"GREEN SYNTHESIS AND CHARACTERIZATION OF SILVER NANOPARTICLES USING EXTRACT OF BEE POLLEN AND EVALUTION OF ITS ANTIBACTERIAL AND ANTIOXIDANT ACTIVITIES"

DISSERTATION THESIS

SUBMITTED IN THE PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE OF

MASTER OF SCIENCE IN BIOTECHNOLOGY

(M.Sc. BIOTECHNOLOGY)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Aayushi Pandey

Roll No: 20402001

Enrolment No: GGV/17/3110

Under the supervision of

Dr. Vikas Chandra

Assistant Professor

Department of Biotechnology
School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur, (C.G.), 495009, India

Session: 2021-2022

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बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Aayushi Pandey**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **"Green synthesis of silver Nanoparticles by bee pollen extract and evaluation of its antibacterial and antioxidant activities"**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Chandra

Dr. Vikas Chandra

M.Sc. Dissertation Supervisor

Date: 13/09/2022
Place: Bilaspur

Bhatt

Head of the Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
Dr. Renu Bhatt
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 13/9/22
Place: Bilaspur

CONTENT

BIOREMEDIATION OF METHYLENE BLUE AND WASTEWATER WITH THE HELP OF WHITE FUNGUS EXTRACTED FROM THE SOIL

Dissertation thesis

Submitted in the partial fulfillment for the award of the degree of

master of science in biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Anchal Painkra

Roll No: 20402004

Enrolment No: GGV/16/3009

Valued
12-9-2022

Under the supervision of

Dr. Vijaya Gupta

Assistant Professor

Department of Biotechnology

School of Studies in Interdisciplinary Educationand Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

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Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Anchal Painkra**, a student of M.Sc. (Biotechnology), has carried out his M.Sc. Dissertation Project on **"Bioremediation of methylene blue and wastewater with the help of white fungus extracted from the soil"** This M.Sc. Dissertation thesis is an authentic record of work done from April to September 2022.

Vijaya. Gupta.

Dr. Vijaya Gupta

M.Sc. Dissertation Supervisor

Date: 12/9/22
Place:

Head of the Department
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 12/9/22
Place: Bilaspur

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Targeting Altered Cancer Metabolism using Alkaloids

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Anjali Singh
Roll. No. 20402005.
Enrollment no. GGV/17/3018

Evaluated 12.9.22

Under the supervision of

Dr. Naveen Kumar Vishvakarma
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

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Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Anjali Singh**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on "**Targeting Altered Cancer Metabolism using Alkaloids**". This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Naveen 12/09/2022

Dr. Naveen Kumar Vishvakarma

M.Sc. Dissertation Supervisor

Date: 12/09/2022
Place: Bilaspur

Head of the Department 12/9/22
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Ghasidas Vishwavidyalaya Bilaspur (C.G.)

Date: 12/9/22
Place:

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Anaerobic Fermentation of Rice Straw for The Production of Bio-ethanol as Green Energy Using Bacteria

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Anjali Tiwari
Roll. No. 20402006.
Enrolment no. GGV/20/10103

Under the supervision of

Dr. Madan Sonkar
Assistant Professor

Department of Biotechnology
School of Studies of Interdisciplinary Educationand Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

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www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Anjali Tiwari**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **'Anaerobic Fermentation of Rice Straw for The Production of Bio-ethanol as Green Energy Using Bacteria'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Dr. Madan Sonkar

M.Sc. Dissertation Supervisor

Date: 12/09/22
Place: Bilaspur

Head of the Department

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 12/09/22
Place:

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PRODUCTION AND CHARACTERIZATION OF BIODEGRADABLE BIOPLASTIC USING KINNOW PEELS

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Ankita Redelwar

Roll. No. 20402007

Enrolmentno.GGV/17/3022

Under the supervision of

Valued
12/9/22

Dr. Harit Jha

Assistant Professor

Department of Biotechnology

School of Studies in Interdisciplinary Education and Research Guru Ghasidas Vishwavidyalaya

Bilaspur(C.G.),495009, India

Session: 2021-20

Department of Biotechnology
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)
(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT
Associate Professor, Ph.D.
Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com
Mob. No. - 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **"Production and characterization of biodegradable biop tic using kinnow peels"** is an authentic record of work done for a month from April to September 2022 by Ankita Redelwar, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

12.9.22

Supervisor
Dr. Harit Jha
Assistant Professor, PhD

Date: 12/09/2022
Place: Bilaspur

Head of Department
Dr. Renu Bhatt
Associate Professor
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

CONTENTS

'Study on preparation of a portable water purification system based on multipronged approach'

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Apurv Soni
Roll. No. 20402008.
Enrolment no. GGV/20/10104

Under the supervision of

Dr. Harit Jha
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Educationand Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

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Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Mr. Apurv Soni**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on "**Study on preparation of a portable water filtration system based on multipronged approach**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September 2022.

12.9.22

Dr. Harit Jha
Supervisor

Date: 12/09/2022
Place: Bilaspur

Dr. Renu Bhatt

Head of the Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date:
Place:

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Studies on the Effects of Different Tea Processing on their Polyphenol Contents and Selected Biological Activities

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR(C.G.)
(A Central University established by the Central Universities Act, 2009 No.25 of 2009)

By

Arpan Singha Deo
Roll. No. 20402009.

Enrolmentno.GGV/20/10105

Under the supervision of

Dr. Dhananjay Shukla
Assistant Professor

Department of Biotechnology

The School of Studies in Interdisciplinary Education and Research

Guru GhasidasVishwavidyalaya

Bilaspur(C.G.),495009, India

Session: 2021-2022

राष्ट्रीय अंतर्विषयी विज्ञान तथा प्रौद्योगिकी संस्थान
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वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद् | Council of Scientific & Industrial Research
इन्डस्ट्रियल एस्टेट पी.ओ, पाप्पनंकोड, तिरुवनंतपुरम, भारत- 695 019 | Industrial Estate P.O., Pappanamcode, Thiruvananthapuram, India - 695 019

CERTIFICATE

This is to certify that the dissertation entitled **"Studies on the effects of different tea processing on their polyphenol contents and selected biological activities"** submitted to Guru Ghasidas Vishwavidyalaya in partial fulfillment of the requirements for the award of the degree of **Master of Science in Biotechnology** is an authentic record of project work done by **Mr. Arpan Singha Deo** from April 2022 - October 2022 under my guidance and supervision at Agroprocessing and Natural Products Division, CSIR National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram. It is further certified that the dissertation has not formed the basis for the award of any degree/diploma/fellowship or any other similar title to any candidate of any university or institution.

Dr. Priya. S

डॉ. प्रिया. एस / Dr. PRIYA. S
प्रधान वैज्ञानिक/Principal Scientist
कृषी संसाधन एव प्राकृतिक उत्पाद प्रभाग
Agro Processing and Technology Division
सी एस आई आर - राष्ट्रीय अंतर्विषयी विज्ञान तथा प्रौद्योगिकी संस्थान
CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), Govt. of India
तिरुवनन्तपुरम/Thiruvananthapuram-695019

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ASSESSMENT OF PHYTOCHEMICALS AND ANTIOXIDANT ACTIVITY ON THE LOCALLY FOUND LEAFY VEGETABLES

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Arpita Rathore

Roll. No. 20402010

Enrolment no. GGV/17/3036

Under the supervision of

Dr. Vikas Chandra

Assistant Professor

Department of Biotechnology

School of Studies of Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

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Bilaspur 495 009 (C.G.)
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Arpita Rathore,** a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **"Assessment of phytochemicals and antioxidant activity on the locally found leafy vegetables"**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Chandra

Dr. Vikas Chandra

M.Sc. Dissertation Supervisor

Date: 12/09/2022

Place: Bilaspur

Dshelt

Head of the Department

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग

Head, Department of Biotechnology

गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 12/9/22

Place: Bilaspur (C.G)

CONTENTS

"GREEN SYNTHESIS OF SILVER NANOPARTICLES BY *Helicteres isora* FRUIT EXTRACT AND EVALUATION OF ITS ANTIBACTERIAL AND ANTIOXIDANT ACTIVITIES"

DISSERTATION THESIS

SUBMITTED IN THE PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE OF

MASTER OF SCIENCE IN BIOTECHNOLOGY

(M.Sc. BIOTECHNOLOGY)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Avish Pathak

Roll No: 20402011

Enrolment No: GGV/17/3039

Under the supervision of

Dr. Vikas Chandra

Assistant Professor

Department of Biotechnology
School of Studies of Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur(C.G.),495009, India

Session: 2021-2022

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Bilaspur 495009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Avish pathak**, a student of M.Sc. (Biotechnology), has carried out his M.Sc. Dissertation Project on **"Green synthesis of silver Nanoparticles by *Helicteres isora* fruit extract and evaluation of its antibacterial and antioxidant activities"**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Chandra

Dr. Vikas Chandra

M.Sc. Dissertation Supervisor

Date: 12/09/22
Place: Bilaspur

Bhatt

Head of the Department
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 12/9/22
Place: Bilaspur (C.G)

CONTENT

ISOLATION AND IDENTIFICATION OF BACTERIAL SPECIES DEGRADING PLASTIC WASTE FROM DUMPYARD WASTE MATERIAL

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURUGHASIDASVISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No.25 of 2009)

By

Ayush Madhukar
Roll. No. 20402012

Enrolmentno.GGV/20/10106

Under the supervision of
Dr. D. K. Parihar
Assistant Professor

Department of Biotechnology

The School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No. 25 of 2009)

D R. RENU BHATT **Email- rbhatt.ggu@gmail.com**

Associate professor, Ph.D.Mob. No.- 9406143129

Head of department of Biotechnology

CERTIFICATE

T is is to certify that the dissertation report entitled "**Isolation and identification of b cterial species degrading plastic waste from dumpyard waste material**"is an authentic r cord of work done for a month from April to September 2022 by Ayush Madhukar, a student of PG biotechnology, M.Sc. IV semester. Department of biotechnology of this University.

