university.

DR. VINEET KUMAR
Supervisor

Forwarded to the controller of examinations, **GURU GHASIDAS VISHWAVIDYALAYA** in partial fulfillment of the requirements of the Degree of Bachelor of Science in **BOTANY (Hons.)**.

Date;

Place : Bilaspur

DR. S.K. SHAHI

Head, Department of Botany
Bilaspur, Chhattisgarh

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

Signature and Seal of the Head

DECLARATION

I, **SHRADHA CHANDRAKAR** hereby declare that the work which is being presented in the thesis entitled “**PHYTOREMEDIATION OF SOIL CONTAMINATED WITH METALS AT MINING AREAS: A REVIEW**” in partial fulfillment of the requirements for the award of the Degree of Bachelor of Science in Botany (Hons.) and submitted in the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh is an authentic record of my own work carried out under the supervision of **DR. VINEET KUMAR**, Assistant Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh. The matter presented in this thesis has not been submitted by me for the award of any other degree in any other University/Deemed University without proper citation.

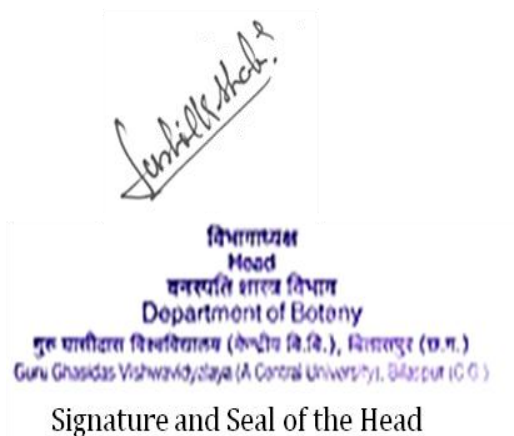
SHRADHA CHANDRAKAR

B.Sc. VI semester

Department of Botany

Guru Ghasidas Vishwavidyalaya,

Bilaspur, Chhattisgarh





ACKNOWLEDGEMENT

First of all, i would like to express my gratitude to all mighty God for enabling me to complete this dissertation on **“PHYTOREMEDIATION OF SOIL CONTAMINATED WITH METALS AT MINING AREAS: A REVIEW”**.

First and foremost, I would like to thanks to my supervisor Dr. Vineet Kumar, Assistant Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh for his guidance, constructive criticism, endless patience, affection and cheerful encouragement throughout this study. His altruistic, benevolent and magnanimous nature has left an indelible mark in my heart and mind. Sir, you would always remain a source of inspiration in my whole life.

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I owe gratitude to Dr. Sushil Kumar Shahi, Heady, Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh for providing excellent facility and research environment at the university which enable me to complete this research work and helping me to come up with the best possible outcome.

Words often fail to express my humble gratitude and profound regard to my family members for their affectionate encouragement and blessing which always being a source of inspiration for me without which it could not have been possible to achieve my targets.

(SHRADHA CHANDRAKAR)



Table of Content

Chapter 1	Introduction
Chapter 2	Review of literature
2.1	Types of heavy metal
2.2	Soil profile
2.3	Environmental risk
2.4	Phytoremediation
2.5	Remediation of heavy metal – contaminated soil
2.6	Uptake and translocation of heavy metals in plants
2.7	Soil concentration ranges & regulatory for some heavy metals
2.8	Phytoremediation strategies
2.9	Native flora
Chapter 3	Conclusion
Chapter 4	References

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

Signature and Seal of the Head



“Renewable energy technology in Rural areas of India: A Review”

A Dissertation

Submitted in partial fulfilment of the requirement for the award of the
Degree of

Bachelor of Science in

Botany

BY

Shresthashree Ratha

Enrolment No.-GGV/18/3264

Roll No. - 18203040

B.Sc. Botany (Hons.)

2020-21

Under the supervision of **Dr.**

S.K. Pandey Assistant

Professor



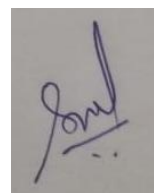
DEPARTMENT OF BOTANY
SCHOOL OF LIFE SCIENCE
GURU GHASIDAS VISHAWAVIDYALAYA
BILASPUR (C.G.)

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

Signature and Seal of the Head

CERTIFICATE OF ORIGINAL WORK

This is to certify that the study conducted by **Shresthashree Ratha** during 2020-2021 reported in the present dissertation review was under my guidance. The results reported by her are genuine and the script of the review has been written by the candidate herself. The review entitled “**Renewable energy technologies in rural areas of India: A review**” is therefore being forwarded for the acceptance in partial fulfilment of the requirements for the award of the degree of **BACHELOR OF SCIENCE IN BOTANY** of the Guru Ghasidas vishwavidyalaya, Bilaspur, (C.G.).



Dr.S.K.Pandey
Signature of supervisor

To the controller of examination, Guru Ghasidas Vishwavidyalaya in partial fulfilment of the requirement of degree of Bachelor of Science in Botany.

Date:

Place: Bilaspur

Signature of
Head of Department
School of Life Sciences



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

Signature and Seal of the Head

DECLARATION

I declare that work presented in this project dissertation entitled “Renewable energy technologies in Rural areas: A review” submitted for partial fulfilment of B.Sc. Botany VI semester, was carried out by me at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) .

The work presented in the project is original and I solely owe the responsibility for the entire information presented in this report including text, pictures in report, diagrams and photographs and has not been submitted anywhere else for this or any other degree.

Date:05/07/2021

place:Bilaspur(C.G.)

Submitted by:
Shresthashree Ratha
Rollno.-18203040
B.Sc. 6th sem
Department of Botany
Guru Ghasidas Vishwavidyalaya
Koni,Bilaspur(C.G.)



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

Signature and Seal of the Head



ACKNOWLEDGEMENTS

First of all, I would like to express my gratitude to all mighty God for enabling me to complete this dissertation on "Renewable energy technologies in rural areas of India: A review". Successful completion of any type of project requires help from a number of people. It is a genuine pleasure to express my deep sense of thanks and gratitude to my advisor Dr. S.K. Pandey, Department of Botany under whose guidance I had the privilege to do my dissertation work.

With deep sense, veneration and obligation from the core of my heart, I beseech the entire array of words of thanks and reverence to mark gratitude towards. Dr. S.K. SAHI, Head Department of Botany, Guru Ghasidas University, Bilaspur.

I acknowledge with special thanks and depth of appreciation to my respected teachers Dr. A.K. Dixit, Dr. V.N. Tripathi, Dr. S.K. Prajapati, Dr. D.K. Patel, Dr. D. Yadav, Dr. S.Shweta, Dr. R.K. Ahirwar, Dr. Mamta Patra Shahi, Dr. Vineet Kumar, Dr. Preeti Verma, Mr. Deepak K. Singh and Miss Shivali Sharma of our department for their guidance and support.

I am also extremely thankful to my family and friends for their useful advice, understanding, encouragement, moral support and timely help during the course of work.

Date:05/07/2021

Place: Bilaspur (C.G.)

Submitted by:

Shresthashree Ratha

Roll no. - 18203040

B.Sc. 6th sem

Department of Botany

Guru Ghasidas Vishwavidyalaya,

Koni, Bilaspur



CONTANT

- ABSTRACT
- INTRODUCTION
- TYPE OF RENEWABLE ENEGRY AND THEIR SOURCES
- IMPLIMENTATION OF DIFFERENT FROM OF RENEWEBLE ENERGY IN RURAL AREAS
- DISCUSSION
- CONCLUSSION

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

Signature and Seal of the Head



BIOREMEDIATION OF HEAVY METALS AND
METALLOIDS IN PAPER AND PULP INDUSTRY: A REVIEW

A DISSERTATION

SUBMITTED FOR THE PARTIAL FULFILLMENT OF THE

DEGREE OF

BACHELOR OF SCIENCE

IN BOTANY

(Hons.)



GURU GHASIDAS VISHWAVIDYALAYA (A
CENTRAL UNIVERSITY)

BY

SHRISTI UIKE B.Sc.

(VI SEMESTER)

(ENROLLMENT NO. GGV/18/3266) UNDER

THE SUPERVISION OF Dr. VINEET

KUMAR

Assistant Professor

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

KONI, BILASPUR-495009 (C.G.)

2021

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

Signature and Seal of the Head



CERTIFICATE

This is to certify that dissertation entitled “BIOREMEDIATION OF HEAVY METALS AND METALLOIDS IN PAPER AND PULP INDUSTRY: A REVIEW” is based in the original work done by SHRISTI UIKE (Enroll. No. GGV/18/3266), Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, and this has not previously performed the award of any degree, diploma, associate ship or any other similar title and represents entirely an independent work on the part of the candidate.

