# Medicinal Significance of Insects (Entomotherapy): A Review



Review paper submitted for partial fulfilment for degree of

B. Sc. in Zoology

By

Ms. Aadya Sharma

Under the Supervision of

Dr. Nisha Sahu



DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISWAVIDYALAYA, BILASPUR (C.G.)

2024



## Department of Zoology Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

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

## CERTIFICATE

This is to certify that Ms. Aadya Sharma has worked on graduate review project entitled "Medicinal Significance of Insects" (Entomotherapy): A Review" under my supervision and this work has not been formed the basis for the award of any other similar title.

It represents entirely an independent work on the part of candidate.

Date: 13.05.2024

Place: Bilaspur

Date: 13.05.2024

Place: Bilaspur

Signature of Supervisor

Head of the Department

ावभागाध्यक्ष
HEAD
जन्तु विज्ञान विभाग
Department of Zoology
गुरू धासीदास वि.वि., बिलासपुर
hasidas Vishwavidvalava Bilasaus

## Table of contents

ingresses, in a tree and accompanies of male profit and a profit and a second

- 1.Introduction
- 2. Review Literature
- 3. Discussion
- 4. Conclusion
- 5. References

## Dissertation Report

on

## EPIDEMIOLOGY OF ALCOHOLISM

Submitted for partial fulfilment of the requirement for the award of degree of Bachelor of Zoology



Session: 2023-2024

SUBMITTED BY

AKASH DEWANGAN

OLL NO.- 21061102

Sc. Hons Zoology 6th sem

ROLLMENT NO.- GGV/21/03304

SUPERVISED BY

DR. L.V.K.S. BHASKAR

(PROFESSOR OF ZOOLOGY)

DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISHWAVIDYALAYA (A CENTRAL UNIVERSITY) BILASPUR(C.G.)-495009



## **CERTIFICATE**

This is to certify that Mr. Aakash Dewangan S/O Mr. Mukesh Kumar Dewangan student of B.Sc. (Hons.) Zoology 6th Semester has submitted his project entitled "EPIDEMIOLOGY OF ALCOHOLISM" for the partial fulfilment of the requirement for the degree of Bachelor of Zoology (Hons.) at Department of Zoology, G.G.U., Bilaspur (C.G.) Under the supervision of Dr. L.V.K.S Bhaskar (Professor of Zoology). I hereby forward him project work in Bachelor of Zoology during the academic session: 2023-24.

Supervisor

DR. L.V.K.S. BHASKAR (Professor of Zoology)

## CONTENT

S.NO.	TOPIC	PAGE NO.
1.	ABSTRACT	6
2.	BACKGROUND	7
3.	INTRODUCTION	7-12
4.	LITERATURE REVIEW	13-14
<b>5.</b> _	OBJECTIVE	
6.	RESEACRH METHODOLOGY	14-15
7.	DATA ANALYSIS	15-20
8.	DISCUSSION	20-22
9.	CONCLUSION	22
10.	REFERENCES	23-24

### LIST OF FIGURES

S.NO.	FIGURE	PAGE NO.
1.	WHO - Global status report on alcohol and health 2018	18
2.	Alcohol consumption in India (Population over 15 years of age who currently drink alcohol)	19
3.	Alcohol attributable deaths (%)	19
4.	Alcohol related death per year (per 100,000 people)	20

## DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.) 2024



## PROJECT WORK ON "WHITE TIGER"



A Project Report

Submitted in partial fulfillment for the degree of

B.Sc. in Zoology

Submitted by
ABHA NAIK (2020404)
VI th semester

Supervised by

DR. MANISH KUMAR TRIPATHY



## Department of Zoology

## Guru Ghasidas Vishwavidyalaya

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

#### CERTIFICATE

This is to certify that **Abha Naik** have submitted a project report for B.Sc. (Zoology) degree entitled "**Project work on white tiger**" under my supervision and guidance. This report has not been submitted for the award of any other degree.

Signature of supervisor

Date: 13 may 2024

place: Bilaspur

**Forwarded** 

Head of the Department

ावभागाध्यक्ष HEAD जन्तु विज्ञान विभाग Department of Zoology गुरू धासीदास वि.वि., बिलासपुर जेवडपवंड Vishwavidyalaya Brasou

#### CONTENTS

- > Introduction
- ➤ General Characters
- ➤ Geographical Distribution
- ➤ Habitat
- Role in Ecosystem
- Feeding Habits, Behaviour and Pattern
- ➤ Hunting Methods
- Mating and Breeding
- Parental Care
- > Reproduction and Life Cycle
- > Threat and Present status of animal
- ➤ Conservation
- ➤ Economic Importance
- What we liked most in the animal
- **▶** Conclusion

#### Guru Ghasidas Vishwavidyalaya

(A Central University)



Bilaspur, Chhattisgarh

A Review Project Report On

"Pesticides toxicity in plants"

As Partial Fulfilment for the Degree of 'B.Sc. in Zoology

For Session 2021-2023

## **Guided By**

Dr. M. K. Tripathi Sir Assistant Professor Guru Ghasidas Vishwavidyalaya

## **Submitted By**

Abhay Kumar Kashyap B.Sc. 6<sup>th</sup> Semester Roll No.: 21061103



#### Department of Zoology

Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G.

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

#### Certificate

This certifies that certifies that Mr. Abhay Kumar Kashyap has conducted a meticulous and methodical review project titled "Pesticides Toxicity in Plants" was conducted in the Department of Zoology at Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G., under the supervision of Dr. Manish Kumar Tripathi. The project was carried out with diligence and sincerity in collecting relevant literature, demonstrating a profound understanding of the impact of pesticides on the environment.

To the best of my knowledge, the work presented in this project is original and has not been submitted elsewhere. I confidently recommend the project report to be forwarded to the respective examiners for thorough evaluation.

Prof. Seema Rai

Head of Department,

Department of Zoology,

Guru Ghasidas Vishwavidyalaya, Bilaspur,

Dr. Manish Kumar Tripathi

Assistant Professor,

Department of Zoology,

Guru Ghasidas Vishwavidyalaya, Bilaspur,

C.G.

C.G.

Department of Zooiogy गुरु घासीदास वि.वि., बिलासपुर nhasidas Vishwavidvalava Bilasous

## Table of Content

#### 1. Introduction

Brief Introduction History of pesticide use Objectives

#### 2. Types of pesticides

#### 3. Modes of Pesticide Uptake in Plants

Soil uptake Foliar Absorption Systemic transport

#### 4. Mechanisms of Pesticide Toxicity in Plants

Enzyme Inhibition
Disruption of Cell Membranes
Interference with Hormonal Signaling
Induction of Oxidative Stress

#### 5. Effect of Pesticides Toxicity on Plants

Effects on Respiration Changes in Transpiration Interference with Nutrient Uptake

#### 6. Observable Indicators of Pesticide Damage

Chlorosis Necrosis Growth Impedation Reduced Yield

#### 7. Pesticide Residues

## 8. Impacts on Fauna and the Environment

Soil Contamination Water Contamination Impacts on non-Target organisms

#### 9. Regulation Policies

National Level Regulation International Level Regulation

#### 10 Mitigation Strategies

#### 11. Conclusion

#### 12. References

## IMPACT OF POLYCYSTIC OVARIAN SYNDROME ON HEALTH

Project dissertation submitted

In partial fulfillment for the degree of

B.Sc. In Zoology VIth Semester

By

#### **ABHISHEK GIRI**

Roll no.- 21061104

Under supervision of

#### Dr. MANISH KUMAR TRIPATHI

(ASSISTANT PROFESSOR)



Department of Zoology

(School of studies of Lifescience)

Guru Ghasidas Vishwavidyalaya

Koni, Bilaspur-495009(C.G.)

2024



### Department of Zoology

#### Guru Ghasidas Vishwavidyalaya

(A central university established by act of parliament 2009 no. 25 of 2009)

#### CERTIFICATE

This is to certify that Mr. Abhishek Giri has worked on undergraduate dissertation project entitled "Impact of polycystic ovarian syndrome on health" under my supervision for 3 months and this work has not been formed the basis for the award of any other similar title.

It represents entirely an independent work on the part of the candidate.

Date: 13/05/24

Place:Bilaspur

Signature of Supervisor

Date:....

Place:Bilaspur

Signature of the Healt of the Department

जुर्का विभ

Department of Zoology गुरु घासीदास वि.वे. विलासपर

shasidas Vishwavidvalava Bilasou

## **CONTENTS**

- Abstract
- Introduction
- Review of literature
- Etiology of PCOS
- References

Dissertation report

THYROID DYSFUNCTION AND ITS IMPACT ON HEALTH Submitted for partial fulfilment of the requirement for the award of degree of Bachelor of Zoology



Session: 2023-2024

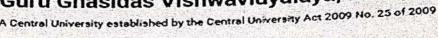
SUBMITTED BY AKANSHA SINGH **ROLL NO.- 21061105** B.Sc. ZOOLOGY 6th Sem **ENROLLMENT NO.- GGV/21/03307** 

SUPERVISED BY DR. NARESH CHANDRA AGRAWAL ASST. PROFESSOR

DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISHWAVIDYALAYA (A CENTRAL UNIVERSITY) BILASPUR(C.G.)-495009



## गुरु घासीदास विश्वविद्यालय, बिलासपुर Guru Ghasidas Vishwavidyalaya, Bilaspur





## CERTIFICATE

This is to certify that Ms. Akansha Singh D/O Mr. Pitamber Singh, student of B.Sc. (Hons.) Zoology 6th Semester has submitted his project entitled "Thyroid Dysfunction And Its Impact On Health" for the partial fulfilment of the requirement for the degree of Bachelor of Zoology (Hons.) at Department of Zoology, G.G.U., Bilaspur (C.G.) Under the supervision of Dr. Naresh Chandra Agrawal (Asst. Professor).

I hereby forward him project work in Bachelor of Zoology

during the academic session: 2023-24.

Supervisor

DR. Naresh Chandra Agrawal (Assistant Professor)

## GURU GHASIDAS VISHVIDYALAYA, BILASPUR (C.G.) DEPARTMENT OF ZOOLOGY

Session 2021-24



## Impact of Use of Pesticides on Butterfly Population and Diversity



A Dissertation Report submitted in partial fulfilment of the requirements for the award of the degree of B.Sc. in Zoology

"BACHELORS OF SCIENCE IN ZOOLOGY"

### Submitted by:

Alka Berma

B.Sc. 6<sup>th</sup> semester

Roll no: 21061106

Enrolment no: GGV/21/03308

Supervised by:

Dr Sushant Kumar Verma

Assistant professor (department of zoology)



## **Department of Zoology**

GURU GHASIDAS VISHVIDYALAYA, BILASPUR (C.G.)

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

## CERTIFICATE

This is certified that **Alka Berma** have submitted a dissertation report for B.Sc. (Zoology) degree entitled "Impact of Use of Pesticides on Butterfly Population and Diversity "under my supervision and this review writing has not been submitted for the award of any other degree.