Supervisor

Dr. D. K. Parihar

Assistant Professor

HoD of Biotechnology

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilasour (C.G.)
Dr. Renu Bhatt

Date: 12/09/2022

Place: Bilaspur

Index

In Vivo effects of rhizospheric bacteria isolated from rhizosphere of Congress grass (*Parthenium hysterophorous* L.) on germination and growth of rice and chickpea

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURUGHASIDASVISHWAVIDYALAYA,BILASPUR(C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Ch kunal
Roll. No. 20402014
Enrolment no. GGV/17/3046

Under the supervision of

Dr. Rajat Pratap Singh
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology
Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.)
(A Central University Established by the Central University Act,2009 No. 25 of 2009)

CERTIFICATE

This is to certify that the dissertation report entitled "*In Vivo* effects of rhizospheric bacteria isolated from rhizosphere of Congress grass (*Parthenium hysterophorous* L.) on germination and growth of rice and chickpea" is an authentic record of work done from June 3, 2022 to September 3, 2022 by Ch kunal, a student of PG Biotechnology M.Sc. IV sem. Department of Biotechnology of this University.

Date: 09/09/2022
Place: Bilaspur

Dr. Rajat Pratap Singh
Supervisor
Assistant Professor

Dr. Renu Bhatt
Associate Professor & Head
Head, Department of Biotechnology
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

List of Contents

"Cell-based and cell-free investigation of the anti-diabetic effect and anti-oxidant activities of different orthodox black tea extracts"

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Chandra Prakash Dewangan

Roll no. – 20402015

Enroll. No. – GGV/20/10107

Under the supervision of

Dr. Renu Bhatt

Associate Professor, PhD

HoD of Department of Biotechnology

The School of Studies in Interdisciplinary Educationand Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Under co-supervision of

Dr. P. Jayamurthy

Principle scientist

Agro-processing and Technology Division, National Institute for interdisciplinary Science and Technology, CSIR-NIIST, Thiruvananthapuram, Kerala (695001), India

Valued 12/9/22

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **"Cell-based and cell-free investigation of the anti-diabetic effect and anti-oxidant activities of different orthodox black tea extracts"** is an authentic record of work done for a month from April to September 2022 by **Chandra Prakash Dewangan,** a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Dr. Renu Bhatt

Associate Professor, PhD

HoD of Biotechnology

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग

Head, Department of Biotechnology

गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Dr. Renu Bhatt

Associate Professor, PhD

Date: 12/09/22

Place: Bilaspur

List of content

"Antimicrobial efficacy of *Andrographis paniculata*, *Bacopa monnieri* & *Azadirachta indica* against oral microbes in toothpaste formulations"

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology
(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Damesh Nayak
Roll. No. 20402016
Enrolment no. GGV/17/3051

Under the supervision of

Dr. Vikas Chandra
Assistant Professor

Department of Biotechnology
School of Studies of Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Mr. Damesh Nayak**, a student of M.Sc. (Biotechnology), has carried out his M.Sc. Dissertation Project on **"Antimicrobial efficacy of *Andrographis paniculata, Bacopa monnieri* & *Azadirachta indica* against oral microbes in toothpaste formulations"**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Date: 12/09/2022
Place: Bilaspur

Dr. Vikas Chandra
M.Sc. Dissertation Supervisor

Date: 13/9/22
Place: Bilaspur

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head of the Department
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

CONTENTS

"Isolation and Identification of Entomopathogen *Aspergillus* species"

DESSIRTATION REPORT

SUBMITTED TO

GURU GHASIDAS VISHWAVIDYALAYA

IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE AWARD OF THE DEGREE OF

MASTER OF SCIENCE IN BIOTECHNOLOGY

By

Ms. Dipti Yadav

M.sc - 4th sem

(Enrollment no. - GGV/20/10108, Roll No.-20402018)

Valued
13/12

UNDER THE GUIDANCE OF

Prof. B.N. Tiwary

CO GUIDANCE OF

DR. VINOD KUMAR NIRMALKAR

Scientist, Department of Plant pathology, BTC CARS, (BSP)

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

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

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

Prof. B.N. Tiwary

Department of Biotechnology

CERTIFICATE

This is to certify that the dissertation report entitled **Isolation and Identification of Entomopathogen *Aspergillus species"*** is an authentic record of work done for a month from April to July 2022 by Dipti Yadav a student of ,M.Sc.IV sem. Department of Biotechnology of this University.

Date: 12/09/22

Place: Bilaspur

Prof. B.N. Tiwary

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

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DEVELOPMENT OF MAHUA FLOWER FLOUR BASED COOKIES WITH IMPROVED FUNCTIONAL AND SENSORIAL ATTRIBUTES

Dissertation Thesis Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

DIVYANSHU GOVIL

Roll. No. 20402019.

Enrolment no. GGV/17/3065

Under the supervision of

Dr. Archana Kumari

Assistant Professor

Department of Biotechnology

School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **"DEVELOPMENT OF MAHUA FLOWER FLOUR BASED COOKIES WITH IMPROVED FUNCTIONAL AND SENSORIAL ATTRIBUTES"** is an authentic record of work done for a month from April to September 2022 by Divyanshu Govil, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor
Archana kumari
Dr. Archana Kumari

Assistant Professor

Date: 12.09.22

Place: Bilaspur

HoD of Biotechnology

विभागाध्यक्ष जैव प्रौद्योगिकी विभाग
Dr. Renu Bhatt
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

CONTENTS:

Effect of pH and temperature on growth of fungus, on the production of the antifungal compound through OSMAC approach

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

JYOTIKA SA
Roll. No. 20402020.
Enrolment no. GGV/17/10141

Under the supervision of

Prof. B.N. TIWARY

Department of Biotechnology
School of Studies in Interdisciplinary Educationand Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Jyotika Sa** , a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **Effect of pH and temperature on growth of fungus, on the production of the antifungal compound through OSMAC approach'** This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Prof. B.N. TIWARY

M.Sc. Dissertation Supervisor

Date:
Place:

Head of the Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 13/09/22
Place: Bilaspur (C.G)

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Dissertation Thesis

On

COMPARATIVE ANALYSIS OF NUTRITIONAL VALUE ON DIFFERENT TYPES OF MUSHROOMS

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA BILASPUR (C.G)
(A central University established by the Central Universities Act, 2009 No.25 of 2009)

Submitted By
JYOTISHA RAJ PATRE
Roll No. 20402021
Enrollment No. GGV/17/3074

Under the Supervision of
Dr. RENU BHATT
Associate Professor and Head of Department

Department of Biotechnology
The School of Studies in Interdisciplinary Education & Research
Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.),495009

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

Dr. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email-rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **Comparative Analysis of Nutritional Value On Different Types of Mushrooms** is an authentic record of work done for a month from April to September 2022 by **Jyotisha Raj Patre**, a student of PG Biotechnology (Hon's), M.Sc. IV semester Department of Biotechnology of this University.

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)
Dr. Renu Bhatt

Supervisor

Dr. Renu Bhatt

Associate Professor, PhD

Date: 13/09/22

Place: Bilaspur

CONTENT

Cloning of CLAVATA gene from *Brassica oleracea* cultivar

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No.25 of 2009)

By

KAJAL SINGH
Roll. No. 20402022.
Enrolment no. GGV/20/10109

Under the supervision of

Dr. Madan Sonkar
(Internal Guide)
Assistant Professor

Dr Prabhakaran Soundararajan
(External Guide)
Staff Scientist III
NIPGR
New Delhi

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Email- rbhatt.ggu@gmail.com

Associate Professor, Ph.D.

Head of Department of Biotechnology

CERTIFICATE

This is to certify that the dissertation report entitled **"Cloning of CLAVATA gene from *Brassica oleracea* cultivar"** is an authentic record of work done from June to September, 2022 by **Kajal Singh,** a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Dr. Madan Sonkar

Assistant Professor, PhD

HoD of Biotechnology

Head, Department of Biotechnology

Dr. Renu Bhatt

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 12/09/22

Place: Bilaspur

Table of Contents

Decolorization of azo dye Orange II by bacteria isolated from red ant (*Oecophylla smaragdina*) and termites

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURUGHASIDASVISHWAVIDYALAYA,BILASPUR(C.G.)
(ACentral UniversityestablishedbytheCentral UniversitiesAct,2009No.25of2009)

By

Kamlesh Singh Kanwar
Roll. No. 20402023
Enrolment no. GGV/17/3077

Under the supervision of

Dr. RajatPratap Singh
Assistant Professor

DepartmentofBiotechnology
The School of Studies in InterdisciplinaryEducationandResearch
GuruGhasidasVishwavidyalaya
Bilaspur(C.G.),495009, India

Session: 2021-2022

Department of Biotechnology
Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.)
(A Central University Established by the Central University Act,2009 No. 25 of 2009)

CERTIFICATE

This is to certify that the dissertation report entitled **"Decolorization of azo dye Orange II by bacteria isolated from red ant (*Oecophylla smaragdina*) and termites"** is an authentic record of work done fromApril, 2022 to August, 2022 by **Kamlesh Singh Kanwar**, a student of PG Biotechnology, M.Sc. IV sem., Department of Biotechnology of this University.