Forwarded to the controller of examination, Guru Ghasidas Vishwavidyalaya, Bilaspur in partial fulfillment of the degree of Bachelor of Science in Botany (Hons.)


DR. VINEET KUMAR

Supervisor

Forwarded to the controller of examinations, GURU GHASIDAS VISHWAVIDYALAYA in partial fulfillment of the requirements of the Degree of Bachelor of Science in BOTANY (Hons.).

D
a
t
e
;

Place:
Bilaspur


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

DR. S.K.

AHI Head, Department of
Botany, GGV
Bilaspur, Chhattisgarh



DECLARATION

I hereby declare that the work presented in this dissertation entitled “BIOREMEDIATION OF HEAVY METALS AND METALLOIDS IN PAPER AND PULP INDUSTRY: A REVIEW” Submitted in partials fulfilment of B.Sc. Botany (Hons.) was carried out in the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

The work was carried out by her under supervisor of DR. VINEET KUMAR, Assistant Professor in the Department of Botany at Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G). this project is original and it will be intellectual property of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

Place:

BILASPUR

Date:

08/07/2021

SHRIST
I UIKE

B.SC. Botany (Hons.) VI
Semester

Department of
Botany,

Guru Ghasidas Vishwavidyalaya, Bilaspur
(C.G).

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

Signature and Seal of the Head



ACKNOWLEDGEMENT

I take this golden opportunity to express my gratitude and sincerely thanks to my respected guide Dr. Vineet Kumar, Assistant Professor, Department Of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) for his guidance, constant encouragement, and support which boosted me with confidence and I am proud to say that it has been a most fruitful and enjoyable experience to work under her guidance.

I express my gratitude and sincerely thanks to the Head, Department of Botany, Dr. S.K.Shahi, for providing facilities which enable me to complete my work successfully and most importantly for always being a source of inspiration throughout my work.

Special thanks to teachers in department namely Dr. A.K. Dixit, Dr. S.K. Prajapati, Dr. S.K. Pandey, Dr. V.N. Tripathi, Dr. D.K. Patel, Dr. R.K. Ahirwar, Dr. M.P. Shahi, Dr. Shweta, Dr. D. Yadav, Dr. Preeti Verma, Mr. Deepak Singh, Ms. Shivali Sharma for encouragement during study.

I am also thankful to all other staff and fellows including Ph.D. scholars for their help during project work and also special thanks to friends for sharing their valuable assistance.

Lastly but most importantly I thanks my parents and family, for their understanding, constant support and encouragement which help me a lot to work more efficiently during crucial times of the completion of the project.

**SHRISTI
UIKE**



Table of Content

1. Introduction
2. About paper & pulp industry
3. Pulp paper wastewater
4. Characteristics of pulp paper industry effluents
5. Heavy metals
6. Heavy metals released from pulp paper industry
7. Impact of pulp paper waste water on surrounding
8. Impact of heavy metal release from paper and pulp industry
9. Bioremediation
10. Bioremediation oh heavy metals and metalloids
11. Phytoremediation of heavy metal in pulp paper industry
12. Conclusion
13. Reference

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

Signature and Seal of the Head



**ETHNOMEDICINAL PLANTS USED BY TRIBAL
COMMUNITIES OF BILASPUR CHHATTISGARH (A
REVIEW)**



A Dissertation Report Submitted
FOR THE PARTIAL FULFILLMENT OF THE
DEGREE OF
BACHELOR OF
SCIENCE DEPARTMENT
OF BOTANY BY
Shweta Bhaskar

GGV/18/3277, Roll No.18203042

Under the supervision of

Dr. RAMESH KUMAR

AHIRWAR (Assistant Professor)

Department of Botany, GGV, Bilaspur, Chha

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

Signature and Seal of the Head



CERTIFICATE

This is to certify that dissertation entitled "Ethnomedicinal plant used by tribal communities of Bilaspur Chhattisgarh (A Review) is based in the original work done by Shweta Bhaskar (Unroll. No. GGV/18/3277) Department of Botany, Guru Ghasidas Vishwavidyalaya and this has not previously formed the award of any degree, diploma, associate ship or any other similar title and represents entirely an independent work on the part of the candidate.

Dr. Ramesh Kumar

Place: Bilaspur.
Ahirwar
Date: July,2021.
Supervisor

Name of the

Forward to the controller of examination, Guru Ghasidas Vishwavidyalaya in partial fulfilment of the degree of Bachelor of Science in botany.

Place: BILASPUR
Shahi Date:

Dr. S. K.
Head of the department
Department of Botany

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



ACKNOWLEDGEMENTS

I express my deepest gratitude to all those who help and encouraged me to complete my dissertation work entitled “Ethnomedicinal plant used by tribal communities of Bilaspur Chhattisgarh: A Review”, for the degree of bachelor in science in botany, Centre of advance study in Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

I am heartily thankful to my mentor, Dr. Ramesh Kumar Ahirwar whose encouragement, supervision and support from the beginning to the concluding of this dissertation work, help me to give my best attention and performance in this work.

I would like to thank Dr. A.K. Dixit, Dr. S.K. Shahi, Dr. D. K. Patel, Dr. S. K. Prajapati, Dr. S.K. Pandey, Dr. V. N. Tripathi, Dr. Deepanker Yadav, Dr S. Sweta, Dr. M. P. Shahi, Dr. Vineet Kumar, Dr. Preeti Verma, Miss. Shivali Sharma and Mr. Deepak Kumar Singh for their kind encouragement.

I am also thankful to all my classmates for sharing their literature and valuable assistance. Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understandings, support and encouragement to give my best effort in this dissertation.

Shweta Bhaskar



DECLARATI ON

I hereby declare that the work presented in the dissertation report entitled “Ethnomedicinal plant used by tribal communities of Bilaspur Chhattisgarh: A Review” submitted as partial fulfilment of B.Sc. Botany VI Semester, was carried out by me at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

The work presented in this project is original and will be intellectual property of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). The information presented in this report including, pictures in report, the responsibility for the same will be solely mine.

Date: 10, July, 2021

Place: Bilaspur

Shweta Bhaskar,

Roll no.: 18203042

B. Sc.VI

SEM

(Department of Botany)

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

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

Signature and Seal of the Head



CONTENTS

1.	Introduction	1
2.	Tribal communities	1
3.	<i>Tinospora cordifolia</i> (Willd.) Miers	2-5
4.	<i>Pongamia pinnata</i> (L.) Pierre	5-9
5.	<i>Vitex negundo</i> L.	9-12
6.	<i>Tridax procumbens</i> (L.) L.	12-15
7.	Conclusion	15
8.	References	16-17
9.	Photographs	

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

Signature and Seal of the Head



**A review: On the role of calcium on plant growth, development
and stress tolerance**

A Dissertation Report

**SUBMITTED BY PARTIAL FULFILMENT OF THE
DEGREE OF BACHELOR OF SCIENCE**

**IN
BOTAN
Y**



**BY SIMRAN
BARA
B.Sc. (VI SEMESTER)
(Enrollment No: GGV/18/3282)**

**UNDER THE
SUPERVISION OF DR.
DEEPANKER YADAV**

**Department of
BOTAN
Y
GURGHASIDAS VISHWAVIDYAI
BILASPUR-
495009
CHHATTISGA
RH**

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

Signature and Seal of the Head



Certificate

This is to verify that SIMRAN BARA, Enrollment No.- GGV/18/3282 and Roll No.-18203044 has carried out her B.Sc. Botany's dissertation work entitled "A review: On the role of calcium on plant growth, development and stress tolerance" under the supervision of Dr. Deepanker Yadav towards the partial fulfillment of the degree of Bachelor of Science in Botany.

The work presented in the project report is original and has not been submitted anywhere else for or any other degree.

Date: 16 July 2021

Place: Bilaspur

Dr. Deepanker Yadav.
Supervisor

Dr. S. K. Sahi
Head

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

Signature and Seal of the Head



DECLARATION

I declare that the work presented in this thesis, “A review: On the role of calcium on plant growth, development and stress tolerance” submitted in partial fulfillment of B.sc. Botany has been carried out at the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

The work presented in this thesis is original and will remain the intellectual property of Guru Ghasidas University, Bilaspur (C.G). The information presented in this dissertation report, including data, figures, and pictures, are original and duly credited. If any discrepancy, mistake, or plagiarism is found in this report, the responsibility for the same will be solely mine.

Place: Bilaspur(C.G)

Date: 16 July 2021

Signature of the student



ACKNOWLEDGMENTS

I express my deepest gratitude to all those who help and encouraged me to complete my dissertation work entitled A review: On the role of calcium on plant growth, development and stress tolerance, for the degree of bachelor's in science in botany, Centre of advance study in botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

I am heartily thankful to my mentor, Dr. Deepanker Yadav, whose encouragement, supervision, and support from the beginning to the conclusion of this dissertation work help me to give my best attention and performance in this work.