Signature of supervisor

Dr Sushant Kumar Verma

Date: 13/05/2024

Place: Bilaspur

Forwarded

Head of the Department

Dr Seema Rai

ावभागाध्यक्ष HEAD जन्तु विज्ञान विभाग Department of Zooiogy गुरू घासीदास वि.वि., बिलासपुर in ahasidas Vishwavidvalava Brissby

## **TABLE OF CONTENT**

- 1. Introduction
- 2. Pesticides
  - 2.1 Types of pesticides
- 2.2 Use of pesticides
  - 2.3 Disadvantages
- 3. Impact of pesticides on animal
- 4. Butterfly population and diversity
- 5. Importance of Butterfly
- 6. Impact of Pesticides on Butterfly Population
  - 6.1 pesticides effect on different stages of life cycle
  - 6.2 mode of action
  - 6.3 Impact of pesticides on Monarch Butterfly
  - 6.4 Neonicotinoids toxicity to Butterfly
  - 6.5 Impact of herbicides on butterfly Population
- 7. Conservation of butterfly from pesticides
- 8. Conclusion
- 9. Reference

#### REVIEW ON CERVICAL CANCER



Dissertation Submitted In
Partial Fulfillment For The Degree Of

By

B.Sc. (Hon's) In Zoology

Anuradha Rai
Under The Supervision Of
Dr. Naresh Chandra Agrawal
(Assistant Professor)

Department of Zoology
School of Life Sciences

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)



## Department of Zoology Guru Ghasidas Vishwavidyalaya

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

## CERTIFICATE

This is to certify that **Anuradha Rai** has worked for dissertation for B.Sc. (Zoology) degree entitled "**Review on Cervical Cancer**" under my supervision for three months and this work has not been formed the basis for the award of any other degree.

It represents entirely an independent work on the part of candidate.

Signature of the Supervisor

Date: 14th May, 2024

Place: Bilaspur

Forwarded

Head of the Department

ावभागाध्यक्ष HEAD जन्तु विज्ञान विभाग Department of Zoology गुरु घासीदास वि.वि., बिलासपुर

hasidas Vishwavidvalava Bilaspur

#### TABLE OF CONTENTS

INTRODUCTION	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
CANCER	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
CATEGORIES OF CANCER	
Carcinomo	
Samonial	
CANCED AND CENTE	
CENES DESPONDENCE	
WORKING PROFILE	중에는 그리가 들어갔다. 사람들이 즐겁니다. 그래
TYPES OF COMMENTS OF PURILOCENIC VARIANTS	
C	
DDEX	
CERVIXCERVICAL CANCER	11
DEPONICE OF THE CENTRAL CANCER	
TYPES OF CERVICAL CANCER	12
RISK FACTORS FOR CERVICAL CANCER-	14
DEATH RATE IN INDIA	17
CONCLUSION	
en des rumos, com marcha questo paració de places destribilho asa encresa	MACHINE COMMUN

CATRIBORIES OF CANCER

The sold fire broad tetreported which indicated the risker and blood glassifications of solds

## EFFECT OF NOISE ON ANIMALS



Dissertation Submitted In

Partial Fulfillment For The Degree Of

B.Sc. (Hon's) In Zoology

By

### **ARUN BAJ**

Under The Supervision Of Dr. Naresh Chandra Agrawal (Assistant Professor)



Department of Zoology School of Life Sciences Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)



## Department of Zoology Guru Ghasidas Vishwavidyalaya

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

## CERTIFICATE

This is to certify that Arun Baj has worked for dissertation for B.Sc. (Zoology Hon's) degree entitled "Effect of Noise on Animals" under my supervision for three months and this work has not been formed the basis for the award of any other degree.

It represents entirely an independent work on the part of candidate.

Signature of the Supervisor

Date: 13th May, 2024

lace: Bilaspur

warded

Head of the Department

विभागाश्यक्ष HEAD

जन्तु विज्ञान विभाग Department of Zoology

गुरू घासीदास वि.वि., बिलासपुर ini Shasidas Vishwavidvalava Bdasbu



## Department of Zoology Guru Ghasidas Vishwavidyalaya

The property of the Management

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

## CERTIFICATE

This is to certify that Arun Baj has worked for dissertation for B.Sc. (Zoology Hon's) degree entitled "Effect of Noise on Animals" under my supervision for three months and this work has not been formed the basis for the award of any other degree.

It represents entirely an independent work on the part of candidate.

Signature of the Supervisor

Date: 13th May, 2024

Place: Bilaspur

Forwarded

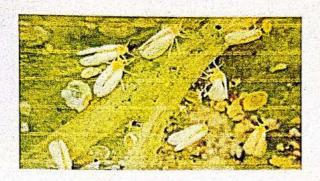
Head of the Department

अन्तु विज्ञान विभाग अन्तु विज्ञान विभाग Department of Zoology गुरु घासीदास वि. वि. , बिलासपुर Ghasidas Vishwavidvalava Bilaspur

## CONTENTS

1. INTRODUCTION
2. Behavioral Option
1. INTRODUCTION  2. Behavioral Options in a Noisy Environment  1. Introduction in a Noisy Environment
• Change of .
• Change of Chan
-ACCIS
3. Physiological effects
• Marine invertebrate Hearing • Effect of Noise by Taxon
5. Noise Effects on T
5. Noise Effects on Terrestrial Invertebrate
• Insect Hearing
Behavioral Effect
Physilogical Effects
6. Noise Effect on Reptiles
Reptiles Hearing
7. Noise Effect on Amphibians
• Frog Hearing
(1) 마음이 아픈 이번 이 마음이 아름다면 보고 있는데 이 마음이 있는데 이 마음이 되었다면 되었다면 되었다면 되었다면 되었다면 하는데 이 아름이 있는데 이 사람이 되었다면 하는데 이 사람이 되었다면 하는데 이 아름이 되었다면 하는데 이 어느를 하는데 이 아름이 되었다면 하는데 이 아름이 되었다면 하는데 이 어느를 하는데 어느를 하는데 이 어느를 하는데 어느를 하는데 이 어느를 하는데 이 어느를 하는데 어느를 하는데 이 어느를 하는데 어느를 하는데 이 어느를 하는데 이 어느를 하는데 어느를 하는데 이 어느를 하는데 어느를
Behavioral Respones to Noise  Physiological Property 12  Physiological
Hysiological Response to Noise
. Noise Effect on Fish
• Fish Hearing
HANDER MARKET SAMPER THE SAMPER END SAMPER AND MARKET THE PROPERTY OF THE PRO
Behavioral Response To Noise
Effect of Noise on the Auditory and other system
Noise Effect on Birds15

## Review on Impact of Insects in Agriculture



Review paper submitted for partial fulfilment for degree of

B. Sc. in Zoology

By

Mr. Aryan Dev Kashyap

Under the Supervision of

Dr. Nisha Sahu



DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISWAVIDYALAYA, BILASPUR (C.G.)



## Department of Zoology Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) (A Central University established by Central University Act 2009 no.25 of 2009)

## CERTIFICATE

This is to certify that Mr. Aryan Dev Kashyap has worked on graduate review project entitled "A Review on Impact of Insects in Agriculture" under my supervision and this work has not been formed the basis for the award of any other similar title.

It represents entirely an independent work on the part of candidate.

Date: 13.05.2024

Place: Bilaspur

Date: 13.05.2024

Place: Bilaspur

Signature of Supervisor

Head of Department

ार्वभागाध्यक्ष HEAD जन्तु विज्ञान विभाग Department of Zoology

Department of Zoology गुरु घासीदास वि.वि., बिलासपुर hasidas Vishwavidvalava Bussous

## TABLE OF CONTENT -

是一个人,但是一个人,就是他的人的主要的人的一种人的,我们是我们的人的人,我们就是我们的我的特别,我们的人的人的人的人的,我们的人的人的人的人的人的人的人的人
Introduction
Review literature
Types of insects
Pollination and its significance
Insect's contributions
Impacts-
1. Economic Impact of Insects on Agriculture
a. Yield Losses
b. Cost of Control Measures
Crop loss the world. Reges the enhills, unterpollars, bactles, and cross then
d. Impact on livestock
2. Ecological impact
a. Soil health
b. Climate change
c. Long-term effect on biodiversity
3. Social Impact of Insects on Agriculture, agriculture is instantial by a parent
Manager for a. Food Security appetitions, type of crep, and farence presentates. Tracers
Livelihoods of Farmers change might high their numbers are
destination c. Public Health; the interaction between pasts and grops will change, taking
district among the consideration The key to managing period in a malag advanced per
Technological Responses to Insect Impact
a. Integrated Pest Management (IPM)
is bis out a b. Biotechnological Solutions of agricultural customs by automatical
there is coc. Precision Agriculture analogoments for delivering the year controlling
Discussion (fidewark control is the general consider still a recupement of pa
Conclusion at the remark be executed appoint to and be considered with other methods a
References? sale quards in order to prevent baros to more surge; organisms and if

## Invertebrate as Model Organism in Research: A Review



Review paper submitted for partial fulfilment for degree of

B. Sc. in Zoology

By

## Ms. Deepshikha Sharma

Under the Supervision of

Dr. Nisha Sahu



DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISWAVIDYALAYA, BILASPUR (C.G.)

2024



## Department of Zoology Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) (A Central University established by Central University Act 2009 no.25 of 2009)

## CERTIFICATE

This is to certify that Ms. Deepshikha Sharma has worked on graduate review project entitled "Invertebrate as Model Organism in Research: A Review" under my supervision and this work has not been formed the basis for the award of any other similar title.

It represents entirely an independent work on the part of candidate.

Date: 13. 05. 2024 an heart submitted previously to

Place: Bilaspur

Date: 13. 05.2024

Place: Bilaspur

Parker to the mile

Signature of Supervisor

Department

HEAD

जन्त् विज्ञान विभाग Department of Zoology

गुरू घासीदास वि.वि., बिलासपर

hasidas Vishwavidvalava Braspur

## MICROPLASTIC AND HUMAN HEALTH

A Project dissertation submitted in fulfillment for the degree of B.Sc Zoology VI Semester

By

#### **FARHAT SHAIKH**

Under supervision of

## Dr. MANISH KUMAR TRIPATHI

(ASSISTANT PROFESSOR)



DEPARTMENT OF ZOOLOGY

GURU GHASIDAS VISHWAVIDYALAYA, KONI, BILASPUR, (CG) 495009



### Guru Ghasidas Vishwavidyalaya

(Acentral university established by act of parliament no.25 of2009)

#### **CERTIFICATE**

This is to certify that MISS FARHAT SHAIKH has worked on an undergraduate dissertation project entitled "MICROPLASTIC AND HUMAN **HEALTH** "under my supervision for 3 months and the work has not been formed the basis of the award of any other similar title.

It represents entirely an independent work on the part of the candidate.

Date: 13/05/24

Place: Bilaspur

Signature of Supervisor

Date:

Place:

Signature of the

Head of the Department

विभागाध्यक्ष HEAD जन्त विज्ञान विभाग

Department of Zooiogy पुरु घासीदास वि.वि., बिलासपुर

hasidas Vishwavidvalava Bilasou

## **CONTENTS**

- Abstract
- Introduction
- Review of literature
- Conclusion
- References

"Social Behavior of Ants (Formicidae)" in Guru Ghasidas Central University Campus, Bilaspur, (Chhattishgarh)



#### DEPARTMENT OF ZOOLOGY

Guru Ghasidas Central University, Bilaspur Chhattishgarh – 495009 INDIA

Guided By
Dr. Seema Rai Ma'am
Head of the Department
Department of Zoology

Submitted By
Gajendra Kumar Banjare
B.Sc.6<sup>th</sup>Semester
Enroll. No. - GGV/21/03314



# DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISHWAVIDYALAYA A Central University Established By Act Of Parliament 2009 No. 25 of 2009

### **CERTIFICATE**

This is to certify that **Mr. Gajendra Kumar Banjare** has worked undergraduate dissertation project entitled "SOCIAL BEHAVIOUR OF

ANTS" under my supervision for three months and this work has not been formed the basis for the award of my other similar title.

It represents an independent work on the part of candidate.