Date: 13/9/22
Place: Bilaspur

Dr. Rajat Pratap Singh
Supervisor
Assistant Professor

Dr. Renu Bhatt
Associate Professor & Head
Head, Department of Biotechnology
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilasour (C.G.)

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REMEDIATION OF HEAVY METALS FROM POLLUTED SOIL USING EXTRACELLULAR POLYMERIC SUBSTANCES

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No.25 of 2009)

By

Kasturi Mahapatra
Roll. No. 20402024.
Enrolment no. GGV/20/10110

Under the supervision of

Dr. Madan Sonkar
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Kasturi Mahapatra**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **''REMEDIATION OF HEAVY METALS FROM POLLUTED SOIL USING EXTRACELLULAR POLYMERIC SUBSTANCES'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Dr. Madan Sonkar
M.Sc. Dissertation Supervisor

Date: 12/09/22
Place: Bilaspur

Date: 13/9/22
Place: Bilaspur

Head of the Department
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

CONTENTS

Production and Extraction of Extracellular Polymeric Substances Released by *Pseudomonas* Species

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No.25 of 2009)

By

Khileshwari Nag
Roll. No. 20402025.
Enrolment no. GGV/20/10111

Under the supervision of

Dr. Madan Sonkar
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **"Production and Extraction of Extracellular Polymeric Substances Released by *Pseudomonas* Species"** is an authentic record of work done for a month from April to September 2022 by Khileshwari Nag student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Bio technology of this University.

Su ervisor

Dr Madan Sonkar

Ass stant Professor, PhD

HoD of Biotechnology विभाग
Head, Department of Biotechnology
Dr. Renu Bhatt
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilasour (C.G.)

Date: 12/09/22

Place: Bilaspur

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Green Synthesis of Zinc oxide nanoparticles using *Lantana camara* leaf and their antibacterial activity

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Lokendra singh dhruw

Roll. No. 20402026
Enrolment no. GGV/20/10112

Under the supervision of

Dr. Archana kumari
Assistant Professor

Department of Biotechnology
School of Studies of Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Mr. Lokendra singh dhruw**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **'Green synthesis of Zinc oxide nanoparticles using *Lantana camara* leaf and their antibacterial activity'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Dr. Archana kumari

M.Sc. Dissertation Supervisor

Date: 13-09-22
Place: Bilaspur

Head of the Department

Date: 13-09-22
Place: Bilaspur

INDEX

Isolation and Identification of Bacterial Isolates from Arpa River Bilaspur(C.G.) and their Potential for Wastewater Treatment.

A

M.SC. DISSERTATION THESIS

Submitted in the partial fulfillment for the award of the degree of

Master of science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR(C.G.)

(A Central University established by the central Universities Act, 2009, No.25 of 2009)

By

MAHENDRA

ROLL. NO. 20402027

Enrolment no. GGV/20/10113

Under the supervision of

Dr. D.K. Parihar

Assistant professor

Department of Biotechnology

The school of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya

Bilaspur(C.G.), 495009, India.

Session: 2021-2022

DEPARTMENT OF BIOTECHNOLOGY

GURU GHASIDAS VISHWAVIDYALAYA BILASPUR, (C.G.)

(A Central university established by the central university Act, 2009 No.25 of 2009)

DR. D.K. PARIHAR
Email-parihardkp@gmail.com
Assistant professor, Ph.D.
Mob no.9977170733

CETIFICATE

This is to certify that the dissertation report entitled **"Isolation and Identification of bacterial isolates from Arpa river Bilaspur(C.G.) And Their potential for wastewater treatment."** Is an authentic record of PG Biotechnology M.SC. 4th sem. Department of biotechnology of this University.

Supervisor
Dr. D.K. Parihar
Assistant professor, Ph.D.

13.9.22
HOD
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)
Dr. Renu Bhatt

Date- 13.9.22
Place- G.G.V. Bilaspur

CONTENTS PAGE

Bioprospecting drought and salinity alleviating bacteria from the Himalayan region for plant growth promotion

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No.25 of 2009)

By

MAMTA SAHU

Roll no. 20402028

ENROLLMENT No. GGV/20/10114

Under the supervision of

Dr. Rajat Pratap Singh
Assistant Professor

Department of Biotechnology

The School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

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

(A Central University Established by the Central University Act,2009 No. 25 of 2009)

CERTIFICATE

This is to certify that the dissertation report entitled **"Bioprospecting drought and salinity alleviating bacteria from Himalayan region for plant growth promotion"** is an authentic record of work done from June 3, 2022 to September 3, 2022 by Mamta Sahu student of PG Biotechnology, M.Sc. IV sem. Department of Biotechnology of this University.

Date: 09/09/2022

Place: Bilaspur

Dr. Rajat Pratap Singh

Supervisor

Assistant Professor

Dr. Renu Bhatt

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग

Associate Professor & Head

गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

List of Contents

Phytochemical analyses and antimicrobial activity of some medicinal plants

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR(C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Mayur Wahane
Roll. No. 20402030.
Enrolment no. GGV/17/3098

Under the supervision of

Dr. Rajat Pratap Singh
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology
Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.)
(A Central University Established by the Central University Act,2009 No. 25 of 2009)

CERTIFICATE

This is to certify that the dissertation report entitled **"Phytochemical analyses and antimicrobial activity of some medicinal plants"** is an authentic record of work done from April, 2022 to August, 2022 by **Mayur Wahane**, a student of PG Biotechnology, M.Sc. IV sem., Department of Biotechnology of this University.

Date: 14.9.22
Place: Bilaspur

Dr. Rajat Pratap Singh
Supervisor
Assistant Professor

Dr. Renu Bhatt
Associate Professor & Head
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

A

DISSERTATION REPORT ON

"ISOLATION AND CHARACTERIZATION OF *PAECILOMYCES LILACINUS* FROM SOIL"

SUBMITTED TO
GURU GHASIDAS UNIVERSITY
IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF

MASTER OF SCIENCE IN BIOTECHNOLOGY

By

MEENAKSHI BARETH

M.Sc. (IV SEMESTER)

(Enrolment no. - GGV/20/10144, Roll No.-20402031)

2021-2022

UNDER THE GUIDANCE OF

Dr. RENU BHATT

Associate Professor, PhD

HoD of Biotechnology (GGU)

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

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

Dr. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **"Isolation and characterization of *Paecilomyceslilacinus* from soil"** is an authentic record of work done in the months from April to July 2022 by Meenakshi Bareth, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Dr. Renu Bhatt

Associate Professor, PhD

Head of Department

Dr. Renu Bhatt
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.)

Date: 13/9/22

Place: Bilaspur

CONTENTS

PRIMARY SCREENING OF COMPOUNDS AGAINST NON-TUBERCULOUS MYCOBACTERIA

A DISSERATATION THESIS

SUBMITTED IN PARTIAL FULFILLMENT FOR AWARD OF DEGREE OF

MASTER OF SCIENCE IN BIOTECHNOLOGY
(M.Sc. Biotechnology)
Session 2021-2022

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act 2009, Act No. 25 of 2009)

BY

MOHAMMAD SHAHAN
M.Sc. Biotechnology, IV SEMESTER
ENROLLMENT NO- GGV/20/10142
Department of Biotechnology

Valued
13/6/22

UNDER THE SUPERVISION OF

Dr. ARUNAVA DASGUPTA
Principal Scientist,
Division of Molecular Microbiology and Immunology
CSIR- Central Drug Research Institute, Lucknow 226031, INDIA
&
Dr. DHANANJAY SHUKLA
Assistant Professor, Department of Biotechnology
GURU GHASIDA VISHWAVIDYALAYA, BILASPUR

CSIR-Central Drug Research Institute

Department of Biotechnology

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

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

Dr. Renu Bhatt
Head of the Department
Department of Biotechnology

Office-07752-260405
Email.rbhatt37@yahoo.com

CERTIFICATE

This is to certify that the dissertation entitled **"Primary Screening of Compounds Against Non-Tuberculous Mycobacteria"** is an authentic record of research work carried out by **Mohammad Shahan**, in partial fulfilment of the requirements for the degree of M.Sc. Biotechnology in IV Semester in the Department of Biotechnology, Guru Ghasidas Vishwavidyalaya.