I would like to thank Dr. S.K Shahi, Head of Department of Botany, Guru

Ghasidas Vishwavidyalaya Bilaspur (C.G) for providing all the necessary facilities during study. I am also thankful to Dr. A.K Dixit, Dr. S.K Prajapati, Dr. V.N Tripathi, Dr. S.K Pandey, Dr. Vinita Dixit, Dr. Shilpa Vinodia, Dr. Preeti Verma, and all faculties of the department for their guidance and support.

I am also thankful to all my classmates for sharing their literature and valuable assistance. Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understandings, support and encouragement to give my best effort in this dissertation.

Date: 15th July 2021

Place: Bilaspur

Submitted by: Simran Bara, Roll no. : 18203044

B.Sc. VI SEM (Department of Botany)

GURU GHASIDAS VISHWAVIDYALAYA, KONI,
BILASPUR (C.G)



CONTENTS

1. ABSTRACT.....	01
2. INTRODUCTION.....	02
3. CALCIUM.....	04
4. MOBILITY AND UPTAKE OF CALCIUM BY PLANTS.....	06
5. ROLES OF CALCIUM ON PLANTS.....	07
6. FACTORS AFFECTING THE AVAILABILITY OF CALCIUM TO PLANTS	
• CALCIUM DEFICIENCY	
• DEVELOPMENT OF DEFICIENCY	
• REASONS FOR DEFICIENCY	
7. SOURCES OF CALCIUM FOR PLANTS.....	12
8. NUTRITION.....	13
9. ROLES OF CALCIUM IN RESPONSES TO PLANT STRESSES.....	15
10. CONCLUSION	19
11. REFERENCES.....	21

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

Signature and Seal of the Head



BIOREMEDIATION USING OF MICROBE (BACTERIA & FUNGI) TREATMENT OF ENVIRONMENT POLLUTION (HEAVY METALS)

A Dissertation Report
SUBMITTED
FOR THE PARTIAL FULFILMENT OF THE DEGREE
OF
BACHELOR OF SCIENCE
IN
BOTANY



By

SUKRIT DAS

Enrolment No. GGV/18/3294, Roll No. 18203045

Under the supervision of

DR. SUSHIL KUMAR SHAHI

Associate Professor

Botany Department, GGV, Bilaspur

DEPARTMENT OF BOTANY
GURU GHASIDAS VISHWAVIDYA
BILASPUR-495005 (CG)

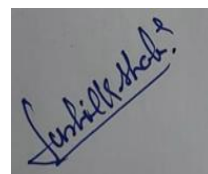
विभागाध्यक्ष
Head
वनस्पति शास्त्र विभाग
Department of Botany
गुरु घासीदास विश्वविद्यालय (केन्द्रीय वि.वि.), बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.)
Signature and Seal of the Head

CERTIFICATE

This is to certify that dissertation entitled ' **BIOREMEDIATION USING OF MICROBE (BACTERIA & FUNGI) TREATMENT OF ENVIRONMENT POLLUTION (HEAVY METALS)**' is based on review done by **SUKRIT DAS** (Enrollment no. GGV/18/3294) Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur 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:



Dr. S. K. Shahi

Name of Supervisor
Botany Department,
GGV, Bilaspur

Forwarded to the controller of examination, Guru Ghasidas Vishwavidyalaya, Bilaspur in partial fulfillment of the degree of Bachelor of Science in Botany.

Place: Bilaspur

Date:



Dr. Sushil Kumar Shahi
Head, Botany Department
GGV, Bilaspur

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

Signature and Seal of the Head

DECLARATION

I here declare that the work presented in this project dissertation entitled **‘BIOREMEDIATION USING OF MICROBES (BACTERIA AND FUNGI) TREATMENT OF ENVIRONMENT POLLUTION (HEAVY METALS).’** submitted for partial fulfillment of B.Sc Botany was carried out at Department of Botany , Guru Ghasidas Vishwavidyalaya , Bilaspur (C.G) .

The work was carried out by me under the supervision of **Dr. S.K. Shahi**, Associate Professor , Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G). The work in this project dissertation is original and will remain intellectual property of department of Botany , Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

Date:

Place: Bilaspur (C.G)

SUKRIT DAS

B.Sc VI semester

Department of Botany

Guru Ghasidas Vishwavidyalaya,

Bilaspur (CG)



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

Signature and Seal of the Head

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Finally I am thankful from the bottom of my heart to my classmates (add name) who encouraged me at each step with great affection.

Last but not least I convey my regards to all those who directly or indirectly contributed to the successful completion of this project work.

(Sukrit Das)

CONTENTS

1. INTRODUCTION

2. REVIEW OF LECTRATURE

2.1. Types of Bioremediation

2.1.1 In situ Bioremediation

2.1.2 Ex situ Bioremediation

3. MATERIAL AND METHODS

3.1. Microbial remediation

3.2. Metal- Microbe Interactions

3.2.1 Biosorption

3.2.2 Bio precipitation

3.2.3 Bio accumulation

3.2.4 Biotransformation

3.2.5 Bio leaching

3.2.6 Anthropogenic source of selected heavy metals

4. Bioremediation Capacity of Microorganism on Heavy Metals

4. 1 Bacterial Remediation Capacity of Heavy Metal

4.2.Fungi Remediation Capacity of Heavy Metal

5.RESULT

6.DISCUSSION

7.CONCLUSION

8. REFERENCES

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

Signature and Seal of the Head



Biodiversity of Chhattisgarh Forest: A Review
A Dissertation

Report

SUBMITTED FOR THE PARTIAL FULFILLMENT OF THE
DEGREE

BACHELOR OF SCIENCE IN
BOTANY



GURU GHASIDAS VISHWAVIDYALAYA
(A Central University)

By
SUNITA SAHU

B.Sc. VI SEMESTER

(Enrollment No- GGV/18/3299; Roll No-18203046)

UNDER THE SUPERVISION

OF

Dr. PREETI VERMA

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

Sunita Sahu

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

CERTIFICATE

This is certify that entitle - **Biodiversity of Chhattisgarh Forest: A Review** ” is based on the original work done by “**SUNITA SAHU**” (Enrollment no.-GGV/18/3299) 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.

Dr. PREETI VERMA
(Project supervisor)

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

Place: BILASPUR

Date:

Dr. S.K. SHAHI

**Head of Department of
Botany**

**Guru Ghasidas Vishwavidyalaya Bilaspur
(C.G.)**

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

Signature and Seal of the Head



DECLARATION

I hereby declare that the work presented in this project dissertation entitled –**Biodiversity of Chhattisgarh Forest: A Review**” submitter for partial fulfillment of B.Sc. Botany was carried out at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

The work was carried out by me under the supervision of **Dr. PREETI VERMA** Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).


The work in this project dissertation is original and will remain intellectual property of Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

Place: BILASPUR

Date:

SUNITA SAHU

**Department of Botany
GGV, Bilaspur (C.G.)**


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



ACKNOWLEDGEMENT

I wish to express my heartfelt thanks and immense gratitude to all those who helped and encourage me to complete my dissertation entitled “**Biodiversity of Chhattisgarh Forest: A Review**” for the degree of Bachelor of Science in Botany, GGV, Bilaspur (C.G.).

It's a great pleasure for me to pay earnest thanks and profound gratitude to my supervisor **Dr. PREETI VERMA**, Department of Botany, GGV, Bilaspur for giving me an opportunity to work under her supervision at this esteemed university. It has been a memorable experience for me to work under his guidance.

I would like to thanks **Dr. S.K. SHAHI**, Head of Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) for providing all the necessary facilities during the course of study, and I would like to extend my special thanks to **PREETI VERMA** who gave me the real attitude of research.

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I am at loss of words for the moral support, encouragement and help providing by my parents, Brothers and friends during the whole course of my dissertation.

Place: BILASPUR

Date:

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

Signature and Seal of the Head

SUNITA SAHU

Department of Botany GGV,
Bilaspur(C.G.)



INDEX

S.No.	Content	Page no.
1	Abstract	7
2.	Introduction	7
3.	History And Profile Of Area Creation Of Chhattisgarh	8
4.	Biodiversity in Chhattisgarh	10
	4.1 Wild Biodiversity	10
	4.2 Domesticated Biodiversity	14
	4.3 Bio-Cultutral Diversity	16
	4.4 Policies, laws & other biodiversity related legal framework	17
5.	Biodiversity and its effects on some aspects	18
6.	Threats / Problems Related To Biodiversity	19
7.	Conclusions	20
8.	References	21

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

Signature and Seal of the Head



PLANTS USED BY LOCAL AND TRIBAL PEOPLE OF
CHHATTISGARH WITH SPECIAL REFERENCE TO THEIR
COSMETIC AND SKIN CARE USES

A DISSERTATION REPORT SUBMITTED FOR THE FULFILMENT OF THE DEGREE OF
BACHELOR OF SCIENCE (Hons.)