Signature of guide

Date: 14.05.2024-Place; Poilanous

Forwarded;

HEAD OF THE DEPARTMENT

Department of Zooiogy गुरु घासीदास वि वि विलासपर

ani Lahasidas Vishwavidvalava Briasou

# **CONTENTS**

- ♦ Introduction
- → Distribution And Habit
- Physical Characteristics
- ♦ Behaviour
- ↑ Types Of Ants
- ♦ Conclusion

## A systematic review of fatty liver disease

A Project dissertation submitted
In Partial fulfillment for degree of
BACHELOR OF SCIENCE IN ZOOLOGY

by

Ms. Garima Pandey

Under supervision of

DR. GITA MISHRA
ASSISTANT PROFESSOR



DEPARTMENT OF ZOOLOGY
GURU GHASIDAS VISI. VAVIDYALAYA
KONI, BILASPUR (C.G) – 495009
2023-2024



# Department of Zoology

## Guru Ghasidas Vishwavidyalaya

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

### **CERTIFICATE**

This is to certify that Ms. Garima Pandey has worked for dissertation for B.Sc. (Zoology) degree entitled "A systematic review of fatty liver disease" under my supervision for three months and this work has not been formed the basis for the award of any other degree. It represents entirely an independent work on the part of candidate.

Date: 13/05/2024

Place: Bilaspur

Signature of Supervisor

Litamisha

Date:

Place:

Head of the Department

जन्त् विज्ञान विभाग Department of Zooiogy गुरू घासीदास वि.वि., विलासपुर

hasidas Vishwavidvalava Bilasou

#### **CONTENTS** Page no. Introduction 01 1. Epidemiology 02-04 2. 3. Types 05-06 06-07 4. Lean NAFLD 07-08 5. Stages 09-10 Symptoms 6. 10-11 7. Causes 11-15 Risk factors 8. 15-18 Management 9. 18-26 10. Diagnosis 26-27 Strategies to decrease NAFLD 11. 27-29 Discussion 12. 29-32 13. References

# **OROFACIAL CLEFTS**

A Review Dissertation
Submitted in partial fulfillment for the degree of
B.Sc. (Hons.) in Zoology VI<sup>th</sup> sem

Submitted by Ms. Gracy Singh [Roll No.21061114]

Under Supervision of Prof. L.V.K.S. Bhaskar (Professor of Zoology)



DEPARTMENT OF TOLOGY

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

2024



## Department of Zoology

### Guru Ghasidas Vishwavidyalaya

(A central university established by central university Act 2009 No. 25 0f 2009)

#### CERTIFICATE

I certify that the dissertation entitled "Orofacial Clefts" submitted for the fulfilment of B.Sc. Hons. Zoology by Ms. Gracy Singh, is the record of research /review work carried out by her during the period from march to may 2024, under my supervision and that this research work has not formed the basis for the award of any degree, diploma, associateship, fellowship or other similar titles in this university or any other university or institution.

Place: Bilaspur.

of the Supervisor .V.K.S. Bhaskar)

Signature of the Head Of Department (Prof. Seema Rai)

> विभागाध्यक्ष HEAD जन्तु विज्ञान विभाग Department of Zoology गुरू घासीदास वि.वि., बिलासपुर hasidas Vishwavidvalava Russnis

## **Content**

- Abstract
- Introduction
  - Embryology and Classification
  - o Etiology
  - o Anatomy
  - O History of cleft in India
- Literature Review
  - Treatment and managing the cleft lip and palate patient
  - Genetics of cleft lip and palate
    - Non genetic elements
  - Specific challenges
    - o Prevention
- Discussion
- Conclusion
- References

# ANTIMICROBIAL PROPERTIES AND ENZYMATIC ACTIVITIES OF ENDOPHYTES IN Ocimum sanctum.L

A DISSERTATION THESIS SUBMITTED TO



## **GURU GHASIDAS VISHWAVIDYALAYA BILASPUR**

FOR THE DEGREE OF

**BACHELORS IN SCIENCE Hons. (2024)** 

IN

ZOOLOGY

BY

**GUNJA WARKADE** 

UNDER THE GUIDENCE OF

DR. SANTOSH SINGH

DEPATMENT OF ZOOLOGY

**GURU GHASIDAS VISHWAVIDYALAYA BILASPUR KONI** 



## **Department of Zoology**

### Guru Ghasidas vishwavidyalaya

(A central university established by act of parliament 2009no. 25 of 2009)

#### **CERTIFICATE**

I certify that the dissertation entitled "Antimicrobial property and enzymatic activity of endophytes in Ocimum sanctum L." submitted for the fulfillment of B.Sc. Hons. Zoology by Miss. Gunja Warkade, is the record of research /review work carried out by her during the period from march to may 2024, under my supervision and that this research work has not formed the basis for the award of any degree, diploma, associateship, fellowship or other similar titles in this university or any other university or institution.

Place: GSV, Billeyfyr

Signature of the supervisor

Sanhas Simb

विभागाध्यक्ष HEAD जन्तु विज्ञान विभाग

Department of Zoology गुरु घासीदास वि.वि., बिलासपर

shasidas Vishwavidvalava Bilaspur

## **INDEX**

SL.NO.	CONTENTS	PAGE NO.
1)	Abstract	1
2)	Introduction	2-4
3)	Endophytes	5-7
4)	Antimicrobial properties of endophytes	8-10
5)	Enzymatic activities of endophytes	11-13
6)	About Ocimum sanctum (Tulsi plant)	14-16
7)	Importance of Ocimum sanctum	17-18
8)	Medicinal value of Ocimum sanctum	19-20
9)	Conclusion	21
10)	References	22-24

### A PROJECT REPORT

ON "IMPERICAL STUDY ON IMPACT OF COVID-19 IN INDIA"

A Dissertation submitted to



DEPARTMENT OF ZOOLOGY
SCHOOL OF LIFE SCIENCE

GURU GHASIDAS VISHWAVIDYALAYA

(A Central University) BILASPUR, CG (495009)

For Partial fulfilment of the requirements for the degree of

BACHELOR OF ZOOLOGY (HONOURS)

2023-24

Submitted by

HARSH DEV SINGH

(ROLL NO: -2106 16)

[ENROLLMENT NO - GGV/21/03318]

Under the Supervision of

DR. NARESH CHANDRA AGARWAL

(Assistant Professor of ZOOLOGY)

#### **CERTIFICATE**

This is to certify that HARSH DEV SINGH has carried out the research work embodied in the present dissertation entitled "IMPERICAL STUDY ON IMPACT OF COVID-19 IN INDIA" for the degree of the Bachelor of Science in Zoology Prepared under my guidance and supervision. It is also affirmed that, the dissertation submitted by him is original. We recommend that this dissertation be placed before the examiners for evaluation.

DATE: -13 MAY, 2024

DR. NARESH CHANDRA AGARWAL

(Supervisor)

Assistant Professor

जन्तु विज्ञान विज्ञान

# CONTENTS

1. Introduction	
2. Literature Review11	
3. State of Art15	
Mathematical modelling of epidemic spreading	
Epidemic spreading on network structure	
4. Issues and challenges18	
Health Infrastructure	
5. Low COVID-19 Mortality Rate in India Might Be Result of Country's Larg	e
Young Population19	
Delayed vaccination and healthcare	
• Food insecurity	
Domestic violence	
Increased screen time	
Mental and physical Health	
Effect of covid on education	
• The new normal	
• Human resources	
Material management	
Monetary aspects	
Conclusion	
eferences and the second of th	

# LEPTOSPIROSIS AND IT'S COMPLICATIONS

Dissertation

Submitted for the Degree of

BACHELOR OF SCIENCE IN ZOOLOGY

By

#### **HEENA PATEL**

(B.Sc. VI SEMESTER)

(Enrollment No: GGV/21/03319)

(Roll No: 21061117)

Under the supervision of

Dr. Santosh Singh

**Assistant Professor** 



Department of Zoology

Guru Ghasidas Vishwavidyalaya Bilaspur, Chhattisgarh-495009 (C.G)

2023 - 2024



#### Department of Zoology

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

(A central university established by act of parliament 2009no. 25 of 2009)

#### CERTIFICATE

This is to certify that HEENA PATEL has worked on dissertation entitled "Leptospirosis and it's complication" for B.Sc. (Zoology) degree under my supervision for six months and this work has not been formed the basis for the award of any degree.

It represents entirely an independent work on the part of candidate

Date: 13.05.24
Place: GSV, Bilerpyr

Sanhi Sind Signature of the supervisor

(Dr. Santosh Singh)

Signature of head of department

rof. Seema Rai)

Department of Zoology गुरु घासीदास वि.वि., बिलासपर

ahasidas Vishwavidyalaya Bilasou

# **INDEX**

SL.NO.	CONTENTS	PAGE
		NO.
1)	Abstract	1
2)	T , 1 , .	2.5
2)	Introduction	2-5
3)	Epidemiology	6-9
4)	Pathophysiology	10-14
5)	Clinical Presentation	15-17
6)	Diagnostic Procedure	18-19
7)	Differential Diagnosis	20
8)	Treatment	21-24
9)	Prevention	25
10)	Conclusion	26
11)	References	27-29

# IMPACT OF CIRCADIAN RHYTHMS ON ENDOCRINE FUNCTIONS

Project dissertation submitted

In partial fulfillment for the degree of

B.Sc. In Zoology VIth Semester

By

#### **HIMANGI KSHATRIYA**

Roll No.- 21061118

Under supervision of

#### Dr. MANISH KUMAR TRIPATHI

(ASSISTANT PROFESSOR)



**Department of Zoology** 

(School of studies of Life Sciences)

Guru Ghasidas Vishwavidyalaya

Koni, Bilaspur-495009(C.G.)

2024



#### **Department of Zoology**

#### Guru Ghasidas Vishwavidyalaya

(A central university established by act of parliament 2009 no. 25 of 2009)

#### **CERTIFICATE**

This is to certify that Ms. Himangi Kshatriya has worked on under graduate dissertation project entitled "Impact of circadian rhythms on endocrine functions" under my supervision for 3 months and this work has not been formed the basis for the award of any other similar title.

It represents entirely an independent work on the part of the candidate.

Date: 13/05/24

Place:Bilaspur

Signature of Supervisor

Date:....

Place:Bilaspur

Signature of the Head of the Department

Department of Zoology गुरु घासीदास वि.वि., विलासपुर मुक्तपावs Vishwavidvalaya हिनेत्रडाप

### **CONTENTS**

- Abstract
- Introduction
- Review of literature
- Sleep and hormones
- Circadian rhythm of carbohydrate and lipids
- References

# The CRISPR innovation in cancer Treatment

Dissertation

Submitted for the Degree of

Bachelor of Science in Zoology

By

Himanshi Keshakar

B.Sc. (VI SEMESTER)

(Enrollment No: GGV/21/03321)

(Roll No: 21061119)

Under the supervision of

Dr. Santosh Singh

**Assistant Professor** 



Department of Zoology

Guru Ghasidas Vishwavidyalaya Bilaspur, Chhattisgarh-495009 (C.G.) **2023 - 2024** 



# **Department of Zoology**

#### Guru Ghasidas vishwavidyalaya

(A central university established by act of parliament 2009no. 25 of 2009)

#### CERTIFICATE

This is to certify that HIMANSHI KESHAKAR has worked on dissertation entitled "The CRISPR innovation in cancer treatment" for B.Sc. (Zoology) degree under my supervision for six months and this work has not been formed the basis for the award of any degree.