Date: 13/09/22
Place: Bilaspur

Dr. Renu Bhatt

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

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A

DissertationReport

On

MICROBIAL PROFILE AND SAFETY OF FRESH JUICE SOLD IN POLLUTED AREA AT BILASPUR CITY

Submitted

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

Master of Science in Biotechnology

By

MUSKAN GUPTA

M.Sc. IV Semester

GGV/20/10115

Roll no –20402033

2021-22

Under the supervision of

Dr.Renu Bhatt

(Associate Professor)

Valued
13.9.22

Department of Biotechnology

Guru GhasidasVishwavidyalayaBilaspur (C.G) 495006

(A CENTRAL UNIVERSITY)

Department of Biotechnology

Guru GhasidasVishwavidyalaya, Bilaspur (C.G) 495006

(A Central University established by central university Act2009 No.25 of 2009)

CERTIFICATE

This is to certify that the dissertation review entitled **"MICROBIAL PROFILE AND SAFETY OF FRESH JUICE SOLD IN POLLUTED AREA AT BILASPUR CITY"** is an authentic collection of information submitted by **MUSKAN GUPTA,** a student of M.Sc., Biotechnology under supervision of **Dr.Renu Bhatt**. The work presented in this dissertation review is original and has not been submitted anywhere else for the award of this or any other degree.

Date: 13/9/22

Place: Bilaspur

Dr. Renu Bhatt

Supervisor

Dr.Renu Bhatt

Associate Professor &
Head, Department of Biotechnology
Guru Ghasidas Vishwavidyalaya, Bilasour (C.G.)

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)

Head of Department

Screening And Study Of Amylase Activity Of Halophilic Bacteria

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Nand Kishor
Roll. No. 20402034.
Enrolment no. GGV/17/3225

Under the supervision of

Dr. Harit Jha
Assistant Professor

Department of Biotechnology
School of Studies in Interdisciplinary Educationand Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **'Screening And Study Of Amylase Activity Of Halophilic Bacteria'** is an authentic record of work done for a month from April to September 2022 by **Nand Kishor**, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

12.9.22

Supervisor

Dr. Harit Jha

Assistant Professor, PhD

Head of Department

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Dr. Renu Bhatt

Date: 12.9.22

Place: Bilaspur

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Association of Socioeconomic Status with Obesity Measures in Adult Population of Chhattisgarh State

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Nansi Namdeo
Roll. No. 20402035

Enrollment no. GGV/20/10116

Under the supervision of

Dr. Dhananjay Shukla
Assistant Professor

Department of Biotechnology

School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session:
2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Email- rbhatt.ggu@gmail.com

Associate Professor, Ph.D.

Mob. No.- 9406143129

Head of Department of Biotechnology

CERTIFICATE

This is to certify that the dissertation report entitled "Association of Socioeconomic Status with Obesity Measures in Adult Population of Chhattisgarh State" is an authentic record of work done for a month from April to September 2022 by Nansi Namdeo, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Dr. Dhananjay Shukla

Assistant Professor

HoD of Biotechnology
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)
Dr. Renu Bhatt

Date: 13.9.22

Place: Bilaspur

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Role of Ascorbic Acid in Host-*Rhizoctonia solani* Interaction

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Nisha Sao

Roll. No. 20402036

Enrolment no. GGV/20/10117

Valued

Under the supervision of

Dr. Dhananjay Shukla

Assistant Professor

Department of Biotechnology

The School of Studies in Interdisciplinary Educationand Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Email- rbhatt.ggu@gmail.com

Associate Professor, Ph.D.

Head of Department of Biotechnology

CERTIFICATE

This is to certify that the dissertation report entitled **"Role of ascorbic acid in host-*Rhizoctonia solani* interaction"** is an authentic record of work done for a month from April to September 2022 by **Nisha Sao**, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Dhananjay 13-9-22

Supervisor

Dr. Dhananjay Shukla

Assistant Professor

RBhatt

HoD of Biotechnology
Head, Department of Biotechnology
Dr. Renu Bhatt
Guru Ghasidas Vishwavidyalaya, Bilasour (C.G.)

Date: 13.9.22

Place: Bilaspur

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Geographical Indications of Chhattisgarh: An Aspect of Bioeconomy

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Pallavi Shukla

Roll. No. 20402037

Enrolment no. GGV/17/3129

Valued
13/9/22

Under the supervision of

Prof. B.N. Tiwary
Dean
School of I.E.R

Department of Biotechnology

The School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the project work entitled **"Geographical Indications Of Chhattisgarh: An Aspect of Bioeconomy"** has been carried out entirely by Pallavi Shukla (Exam Roll No. 20402037) a student of PG Biotechnology (Hon's),M.Sc IV th Semester submitted to Guru Ghasidas Vishwavidyalaya, Koni Bilaspur (C.G) for consideration in partial fulfilment of requirements for the award of the degree of Master of Science in Biotechnology.

The research work was carried out by her under my supervision from month of April to September 2022 and that the candidate has fulfilled the requirements of the regulation laid down for the degree of Master of Science in Biotechnology.

Supervisor

Prof. B.N. Tiwary

Dean

HoD of Biotechnology
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
Dr. Renu Bhatt
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date 13-09-22

Place: Bilaspur

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Associations of Physical Activity with Obesity Measures in the Adult population of Bilaspur, Chhattisgarh

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Parul Yadav
Roll. No. 20402038.
Enrollment no. GGV/17/3130

Under the supervision of

Dr. Dhananjay Shukla
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Parul Yadav**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **'Associations of Physical Activity with Obesity Measures in the Adult population of Bilaspur, Chhattisgarh'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Dr. Dhananjay Shukla
M.Sc. Dissertation Supervisor

Date: 13-09-2022
Place:

Head of the Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 13.9.22
Place: Bilaspur

Contents

"DECOLORIZATION OF TRYPAN BLUE DYE BY FUNGI"

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Piyush Painkra
Roll. No. 20402039.
Enrolment no. GGV/17/3226

Under the supervision of

Dr. Vikas Chandra
Assistant Professor

Department of Biotechnology
School of Studies of Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Mr. Piyush Painkra**, a student of M.Sc. (Biotechnology), has carried out his M.Sc. Dissertation Project on **"Decolorization of trypan blue by fungi"**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Date: 13/09/2022
Place: Bilaspur

Dr. Vikas Chandra
M.Sc. Dissertation Supervisor

Date: 13/9/22
Place: Bilaspur

Head of the Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

CONTENTS

"ROLE OF TGF- β EXPRESSION IN HUMAN COLON CANCER"

A project dissertation report submitted to

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

In the partial fulfillment of the requirement for the award of

MASTER'S DEGREE in BIOTECHNOLOGY

by

POLEPALLY DEEPIKA

(GGV/20/10119)

Undertaken at

Valued
29/12

Department of Molecular biology.

INSTITUTE OF GENETICS AND HOSPITAL FOR GENETIC DISEASES.

Osmania University, Hyderabad, Telangana. -500016.

2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

Dr. RENU BHATT

Associate Professor, HoD.

Email- RBHATT.GGU@gmail.com

CERTIFICATE

This is to certify that the dissertation report entitled **"Role of TGF- β expression in human colon cancer"** submitted to Guru Ghasidas University in partial fulfillment of the requirements for the award of Master's Degree in Biotechnology is an authentic record of project work done by **Ms. Polepally Deepika** (GGV/20/10119) at Institute of Genetics and Hospital for Genetic diseases, Osmania university, Hyderabad, Telangana, under the guidance of Dr. B. Vijaya Lakshmi, Supervisor & Director, Molecular biology department from April – August 2022. It is further certified that the dissertation has not formed the basis for the award of any degree or any other similar title to any candidate of any university or institution.

Date: 12/9/22
Place: Bilaspur

(Dr. Renu Bhatt)
Associate Professor,
Head of the Department.

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Ghasidas Vishwavidyalaya, Bi

CONTENTS

ISOLATION OF ASPERGILLUS FLAVUS FROM THE SOIL SAMPLE & TO CHECK THE PATHOGENCITY OF ASPERGILLUS FLAVUS

DISSERTATION REPORT SUBMITTED TO
GURU GHASIDAS UNIVERSITY
IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF

MASTER OF SCIENCE IN BIOTECHNOLOGY

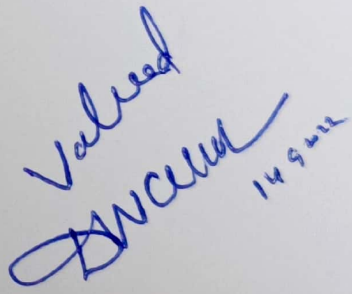
By

POOJA SHARMA

M.Sc. (IV SEMESTER)

(Enrolment no. - GGV/20/10120, Roll No.-20402041)

2021-2022



UNDER THE GUIDANCE OF

Dr. RENU BHATT

Associate Professor, PhD

HoD of Biotechnology (GGU)

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

session:2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT **Email-** rbhatt.ggu@gmail.com

Associate Professor, Ph.D. **Mob. No.- 9406143129**

Head of Department of Biotechnology

CERTIFICATE

This is to certify that the dissertation report entitled **"isolation of Aspergillus flavus from the soil sample and to check the pathogencity of aspergillus flavus"** is an authentic record of work done for a month from April to July 2022 by pooja sharma, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Dr. Renu BhattDr. Renu Bhatt

Associate Professor, PhDAssociate Professor

HoD of Biotechnology

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 14.9.22 Place: Bilaspur

table of content

Study of Antibiotic Resistance Pattern among Bacteria Isolated from fish

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Pooja Sonwane
Roll. No. 20402042

Enrolmentno.GGV/20/10121

Under the supervision of

Dr. D.K. Parihar
Assistant Professor

Department of Biotechnology

The School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.),495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No. 25 of 2009)

DR. RENU BHATT

Associate professor, Ph.D.