IN

BOTANY



By

SURABHI SUMAN PATEL

(Enroll.No. GGV/18/3301, Roll No. 18203047)

Under the supervision of

DR. A. K. DIXIT

Associate Professor

Dept. of Botany, GGV Bilaspur, Chhattisgarh, Ind

**DEPARTMENT OF BOTANY
GURU GHASIDAS VISHWAVIDYAL
(A CENTRAL UNIVERSITY)
KONI-BILASPUR, CHHATTISGARH, INDIA**

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



DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

(A CENTRAL UNIVERSITY)

KONI-BILASPUR, CHHATTISGARH, INDIA-495009



CERTIFICATE

This is to certify that dissertation report entitled “Plants used by local and tribal people of Chhattisgarh with special reference to their cosmetic and skin care uses” is based on original work done by **Surabhi Suman Patel**, student of B.Sc. (Hons.) in Botany VI semester at Department of Botany session 2020-2021, Roll No. : 18203047, Enrollment No. : GGV/18/3301. It represents entirely an independent work of the candidate. This is an original work and the report has not been submitted to any other institution for the award of any degree or diploma.

Place : Bilaspur

Date :

Dr. A. K. Dixit

Associate Professor
Department of Botany
GGV Bilaspur CG

Forwarded to the controller of examination, Guru Ghasidas Vishwavidyalaya, Bilaspur CG in partial fulfillment of the degree of **Bachelor of Science (Hons.)” in Botany.**

Place : Bilaspur

Date :

Dr. S. K. Shahi

Head of the Department
Department of Botany
GGV Bilaspur CG

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

Signature and Seal of the Head



DECLARATION

I **SurabhiSuman Patel**, hereby declare that the work presented in this project dissertation entitled “**Plants used by local and tribal people of Chhattisgarh with special reference to their cosmetic and skin care uses.**” submitted for partial fulfilment of the degree of “**Bachelor of Science (Hons.)**” in **Botany** has been carried out at Department of Botany, Guru Ghasidas Vishwavidyalaya, Koni-Bilaspur (C.G.).

The work was carried out by me under the supervision of **Dr. A. K. Dixit**, Associate Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Koni-Bilaspur (C.G.). The work done in the present dissertation is original and has not been submitted to any other institution for the award of any degree or diploma.

Place : Bilaspur


Date :

SurabhiSuman Patel

B.Sc. (Hons.) VI Semester

Department of Botany

GGV Bilaspur CG


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



ACKNOWLEDGEMENT

First and foremost I express my deepest gratitude to respected supervisor **Dr. A. K. Dixit**, Associate Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Koni-Bilaspur (C.G.), for his guidance, supervision and providing me an environment to complete my dissertation successfully.

Also, I am thankful to respected head of the department **Dr. S. K. Shahi**, HOD. I would also like to thank **Dr. D. K. Patel, Dr. S. Prajapati, Dr. S. K. Pandey, Dr. V. N. Tripathi, Dr. R. K. Ahirwar, Dr. D. Yadav, Dr. S. Shweta, Dr. M. P. Shahi, Dr. Vineet Kumar, Dr. Preeti Verma, Mr. D. K. Singh** and **Ms. S. Sharma** for giving me the real attitude of research.

Finally, I am thankful from the bottom of my heart and express my gratitude and love towards my father **Mr. D. L. Patel**, mother **Mrs. L. Patel** and brother **Sarvesh Kaushik Patel**, for their understanding, kind support and encouragement to do my work more efficiently during the crucial times of the completion of the project dissertation. I am also thankful to my classmates for sharing their literature and valuable assistance.

Last but not least I convey my regards to all those who directly or indirectly contributed to the completion of this work.

Surabhi Suman Patel

B.Sc. (Hons.) Botany



TABLE OF CONTENTS

1. Abstract.....	1
2. Introduction.....	2-3
3. Review of literature.....	4-5
4. Material and methods.....	6
5. Discussion.....	7-13
6. Visualization (Photographs).....	14-18
7. Result.....	19
8. Conclusion.....	20
9. References.....	21-26

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

Signature and Seal of the Head



**A REVIEW ON ORGANIC FARMING: AN
ECO-FRIENDLY APPROACH TO THE DEVELOPMENT
OF CROP AND YIELD**

**Dissertation Report
Submitted**

**For the partial fulfillment of the degree of
BACHELOR OF SCIENCE**

**IN
BOTANY**



By

**SURAJ KURREY ROLL NO.
18203048 (Enrollment No.
GGV/18/3302)
2020-21**

**Under the supervision of
Dr. PREETI VERMA
Assistant Professor
(Department of Botany)**

**GURU GHASIDAS VISHWAVIDYALAYA
BILASPUR - 495009 (CHHATTISGARH)**

Suraj Kurrey

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

Signature and Seal of the Head



CERTIFICATE

This is to certify that the project report entitled “**A Review on Organic Farming: An Eco-Friendly Approach to the Development of Crop and Yield**” is an authentic record of work done by **Suraj Kurrey** Student of B.Sc. Botany (Hons.) in the Department of Botany of this Vishwavidyalaya.

Place: Bilaspur (Chhattisgarh)
Date:

Signature of Guide
Dr. Preeti Verma

Forwarded to the controller of examinations, Guru Ghasidas Vishwavidyalaya in partial fulfilment of the requirement of degree of bachelor of science in Botany.

Place: Bilaspur
Date:
Department: Botany

Dr. S. K. Shahi
Head of the Botany Department
GGV BILASPUR (C.G.)

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

Signature and Seal of the Head



DECLARATION

I hereby declare that the work presented on this Dissertation entitled “**A Review on Organic Farming: An Eco-Friendly Development to the Crop and Yield**” submitted for the, partial fulfillment of B.Sc. BOTANY was carried out at Department of Botany Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhatisgarh.


This dissertation work was carried out by me under the supervision of **Dr. PREETI VERMA** Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

The work in this project is original and will remain intellectual property for the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhatisgarh.

Place:

Date:

SURAJ KURREY
B.Sc. Botany (VI Semester)
Guru Ghasidas Vishwavidyalaya, Koni,
Bilaspur (C.G.)


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



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I wish to express my heartfelt to thanks and immense gratitude to all those who helped and encouraged my dissertation entitled “**A Review on Organic Farming: An Eco-Friendly Approach to the Development of Crop and Yield**”, as partial fulfillment of the degree of Bachelor of Science in Botany, Center for Advanced Studies in Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

It is great pleasure for me to pay earnest thank and profound gratitude to my supervisor, DR. Preeti Verma, Assistant Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) for giving me an opportunity to work under her supervision at this esteemed University and for regular discussions on the topic.

I would like to thanks Dr. S.K. Shahi, Head of department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) for providing all the necessary facilities during the course of this study and for constant encouragement and support. I owe my profound thanks to Dr. A. K. Dixit, Dr. D. K. Patel, Dr. S.K. Prajapati, Dr. V.N. Tripathi, Dr. S. Shweta, Dr. S.K. Pandey, Dr. D. Yadav, Dr. R. K. Ahirvar, Dr. M.P.Shahi, Dr. Vineet Kumar, Mr. Deepak. K. Singh, Mis. Shivali Sharma for their valuable suggestions. I would also like to extend my thanks to all the Ph.D. scholars who encouraged me during the course of this work.

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I am at indebted to my parents, brothers and friends for their moral support and encouragement during the course of work on my dissertation.

Date:

Place: Bilaspur

Suraj Kurrey
Department of Botany
Guru Ghasidas Vishwavidyalaya, Koni,
Bilaspur (C.G.)