It represents entirely an independent work on the part of candidate

Place: GGV, Bilourfers

Santus Sind Signature of the supervisor

(Dr. Santosh Singh)

Signature of HOD

( Prof. Seema Rai )

विभागाध्यक्ष जन्तु विज्ञान विभाग Department of Zoology ुरू घासीदास वि.वि., बिलासपुर shasitlas Vicheravidvainea Rittado

# **INDEX**

SL.NO. CONTENTS		PAGE
	- 4	NO.
1)	Abstract	1
2)	Introduction	2
3)	CRISPR	3-8
4)	Crispr Preclinical Use	9-11
5)	Crispr in clinical practice	12-14
6)	Crispr in Oncology-Preclinical use	15-16
7)	Crispr use in prevention	17
8)	Crispr use for clinical cancer treatment	18-21
9)	Crispr use Limitation	22
10)	Conclusion	22
11)	References	23-25

# Nephroprotective effect of caffeic acid against aluminium and beryllium induced toxicity

A Dissertation Submitted

In partial fulfillment for the degree of

B. Sc. in

Zoology

By

Himshikha Yadav

Under the supervision of

Dr. Monika Bhadauria

Professor



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



### Department of Zoology Guru Ghasidas Vishwavidyalaya Koni, Bilaspur 495009 (C.G.)

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

#### **CERTIFICATE**

This is to certify that Ms. Himshikha Yadav has worked on undergraduate dissertation project entitled "Nephroprotective effect of caffeic acid against aluminium and beryllium induced toxicity" under my supervision for three months and this work has not been formed the basis for the award of any other similar title.

It represents an independent work on the part of candidate.

Signature of Supervisor

Date: 14/55/24
Place: Bilaspur

Forwarded

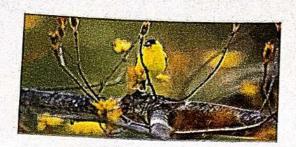
Head of Department

विभागाध्यक्ष HEAD जन्तु विज्ञान विभाग Department of Zoology गुरु धासीदास वि.वि., बिलासपर hasidas Vishwavidvalava Bilasou

#### **CONTENTS**

- (1) Introduction
- (2) Review of Literature
- (3) Materials and Methods
- (4) Results
- (5) Discussion and Conclusion
- (6) References

# IMPACT OF CLIMATE CHANGE ON AVIAN SPECIES



Dissertation Submitted In
Partial Fulfillment For The Degree Of
B.Sc. (Hon's) In Zoology

By

Indra Kumar Sawani

Roll No. - 21061121

**Under The Supervision Of** 

Dr. Naresh Chandra Agrawal (Assistant Professor)

Department of Zoology

**School of Life Sciences** 

Guru Ghasidas Vishwavidya

lilaspur (C.G.)



### Department of Zoology Guru Ghasidas Vishwavidyalaya

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

#### CERTIFICATE

This is to certify that Indra Kumar Sonwani has worked for dissertation for B.Sc. (Zoology) degree entitled "IMPACT OF CLIMATE CHANGE ON AVIAN SPECIES" under my supervision for three months and this work has not been formed the basis for the award of any other degree.

It represents entirely an independent work on the part of candidate.

Signature of the Supervisor

Date: 13th May, 2024

Place: Bilaspur

Forwarded

Head of the Department

प्रभागाध्यक्ष
HEAD
जन्तु विज्ञान विभाग
Department of Zoology
गुरू घासीदास वि.वि., बिलासपुर
hasidas Vishwavidvalava निष्टा

## CONTENTS

	s.	No	TOPICS	PAGE No.
	1.		INTRODUCTION	1
	2.		REASONS FOR CLIMATE CHANGE	2
	3.	N	MAJOR IMPACTS	
4	<b>1.</b>	M	ATERIAL AND METHODS	
5.		RE	s the complete of freeding surges through f SULTS .	20-
6.		REV	VIEW OF LITERATURE	
10年2月		CON DIRE	CLUSION AND FUTURE	
	I	REFE	RENCES  OF CHARGE IN VIRTUES OF MEMORIAL PROPERTY.	

# "Nest Making behavior of House Sparrow (Passer Domesticus)"

A Dissertation Submitted

In partial fulfillment for the degree of

**B.Sc Zoology** 

By

Ms. Kajal Gavel

Under the supervision of

Dr. Seema Rai

Professor



DEPARTMENT OF ZOOLOGY
GURU GHASIDAS UNIVERSITY , BILSPUR (C.G) 495009



### DEPARTMENT OF ZOOLOGY

#### GURU GHASIDAS VISHWAVIDYALAYA

A Central University Established By Act Of Parliament 2009 No. 25 of 2009

#### **CERTIFICATE**

This is to certify that Ms. Kajal Gavel has worked on undergraduate dissertation project entitled "Nest Making behavior of House Sparrow(Passer Domesticus)" under my supervision for three months and this work has not been formed the basis for the award of my other similar title.

It represents an independent work on the part of candidate.

Signature of guide

Date; 14.05.24

Place; BSP

Forwarded;

HEAD OF THE DEPARTMENT

HEAD जन्तु यिज्ञान विभाग

Department of Zoology गुरु घासीदास वि.वि., विलासपुर 2

#### CONTENTS

- (1) Introduction
- (2) Review of Literature
- (3) Methedology
- (4) Discussion
- (5) References

# Effects of aspartame on brain: A review

A Project dissertation submitted
In Partial fulfillment for degree of
BACHELOR OF SCIENCE IN ZOOLOGY

by

#### Kanha Rath

Under supervision of

DR. GITA MISHRA
ASSISTANT PROFESSOR



DEPARTMENT OF ZOOLOGY
GURU GHASIDAS VISHWAVIDYALAYA
KONI, BILASPUR (C.G) – 495009
2023-2024



# Department of Zoology Guru Ghasidas Vishwavidyalaya

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

#### CERTIFICATE

This is to certify that Mr. Kanha Rath has worked for dissertation for B.Sc. (Zoology) degree entitled "Effects of aspartame on brain: A review" under my supervision for three months and this work has not been formed the basis for the award of any other degree.

It represents entirely an independent work on the part of candidate.

Date: 13/05/2024

Place: Bilaspur

Signature of Supervisor

Litanish &

Date: 14.05.20 24

Place: BSP

Head of the Department

विभागाध्यक्ष HEAD जन्तु विज्ञान विभाग Department of Zoology गुरु धासीदास वि.वि., विलासपुर shasidas Vishwavidvalava 613300

#### **CONTENTS**

- Abstract (Page: 1)
- Introduction (Page: 2-5)
- History of aspartame (Page: 5-15)
- Aspartame consumption effects (Page: 15-16)
- Dietary and aspartame-induced amino acid changes (Page: 17)
- Effects on neurotransmitters (Page:18)
- Conclusion (Page:20-21)
- References (Page: 22-27)

# GURU GHASIDAS VISHWAVIDYALAY, BILASPUR (C.G) DEPARTMENT OF ZOOLOGY

SESSION 2021-2024



#### IMPACT OF HABITAT LOSS AND HABITAT FRAGMENTATION ON TERRESTRIAL BIODIVERSITY



A Dissertation submitted in partial fulfillment of the requirements for the award of the degree of B.Sc. in Zoology

#### Supervised\_by:

Dr. Sushant Kumar Verma

**Assistant Professor** 

#### Submitted by:

Khushboo Shriwas

B.Sc. VI Semester

Roll no.- 21061125

Enrollment no.-GGV/21/03327



## Department of Zoology

GURU GHASIDAS VISHWAVIDYALAY, BILASPUR (C.G)

(A Central University established by central university Act 2009 no.25of 2009)

### **CERTIFICATE**

This is certified that Khushboo Shriwas have submitted a dissertation report for B.Sc. (Zoology) degree entitled "Impact of Habitat Loss and Habitat Fragmentation on Terrestrial Biodiversity" under my supervision and this review righting has not been submitted for the award of any other degree.

5 K. Ara

Signature of Supervisor 13.05.24

Place

Date

Bilaspus

**Forwarded** 

Head of the Department

व्यागाध्यक्ष HEAD अन्त्र<sup>∗</sup>विज्ञान विभाग

Department of Zoology गुरू घासीदास वि.वि., बिलासपुर shasidas Vishwavidvalava Bilasour

# CONTENTS

- 1. Introduction
- 2. Habitat Loss
  - 2.1. What is habitat loss?
  - 2.2. Consequences of habitat loss
- 3. Habitat Fragmentation
  - 3.1. What is habitat fragmentation?
  - 3.2. Consequences of habitat fragmentation
- 4. Impact of habitat loss and habitat fragmentation
  - 4.1. Examples of habitat loss
  - 4.2. Examples of habitat fragmentation
- 5. Conservation Strategies
- 6. Conclusion
- 7. Reference

# MENTAL HEALTH BENEFITS OF REGULAR PHYSICAL ACTIVITY

Submitted for partial fulfilment of the requirement for the award Degree of Bachelor of Science in Zoology.

By

#### MANJEET XAXA

Roll no.-21061126

Enrollment no.-GGV/21/03328

Under the supervision of

Dr. L.V.K.S. BHASKAR

(PROFESSOR OF ZOOLOGY)



Department of Zoology

Guru sidas Vishwavidyalaya

Koni, Bilaspur-495009(C.G.)

**Session 2023-24** 



## Department of Zoology Guru Ghasidas Vishwavidyalaya

(A central university established by act of parliament 2009 no. 25 of 2009)

### CERTIFICATE

This is to certify that Mr. Manjeet Xaxa student of B.Sc. Zoology (Hons.) 6<sup>th</sup> Semester has worked on under-graduate dissertation project entitled "Mental health benefits of regular physical activity" for the partial fulfilment of the requirement for the degree of Bachelor of Science in Zoology by the supervision of Dr. L.V.K.S. Bhaskar (Professor of Zoology).

I hereby forward him project work in Bachelor of Science in Zoology during the academic session 2023-24

L.v.ks. Bloom Supervisor

Dr. L.V.K.S BHASKAR.

# CONTENTS

Topic
Abstract
Introduction
The mental health benefits of physical activity
Physical activity and the treatment of mental illness
Exercise and the treatment of depression
Does physical activity future depressive illness?
Implications for practice
Limitations associated with current studies and implications for future research
References

## IMPACT OF PLASTIC ON AQUATIC LIFE

Dissertation Report Submitted to the Department of Zoology as Partial Fulfillment Award of the Bachelor of Science Degree in Zoology

### By

#### MANSI RATHORE

B.Sc. Zoology (Hons.)6th semester

Roll no.-21061127

Enrollment no.-GGV/21/03329

Under the supervision of Dr. L.V.K.S. BHASKAR (PROFESSOR OF ZOOLOGY)

### **BACHELOR OF SCIENCE**

**Session 2023-24** 



**Department of Zoology** 

GURU GHASIDAS VISHWAVIDYALAYA , (A CENTRAL UNIVERSITY) Koni, Bilaspur-495009(C.G.)



### Department of Zoology Guru Ghasidas Vishwavidyalaya

(A central university established by act of parliament 2009 no. 25 of 2009)

### CERTIFICATE

This is to certify that Miss Mansi Rathore, student of B.Sc. Zoology (Hons.) 6<sup>th</sup> Semester has worked on under-graduate dissertation project entitled "Impact of Plastics on Aquatic Life" for the partial fulfilment of the requirement for the degree of Bachelor of Science in Zoology by the supervision of Dr. L.V.K.S. Bhaskar (Professor of Zoology).

I hereby forward him project work in Bachelor of Science in Zoology during the academic session 2023-24

Lyla Khoard
Supervisor

Dr. L.V.K.S BHASKAR.