Head of department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled "**Study of Antibiotic Resistance Pattern among the Bacteria Isolated from Fish**" is an authentic re... for a month from April to September 2022 by Pooja Sonwane, a student of ... M.Sc. IV semester. Department of biotechnology of this University.

14/09/22

HoD of Biotechnology

Dr. Renu Bhatt
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Supervisor

Dr. D.K.Parihar

Assistant Professor

Date 14/09/22

Place : Bilaspur

Table of Content

"Use of Potent Bacterial Isolate to treat the Sewage Wastewater Pollutant"

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURUGHASIDAS VISHWAVIDYALAYA, BILASPUR(C.G.)

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

By

Pragyan Kaushik

Roll. No. 20402044.

Enrolmentno.GGV/20/10122

Under the supervision of

Dr. Madan Sonkar

Assistant Professor

Department of Biotechnology

The School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

of Department of Biotechnology

Email-rbhatt.ggu@gmail.com

Mob. No.- 9406143129 Head

CERTIFICATE

This is to certify that the dissertation report entitled **"Use of Potent Bacterial Isolate to treat the Sewage Wastewater Pollutant"** is an authentic record of work done for a month from April to September 2022 by [illegible]hik student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

12/9/22

Supervisor

Dr. Madan Sonkar

Assistant Professor, PhD

Rbhatt 14/9/22

HoD of Biotechnology

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
Dr. Renu Bhatt
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: September, 2022

Place: Bilaspur

Cancer Metabolism Modulation using COX Inhibitors

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Pramesh Sinha
Roll. No. 20402045.
Enrollment no. GGV/17/3139

Under the supervision of

Dr. Naveen Kumar Vishvakarma
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Mr. Pramesh Sinha**, a student of M.Sc. (Biotechnology), has carried out his M.Sc. Dissertation Project on **''Cancer Metabolism Modulation using COX Inhibitors'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Date: 12/09/2022
Place: Bilaspur

12/09/2022

Dr. Naveen Kumar Vishvakarma
M.Sc. Dissertation Supervisor

Date: 14/09/22
Place: Bilaspur

Head of the Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

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A modified antimicrobial ceramic filter based on water microfiltration and purification system for obtaining potable water

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURUGHASIDASVISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No.25of2009)

By

Priti Janghel
Roll. No. 20402046.

Enrolment no.GGV/17/3018

Under the supervision of

Dr. Harit Jha
Assistant Professor

Department of Biotechnology

School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No. 25 of 2009)

DR. RENU BHATT **Email- rbhatt.ggu@gmail.com**

Associate Professor,Ph.D. Mob. No.- 9406143129

Head of Department of Biotechnology

CERTIFICATE

This is to certify that the dissertation report entitled "**A modified antimicrobial ceramic filter based on water microfiltration and purification system for obtaining potable water**" is an authentic record of work done for a month from April to September 2022 by Priti Janghel, a student of PG Biotechnology, M.Sc. IV semester. Department of Biotechnology of this University.

Supervisor

Dr. Harit Jha

Assistant Professor

HoD of Biotechnology

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 14.9.22

Place: Bilaspur

TABLE OF CONTENTS

"Identifying Metabolic Targets of Anti-diabetic Drugs in Cancer and their In-Vitro Validation"

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No.25 of 2009)

By

PRIYANKA BHAKAT
Roll No. 20402047
Enrolment no. GGV/17/3227

Under the supervision of

Dr. Naveen Kumar Vishvakarma
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Priyanka Bhakat**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **'Identifying Metabolic Targets of Anti-diabetic Drugs in Cancer and their In-Vitro Validation'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Naveen 12/09/2022

Dr. Naveen Kumar Vishvakarma

M.Sc. Dissertation Supervisor

Date: 12/09/2022
Place: Bilaspur.

Head of the Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 13.9.22
Place:

LIST OF CONTENTS

"Cloning of *IFNL3* gene in mammalian expression vector"

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Rakesh Kumar Patail

Roll. No. 20402048

Enrolment no. GGV/17/3153

Under the supervision of

Dr. Vikas Chandra
Assistant Professor

Department of Biotechnology

School of Studies of Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

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Guru Ghasidas Vishwavidyalaya
Bilaspur 495009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Rakesh Kumar Patail**, a student of M.Sc. (Biotechnology), has carried out his M.Sc. Dissertation Project on **"Cloning of *IFNL3* gene in mammalian expression vector"**.

This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Date: 15/09/2022
Place: Bilaspur

Chandra

Dr. Vikas Chandra
M.Sc. Dissertation Supervisor

Date: 15/09/2022
Place: Bilaspur

15.9.22

Head of the Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

"Phytochemical Analysis and Antioxidant Activities of *Bryophyllum Pinnatum* Leaves Extracts"

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By
Ranjana Khandekar
Roll.No.20402049
Enrolment No.GGV/20/10124

Under The supervision of

Dr. Archana Kumari

Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

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

(A central university established by the Central University Act, 2009 No.25 of 2009)

Dr. Renu Bhatt

Associate Professor,

Head of Biotechnology Department

Email id- rbhatt.ggu@gmail.com

Contact Number- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **"Phytochemical Analysis and Antioxidant Activities of *Bryophyllum Pinnatum* Leaves Extracts"** is an authentic record of work done for a month from April to July 2022 by Ranjana khandekar , a student of PG Biotechnology (Hon's) , M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor
Dr. Archana Kumari
Assistant professor

HOD of Biotechnology
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
Dr. Renu Bhatt
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 13.09.22

Place: Bilaspur

Isolation and characterization of antifungal metabolites produced by bacterial endophytes against *Sclerotium rolfsii*, a soil-borne fungal pathogen

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURUGHASIDASVISHWAVIDYALAYA,BILASPUR(C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Rohit Mishra
Roll. No. 20402050
Enrolment no. GGV 15/3144

Under the supervision of

Dr. Rajat Pratap Singh
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology
Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.)
(A Central University Established by the Central University Act,2009 No. 25 of 2009)

CERTIFICATE

This is to certify that the dissertation report entitled **"Isolation and characterization of antifungal metabolites produced by bacterial endophytes against *Sclerotium rolfsii*"** is an authentic record of work done from June 3, 2022 to September 3, 2022 by **Rohit Mishra**, a student of PG Biotechnology, M.Sc. IV sem. Department of Biotechnology of this University.

Date: 09/09/2022
Place: Bilaspur

Dr. Rajat Pratap Singh
Supervisor
Assistant Professor

13.9.22
Dr. Renu Bhatt
Associate Professor & Head
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

List of Contents

Identification and Validation of Metabolic Targets of Cancer through Anti-Cardiac Drugs

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Sakshi Mirjha
Roll. No. 20402052.
Enrolment no. GGV/17/3230

Under the supervision of

Dr. Naveen Kumar Vishvakarma
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Educationand Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

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Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Sakshi Mirjha**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **'Identification and Validation of Metabolic Targets of Cancer through Anti-Cardiac Drugs.'** This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Naveen 12/9/2022

Dr. Naveen Kumar Vishvakarma
M.Sc. Dissertation Supervisor

Date: 12/09/2022
Place: Bilaspur

Head of the Department
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 12/9/22
Place: Bilaspur

LIST OF CONTENTS

"ANTIOXIDANT ACTIVITY OF BACTERIAL EXOPOLYSACCHARIDE"

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

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

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

By

Sangita Jatwar

Roll. No. 20402054

Enrollment No. GGV/17/3232

Under the supervision of

Mrs. Alka Ekka

Assistant Professor

Department of Biotechnology

School of Studies in Interdisciplinary Educational Research

Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.),495009, India

Session: 2021-2022

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Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैवप्रौद्योगिकीविभाग

Department of Biotechnology

Certificate

This is to certify that **Sangita Jatwar**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **''Antioxidant activity of bacterial exopolysaccharide'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

14/09/22

Mrs. Alka Ekka

M.Sc. Dissertation Supervisor

Date:

Place:

Head of the Department
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilasour (C.G.)

