



**“PRELIMINARY ANTIBACTERIAL AND CYTOTOXICITY
ANALYSIS OF *ACALYPHA FRUTICOSA* FORSSK.”**

This dissertation is submitted to the
University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: **ARYASREE C.V**.....

Reg No: **CRAVSB0001**.....

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY

CARMEL COLLEGE (Autonomous), MALA




CERTIFICATE

This is to certify that the dissertation entitled “Preliminary Antibacterial and Cytotoxicity Analysis of *Acalypha fruticosa* FORSSK.” is a record of bonafide project work successfully completed by Aryasree C V with Reg. No. CRAVSBO001 ,Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of Dr Bindhu K B, Associate Professor and Head in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.


Dr. Bindhu K B

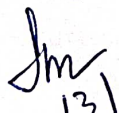
Research Guide


Dr. Bindhu K B

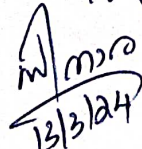
Head of the Department
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

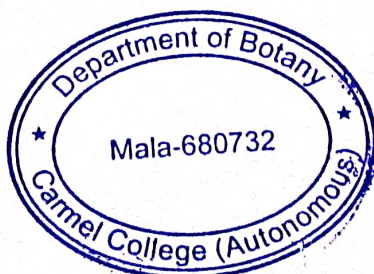
Examiners

1.


13/3/2024

2.


13/3/24



DECLARATION

I hereby declare that the dissertation entitled “**Preliminary Antibacterial and Cytotoxicity Analysis of *Acalypha fruticosa* Forssk.**” submitted to Calicut University in partial fulfillment of the requirement for the award of Bachelor of Science in Botany has been originally carried out under the guidance of Dr Bindhu K B, Associate Professor and Head in Research and PG Department of Botany, Carmel College (Autonomous), Mala. Any part of this dissertation has formed the basis for the award of any degree, Diploma, Associate ship or other title of any University or Institution.



Aryasree C V

Place : Mala

Date : 06-03-2024



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For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: *ASHNY UV*.....

Reg No: *CRAVSB0002*.....

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



CERTIFICATE

This is to certify that the dissertation entitled “Preliminary Antibacterial and Cytotoxicity Analysis of *Acalypha fruticosa* FORSSK.” is a record of bonafide project work successfully completed by Ashny U V with Reg. No. CRAVSBO002 ,Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of Dr Bindhu K B, Associate Professor and Head in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

Dr. Bindhu K B

Research Guide

Dr. Bindhu K B

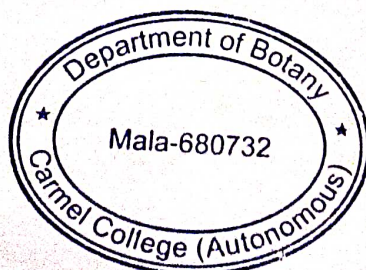
Head of the Department
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

Examiners

1.

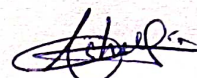
13/3/2024

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Ashny U V

Place : Mala

Date : 06-03-2024



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This dissertation is submitted to the
University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: ...**JENI RAJAPPAN**.....

Reg No: ...**C.R.A.V.S.B.0003**.....

Research and PG Department of Botany

Carmel College (Autonomous), Mala


2023-2024


RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



CERTIFICATE


This is to certify that the dissertation entitled “Preliminary Antibacterial and Cytotoxicity Analysis of *Acalypha fruticosa* FORSSK.” is a record of bonafide project work successfully completed by Jeni Rajappan with Reg. No. CRAVSBO03 ,Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of Dr Bindhu K B, Associate Professor and Head in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.


Dr. Bindhu K B
Research Guide


Dr. Bindhu K B
Head of the Department
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

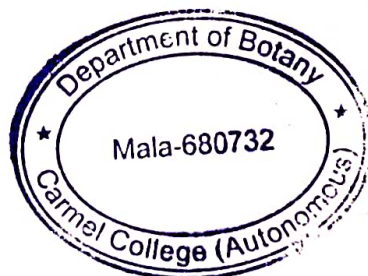
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Jeni Rajappan

Place : Mala

Date : 06-03-2024



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This dissertation is submitted to the
University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: ...**KRISHNAPRIYA: N:R**...