	Tonic
Sr.	Topic
1.	Abstract
2.	Introduction
3.	What is Plastic Particle?
4.	Plastic Pollution in Aquatic Environments
5.	Characteristics that facilitate plastics to adsorb different types of contaminants
6.	Interaction of plastics with aquatic biota
7.	Which are the consequences of the adsorption of chemicals to plastics
8.	Missing links, challenges and potential solutions
9.	Reference

# To evaluate the neuroprotective effect of Caffeic acid against toxicity induced by Cyclophosphamide

A Dissertation Submitted

In partial fulfillment for the degree of

B.Sc.Zoology

By

Mr. Michael Albert

Under the supervision of

Dr. Monika Bhadauria

Professor



DEPARTMENT OF ZOOLOGY
GURU GHASIDAS UNIVERSITY , BILSPUR (C.G) 495009



#### DEPARTMENT OF ZOOLOGY

#### GURU GHASIDAS VISHWAVIDYALAYA

A Central University Established By Act Of Parliament 2009 No. 25 of 2009

### CERTIFICATE

This is to certify that Mr. Michael Albert has worked on undergraduate dissertation project entitled "To evaluate the neuroprotective effect against toxicity induced by cyclophosphamide" under my supervision for three months and this work has not been formed the basis for the award of my other similar title.

It represents an independent work on the part of candidate.

Signature of guide

Date; Pace; Bilarpur

Forwarded;

HEAD OF DEPARTMENT

जन्त विज्ञान विभाग

Department of Zoology

2

### **CONTENTS**

- (1) Introduction
- (2) Review of Literature
- (3) Materials and Methods
- (4) Results and Discussion
- (5) References

# Comprehensive Review on Cannabis sativa



Review paper submitted for partial fulfilment for degree of

B. Sc. in Zoology

By

### Mr. Mihir Kumar Barman

Under the Supervision of

Dr. Nisha Sahu



DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISWAVIDYALAYA, BILASPUR (C.G.)



# Department of Zoology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)
(A Central University established by Central University Act 2009 no.25 of 2009)

### CERTIFICATE

This is to certify that Mr. Mihir Kumar Barman has worked on graduate review project entitled "Comprehensive Review on Cannabis sativa" under my supervision and this work has not been formed the basis for the award of any other similar title.

It represents entirely an independent work on the part of candidate.

Date: 14.05.2024

Place: Bilaspur

Date: 14. 05.2024

Place: Bilaspur

Signature of Supervisor

Head of the Department

Department of Zoology गुरु धासीदाश वि.वि., बिलासपुर

hasidas Vishwavidvalava Bilaspur

# GLAUCOMA – 2<sup>nd</sup> LEADING CAUSE OF BLINDNESS IN THE WORLD

Α

Project dissertation submitted In fulfillment for degree of

B.Sc. (Hons.) Zoology

By

Mr. Rohit Kumar Roy

Under supervision of

Dr. Santosh Singh

(Assistant Professor of zoology)



DEPARTMENT OF ZOOLOGY

GURU GHASIDAS VISHWAVIDYALAYA,

KONI, BILASPUR (C.G.) 2024



# **Department of Zoology**

## Guru Ghasidas vishwavidyalaya

(A central university established by act of parliament 2009no. 25 of 2009)

### **CERTIFICATE**

I certify that the dissertation entitled "Glaucoma – A (2<sup>ND</sup>) leading cause of blindness in the world " submitted for the fulfillment of B.Sc. Hons. Zoology by Mr. Rohit Kumar Roy, is the record of research /review work carried out by her during the period from march to may 2024, under my supervision and that this research work has not formed the basis for the award of any degree, diploma, associateship, fellowship or other similar titles in this university or any other university or institution.

Date: 14/05/2024

Place: Bilaspur

Signature of the supervisor

(Dr. Santosh Singh)

Signature of head of department

Seema Rai )

HEAD

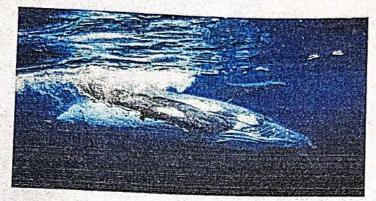
Oepartment of Zoology गुरु घासीदास वि.वि., बिलासपुर shasidas Vishwavidvalava Bilasour

111

# **INDEX**

SL.NO.	CONTENTS	PAGE NO.
1)	Abstract	1
2)	Introduction to Glaucoma	2-3
3)	Classification of Glaucoma	3-10
4)	Types of diagnosis for	
	Glaucoma(tonometry, gonioscopy,	11-15
	perimetry )	
5)	Different types of drugs used for	
	treatment and their mechanism	16-33
	of action	
6)	Laser treatment	34
7)	Trabeculoplasty	35
8)	Laser iridotomy	35-36
9)	Prevention of Glaucoma	37
10)	Conclusion	38
11)	References	39-45

# Impact of Noise Pollution on Marine Mammals



Review paper submitted for partial fulfilment for degree of

B. Sc. in Zoology

By

Mr. Nikesh Kumar Kanwar

Under the Supervision of

Dr. Nisha Sahu



DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISWAVIDYALAYA, BILASPUR (C.G.)

2024



# Department of Zoology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)
(A Central University established by Central University Act 2009 no.25 of 2009)

### CERTIFICATE

This is to certify that Mr. Nikesh Kumar Kanwar has worked on graduate review project entitled "Impact of Noise Pollution on Marine Mammals" under my supervision and this work has not been formed the basis for the award of any other similar title.

It represents entirely an independent work on the part of candidate.

Productive Employment of The Law Companies Visites Webstern

Date: 14-05 2024

Place: Bilaspur

Date: 14.05-204

Place: Bilaspur

Signature of Supervisor

lead of the Department

प्रांतिकारिक स्थानिक प्रांतिकारिक स्थानिक स्यानिक स्थानिक स्यानिक स्थानिक स्थानिक स्थानिक स्थानिक स्थानिक स्थानिक स्थानिक स्य

# Nephroprotective effect of caffeic acid against cyclophosphamide induced toxicity

A Dissertation Submitted

In partial fulfillment for the degree of

B.Sc. in

Zoology

By

Nilesh Jangde

Under the supervision of

Dr. Monika Bhadauria

**Professor** 



# DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISHWAVIDYALAYA, KONI BILSPUR (C.G) 495009



## Department of Zoology Guru Ghasidas Vishwavidyalaya Koni, Bilaspur 495009 (C.G.)

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

### **CERTIFICATE**

This is to certify that Nilesh Jangde has worked on undergraduate dissertation project entitled "Nephroprotective effect of caffeic acid against cyclophosphamide induced toxicity under my supervision for three months and this work has not been formed the basis for the award of any other similar title.

It represents an independent work on the part of candidate.

Signature of Supervisor

Date: 14/05724

Place: Bilanpur

Head of the Department

HEAD जन्तु विज्ञान विभाग Department of Zoology गुरु घासीदास वि.वि., विलासपुर Masidas Vishwavidvalava Beasage

### **CONTENTS**

(1)	Introduction
(2)	Review of Literature
(3)	Materials and Methods
(4)	Results
(5)	Discussion and Conclusion
(6)	References

# A REVIEW ON GLOBAL CLIMATE CHANGE AND ITS EFFECTS ON AVIAN MIGRATION

Review Article Submitted for Partial Fulfillment of the Degree of Bachelor of Science in Zoology (Hons.)

> By ONKAR PATTNAIK

Roll number- 21061134

Enrollment number- GGV/21/03337



**Under Supervision Of** 

Dr. Sushant kumar Verma

(Assistant Professor)

Department of Zoology

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



### **CERTIFICATE**

This is to certify that Mr. ONKAR PATTNAIK has written a review article entitled "A REVIEW ON GLOBAL CLIMATE CHANGE AND ITS EFFECTS ON AVIAN MIGRATION" under my guidance for the degree of Bachelor of Science in Zoology.

Signature of supervisor

partment

विभागाध्यक्ष

HEAD जन्तु विज्ञान विभाग

Department of Zoology गुरू घासीदास वि.वि., बिलासंपुर and Ghasidas Vishwavidvalava Bilasou

Date:-14.05.24

Place:- Bilaspur

### **CONTENTS**

- Abstract
- Introduction
- Review of literature
  - 1. Overview of Avian Migration
  - 2. Effects of Climate change on migratory Species
  - 3. Migration Pathways In India.
  - 4. Changes in Migration Phenology Due to Climate Change.
  - 5. Primary Climatic Variables Used To Assess The Effects Of Climate Change On Bird Migratory Phenology.
  - 6. North atlantic Oscillation (Nao), El Niño-southern Oscillation (Enso) And Bird Migratory Phenology.
  - 7. Climatic Variables And Bird Migratory Phenology Across Different Temporal Scales.
  - 8. Migratory Phenology Of Shorebirds In A Coastal Wetland In Western India.
- References

# PSYCHOLOGICAL DISORDERS

Dissertation Submitted In

Partial Fulfillment For The Degree Of

B.Sc. (Hon's) In Zoology

 $\mathbf{B}\mathbf{y}$ 

PALLAVI LAHARE

**Under The Supervision Of** 

Dr. GITA MISHRA

(Assistant Professor)

Department of Zoology

School of Life Sciences

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)



# Department of Zoology Guru Ghasidas Vishwavidyalaya

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

### CERTIFICATE

This is to certify that **PALLAVI LAHARE** has worked for dissertation for B.Sc. (Zoology) degree entitled "**PSYCHOLOGICAL DISORDER**" under my supervision for three months and this work has not been formed the basis for the award of any other degree.

It represents entirely an independent work on the part of candidate.

Signature of the Supervisor

Date: 14th May, 2024

Place: Bilaspur

Forwarded

Head of the Department

विभागाध्यक्ष HEAD जन्तु विज्ञान विभाग Department of Zoology गुरु घासीदास वि.वि., विलासपुर hasidas Vishwavidvalava Bitaspu

SNO	CONTENT	
	ABSTRACT	PAGE
1		NO.
2	KEYWORDS	1
3	ABBREVATION	2
4	INTRODUCTION	2
5	REVIEW OF LITERATURE	3
	5.1. PSYCHOLOGICAL DISEASES AND MENTAL DIORDERS	4
	3.1.1 TI DE OF MENTAL DISORDERS	
	5.1.2 CAUSES OF MENTAL DISORDERS	
	5.1.3 TREATMENTS FOR MENTAL DISORDERS	
	5.1.4 DIAGNOSES AND TESTS	
	5.1.5 TREATMENTS AND THERAPIES	
	5.2- DRUGS TO TREAT PSYCHOLOGICAL DISEASES AND MENTAL ILLNESS	
	5.2.1 DRUGS TO TREAT DEPRESSION -ANTIDEPRESSANTS	-
	5.2.2 DRUGS TO TREAT ANXIETY -ANTI-ANXIETY MEDICATIONS	
	5.2.3 DRUGS TO TREAT PSYCHOTIC DISORDERS -ANTIPSYCHOTICS	
6	CONCLUSION	25
7	REFRENCE	26

# Environmental and Health Effects of Herbicide



Review paper submitted for partial fulfilment for degree of

B. Sc. in Zoology

By

Mr. Prashant Singh Divya

Under the Supervision of

Dr. Nisha Sahu



DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISWAVIDYALAYA, BILASPUR (C.G.)