Date: 14.9.22

Place: Bilaspur

Contents

Phytochemical screening and antioxidant activity of *Zingiber purpureum* extract using fenton reaction

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009No.25of2009)

By

Satya Singh

Roll No. 20402055

Enrolment no. GGV/17/3233

Under the supervision of

Dr. Vikas Chandra

Assistant Professor

Department of Biotechnology

School of Studies of Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

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Bilaspur 495 009 –C.G.
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जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Satya Singh**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on '**Phytochemical screening and antioxidant activity of *Zingiber purpureum* extract using fenton reaction'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Dr. Vikas Chandrra

M.Sc. Dissertation Supervisor

Date: 14/09/2022
Place: Bilaspur

Head of the Department

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 14/09/2022
Place: Bilaspur

CONTENT

"The Propitious Advancement of Flavored Wine Fermentation Using Fruit Juice Along with Herbal Extracts for The Production of Wine with Medicinal Potential"

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Set Kumar Nayak
Roll. No. 20402056.
Enrolment no. GGV/17/3180

Under the supervision of

Mrs. Alka Ekka
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

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Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Mr. Set Kumar Nayak**, a student of M.Sc. (Biotechnology), has carried out his M.Sc. Dissertation Project on **'The Propitious Advancement of Flavored Wine Fermentation Using Fruit Juice Along with Herbal Extracts for The Production of Wine with Medicinal Potential'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

13/09/22

Mrs. Alka Ekka

M.Sc. Dissertation Supervisor

Date: 13/09/22
Place: Bilaspur

Head of the Department
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 14.9.22
Place: Bilaspur

CONTENTS

Phytochemical screening and antimicrobial activity of *Dioscorea bulbifera* rhizome

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Shail Sahu

Roll. No. 20402057

Enrolment no. GGV/17/3234

Under the supervision of

Dr. Vikas Chandra

Assistant Professor

Department of Biotechnology

School of Studies of Interdisciplinary Educationand Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
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Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Shail Sahu**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on "**Phytochemical screening and antimicrobial activity of *Dioscorea bulbifera***". This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Dr. Vikas Chandra

M.Sc. Dissertation Supervisor

Date: 14/09/2022
Place: Bilaspur

Head of the Department
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 14/09/2022
Place: Bilaspur

CONTENT

Exploration of phylloplane and rhizosphere microbial diversity of rice plants for its plant growth promotion (PGP) and biocontrol potential

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA,BILASPUR(C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Sharda Patel
Roll. No. 20402058
Enrolment no. GGV/20/10127

Under the supervision of

Dr. Rajat Pratap Singh
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology
Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.)
(A Central University Established by the Central University Act,2009
No. 25 of 2009)

CERTIFICATE

This is to certify that the dissertation report entitled **"Exploration of phylloplane and rhizosphere microbial diversity of rice plants for its plant growth promotion and biocontrol potential"** is an authentic record of work done from June 3, 2022 to September 3, 2022 by Sharda Patel, a student of PG Biotechnology, M.Sc. IV sem. Department of Biotechnology of this University.

Date: 09/09/2022
Place: Bilaspur

Dr. Rajat Pratap Singh
Supervisor
Assistant Professor

4/9/22
Dr. Renu Bhatt
Associate Professor & Head
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilasour (C.G.)

List of Contents

"Bio-fertilizer at home"

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Shivani Sharma
Roll. No. 20402059
Enrolment no. GGV/10/10128

Under the supervision of

Mrs. Alka Ekka
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Educationand Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

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Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Shivani Sharma,** a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **''Bio-fertilizer at home'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

14/09/22

Mrs. Alka Ekka

M.Sc. Dissertation Supervisor

Date: 14/09/22
Place: Bilaspur

Dr. Renu Bhatt

Head of the Department
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 14/09/22
Place: Bilaspur

LIST OF CONTENT

DEVELOPMENT OF EUGENOL INFUSED CHOCOLATE FLAVOURED PEA BASED MILK ALTERNATIVE

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Shobhit Khamhari

Roll. No. 20402060.

Enrolment no. GGV/17/3235

Under the supervision of

Dr. Archana Kumari

Assistant Professor

Department of Biotechnology

School of Studies in Interdisciplinary Educationand Research

Guru Ghasidas Vishwavidyalaya

Koni, Bilaspur (C.G.), 495009, India

14.9.2022

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled ***"Development of Eugenol Infused Chocolate Flavoured Pea based Milk Alternative"*** is an authentic record of work done for a month from April to September 2022 by Shobhit Khamhari , a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Dr. Archana Kumari

Assistant Professor

Date: 14.09.22

Place: Bilaspur

RBhatt

HoD of Biotechnology

Dr. Renu Bhatt

विभाग... भाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

CONTENTS

Exploring Metabolic Modulatory Potential of Fluoroquinolone Antibiotics against Cancer

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Shreyas Chandra
Roll. No. – 20402061

Enrolment no. - GGV/17/3236

Under the supervision of

Dr. Naveen Kumar Vishvakarma
Assistant Professor

Department of Biotechnology

The School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

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बिलासपुर ४९५००९ छ.ग.

www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya

Bilaspur 495 009 –C.G.

www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Mr. Shreyas Chandra**, a student of M.Sc. (Biotechnology), has carried out his M.Sc. Dissertation Project on **'Exploring Metabolic Modulatory Potential of Fluoroquinolone Antibiotics against Cancer'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September 2022.

Naveen 14/9/22

Dr. Naveen Kumar Vishvakarma

M.Sc. Dissertation Supervisor

Date: 14/9/22

Place: Bilaspur

Head of the Department

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.)

Date: 15.9.22

Place: Bilaspur

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Effect of salt and minerals on growth of fungi isolated from soil on production of antifungal through OSMAC approach

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Shristi Panigrahi

Roll No. 20402062

Enrolment no. GGV/20/10129

Under the supervision of

PROF. B.N. Tiwary

Dean of Life Science

Valued
14/9/22

Department of Biotechnology

School of Studies in Interdisciplinary Educationand Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email-rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled**"Effect of salt and minerals on growth of fungi isolated fr n soil on production of antifungal through OSMAC approach"** is an authentic record of rk done for a month from April to September 2022 by ShristiPanigrahi, a student of PG Bi chnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Prof. B.N. Tiwary

HoD of Biotechnology

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
Dr. Renu Bhatt
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 14.9.22

Place: Bilaspur

CONTENTS

Investigation on Antimalarial Drugs to Target Cancer Metabolism

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Shriya Soni
Roll. No. 20402063
Enrolment no. GGV/17/3186

Under the supervision of

Dr. Naveen Kumar Vishvakarma
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Educationand Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Shriya Soni**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **''Investigation on Antimalarial Drugs to Target Cancer Metabolism'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Naveen 12/09/2022

Dr. Naveen Kumar Vishvakarma

M.Sc. Dissertation Supervisor

Date: 12/09/2022
Place: Bilaspur

Head of the Department

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 15.9.22
Place: Bilaspur

Contents

Characterization of Tamoxifen Resistant MCF7 Cells

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Siddharth Bhardwaj
Roll. No. 20402065
Enrolment no. GGV/17/3237

Under the supervision of

Dr. Vikas Chandra
Assistant Professor

Department of Biotechnology
School of Studies of Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
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Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Mr. Siddharth Bhardwaj**, a student of M.Sc. (Biotechnology), has carried out his M.Sc. Dissertation Project on **"Characterization of Tamoxifen Resistant MCF7 Cells"**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Vchandra

Dr. Vikas Chandra

M.Sc. Dissertation Supervisor

Date: 14/09/2022
Place: Bilaspur

Head of the Department

Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 14.9.22
Place: Bilaspur

CONTENTS

Phytochemical screening and antibacterial activity of *Curcuma caesia* rhizome extract

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Sonali Bharti

Roll. No. 20402066

Enrolment no. GGV/17/3238

Under the supervision of

Dr. Vikas Chandra

Assistant Professor

Department of Biotechnology

School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Sonali Bharti, a** student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on "**Phytochemical Screening and antibacterial activity of Curcuma caesia**". This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

Chandra

Dr. Vikas Chandra

M.Sc. Dissertation Supervisor

Date: 14/09/2022
Place: Bilaspur

Bhatt

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head of the Department
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.)

Date: 14.9.22
Place: Bilaspur

CONTENT

"ENDOPHYTIC DIVERSITY OF TWO GENERA OF LAMICEAE AND THEIR VOC PRODUCING ABILITY"

DISSERTATION REPORT SUBMITTED TO
GURU GHASIDAS UNIVERSITY
IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF

MASTER OF SCIENCE IN BIOTECHNOLOGY

By

SUBHANKAR MAHAPATRA

M.Sc. (IV SEMESTER)

(Enrolment no. - GGV/20/10132, Roll No.-20402067)

2021-2022

Valued
15/9/2022

UNDER THE GUIDANCE OF

Dr. Archana Kumari

Associate Professor

Department of Biotechnology

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

Prof, Debdulal Banarjee

Associate Professor

Department of Botany, Vidyasagar University

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D., and Head

Department of Biotechnology

Email- RBHATT.GGU@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **"ENDOPHYTIC DIVERSITY OF TWO GENERA OF LAMICEAE AND THEIR VOC PRODUCING ABILITY"** is an authentic record of work done for a month from April to July 2022 by Subhankar Mahapatra, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Archana Kumari 15.9.22

Dr. Archana Kumari

Associate Professor

Rbhatt 15.09.22

Dr. Renu Bhatt

Associate Professor, PhD

HoD of Biotechnology (GGU)

विभागाध्यक्ष/
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

ENDOPHYTIC DIVERSITY OF TWO GENERA OF LAMIACEAE AND THEIR VOC PRODUCING ABILITY

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Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Sunny Khute

Enroll. No. GGV/17/3239

Roll No. 20402068

Under the supervision of

Dr. Archana Kumari

(Assistant Professor)

Department of Biotechnology

School of Studies of Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Session: 2021-2022

DEPARTMENT OF BIOTECHNOLOGY
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

Dr. Renu Bhatt
Associate Professor, Ph.D.
Head, Department of Biotechnology

Email: rbhatt.ggu@gmail.com
Mob. No. 9406143129

HEAD'S CERTIFICATE

This is to certify that the dissertation report entitled **"Biological Activities of Neem Leaf Collected from different areas of Chhattisgarh"** is an authentic record of work done for a month from April to September 2022 by **Sunny Khute**, a student of M.Sc. IV Semester, Biotechnology (Hon's), Department of Biotechnology of this University.