Topic	Page No.
1. Abstract.....	08
2. introduction	09
3. Review of Literature.....	10-20
3.1. Various components of Organic Farming.....	10-19
3.1.1 Crop rotation.....	10
3.1.2 Green manuring.....	11
3.1.2.1. Green manuring in-situ.....	11
3.1.2.2. Green leaf manuring.....	11
3.1.3 Vermicomposting.....	12
3.1.4 Mixed cropping/ Intercropping system.....	13
3.1.5 Bio-Fertilizers.....	14
3.1.5.1. Nitrogen fixers.....	14
3,1.5.1.1. Rhizobium.....	14
3.1.5.1.2. Azotobacter	15
3.1.5.1.3. Azospirillum.....	15
3.1.5.1.4. Anabaena Azollae.....	15
3.1.5.1.5. Blue-Green Algae.....	16
3.1.5.2. Phosphate solubilizing and Mobilizing Bio-fertilizer-	16
3.1.5.2.1. Mycorhiza.....	16
3.1.5.3. Potassium solubilizing and Mobilizing Bio-fertilizer-.....	16
3.1.5.4. Sulphur oxidizing Bio-fertilizer.....	17
	18

3.1.5.6. Plant growth promoting Rhizobacteria (PGPR)-	18
3.1.6. Bio-Pesticides.....	19
3.2. Limitations.....	20
3.3. Future Prospect.....	20
4. Conclusion.....	21
5. References.....	21-23



विभागाध्यक्ष
 Head
 वनस्पति शास्त्र विभाग
 Department of Botany
 गुरु गोविंदराव विश्वविद्यालय (केन्द्रीय वि.वि.), बिलासपुर (छ.प्र.)
 Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.)
 Signature and Seal of the Head

**OF
MENTHA SPECIES-A REVIEW**

A Dissertation Report

Submitted for the partial fulfilment of the requirement of

THE AWARD OF DEGREE OF

**BACHELOR OF SCIENCE IN
BOTANY**



BY

TALAT NASREEN B. Sc

VI Semester (Roll

No:18203049)

UNDER THE SUPERVISION OF Dr.

MAMTAPATRA SAHI Assistar

Professor

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

BILASPUR-495005 (CG)

Talati Nasreen
विभागाध्यक्ष
Head
वनस्पति शास्त्र विभाग
Department of Botany
गुरु घासीदास विश्वविद्यालय (केन्द्रीय वि.वि.), बिलासपुर (छ.प्र.)
Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.)
Signature and Seal of the Head

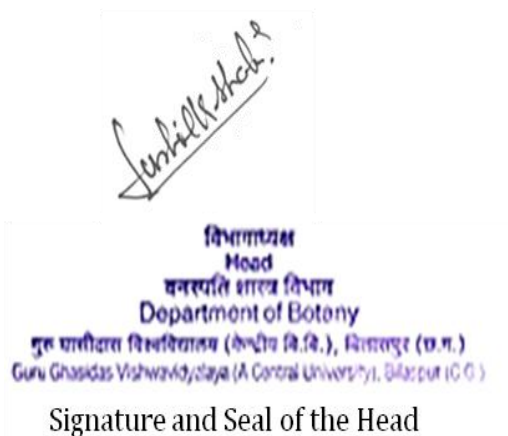
CERTIFICATE

This is to certify that dissertation entitled –**PHYTOCHEMICALS AND BIOLOGICAL ACTIVITIES OF MENTHA SPECIES-A REVIEW** ” submitted to the Department of Botany, GGV is a record of independent dissertation work carried out by **TALAT NASREEN**, for the degree of Bachelor of Science under my supervision and guidance.

This has not been previously submitted for the award of any degree diploma or any other similar title. To the best of my knowledge and belief this dissertation embodies the work done by the candidate.

Dr. MamtaPantra Shahi

Department of Botany,
GGV, Bilaspur C.G.



DECLARATION


I declare that the work done in my dissertation entitled, “**PHYTOCHEMICALS AND BIOLOGICAL ACTIVITIES OF MENTHA SPECIES-A REVIEW**” has been carried out by me and do not involve plagiarism. I also certify that: No sentence, equation, diagram, table, paragraph or section has been copied verbatim from previous work unless it is place under quotation marks and duly referenced.

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Place

Date: July 15, 2021

Signature of the student



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

Signature and Seal of the Head



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First and foremost, I express my deepest gratitude to my supervisor Dr. Mamta Patra Shahi, Department of Botany, GGV, Bilaspur, C.G., India; whose inspiration, supervision and support and encouragement to complete my dissertation work entitled **-BIOLOGICAL ACTIVITIES OF MENTHA SPECIES** from preliminary to concluding level on this project. I also thank for his kindness, timely cooperation and guidance for this project.

I would like to thanks Dr. S. K. Shahi, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C. G) for providing all the necessary facilities during the course of study.

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I am also thankful to all my classmates for sharing their literature and valuable assistance. Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, support and encouragement to give in this dissertation.

Date: July 15, 2021
Place: Bilaspur
Name: **Talat Nasreen**
Roll No: 18203049
B. Sc. VI
Semester
Department of
Botany GGV,
Bilaspur



BIOREMEDIATION: A HOLISTIC APPROACH FOR SUSTAINABLE TANNERY WASTEWATER TREATMENT

A DISSERTATION SUBMITTED FOR
THE PARTIAL FULFILMENT OF THE DEGREE OF
BACHELOR OF SCIENCE (Hons.)

IN
BOTANY



BY
TANUJA GUPTA
B. Sc. (VI SEMESTER)
(Enrollment No. GGV/18/3312, Roll No. 18203050)

UNDER THE SUPERVISION OF

DR. VINEET KUMAR
ASSISTANT PROFESSOR

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVI

(A CENTRAL UNIVERSITY)

KONI, BILASPUR-495009, CHATTIS

2021

Janki K. Shukla

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



CERTIFICATE

This is to certify that the dissertation report entitled “BIOREMEDIATION: A HOLISTIC APPROACH FOR SUSTAINABLE TANNERY WASTEWATER TREATMENT” submitted by TANUJA GUPTA is based on the review work carried out under the supervision of DR. VINEET KUMAR, Assistant Professor in the Department of Botany at Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh. This is an original report and has not been previously submitted in part or full for the award of any other degree or diploma to this or any other university.

DR. VINEET KUMAR
Supervisor

Forwarded to the controller of examinations, GURU GHASIDAS VISHWAVIDYALAYA in partial fulfillment of the requirements of the Degree of Bachelor of Science in BOTANY (Hons.).

Date;

Place : Bilaspur

DR. S.K. SHAHI

Head, Department of Botany
Bilaspur, Chhattisgarh


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

Signature and Seal of the Head



DECLARATION

I, **TANUJA GUPTA**, hereby declare that the work which is being presented in the thesis entitled “**BIOREMEDIATION: A HOLISTIC APPROACH FOR SUSTAINABLE TANNERY WASTEWATER TREATMENT**” in partial fulfillment of the requirements for the award of the Degree of Bachelor of Science in Botany (Hons.) and submitted in the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh is an authentic record of my own work carried out under the supervision of **DR. VINEET KUMAR**, Assistant Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh. The matter presented in this thesis has not been submitted by me for the award of any other degree in any other University/Deemed University without proper citation.


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

TANUJA GUPTA
B.Sc. VI semester
Department of Botany,
Guru Ghasidas Vishwavidyalaya,
Bilaspur, Chhattisgarh



ACKNOWLEDGEMENT

First and foremost, I would like to thank to my supervisor, Dr. Vineet Kumar, Assistant Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, for his guidance, constructive criticism, endless patience, affection and cheerful encouragement throughout this study. His altruistic, benevolent and magnanimous nature has left an indelible mark in my heart and mind. Sir, you would always remain a source of inspiration in my whole life.

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(TANUJA GUPTA)



Table of contents

Abstract

1. Introduction
2. Review of literature
 - 2..1 What is tannery and tanning?
 - 2.2. Tanning waste water properties and characteristic
 - 2.3 Application of microorganism in tannery waste water treatment
 - 2.4 Manufacturing processes
 - 2.5 Sources of tannery waste
 - 2.6. Disposal of waste water
 - 2.7 Impact of pollutants from the tannery
 - 2.8 Tannery waste water treatment
 - 2.9. Recycling of tannery waste water
 - 2.10 Bioremediation of tannery waste water by microorganism
 - 2.11 Advantages and disadvantages of waste water treatment process in tanning industry
3. Conclusion
4. Reference

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



Guru Ghasidas Vishwavidyalaya
A Review Study on effect of Arsenic on plant physiology (
Photosynthesis Respiration Flowering and Yield)

BSc. review project study submitted to Guru Ghasidas
Vishwavidyalaya, Bilaspur

In fulfillment of the requirement for the degree

Bachelor of Science in Botany

By

Uma Shankar Bhakt

(Enrollment no.-GGV/18/3321, Roll no.-18203051)

Department of Botony

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Under the guidance of

Dr. Deepanker Yadav

Assistant Professor

Department of Forensic Science

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

A Central University

Bilaspur (C.G.)



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

Signature and Seal of the Head



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I am also highly indebted to my parents and my classmates for their unconditional blessings and support, without their firm faith and confidence this would have remain incomplete.

UMA SHANKAR BHAKT

B .Sc. Botony

VI Semester



Certificate

This is to verify that Uma Shankar Bhakt GGV/18/3321 roll no- 18203051 has carried out her B.Sc. Botany's dissertation work entitled 'A Review Study on effect of Arsenic on plant physiology (Photosynthesis Respiration Flowering and Yield)' under the supervision of Dr. Deepanker Yadav towards the partial fulfillment of the degree of Bachelor of Science in Botany.