2024



# Department of Zoology

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)
(A Central University established by Central University Act 2009 no.25 of 2009)

### CERTIFICATE

This is to certify that Mr. Prashant Singh Divya has worked on graduate review project entitled "Environmental and Health Effects of Herbicide" under my supervision and this work has not been formed the basis for the award of any other similar title.

It represents entirely an independent work on the part of candidate.

Date: 14.05. 2024

Place: Bilaspur

Date: 14.05.2024

Place: Bilaspur

Signature of Supervisor

Head of the Department

बान्तु विज्ञान विभाग Department of Zoology गुरु घासीदास वि.वि., बिलासपुर ahasidas Vishwavidvalava Bilasour

## Microbiology of Wastewater Treatment

A Dissertation Report
SUBMITTED ON THE PARTIAL FULFILMENT OF
THE DEGREE

OF

**BACHELOR OF SCIENCE** 

IN

**ZOOLOGY** 



### GURU GHASIDAS VISHWAVIDALAYA (A Central University)

BY

PURVI DADAR

B. Sc. (VI SEMESTER)

(Enrolment No: GGV/21/03341, Roll No:21061138)

UNDER THE SUPERVISION OF

Dr. SANTOSH SINGH

DEPARTMENT OF ZOOLOGY GURU GHASIDAS VISHWAVIDALAYA, KONI, BILASPUR-495009 CHHATTISGARH



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

### **CERTIFICATE**

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

Dr. Santosh singh

(Signature of supervisor)

Place: Bilaspur

Date: 14.5.24

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

Place: Bilaspur

Date:

जन्तु विज्ञान विभाग Department of Zoology गुरू घासीदास वि.वि., बिलासपुर hasidas Vishwavidvalava Brias**ou** 

2

# Content

1.	Abstract	1
2.	Introduction	2-3
3.	Waterwaste Treatment Option	4
	(i) Physical	
	(ii) Chemical	4
	(iii) Biological	4
4.	Steps involve in treatment of waterwaste	4
	(i) Preliminary treatment / pre-treatment	4
	(ii) Primary treatment	5
	(iii) Secondary treatment	6
	(iv) Secondary Classification	
	(v) Tertiary/ Advance treatment	7
5.	Biological treatment options	10
	(i) Aerobic	
	a. Suspended cell system	
	Activated sludge process-ASP	11
	b. Attached cell system	
	Tracing filter –TF	18
	Rotatory biological container-RBC	19
	(ii) Anaerobic	20
	Up flow anaerobic sludge blanket-UASB2	20
	Anaerobic filter –AF	21
6.	Biological removal of nitrogen	22
7.]	Biological removal of phosphorus	23
8 1	Conclusion	25
0. 1	Coliciusion	26
۶.]	References	20

### ONE HEALTH APPROACH

A

Project dissertation submitted

In partial fulfillment for the degree of

B.Sc. In Zoology VIth Semester

BY

### RAHUL PATEL

Under supervision of

### Dr. MANISH KUMAR TRIPATHI

(ASSISTANT PROFESSOR)



Department of Zoology

Guru Ghasidas Vishwavidyalaya

Koni, Bilaspur - 495009 (C.G.)



# Department of Zoology Guru Ghasidas Vishwavidyalaya

(A central university established by act of parliament 2009no. 25 of 2009)

#### **CERTIFICATE**

This is to certify that Mr. RAHUL PATEL has worked on under graduate dissertation project entitled "One health approach" under my supervision for 3 months and this work has not been formed the basis for the award of any other similar title.

It represents entirely an independent work on the part of the candidate.

Date: 13/05/24

Place: Bilaspur

Signature of Supervisor

Date: 14.65.24

Place: Bilaspur

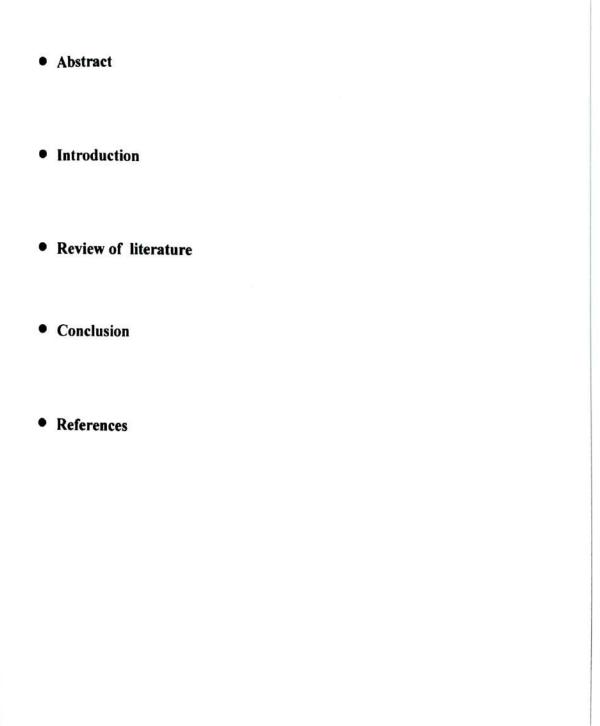
विभौगाध्यक्ष

Signature of the Head of the

Department of Zooiogy गुरु घासीदास वि.वि., बिलासपुर Department

Shasidas Vishviavidvatava Bitasou

## **CONTENT**



# COPPER METAL TOXICITY AND COPPER NANOPARTICLE TOXICITY ON AQUATIC FISHES

A Project dissertation submitted
In Partial fulfillment for degree of
BACHELOR OF SCIENCE IN ZOOLOGY

by

Rajesh Dafadar

Under supervision of

DR. GITA MISHRA
ASSISTANT PROFESSOR



DEPARTMENT OF ZOOLOGY
GURU GHASIDAS VISHWAVIDYALAYA
KONI, BILASPUR (C.G) – 495009
2023-2024



# **Department of Zoology** Guru Ghasidas Vishwavidyalaya

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

#### CERTIFICATE

This is to certify that Mr. Rajesh Dafadar has worked for dissertation for B.Sc. (Zoology) degree entitled "Copper metal toxicity and copper nanoparticle toxicity on aquatic fishes" under my supervision for three months and this work has not been formed the basis for the award of any other degree.

It represents entirely an independent work on the part of candidate.

Date: 14/05/ 2024

Place: Bilaspus

Signature of Supervisor

hitomis wil

Date: 14.03.2°27
Place: Poilorpur.

Head of the Department

# Index

S. NO.	TABLE OF CONTENTS	
1.	✓ INTRODUCTION	
	✓ COPPER METAL TOXICITY	
	✓ Effect of Copper on animal	
1	✓ Toxic effects of Copper on animal	
1	✓ Names of various toxic Copper salts	
. [	✓ Copper nanoparticle toxicity	
	✓ COPPER- INDUCED TOXICITY IN AQUATIC	
	MODEL- FISHES	
	✓ Organ toxicity on fishes by Copper metal exposure	
	✓ OUTLINE OF ORGAN TOXICITY IN FISHES BY	
	COPPER NANOPARTICLES AND COPPER-	
	OXIDE NANOPARTICLES:	
	✓ CONCLUSION	
	✓ REFERENCES	

# A review on arsenic toxicity

A Project dissertation submitted
In Partial fulfillment for degree of
BACHELOR OF SCIENCE IN ZOOLOGY

by

Reetika Singh

Under supervision of

DR. GITA MISHRA
ASSISTANT PROFESSOR



DEPARTMENT OF ZOOLOGY
GURU GHASIDAS VISHWAVIDYALAYA
KONI, BILASPUR (C.G) – 495009
2023-2024



# Department of Zoology Guru Ghasidas Vishwavidyalaya

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

#### CERTIFICATE

This is to certify that Ms. Reetika Singh has worked for dissertation for B.Sc. (Zoology) degree entitled "A review on arsenic toxicity" under my supervision for three months and this work has not been formed the basis for the award of any other degree.

It represents entirely an independent work on the part of candidate.

Date: 14/05/2024

Place: Bilospus

Signature of Supervisor

Date: 14.05.2024

Place: Blasput

Head of the

मह्मानाच्यक्ष HEAD अन्तु विज्ञान विभाग

Department of Zoology गुरु घासीदान दि.वि., विलासपुर shasidas Vishwavidvalava Brisspus

# A REVIEW ON IMPACT OF ENVIRONMENTAL AND DISTURBANCE VARIABLES ON AVIAN COMMUNITY STRUCTURE ALONG URBANIZATION GRADIENT

# Review Article Submitted for Partial Fulfillment of the Degree of Bachelor of Science in Zoology (Hons.)

#### Submitted By

Ms. Rhitu Pandey

Session: 2023-24

Roll No.: 21061143

Enrollment No.: GGV/21/03346

Under the Supervision of

Dr. Sushant Kumar Verma Assistant Professor



Department of Zoology Guru Ghasidas Vishwavidyalaya Bilaspur, Chattisgarh



### **CERTIFICATE**

This is to certify that Ms. Rhitu Pandey has written a review article entitled "IMPACT OF ENVIRONMENTAL AND DISTURBANCE VARIABLES ON AVIAN COMMUNITY STRUCTURE ALONG URBANIZATION GRADIENT"under my guidance for the degree of Bachelor of Science in Zoology.

K. who Signature of supervisor

epartment

वभौगाध्यक्ष HEAD

जन्तु विज्ञान विभाग Department of Zoology गुरू घासीदास वि.वि., विलासपुर

Thasidas Vishwavidvalava Bilasour

Date:-

14.05.24

Place:- Bilaspur

#### CONTENT

- 1. Introduction
- 2. Importance of birds
- 3. How bird diversity is reducing
- 4. Impact of Urbanization gradient on Avian community
- 5. Impact of Environmental variables on Avian community
- 6. Impact of Disturbance variables on Avian community
- 7. Review of literature
- 8. Conclusion
- 9. References

# Hepatoprotective potential of caffeic acid against aluminium and beryllium induced toxicity

A Dissertation Submitted

In partial fulfillment for the degree of

B. Sc. in

Zoology

By

Ritika

Under the supervision of

Dr. Monika Bhadauria

**Professor** 



DEPARTMENT OF ZOOLOGY

GURU GHASIDAS VISHWAVIDYALAYA, KONI BILSPUR
(C.G.) 495009



# Department of Zoology Guru Ghasidas Vishwavidyalaya Koni, Bilaspur 495009 (C.G.)

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

# **CERTIFICATE**

This is to certify that Ritika has worked on undergraduate dissertation project entitled "Hepatoprotective potential of caffeic acid against aluminium and beryllium induced toxicity" under my supervision for three months and this work has not been formed the basis for the award of any other similar title.

It represents an independent work on the part of candidate.

Signature of Supervisor

Date: 14.05.2024
Place: Pollarpur

Head of the Department

विभागाध्यक्ष HEAD जन्तु विज्ञान विभाग Department of Zoology गुरु घासीदास वि.वि., बिलासपुर Bur Shasidas Vishwavidvalava Brasaus

# **CONTENTS**

(1)	Introduction
(2)	Review of Literature
(3)	Materials and Methods
(4)	Results and Discussion

(5) References

# Animal behaviour "Social behaviour of Monkeys"

A dissertation submitted to The Department of Zoology,

# **GURU GHASIDAS VISHWAVIDYALAYA**

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

For Partial fulfillment of the requirements for the degree of



#### BECHELOR FO SCIENCE IN ZOOLOGY

Submitted by : Roshani Gabel B.sc. honors Department of Zoology

Enrollment No. GGV/21/03349 Roll No. 21061146 Under the supervision of Professor SEEMA RAI

SCHOOL OF LIFE SCIENCE

DEPARTMENT OF ZOOLOGY

GURU GHASIDAS VISHWAVIDYALAYA, KONI, BILASPUR, C.G. 595009

MAY 2024

# Department of zoology

Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G.-595009

#### **CERTIFICATE:**

This is to certify that Roshani Gabel has carried out the research work embodied in the present dissertation on topic, "Social bheviour of monkey", for the degree of Bachelor of science honours in zoology under my direct supervision and guidance. I considered that the Dissertation has reached the standards and fulfills the requirements of the rules and regulations relating to the nature of the degree.