Date:- 15.9.22

Place: Bilaspur

Dr. Renu Bhatt
Associate Professor & Head
Department of Biotechnology
Guru Ghasidas Vishwavidyalaya, Bilaspur

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"Evaluation of Anti-Cancer Activity of Flavouring Agents by In-Silico and In-Vitro Studies"

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

SUPRIYA BARIK

Roll. No. 20402069.

Enrolment no. GGV/17/3240

Under the supervision of

Dr. Naveen Kumar Vishvakarma

Assistant Professor

Department of Biotechnology

The School of Studies in Interdisciplinary Educationand Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Ms. Supriya Barik**, a student of M.Sc. (Biotechnology) IV semester has carried out her M.Sc. Dissertation Project on **'Evaluation of Anti-Cancer Activity of Flavouring Agents by In-Silico and In-Vitro Studies'** under supervision of Dr. Naveen Kumar Vishvakarma. This M.Sc. Dissertation hesis is an authentic record of work done from April to September, 2022.

Naveen 12/09/2022

Dr. Naveen Kumar Vishwakarma
M.Sc. Dissertation Supervisor

Date: 12/09/2022
Place: Bilaspur

Head of Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalava, Bilasour (C.G.)

Date: Bilaspur
Place: 15.9.22

CONTENT

Study of Plastic Degradation Using Novel Bacterial Isolate

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Surbhi Shukla
Roll. No. 20402070.
Enrolment no. GGV/20/10133

Under the supervision of

Dr. Madan Sonkar
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Educationand Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
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जैव प्रौद्योगिकी विभाग

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

Department of Biotechnology

Certificate

This is to certify that **Ms. Surbhi Shukla**, a student of M.Sc. (Biotechnology), has carried out her M.Sc. Dissertation Project on **''Study of Plastic Degradation Using Novel Bacterial Isolate'**. This M.Sc. Dissertation thesis is an authentic record of work done from April to September, 2022.

12/09/22

Dr. Madan Sonkar
M.Sc. Dissertation Supervisor

Date: September, 2022
Place: Bilaspur

14/9/22

Head of the Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: September, 2022
Place Bilaspur

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Enhancement of organic farming and rice crop production by using azolla as a bio fertilizer

A

DISSERTATION PROJECT REPORT

IN OF THE DEGREE OF

M.Sc. BIOTECHNOLOGY IV SEMESTER (2021-22)

Submitted by

SURESH KUMAR SAHU

ROLL NO. 20402071

UNDER THE GUIDANCE OF

DR. VIJAYA GUPTA

ASSISTANT PROFESSOR DEPARTMENT OF BIOTECHNOLOGY

Valued
14.9.22

Department of biotechnology

Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.)

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT
Associate Professor, Biotechnology

Email- rbhatt.ggu@gmail.com

CERTIFICATE

This is to certify that the dissertation report entitled **Enhancement of organic farming and rice crop production by using azolla as a bio fertilizer**" is an authentic record of work done for a month from April to September 2022 by Suresh Kumar, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Vijaya Gupta. 14.09.22

Supervisor

Dr. Vijaya Gupta

Assistant professor, Ph.D

Date – 14.9.22

Place – Bilaspur.

RBhatt

HoD of Biotechnology

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Dr. Renu Bhatt

Associate professor, Ph.D

LIST OF CONTENT

Screening and Characterization of laccase producing fungus isolated from waste disposal site and its application in Degradation of Polythene

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURUGHASIDASVISHWAVIDYALAYA,BILASPUR(C.G.)

(ACentral UniversityestablishedbytheCentral UniversitiesAct,2009No.25of2009)

By

Susha[illegible]arangi

Roll. No. 20402072

Enrolment no. GGV/17/3241

Under the supervision of

Dr. D.K. Parihar

Assistant Professor

DepartmentofBiotechnology

The School of Studies in Interdisciplinary EducationandResearch

GuruGhasidasVishwavidyalaya

Bilaspur(C.G.),495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No. 25 of 2009)

DR. RENU BHATT

Associate professor, Ph.D.

Head of department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled "**Screening and characterization of laccase producing fungus isolated from waste disposal site and its application in degradation of polythene**" is an authentic record of work done for a month from April to September 2022 by Sushree Sarangi, a student of PG biotechnology, M.Sc. IV semester. Department of biotechnology of this University.

Supervisor

Dr. D.K. Parihar

Assistant Professor

HoD of Biotechnology

Dr. Renu Bhatt

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date : 15.9.22

Place : Bilaspur

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A

Dissertation report

On

Use of different Carbon and Nitrogen sources and metals ions in OSMAC approach for production of antifungal from soil fungi

Submitted for partial fulfillment of the award of the degree of

Master of Science in Biotechnology

(Session 2021-2022)

Submitted by

SWETA TAWADKER

M.Sc. Biotechnology IV Sem

GGV/20/10143

Roll Number: 20402073

Under the supervision of

Prof. B.N. TIWARY

Department of Biotechnology
Guru GhasidasVishwavidalaya
Bilaspur (C.G)
495009

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **"Use of different Carbon and Nitrogen sources and metals ions in OSMAC approach for Production of antifungal from soil fungi"** is an authentic record of work done for a month from April to September 2022 by Sweta Tawadker, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Prof. B N Tiwary

HOD of Biotechnology

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरू घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Dr. Renu Bhatt

Date: 14.09.22

Place: Bilaspur

TABLE OF CONTENTS:

"VERMICOMPOSTING OF ORGANIC WASTE BY USING EPIGENIC EARTHWORMS *Eisenia fetida*"

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. IV Semester Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR(C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Upasana Tirkey
Roll. No. 20402074.
Enrolment no.GGV/20/10135

Under the supervision of

Dr. Archana Kumari
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D and Head

Email- RBHATT.GGU@gmail.com

Mob. No.- 9406143129 Department of Biotechnology

CERTIFICATE

This is to certify that the dissertation report entitled **"Vermicomposting of Organic Waste by Using Epigenic Earthworms *Eisenia Fetida*"** is an authentic record of work done for a month from April to July 2022 by Upasana Tirkey, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Dr. Archana Kumari

Associate Professor, PhD

Place : Bilaspur

Date :15/09/2022

Dr. Renu Bhatt

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)

Associate Professor, PhD

HOD of Biotechnology (GGU)

LIST OF CONTENTS

Green synthesis of silver nanoparticles from *Coccinia grandis* and evaluating it for diabetes treatment

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

GURU GHASIDAS VISHWAVIDYALAYA BILASPUR(C.G.)

(A Central University established by the Central Universities Act,2009No.25of2009)

By

Vaibhav Shukla

Roll. No. 20402075.

Enrolment no. GGV/17/3207

Vaibhav Shukla 15-9-2022

Under the supervision of

Dr. Vikas Chandra

Assistant Professor

Department of Biotechnology

School of Studies of Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
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Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Vaibhav Shukla**, a student of M.Sc. (Biotechnology), has carried out his M.Sc. Dissertation Project on **"Green synthesis of silver nanoparticles from *Coccinia grandis* and evaluating it for diabetes treatment".** This M.Sc. Dissertation thesis is an authentic record of work done from April to September 2022.

Chandra

Dr. Vikas Chandra
M.Sc. Dissertation Supervisor

Date: 15/09/2022
Place: Bilaspur

Head of the Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 15/09/2022
Place: Bilaspur

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Investigating diet-induced obesity in the adult population of Chhattisgarh

Dissertation Thesis

Submitted in the partial fulfillment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Vaishali Gupta
Roll. No. 20402076
Enrolment no. GGV/17/3208

Under the supervision of

Dr. Dhananjay Shukla
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ - छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495009 – C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

CERTIFICATE

This is to certify that the dissertation report entitled **'Investigating diet-induced obesity in the adult population of Chhattisgarh'** is an authentic record of work done for the months from April to September 2022 by **Vaishali Gupta**, a student of Integrated UG/PG M.Sc. Biotechnology IV Sem in the Department of Biotechnology of this University.