The work presented in the project report is original and has not been submitted anywhere else for or any other degree.

Date: 16 July 2021

Place: Bilaspur

Dr. Deepanker Yadav.
Supervisor

Dr. S. K. Sahi
Head

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

Signature and Seal of the Head



DECLARATION


I declare that the work presented in this thesis, “A Review Study on effect of Arsenic on plant physiology (Photosynthesis Respiration Flowering and Yield” submitted in partial fulfillment of B.sc. Botany has been carried out at the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

The work presented in this thesis is original and will remain the intellectual property of Guru Ghasidas University, Bilaspur (C.G). The information presented in this dissertation report, including data, figures, and pictures, are original and duly credited. If any discrepancy, mistake, or plagiarism is found in this report, the responsibility for the same will be solely mine.

Place: Bilaspur(C.G)

Date: 16 July 2021


Signature of the student


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



CONTENT-

- Abstract
- Introduction
- Arsenic
- Effects of arsenic on plant
- Arsenic induced Physiological and biological changes in plant
- Example of different Plants
- Conclusion
- References



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

Signature and Seal of the Head



"ROLE OF RHIZOBACTERIA IN BIOCONTROL OF PLANT PATHOGEN"

A Dissertation Report
Submitted on the partial fulfilment of
The degree
of

BACHELOR OF
SCIENCE IN



BOTANY

BY

USHMA SEN

B. Sc (VI SEMESTER)

(Enrollment No: GGV/18/3032, Roll No:18203009)

UNDER THE SUPERVISION OF

Mr. DEEPAK KUMAR SINGH

Department of BOTANY
GURU GHASIDAS VISHWAVIDALAY
BILASPUR-495009 CHHATTISGARH

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

Signature and Seal of the Head



DEPARTMENT OF
BOTANY

GURU GHASIDAS
VISHWAVIDYALAYA

(A CENTRAL UNIVERSITY ESTABLISHED BY CENTRAL
UNIVERSITY ACT 2009)

CERTIFICATE

This is certify that dissertation entitled 'ROLE OF RHIZOBACTERIA IN THE BIOCONTROL OF PLANT PATHOGEN' is a record of independent dissertation work carried out by USHMA SEN (Reg.No GGV/18/3327) Department of BOTANY, Guru Ghasidas Vishwayidyalaya, Koni, Bilaspur(C.G.) This has not been previously submitted for the award of any degree diploma or any other similar title.

Mr. DEEPAK KUMAR SINGH

(Project supervisor)

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

Signature and Seal of the Head

Forwarded to the controller of Examination Guru Ghasidas Vishwavidyalaya in partial fulfilment of the requirements of the degree of Bachelor of Science in Botany.



DEPARTMENT OF BOTANY
GURU GHASIDAS
VISHWAVIDYALAYA

**(A CENTRAL UNIVERSITY ESTABLISHED BY CENTRAL UNIVERSITY
ACT 2009)**

DECLARATION

I hereby declare that the work presented in this project dissertation entitled ‘**ROLE OF RHIZOBACTERIA IN THE BIOCONTROL OF PLANT PATHOGEN**’ ” Submitted for partial fulfilment of B. Sc. Botany was carried out at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

The work was carried out by me under supervisor of Deepak kumar Singh, , Department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).The work in this project dissertation is original and will remain intellectual property of department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.)

Date:
SEN

Place: GGV BILASPUR

USHMA

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

Signature and Seal of the Head



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First and foremost, I express my deepest gratitude to my supervisor **Deepak kumar Singh**, Department of Botany, GGV, Bilaspur, C.G., India; whose inspiration, supervision and support and encouragement to complete my dissertation work entitled “**ROLE OF RHIZOBACTERIA IN BIOCONTROL OF PLANT PATHOGEN**” from preliminary to concluding level on this project. I also thank for his kindness, timely cooperation and guidance for this project.

I would like to thanks Dr S. K. Shahi, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C. G) for providing all the necessary facilities during the course of study.

Special thanks to my all teachers in the department, namely Dr. A. K Dixit, Dr. D.K Pandey, Dr. S.K. Pandey, Dr.S.K Prajapati, Dr. S. Shweta, Dr. D Yadav, Dr.R.K Ahirwar, and all the faculties of the department for their guidance and encouragement during the study. I am also thankful to all my classmates for sharing their literature and valuable assistance.

Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, kind support and encouragement to do my work more and more efficiently during the crucial times of the completion of the project.

Name: USHMA SEN

Roll No: 18203052, B. Sc.

(DEPARTMENT OF BOTANY) GURU GHASIDAS VISHWAVIDALAYA,
KONI, BILASPUR

Date:

Place:



**“MEDICINAL HERBS AND IT’S USES FOR
IMMUNITY ASSISTANCE DURING COVID-19”**

A Dissertation

**Submitted in partial fulfilment of the requirement of the
award of the degree of**

**Bachelors of Science
In
BOTANY
BY**

**VANSHIKA RAI B. Sc.
BOTANY ROLL NO.
-18203053**

ENROLLMENT NO.- GGV/18/3331

**UNDER THE SUPERVISION OF
DR. SUDHIR KUMAR PANDEY**



**DEPARTMENT OF BOTANY
SCHOOL OF LIFE SCIENCE
GURU GHASIDAS VISHWAVIDYALAYA, KONI
BILASPUR (C.G.) 2020-21**



CERTIFICATE OF ORIGINAL WORK

This is to certify that this dissertation entitled “**Medicinal herbs and it’s uses for immunity assistance during COVID-19**” submitted to the **Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)** is a record of independent dissertation work carried out by **Vanshika Rai**, for the degree of **Bachelor of Science** under my supervision and guidance. This has not been previously submitted for the award of any degree, diploma or any other similar title.

Date:

Name of the Supervisor

Place: Bilaspur (C.G.)

Dr. Sudhir Kumar Pandey

Forwarded to the controller of examination, Guru Ghasidas Vishwavidyalaya in partial fulfilment of the requirement of degree of Bachelor of Science in Botany.

Date:

Signature of

Place: Bilaspur (C.G.)

Head of Department

School of Life Sciences

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



DECLARATION

I hereby declare that the work presented in this dissertation report entitled “**Medicinal herbs and it’s uses for immunity assistance during COVID-19**” submitted for the partial fulfillment of degree of “Bachelor of Science” in Botany was carried out at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

The work was carried out by me under the guidance of **Dr. Sudhir Kumar Pandey, (Assistant Professor)** Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). The work in this dissertation report is original and will remain intellectual property of Department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.). The information presented in this report including pictures in report, the responsibility for the same is solely mine.

Date: 05/07/2021

Place: Bilaspur (C.G)


Vanshika Rai

B.Sc. VI Semester

Roll No. 18203053

Department of Botany

GGV, Bilaspur (C.G.)


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



ACKNOWLEDGEMENT

I express my deepest gratitude to all those who help me and encouraged me to complete my dissertation work entitled “**Medicinal herbs and it’s uses for immunity assistance during COVID-19**” for the degree of Bachelor of Science in Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

I am heartily thankful to my mentor, **Dr. Sudhir Kumar Pandey** whose encouragement, supervision and support from the beginning to the concluding of this dissertation work, help me to give my best attention and performance in this work.

I would like to thank **Dr. S.K. Shahi**, Head of Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) for providing all the necessary facilities during the course of study. I am also thankful to **Dr. A.K. Dixit, Dr. S.K. Prajapati, Dr. V.N. Tripathi, Dr. D.K. Patel, Dr. D. Yadav, Dr. S. Shweta, Dr. R.K. Ahirwar, Dr. Mamta Patra Shahi, Dr. Vineet Kumar, Dr. Preeti Verma, Mr. Deepak K Singh and Ms. Shivali Sharma** of the department for their literature and valuable assistance.

I am also thankful to all my classmates for sharing their literature and valuable assistance. Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, support and encouragement to give my best effort in this dissertation.

Date: 05/07/2021

Submitted by: Vanshika Rai

Place: Bilaspur (C.G.)
18203053

Roll No.

B.Sc. VI Sem. (Department of Botany)

Guru Ghasidas Vishwavidyalaya,

Koni, Bilaspur (C.G.)