Signature of the guide

Prof. Seema Rai

We recommend this dissertation to be placed before the examiner for evaluation.

Head of the Department

Department of zoology

Guru Ghasidas Vishwavidyalaya Bilaspur, C.G., 595009

ावभागिधिक HEAD जन्तु विज्ञान विभाग Department of Zoology गुरू घासीदास वि.वि., विलासपुर Thasidas Vishwavidvalava हिल्बेडहरू

# TABLE OF CONTENT

S. No.	Title	Page No.
1	Introduction to animal bheviour	1 1 1 2
2	type of bheviour	177
3	internal and external cues	a de tingen
4	Social bheviour of monkey	
5	Benefits of social bheviour	
6	Grooming bheviour	
7	foraging and searching bheviour	Carried Carried
8	Aggressive behaviour	T entered
9	Mother and infants	
10	communication	
11	Defensive bheviour	
12	Reproductive behaviour (courtship display)	
13	Territoriality	
14	Image Gallery	
15	Conclusion	
16	Refrence	

# A REVIEW ON "EFFECT OF HERBICIDES ON POND ANIMALS COMMUNITY STRUCTURE"

# Review Article Submitted for Partial Fulfillment of the Degree of Bachelor of Science in Zoology (Hons.)

### Submitted By

Ms. Shalini Sao Session: 2023-24 Roll No.: 21061147

Enrolment No.: GGV/21/03350

Under the Supervision of

Dr. Sushant Kumar Verma Assistant Professor



Department of Zoology Guru Ghasidas Vishwavidyalaya Bilaspur, Chattisgarh



Department of zoology
Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.)
A central university established by central university act 2009 No. 25 of 2009

# CERTIFICATE

This is to certify that SHALINI SAO has written a review article entitled "EFFECT OF HERBICIDES ON POND ANIMALS COMMUNITY STRUCTURE" under my guidance for the degree of Bachelor of Science in Zoology.

J.K. when

Signature of supervisor

Head of Department

विभागाध्यक्ष HEAD जन्तु विज्ञान विभाग

Department of Zoology गुरु घासीदास वि.वि., बिलासपुर Shasidas Vishwavidvalava Bilasou

Date:-

14.050 6

Place:- Bilaspur

# CONTENT

1. INTRODUCTION	6-7	
2. HERBICIDES		
■ TYPES OF HERBICIDES	8-9	
COMMON EXAMPLES OF HERBICIDES	10	
<ul><li>ADVANTAGES AND DISADVANTAGES</li></ul>	11	
3. ORGANIC HERBICIDES	12-15	
TOXIC TO ANIMALS		
4. BIOHERBICIDES	16	
<ul> <li>ADVANTAGES AND</li> </ul>		
DISADVANTAGES		
5. EFFECT OF	17-18	
HERBICIDES ON POND		
ANIMAL COMMUNITY		
6. HERBICIDES EFFECT	19-22	
ON THE FOLLOWING		
POND ANIMAL	Dec.	
7. CONCLUSION	23	
8. REFERENCES	24-25	



# **GURU GHASIDAS UNIVERSITY**

Bilaspur, Chhattisgarh

**Dissertation Work** 

# ASSIGNMENT TOPIC

# BEHAVIOUR OF STREET DOGS

SUBMITTED BY
SHUBHAM KASHYAP
B.SC. HONS. ZOOLOGY
6'th SEMESTER
21061150

SUBMITTED TO

DR SEEMA RAI

# CERTIFICATE

This is to certify that SHUBHAM KASHYAP has worked on review project entitled "BEHAVIOUR OF STREET DOGS under my supervision and this work has not been formed the basis for the award of any other similar title.

It represents entirely an independent work on the part of candidate.

Date: 13.05, 2029

Place: Bilaspur

Signature of Supervisor

Date: 14.05.2027

Place: Bilaspur

Head of the Bepartment

विभागाध्यक्ष HEAD जन्तु विज्ञान विभाग Department of Zoology गुरू घासीदास वि.वि., विलासपुर कोasidas Vishwavidvalava Bilas**ow** 

A Stime

# **TABLE OF CONTENTS**

- 1. INTRODUCTION
- 2. Food & Food Habits
- 3. Aggressive Behaviour
- 4. Reproductive Behaviour

and the same and the standard bands because the forces of

- 5. Common Behaviour
- 6. Conclusion
- 7. Reference

# DIABETES MANAGEMENT THROUGH MEDICINAL PLANTS

A project dissertation submitted on fulfillment of degree of B.Sc.

Zoology VI<sup>th</sup> Semester



Session 2023-24

Roll No :- 21061151

Enrollment No :- GGV/21/03354

**GUIDED BY:-**

Dr. Manish Kumar Tripathi

(Assistant Professor)

**SUBMITTED BY:-**

Shubhangi Vaishnava

B.Sc VIth Semester

# **CERTIFICATE**

This is to certify that Ms. Shubhangi Vaishnava has worked ad completed her project work for the degree of Bachelor of Science in the faculty of Zoology VI<sup>th</sup> Semester on Title of project work to be written "DIABETES MANAGEMENT THROUGH MEDICINAL PLANTS" under my supervision. It is her own work and facts reported by her personal findings and investigations.

Dr. Manish Kumar Tripathi

(Assistant Professor)

Date of Submission: 14.05. 2027

HEAD

जन्तु विज्ञान विभाग Department of Zooiogy गुरू घासीदास वि.वि., बिलासपुर

Shasidas Vishwayidyalaya Bilasou

# CONTENTS

- Abstract
- Introduction
- Types of diabetes
- Review of literature
- Conclusion
- References

# Obesity: Pathophysiology and therapeutic advances

A Project dissertation submitted
In Partial fulfillment for degree of
BACHELOR OF SCIENCE IN ZOOLOGY

by

Siddhant Banjare

Under supervision of

DR. GITA MISHRA
ASSISTANT PROFESSOR



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

2023-2024



# Department of Zoology

# Guru Ghasidas Vishwavidyalaya

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

### CERTIFICATE

This is to certify that Mr. Siddhant Banjare has worked for dissertation for B.Sc. (Zoology) degree entitled "Obesity: Pathophysiology and therapeutic advances" under my supervision for three months and this work has not been formed the basis for the award of any other degree.

It represents entirely an independent work on the part of candidate.

Date: 13/05/2024

Place: Bilaspur

Lidounie Victor

Date: 14.03. 2024

Place: Poslaspus

Head of the Department

भग ८० जन्त विज्ञान विभाग

Department of Zooicys पुरु धारीवारा वि.वि., बिलारापुर

hasidas Vishwavidvalava Bilasou

# Index

S. NO.	CONTENTS	PAGE NO.
1.	Introduction of obesity	01-02
2.	Obesity epidemiology	03-06
3.	Obesity in children and pregnancy risk	07-08
4.	Body mass index	09-10
5.	The impact of obesity on Quality of life	11-12
6.	Obesity associated abnormalities and conditions	13-16
7.	Healthy eating plan	17
8.	Pharmacological treatments of obesity	18-19
10.	Discussion	20-22
11.	References	23-28

# Hepatoprotective potential of caffeic acid against cyclophosphamide induced toxicity

A Dissertation Submitted

In partial fulfillment for the degree of

B. Sc. in Zoology

Ву

Srishti Sahu

Under the supervision of

Dr. Monika Bhadauria

**Professor** 



DEPARTMENT OF ZOOLOGY
GURU GHASIDAS VISHWAVIDYALAYA, KONI
BILASPUR (C.G) 495009



## Department of Zoology Guru Ghasidas Vishwavidyalaya Koni, Bilaspur 495009 (C.G.)

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

#### **CERTIFICATE**

This is to certify that **Srishti Sahu** has worked on undergraduate dissertation project entitled "**Hepatoprotective potential of caffeic acid against cyclophosphamide induced toxicity**" under my supervision for three months and this work has not been formed the basis for the award of any other similar title.

It represents an independent work on the part of candidate.

Signature of Supervisor

Date: 14105724

Place: Bilaspur

Heart of the Department

मह्मागाध्यक्ष HEAD जन्तु विज्ञान विभाग

Department of Zooiogy गुरु घासीदास वि.वि., बिलासपुर

shasidas Vishwayidvalaya Bilasou

# **CONTENTS**

- (1) Introduction
- (2) Review of Literature
- (3) Materials and Methods
- (4) Results and Discussion
- (5) References

# Neuroprotective effect of caffeic acid against aluminium and beryllium induced toxicity

#### DISSERTATION

Submitted

in

Partial fulfillment for the degree of B. Sc. in Zoology

By

SUMAN PARKAR

Under the supervision of

DR. MONIKA BHADAURIA

Professor



#### DEPARTMENT OF ZOOLOGY

GURU GHASIDAS VISWAVIDYALAYA, BILASPUR 495009 (C.G.)

2024



# Department of Zoology Guru Ghasidas Vishwavidyalaya Koni, Bilaspur 495009 (C.G.)

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

### **CERTIFICATE**

I, Ms Suman Parkar, student of B.Sc. VI Semester, Department of Zoology, Guru Ghasidas Vishwavidyalaya, hereby declare that the report entitled "Neuroprotective effect of caffeic acid against aluminium and beryllium induced toxicity" is a record of original laboratory and research work done by me under the supervision of Dr. Monika Bhadauria, Professor, Department of Zoology, Guru Ghasidas Vishwavidyalaya, Koni-Bilaspur 495009 (C.G).

The outcome of this work has not been submitted previously to any other university for any examination by me.

Signature of Supervisor

Date: 14/05/24 Place: Bilaspur

Head o epartment

Department of Zoology गुरु घारतीवास वि.वि., विलासपुर

masidas Vishwavidvalava Bilaspu

### **CONTENTS**

- (1) Introduction
- (2) Review of Literature
- (3) Materials and Methods
- (4) Results and Discussion
- (5) References

# HORMONAL REGULATION OF STRESS RESPONSE

A Project dissertation submitted in fulfillment for the degree of B.Sc. Zoology VI Semester

By

#### SWASTIK SARANGI

Under supervision of

#### Dr. MANISH KUMAR TRIPATHI

(ASSISTANT PROFESSOR)



DEPARTMENT OF ZOOLOGY

GURU GHASIDAS VISHWAVIDYALAYA, KONI, BILASPUR, (CG) 495009



#### Department of Zoology

#### Guru Ghasidas Vishwavidyalaya

(A central university established by act of parliament 2009 no. 25 of 2009)

#### **CERTIFICATE**

This is to certify that Mr. Swastik Sarangi has worked on an undergraduate dissertation project entitled "Hormonal regulation of Stress response" under my supervision for 3 months and the work has not been formed the basis of the award of any other similar title.

It represents entirely an independent work on the part of the candidate.

Date: 13/09/24
Place: 8/03/09

Signature of Supervisor

Place: Bilarpow1.