15/9/22

Dr. Dhananjay Shukla

M.Sc. Dissertation Supervisor

Date:

Place:

Head of the Department
विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 15.9.22

Place: Bilaspur

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STUDY ON ANTIBACTERIAL ACTIVITY OF THERMOPHILES FROM HOT SPRING OF VASHISHT TEMPLE, MANALI

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No.25 of 2009)

By

Varsha Dansena
Roll. No. 20402077

Enrolment no.GGV/17/3243

Under the supervision of

Dr. Harit Jha
Assistant Professor

Department of Biotechnology

School of Studies in Interdisciplinary Education and Research

Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.),495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No. - 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **"Study on Antibacterial activity of Thermophiles from Hot spring of Vashisht Temple, Manali"** is an authentic record of work done for a month from April to September 2022 by Varsha Dansena, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor 12.09.22

Dr. Harit Jha

Assistant Professor, PhD

Head of Department

Dr. Renu Bhatt

Associate Professor

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 14/9/2022

Place: Bilaspur

CONTENTS

Synthesis And Characterization Of Starch Based Bioplastic

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No.25 of 2009)

By

Vasundhara Gupta
Roll. No. 20402078.
Enrolment no. GGV/20/10136

Under the supervision of

Dr. Archana Kumari
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **"Synthesis And Characterization Of Starch Based Bioplastic"** is an authentic record of work done for a month from April to September 2022 by Vasundhara Gupta student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Dr. Archana Kumari

Assistant Professor

15.09.22

HoD of Biotechnology

Dr. Renu Bhatt

Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 15.09.22

Place: Bilaspur

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"Green synthesis and characterization of silver nanoparticles using leaf extract of *Azadirachta indica* and *Peltophorum pterocarpum* and their pharmacological activities, & importances"

DISSERTATION REPORT SUBMITTED TO
GURU GHASIDAS UNIVERSITY
IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF

MASTER OF SCIENCE IN BIOTECHNOLOGY

By

VIDYA KUTIYARE

M.Sc. (IV SEMESTER)

(Enrolment no. - GGV/20/10137, Roll No.-20402079)

2021-2022

Valued

UNDER THE GUIDANCE OF

Dr. RENU BHATT

Associate Professor, PhD

HoD of Biotechnology (GGU)

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

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled **"Green Synthesis and Characterization of Silver Nanoparticles using Leaf Extract of *Azadirachta indica* and *Peltophorum pterocarpum* and their Pharmacological activities, & Importances"** is an authentic record of work done for a month from April to September 2022 by Vidya Kutiyare, a student of PG Biotechnology (Hon's). M.Sc. IV sem. Department of Biotechnology of this University.

RBhatt

Supervisor

Dr. Renu Bhatt

Associate Professor, PhD

RBhatt

HoD of Biotechnology

Dr. Renu Bhatt

Date: 14.9.22

Place: Bilaspur

CONTENTS

''ISOLATION OF ENTAMOPATHOGENIC FUNGI FROM SOIL SAMPLE OF BILASPUR DISTRICT AND STORAGE VIABILITY OF VERTICILLUM SP.''

DESSIRTATION REPORT SUBMITTED TO

GURU GHASIDAS UNIVERSITY

IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE AWARD OF THE DEGREE OF

MASTER OF SCIENCE IN BIOTECHNOLOGY

By

Ms. Vinamrata kashyap

M.Sc.-4th Semester

(Enrollment no. - GGV/20/10138, Roll No.-20402080)

Valued

14/05/24

UNDER THE GUIDANCE OF

Dr. RENU BHATT

Associate ProfessorPh. D

HoD of Biotechnology(GGU)

CO-GUIDANCE OF

Mr. VINOD KUMAR NIRMALKAR

Scientist, Department of Plant Pathology, BTC CARS, (BSP)

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

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, PhD and Head

Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that **Ms. VINAMRATA KASHYAP** has carried out post-graduate dissertation project on**"ISOLATION OF ENTAMOPATHOGENIC FUNGI FROM SOIL SAMPLE OF BILASPUR DISTRICT AND STORAGE VIABILITY OF VERTICILLIUM SP."** under my supervision from month of April to Juley, 2022. During the project work, she has learned most of the techniques of Animal tissue culture.

Supervisor

Dr. Renu Bhatt

Associate professor ,PhD

Date: 14.9.22

Place: Bilaspur

HoD of Biotechnology (GGU)

Dr. Renu Bhatt

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

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Amelioration of D-Galactose Induced Aging by Triphenylphosphonium Conjugated Oleanolic Acid in HepG2 Cells

Dissertation Thesis

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A Central University established by the Central Universities Act, 2009 No. 25 of 2009)

By

Vinit Singh Baghel
Roll. No. 20402082.
Enrolment no. GGV/20/10139

Under the supervision of

Dr. Dhananjay Shukla
Assistant Professor

Department of Biotechnology
The School of Studies in Interdisciplinary Education and Research
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.), 495009, India

Session: 2021-2022

Candidate's Declaration

I, **Vinit Singh Baghel,** declare that the work embodied in this M.Sc. Dissertation Thesis entitled '**Amelioration of D-galactose induced aging by triphenylphosphonium conjugated oleanolic acid in HepG2 cells**' is my own bonafide work. This work was carried out by me under the supervision of **Dr. Dhananjay Shukla,** Assistant professor, Department of Biotechnology, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G. and **Dr. K.G. Raghu (External supervisor),** Chief Scientist, CSIR-NIIST, Trivandrum, in academic session **2021-2022.** The matter embodied in this M.Sc. Dissertation Thesis has not been submitted for the award of any other degree/diploma.

I declare that I have faithfully acknowledged, given credit to and referred to the research workers wherever their works have been cited in the text and the body of the thesis. I further certify that I have not willfully lifted up some other's work para, text, data, results etc., reported in the journals, books, magazines, reports, dissertations, theses, etc., or available at websites and included them in this M.Sc. Dissertation Thesis and cited as my own work. If any discrepancy, mistake or plagiarism is found in the report, the responsibility for the same will be solely mine.

Date 05/09/2022

Place: Bilaspur

Vinit Singh Baghel

Certificate from the Supervisor

This is to certify that the above statement made by the candidate is correct to the best of my knowledge. The work embodied in the M.Sc. dissertation thesis was carried out under my supervision and that the candidate has worked under me for the period required under the regulations.

05/09/22

Dr. Dhananjay Shukla

Assistant Professor

Endorsement

The declaration and certificate mentioned above regarding M.Sc. Dissertation Thesis are hereby endorsed by Department of Biotechnology, Guru Ghasidas Vishwavidyalaya (Bilaspur, Chhattisgarh).

13/9/22

Head

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु [illegible] विश्वविद्यालय, बिलासपुर (छ.ग.)
[illegible] Bilaspur (C.G.)

List of Contents

EFFECT OF EDIBLE COATING ON SHELF LIFE AND BIOCHEMICAL QUALITY OF MANGO (*Mangifera indica*)

DISSERTATION THESIS

Submitted in the partial fulfilment for the award of the degree of

Master of Science in biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Vishal Singh

Roll No: 20402083

Enrolment No: GGV/17/3244

Under the supervision of

Dr. Vijaya Gupta

Assistant professor

Department of Biotechnology

School of Studies in Interdisciplinary Educationand Research

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.), 495009, India

Session: 2021-2022

गुरु घासीदास विश्वविद्यालय
बिलासपुर ४९५००९ छ.ग.
www.ggu.ac.in

Guru Ghasidas Vishwavidyalaya
Bilaspur 495 009 –C.G.
www.ggu.ac.in

जैव प्रौद्योगिकी विभाग

Department of Biotechnology

Certificate

This is to certify that **Vishal Singh**, a student of M.Sc. (Biotechnology), has carried out his M.Sc. Dissertation Project on **"Effect of Edible Coating on shelf life and biochemical quality of mango (*Mangifera indica*)"** This M.Sc. Dissertation thesis is an authentic record of work done from April to September 2022.

Vijaya Gupta. 13.9.22

Dr. Vijaya Gupta

M.Sc. Dissertation Supervisor

Date: 13/09/22
Place: Bilaspur

RShatt

Head of the Department
Dr. Renu Bhatt

Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Date: 13/09/22
Place: Bilaspur

CONTENT

A

DISSERTATION

ON

PRODUCTION OF OYSTER MUSHROOM BY ADDING CALCIUM CARBONATE (CaCo3) TO AGRICULTURE WASTE AS CARBON SOURCE MEDIA

Submitted in the partial fulfilment for the award of the degree of

Master of Science in Biotechnology

(M.Sc. Biotechnology)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

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

By

Yogeshvari Sahu

Roll. No. 20402084

Enrollment No. GGV/16/3081

Under the supervision of

Dr. Archana Kumari

Assistant Professor

Department of Biotechnology

School of Studies of Interdisciplinary Education & Research

Guru Ghasidas Vishwavidyalaya,

Koni Bilaspur (C.G.), 495009, INDIA

Session: 2021-2022

Department of Biotechnology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

(A central university established by the Central University Act, 2009 No.25 of 2009)

DR. RENU BHATT

Associate Professor, Ph.D.

Head of Department of Biotechnology

Email- rbhatt.ggu@gmail.com

Mob. No.- 9406143129

CERTIFICATE

This is to certify that the dissertation report entitled "**Production Of Oyster Mushroom By Adding Calcium Carbonate (CaCo3) To Agriculture Waste As Carbon Source Media"** is an authentic record of work done for a month from April to September 2022 by **Yogeshvari Sahu**, a student of PG Biotechnology (Hon's), M.Sc. IV sem. Department of Biotechnology of this University.

Supervisor

Archana Kumari

Dr. Archana Kumari

Assistant Professor

HoD of Biotechnology

विभागाध्यक्ष, जैव प्रौद्योगिकी विभाग
Head, Department of Biotechnology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilasour (C.G.)

Dr. Renu Bhatt

Date: 15.09.22

Place: Bilaspur

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