CONTENTS

<u>TOPICS</u>	<u>PAGE NO.</u>
ABSTRACT.....	01
INTRODUCTION.....	02-03
TULSI.....	04-05
ASHWAGANDHA.....	05-07
GILOY.....	07-08
BLACK PEPPER.....	09-10
NEEM.....	10-11
BRAHMI.....	11-12
TURMERIC.....	13-14
CLOVE.....	14-15
GARLIC.....	16-17
GINGER.....	17-18
COVID-19 AND IT'S IMPACT.....	19
PREVENTION USING HERBS.....	19-20
CONCLUDING REMARKS.....	21
REFERENCES.....	22-23



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

Signature and Seal of the Head



THE ROLE OF MICROBES IN BIOREMEDIATION: A REVIEW

A Dissertation Report
SUBMITTED ON THE
PARTIAL
FULFILMENT OF THE
DEGREE OF
BACHELOR OF SCIENCE

IN BOTANY

GURU GHASIDAS VISHWAVIDALAYA



SUBMITTED BY VIBHU PANDEY

B. Sc (VI SEMESTER)

(Enrollment No: GGV/18/3332; Roll No.:18203054)

UNDER THE SUPERVISION OF

DR. PREETI VERMA

DEPARTMENT OF BOTANY

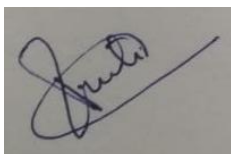
GURU GHASIDAS VISHWAVIDALAYA, KONI,

BILASPUR-495009 (C.G.)

CERTIFICATE

This is certify that dissertation entitled “**The Role of Microbes in Bioremediation: A review**” submitted to the Department of Botany, GGV is a record of independent dissertation work carried out by Vibhu Pandey, for the degree of Bachelor of Science under my supervision and guidance. This has not been previously submitted for the award of any degree diploma or any other similar title.

To the best of my knowledge and belief this dissertation embodies the work done by the candidate.



Dr. PREETI VERMA
Department of Botany,
GGV, Bilaspur C.G.



DECLARATION

I declare that the work done in my dissertation entitled, “**The Role of Microbes in Bioremediation: A Review**” has been carried out by me and do not involve plagiarism. I also certify that: No sentence, equation, diagram, table, paragraph or section has been copied verbatim from previous work unless it is place under quotation marks and duly referenced.

The project work will remain intellectual property of department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

Place:

Date: _____

Signature of the student



ACKNOWLEDGEMENT

First and foremost, I express my deepest gratitude to my supervisor Dr. Preeti Verma, Department of Botany, GGV, Bilaspur, C.G., India; whose inspiration, supervision and support and encouragement to complete my dissertation work entitled “**The Role of Microbes in Bioremediation:A Review**” from preliminary to concluding level on this project. I also thank for his kindness, timely cooperation and guidance for this project.

I would like to thanks Dr. S. K. Shahi, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C. G) for providing all the necessary facilities during the course of study.

Special thanks to my all teachers in the department, namely Dr. A. K Dixit, Dr. S.K. Pandey, Dr. V.N. Tripathi, Dr. S. Shweta, Dr. Amar Abhishek, Dr. Vinita Dixit, Mr. C. Dewangan and all the faculties of the department for their guidance and encouragement during the study.

I am also thankful to all my classmates for sharing their literature and valuable assistance.

Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, support and encouragement to give in this dissertation.

Date:

Place:

Name: Vibhu Pandey

Roll No: 18203054

B. Sc. (Department of botany)

GGV, Bilaspur



CONTENT

S.NO.	<u>TOPIC</u>	PAGE NO.
1.	Abstract	6
2.	Introduction	7-8
3.	Literature review	9-24
	Mechanisms of bioremediation	9-11
	Microbial populations for bioremediation processes	11-12
	Enzymes in bioremediation	12-13
	Microbes in organic pollutant remediation	14-21
	Microbes in heavy metal remediation	21-23
	Role of genetically engineered microorganism	23-24
4.	Conclusion	25
5.	Reference	26-29

Sanjiv K. Shrivastava

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

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.)

***AEGLE MARMELOS- (ANCIENT TREASURE OF MEDICINE)
PHARMACOLOGICAL AND BIOACTIVE PROPERTIES -A REVIEW***

**A DESSERTATION
REPORT SUBMITTED
FOR THE PARTIAL FULFILLMENT OF THE DEGREE
OF BACHELOR OF
SCIENCE
IN BOTANY**



BY

**VINAY
NAIK**

(Enrollment no. GGV/18/3335, Roll no.:-18203055)

UNDER THE SUPERVISION

OF Dr. MAMTA

PATRASHAHI

ASSISTANT PROFESSOR

**DEPARTMENT OF
BOTANY**

GURU GHASIDAS VISHWA

BILASPUR- 495005 (C.G.)

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

Signature and Seal of the Head

2020-
258 2021



CERTIFICATE

This is to certify that the dissertation work entitled as “AEGLE MARMELOS – (ANCIENT TREASURE OF MEDICINES) PHARMOCOLOGICAL AND BIOACTIVE PROPERTIES)- A REVIEW” is a review based on the original work done by VINAY NAIK (Roll no.:- 18203055, Enrollment no.:-GGV/18/3335) Department Of Botany, School Of Life Science , G. G. V. BILASPUR and not previously formed the basis of the award of any Degree, diploma, associate-ship, or any other similar title and it represent entirely an independent work on the part of the candidate.

Place:- Bilaspur

Date:-

Supervisor

Dr. MAMTA PATRA SHAHI

Assistant professor

Department of Botany,

GGV BILASPUR (C.G.)

Forwarded to the controller of the examination Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.) in partial fulfillment of the degree of Bachelor Of Science in Botany Hon's.

Place :- Bilaspur

Date:-

Dr. S. K. SHAHI

Head Of The Department

Department Of Botany,

GGV BILASPUR (C.G.).

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

Signature and Seal of the Head




DECLARATION

I here declare that the work presented in this project dissertation entitled “**AEGLE MARMELOS–(ANCIENT TREASURE OF MEDICINE) PHARMOCOLOGICAL AND BIOACTIVE PROPERTIES- A REVIEW**” is submitted for partial fulfillment of B.Sc.Botany was carried out at Department of Botany , Guru Ghasidas Vishwavidyalaya , Bilaspur (C.G) .

The work was carried out by me under the supervision of **Dr. M.P. SHAHI**, Assistant Professor , Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G). The work in this project dissertation is original and will remain intellectual property of department of Botany , Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

Place :- Bilaspur

Date:-


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

VINAY NAIK
B.Sc. 6th semester
Department of Botany,
GGV Bilaspur (C.G.)



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With the utmost appreciation, I would like to concede respected supervisors Dr. Mamta Patra Shahi for their guidance, selfless efforts, sparing their precious time for guidance and supervision and always being ready for pointing out mistakes and giving suggestions to improve them.

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Special thanks to the teachers in the Department, namely, Dr. .A.K. Dixit, Dr. D.K. Patel, Dr. S.K. Prajapati, Dr. S.K. Pandey, Dr. V.N .Tripathi, Dr. S. Shweta, Dr. R .K. Ahirwar, Dr. D. Yadav, Dr. Vineet Singh, Dr. Preeti Varma, Mr. Deepak Kumar Singh, Ms. Shivali Sharma for encouragement during the study.

I am also like to thanks the lab technician and librarian Mr Naresh Chandraker&Nirmalkar for help in making this projects a successful one.

No words can suffice the efforts taken by my parents for the completion of my project. This work is an outcome of their blessing & constant moral support.

Finally I am thankful from the bottom of my heart to my classmates Neha Patel, Rupa Patel, and Talat Nasreen who encouraged me at each step with great affection.

Last but not least I convey my regards to all those who directly or indirectly contributed to the successful completion of this project work.

Place :- Bilaspur

Date:-

VINAY NAIK
B.Sc. 6th semester
Department of Botany
GGV Bilaspur(C.G.)



Environmental hazards from BALCO

A

Dissertation Report

SUBMITTED ON THE PARTIAL FULFILMENT OF

THE DEGREE OF

BACHELOR OF SCIENCE

IN

DEPARTMENT OF BOTANY GURU

GHASIDAS VISHWAVIDYALAYA



SUBMITTED BY VINITA MONDAL

B. Sc (VI SEMESTER)

(Enrollment No: 18203056)

UNDER THE SUPERVISION OF

DR. SANTOSH KUMAR PRAJAPATI,

ASSISTANT PROFESSOR

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDYALAYA

BILASPUR, CHHATTISGARH

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

Signature and Seal of the Head



CERTIFICATE

This is to certify that the dissertation entitled “Environmental hazards from BALCO” submitted to the Department of BOTANY, GGV is a record of independent dissertation work carried out by Vinita Mondal, for the degree of Bachelor of Science under my supervision and guidance. This has not been previously submitted for the award of any degree diploma or any other similar title.

To the best of my knowledge and belief, this dissertation embodies the work done by the candidate.

Dr. Santosh Kumar Prajapati,

Assistant professor,

Department of Botany,

GGV, Bilaspur C.G.