विभागाध्यक् Head of the Department

HEAD जन्त विज्ञान विभाग

Department of Zoology

**गुरू घासीदास वि.वि., बिलासपर** 

hasidas Vishwavidvalava Bilasou

# **CONTENTS**

- Abstract
- Introduction
- Review of literature
- References

# GURU GHASHIDAS VISHWAVIDAYALAYA KONI BILASPUR ( C.G )

### PROJECT REPORT ON

# FUNGAL DISEASES IN FISH IN RELATION TO POND MANAGMENT

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

#### **BACHELOR OF ZOOLOGY**



SUBMITTED BY -

SUBMITTED TO -

TANYA SINGH

ENROLL NO. - GGV/21/03359

DR. SANTOSH SINGH SIR

UNDER THE GUIDANCE OF

ROLL NO. - 21061156

ASSISTENT PROFFESOR

DEPARTMENT OF ZOOLOGY

#### **CERTIFICATE**

I, the undersigned, certify that the dissertation entitled "FUNGAL DISEASES IN FISHES IN RELATION TO POND MANAGEMENT" submitted by Tanya Singh. Enrolment number – GGV/21/03359 to the department of Zoology, Guru Ghashidas Vishwavidiyalaya Chhattishgarh India for the partial fulfillment of the requirement for the award of the degree of Bachelor of Science in Zoology has been approved.

Depertment of Zoology पुरु घासीदास वि.वि., बिलासपुर Jur Shasidas Vishwavidvalava विशेवक्रक Dr. Santosh Singh

Assistent Professor

Department of Zoology

# BEHAVIOUR OF MONKEY

A Review Dissertation
Submitted in partial fulfillment for the degree of
B.Sc. (Hons.) in Zoology VI<sup>th</sup> sem

Submitted by Tarun Diwakar

[Roll No.21061157]

Under Supervision of Prof. Seema rai (Professor of Zoology)



DEPARTMENT OF ZOOLOGY
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
2024



### Department of Zoology

#### Guru Ghasidas Vishwavidyalaya

(A central university established by central university Act 2009 No. 25 0f 2009)

#### CERTIFICATE

I certify that the dissertation entitled "Behaviour of monkey" submitted for the fulfilment of B.Sc. Hons. Zoology by Tarun Diwakar, is the record of research /review work carried out by him during the period from march to may 2024, under my supervision and that this research work has not formed the basis for the award of any degree, diploma, associateship, fellowship or other similar titles in this university or any other university or institution.

Date: 14-05-2024

Signature of the Supervisor (Prof. Seema Rai)

Place: Bîlarpur (GHV)

Signature of the Head Of Department (Prof. Seema Rai)

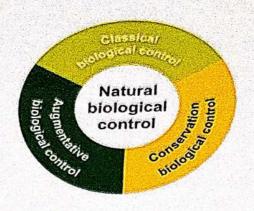
ायभागाध्यक्ष HEAD जन्तु विज्ञान विभाग Department of Zoology गुरू घारीदारा वि.वि., विलासपुर hasidas Vishwavidvalava विश्वेडठ०७

#### **CONTENTS**

- INTRODUCTION
- ACTIVITY PATTERN
- SOCIAL ORGANISATION
- MATING AND PARENTAL CARE
- FEMALES IN GROUPS
- HOME RANGE/TERRITORY
- BEHAVIOUR SOCIAL GROOMING

REPRODUCTION
MOTHER- INFANT RELATIONSHIP
DOMINANCE
AGGRESION
COMMUNICATION

#### Biocontrol of Insect pest



Dissertation Submitted In
Partial Fulfillment For The Degree Of

B.Sc. (Hon's) In Zoology

By

Tikesh jyoti

21061158

Under The Supervision Of
Dr. Naresh Chandra Agrawal
(Assistant Professor)

Department of Zoology

**School of Life Sciences** 

Guru Ghasidas Vi wavidyalaya, Bilaspur (C.G.)



# Department of Zoology

## Guru Ghasidas Vishwavidyalaya

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

#### CERTIFICATE

This is to certify that **Tikesh jyoti** has worked for dissertation for B.Sc. (Zoology) degree entitled "**BIOCONTROL OF INSECT PEST**" under my supervision for three months and this work has not been formed the basis for the award of any other degree.

It represents entirely an independent work on the part of candidate.

Signature of the Supervisor

Date: 14th May, 2024

Place: Bilaspur

Forwarded

Head of the Bepartment

अवभागाध्यक्ष
HEAD
अन्तु विज्ञान विभाग
Department of Zoology
गुरु घासीदास वि.वि., बिलासपुर
hasidas Vishwavidvalava Brissay

#### CONTENTS

- Review of literature
- Abstract
- Introduction
- Approaches/Strategies of Biological Control of Insect pests
  - 1. conservation biocontrol
  - 2. Classical Biological Control (CBC)
  - 3. Augmentation
- Biological control agents
  - 1. Predators
  - 2. Paracitoids
  - 3. Nematodes
  - 4. Bacteria
- 5. Viruses
- 6. Fungi
- Benefits of Biocontrol
- References

# A REVIEW ON IMPACTS OF PESTICIDES ON AVIAN COMMUNITY

Review Article Submitted for Partial Fulfillment of the Degree of Bachelor of Science in Zoology (Hons.)

#### **Submitted By**

Vasundhara Mishra

Session 2023-24

Roll No.- 21061159

Enrollment No.- GGV/ 21/03362

Under the Supervision of

Dr. Sushant Kumar Verma Assistant Professor



Department of Zoology Guru Ghasidas Vishwavidyalaya Bilaspur, Chattisgarh



# **CERTIFICATE**

This is to certify that Ms. Vasundhara Mishra has written a review article entitled "IMPACTS OF PESTICIDES ON AVIAN COMMUNITY" under my guidance for the degree of Bachelor of Science in Zoology.

Signature of supervisor

Head of Department

ग्वभागाध्यक्ष
HEAD
अन्तु विज्ञान विभाग
Department of Zoology
गुरु घासीदास वि.वि., बिलासपुर
अhasidas Vishwavidvalava Bilaspu

Date:- 14.05.24.

Place:- Bilaspur

# CONTENT

- . INTRODUCTION
- BIRDS AND THEIR IMPORTANCE
- . PESTICIDES
- HOW PESTICIDES AFFECTS THE BIRDS BEHAVIOUR?
- . IMPACTS OF PESTICIDES ON AVIAN COMMUNITY
- HOW THESE PESTICIDES HAVE AFFECTED THE BIRDS POPULATION?
- REVIEW OF LITERATURE
- CONCLUSION
- REFERENCES

#### GURU GHASHIDAS VISHWAVIDAYALAYA KONI BILASPUR ( C.G )

#### PROJECT REPORT ON

#### THE ENDOCRINE SYSTEM

#### **AND**

#### **HORMONE REGULATION**

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

#### BACHELOR OF ZOOLOGY



SUBMITTED BY -

VIKASH RATHORE

ENROLL NO. - GGV/21/03360

ROLL NO. - 21061160

SUBMITTED TO -

UNDER THE GUIDANCE OF

DR. SANTOSH SINGH SIR

ASSISTANT PROFFESOR



#### Department of Zoology

Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G.

#### **CERTIFICATE**

I, the undersigned, certify that the dissertation entitled "THE ENDOCRINE SYSTEM AND HORMONE REGULATION" submitted by VIKASH RATHORE. Enrolment number – GGV/21/03363 to the department of Zoology, Guru Ghashidas Vishwavidiyalaya Chhattishgarh India for the partial fulfillment of the requirement for the award of the degree of Bachelor of Science in Zoology has been approved.

जन्तु विज्ञान विभाग Department of Zoology गुरू घासीदास वि.वि., बिलासपुर Ghasidas Vishwavidvalava Briasour Dr. Santosh Singh

far new Sind

**Assistant Professor** 

Department of Zoology

#### TABLE OF CONTENTS

- 1. INTRODUCTION
- 2. LITERTURE REVIEW
- 3. ENDOCRINE GLAND
  - HYPOTHALAMUS
  - PITUITARY GLAND
  - THYROID GLAND
  - PARATHYROID GLAND
  - ADRENAL GLAND
  - PANCREAS
  - GONADS
- 4. FEEDBACK MECHANISM
- 5. CONCLUSION

# To Study the effect of local fruits and Herbal plant on (Escherichia coli and Staphylococcus Aureus) bacteria associated with urinary tract infection(UTI)

Dissertation/Project

Submitted by

#### VINAY RATHOUR

in partial fulfillment for the award of the degree

of
Bachelor of Science(Zoology)



# GURU GHASIDAS VISHWAVIDYALAYA BILASPUR(C.G.) DEPARTMENT OF ZOOLOGY

Supervised By

L.V.K.S. Bhaskar

Professor

Department Of Zoology

Submitted By

Vinay Rathour

GGV/21/03364

#### CERTIFICATE

Departament of Zoology
Guni Ghasidas Visdiwasidyalaya, Bilaspur (CG)

This is to certify that Vinay Rathour (Enrolment No. GGV/21/03364), a student in the 6th Semester of Bachelor of Science(Zoology) at the Department of Zoology, Guru Ghasidas Vishwavidyalaya, Bilaspur. (CG) has successfully completed his/her dissertation/project on "TO STUDY THE EFFECT OF LOCAL FRUITS AND HERBAL PLANT ON (ESCHERICHIA COLI AND STAPHYLOCOCCUS AUREUS) BACTERIA ASSOCIATED WITH URINARY TRACT INFECTION(UTI)"

I hereby confirm that the matter embodied in the dissertation/project has not been submitted to any other University/Institute for the award of a post graduation degree at Guru Ghasidas Vishwavidyalaya, Bilaspur. (CG)

Date 14.05.2027

L.V.K.S. Bhaskar

Professor

Department Of Zoology

Guru Ghasidas Vishwavidyalaya

जन्तु विज्ञान विनिष् Department of Zeology गुरू घासीदास वि.वि., बिलासपुर Ghasidas Vishwavidvalava Bilaspus

211

#### CONTENTS

CHAPTER 1
1.1 INTRODUCTION
CHAPTER 2
2.1 MATERIALS AND METHOD . 8-11
CHAPTER 3
3.1 RESULTS
CHAPTER 4
4.1 CONCLUSION 12
CHAPTER 5
5.1 REFERENCE 12-L

# Review on Impact of Invasive Species on Wetland Ecosystem



Review Paper Submitted In

Partial Fulfillment for The Degree Of

**B.Sc. In Zoology** 

By

Yash Rathore

Under The Supervision Of

Dr. Sushant Kumar Verma Sir



Department of Zoology,

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

2024



#### गुरु घासीदास विश्वविद्यालय, बिलासपुर Guru Ghasidas Vishwavidyalaya, Bilaspur

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

#### **CERTIFICATE**

This is to certify that Mr. Yash Rathore has worked on graduate review project entitled "A Review on Impact of Invasive Species on Wetland Ecosystem" under my supervision and this work has not been formed the basis for the award of any other degree.

It represents entirely an independent work on the part of candidate.

Date: 14/05/24

Department of Zoology गुरु पासीदास वि.वि., विलासप्र Sur Shasidas Vishwavidyalaya क्रि.३४०००

Place: Bilaspur

Signature of Supervisor

# **TABLE OF CONTENTS:**

- 1. Abstract
- 2. Review of literature
- 3. Introduction
- 4. Wetlands
- 5. Invasion of Invasive species
- 6. Pathways of Invasion
  - 6.1 Ornamental trade
  - 6.2 Aquaculture
  - 6.3 Canals and water diversion
  - 6.4 Ballast water
- 7. Impact of Invasive Species
  - 7.1 Water hyacinth
  - 7.2 Exotic Aquaculture species
  - 7.3 Invasive Ornamental fishes
- 8. Management and Control
- 9. Conclusion
- 10. Reference