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

Signature and Seal of the Head



DECLARATION


I declare that the work done in my dissertation entitled, “Environmental hazards from BALCO” has been carried out by me and does not involve plagiarism. I also certify that: No sentence, equation, diagram, table, paragraph, or section has been copied verbatim from previous work unless it is placed under quotation marks and duly referenced. The project work will remain the intellectual property of the Department of Botany, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.).

I, Vinita Mondal hold the responsibility for the content presented in dissertation.

Place:

Date: _____

Signature of the student


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



ACKNOWLEDGEMENT

First and foremost, I express my deepest gratitude to my supervisor Dr. Santosh Kumar Prajapati, Assistant Professor, Department of Botany, GGV, Bilaspur, C.G., India; whose inspiration, supervision, and support and encouragement to complete my dissertation work entitled “ENVIRONMENTAL HAZARDS FROM BALCO” from preliminary to concluding level on this project. I also thank him for his kindness, timely cooperation, and guidance for this project.

I would like to thank Dr. S. K. Shahi, Head of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C. G) for providing all the necessary facilities during the course of study.

Special thanks to all my teachers in the department, namely Dr. A. K Dixit, Dr. S.K. Pandey, Dr. V.N. Tripathi, Dr. S. Shweta, Dr. Amar Abhishek, Dr. Vineeta Dixit, Mr. C Dewangan, and all the faculties of the department for their guidance and encouragement during the study.

I am also thankful to all my classmates for sharing their literature and valuable assistance.

Finally, yet importantly, I take this opportunity to express my gratitude and love towards my parents and beloved family members, for their understanding, support, and encouragement to give in this dissertation.

Date:

Place:

Name: Vinita Mondal

Roll No: 18203056

B. Sc. (DEPARTMENT OF BOTANY)

GURU GHASIDAS VISHWAVIDYALAYA, KONI, BILASPUR



Table of Contents:

ABSTRACT	6-7
INTRODUCTION	7-11
REVIEW OF LITERATURE	12-17
CONCLUSION	18
REFERENCE	19-22

A handwritten signature in black ink, written diagonally, which appears to be 'Sushil K. Shukla'.

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

Signature and Seal of the Head



BIODIESEL PRODUCTION FROM INDUSTRIAL WASTE: A REVIEW

A DISSERTATION SUBMITTED
FOR THE PARTIAL FULFILLMENT OF THE DEGREE

BACHELOR OF SCIENCE

IN
BOTANY (Hons.)



By

YAMINEE KUMHAR

(GGV/18/3340, Roll No.18203057)

UNDER SUPERVISION OF

Dr. VINEET KUMAR

Assistant Professor

DEPARTMENT OF BOTANY

GURU GHASIDAS VISHWAVIDY

KONI, BILASPUR-495009 (C.G)

2021

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

Signature and Seal of the Head



CERTIFICATE

This is to certify that dissertational entitled “**BIODIESEL PRODUCTION FROM INDUSTRIAL WASTE**” is based in the original work done by **MS. YAMINEE KUMHAR** student of B.Sc. in Botany .(Hons.) VI Semester at Department of Botany Session 2020-2021, RollNo.18203057, Enroll.No.GGV/18/3340. It represents entirely an independent work of the candidate. This is an original work and the content embodied in the dissertation have not been submitted for the award of any other degree or diploma in this or any other university.

Place : Bilaspur

Date : 09.07.2021

Dr. VINEET KUMAR
Associate Professor Head
of the Department
Department of Botany
GGU Bilaspur(C.G.)

Forward to the controller of examination, Guru Ghasidas Vishwavidyalaya in partial fulfillment of the degree of **Bachelor of Science in Botany (Hons.)**

Place: Bilaspur Date:

09.07.2021

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

Signature and Seal of the Head

Dr.S. K. Shahi Head
of the Department
Department Of Botany
J Bilaspur (C.G.)



DECLARATION

I, **YAMINEE KUMHAR**, here by declare that the work presented in this project dissertational titled “**BIO DIESEL PRODUCTION FORM INDUSTRIAL WASTE**” submitted for partial fulfilment of the degree of “**Bachelor of Science (Hons.) in Botany**” has been carried out at Department of Botany, Guru Ghasidas Vishwavidyalaya (C.G).

The work was completed by me under the supervision of **Dr. VINEET KUMAR**, Associate professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Koni, Bilaspur (C.G.). the work contain in the Dissertation is original and has been done by myself under the supervision of my supervisor. The Work has not been submitted to another institute for any degree or diploma whenever I have used material form other source I have give due credit to them. By citing them in the text of the dissertation and giving their detailing the reference.

Place: Bilaspur

Date: 09.07.2021

YAMINEE KUMAHAR
B.Sc.(Hons.) VI Semester
Department Of Botany
GGV, Bilaspur (C.G.)

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



ACKNOWLEDGEMENT

First and foremost I would like to express my deep and sincere gratitude to my respected supervisor **Dr. VINEET KUMAR**, Assistant Professor, Department of Botany, Guru Ghasidas Vishwavidyalaya, Koni, Bilaspur (C. G.) for providing me the opportunity to do this work and providing invaluable guidance throughout this work. His dynamism, vision, sincerity and motivation has deeply inspired me.

I am thankful to respect head of the department **Dr. S.K. Shahi HOD**. I would like to thank **Dr.A.K. Dixit, Dr. S. Prajapati, Dr. D.K. Patel, Dr. S.K. Pandey, Dr. V.N.Tripathi, Dr. R.K. Ahirwar, Dr. M.P. Shahi, Dr. S. Shweta, Dr. D. Yadav, Dr. Preeti Verma, Mr.D.K.Singh and Ms.S.Sharma** for giving me the real attitude of research.

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YAMINEE KUMAHAR



TABLE OF CONTENT

1. Introduction
2. Review of literature
 - 2.1 History of biodiesel production
 - 2.2 Definition of biodiesel
 - 2.3. Industrial wastage use as a raw materials
 - 2.3.1 Biodegradable wastage
 - 2.3.2 Non- biodegradable wastage
 - 2.4 Using microbes to produce biodiesel
 - 2.5 Equipment for biodiesel production
 - 2.6 Procedure for biodiesel production
 - 2.7 Properties of biodiesel
 - 2.7.1 physical properties
 - 2.7.2 Chemical properties
 - 2.7.3. Biological properties
 - 2.8 Advantages of biodiesel
 - 2.9 Disadvantages of biodiesel
 - 2.10 “Use of biodiesel is a challenge” for our society
3. Conclusion
4. Reference

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



**ETHNOMEDICINAL PLANTS USED BY TRIBAL PEOPLES OF
RAIGARH CHHATTISGARH (A REVIEW)**



**A Dissertation Report Submitted
FOR THE PARTIAL FULFILLMENT OF THE DEGREE
OF
BACHELOR OF SCIENCE
DEPARTMENT OF BOTANY
BY**

Yogendra Patel

GGV/18/3342, Roll No.18203058

Under the supervision of


Dr. RAMESH KUMAR AHIRWAR

(Assistant Professor) Department of

Botany

Guru Ghasidas Vishwavidyalaya, Bilaspur, C

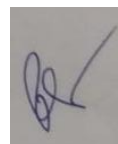
2021


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



CERTIFICATE

This is to certify that dissertation entitled “Ethnomedicinal Plants used by tribal peoples of Raigarh Chhattisgarh (A Review)” is based on the original work done by Yogendra Patel (Enrollment No. GGV/18/3342), Department of Botany, Guru Ghasidas Vishwavidyalaya and this has not previously formed the award of any degree, diploma, associateship or any other similar title and represents entirely an independent work on the part of the candidate.



Place: Bilaspur.

Dr. Ramesh Kumar Ahirwar

Date:

Name of the Supervisor

Forward to the controller of examination, Guru Ghasidas Vishwavidyalaya in partial fulfillment of the degree of Bachelor of Science in botany.

Place: Bilaspur

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

hahi

Date:

Signature and Seal of the Head

Department

Department of Botany



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Yogendra Patel



DECLARATION

I hereby declare that the work presented in the dissertation report entitled "Ethnomedicinal Plants used by tribal people of Raigarh district of Chhattisgarh (A Review)" submitted as partial fulfillment of B.Sc. Botany VI Semester, was carried out by me at Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

The work presented in this project is original and will be intellectual property of the Department of Botany, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). The information presented in this report including, pictures in report, the responsibility for the same will be solely mine.


Place: Bilaspur

Yogendra Patel

Date:

Roll no.: 18203058

B. Sc.VI SEM (Department of Botany)
Guru Ghasidas Vishwavidyalaya, Koni,


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



CONTENTS

1. Introduction	7
2. Tribes in Raigarh	8-11
3. Different medicinal plants	11-31
4. Conclusion	32
5. References	33-34
6. Photographs	35-39

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

Signature and Seal of the Head

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.)