Reg No:**CRAVSBO004**.....

Research and PG Department of Botany

Carmel College (Autonomous), Mala

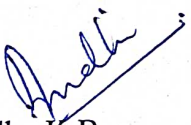
2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



CERTIFICATE

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Dr. Bindhu K B

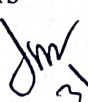
Research Guide


Dr. Bindhu K B


Head of the Department

Examiners

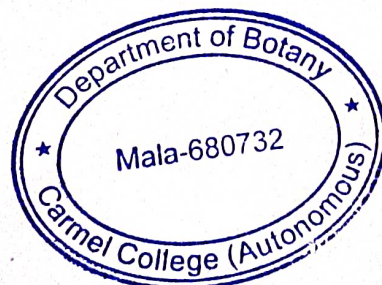
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Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



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Krishnapriya N R

Place : Mala

Date : 06-03-2024



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University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: *NIMISHA . PS*

Reg No: *CRAVSB0005*

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024



CERTIFICATE

This is to certify that the dissertation entitled “Preliminary Antibacterial and Cytotoxicity Analysis of *Acalypha fruticosa* FORSSK.” is a record of bonafide project work successfully completed by Nimisha P S with Reg. No. CRAVSBO05 ,Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of Dr Bindhu K B, Associate Professor and Head in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

Dr. Bindhu K B
Research Guide

Dr. Bindhu K B
Head of the Department

Examiners

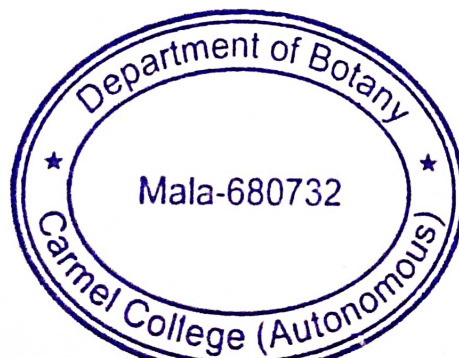
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Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



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Nimisha

Nimisha P S

Place : Mala

Date : 06-03-2024



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Submitted by

Name: **PARVATHY.P**

Reg No: **CRAVSBO006**

Research and PG Department of Botany

Carmel College (Autonomous), Mala

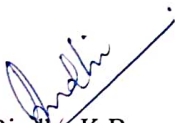
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RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



CERTIFICATE

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Dr. Bindhu K B
Research Guide


Dr. Bindhu K B
Head of the Department

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

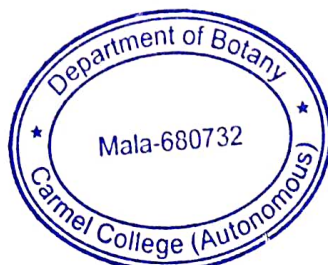
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Parvathy P

Place : Mala

Date : 06-03-2024



**“ MICROALGAL DIVERSITY OF SELECTED PONDS IN
MALA PANCHAYATH”**

This dissertation is submitted to the
University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: SNEHA.K.S

Reg No: CRAVSBO007

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



CERTIFICATE


This is to certify that the dissertation entitled “**Microalgal Diversity of selected ponds in mala panchayath.**” is a record of bonafide project work successfully completed by **Sneha.K.Swith** Reg. No.**CRAVSBO007** Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of Dr.Geo Joseph, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.



Dr. Geo Joseph

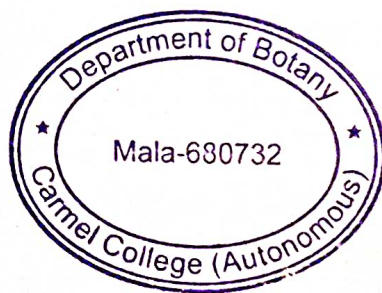
Research Guide


Dr. Bindhu K.B.

Head of the Department
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

Valued
1. 
13/3/24

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13/3/24



DECLARATION

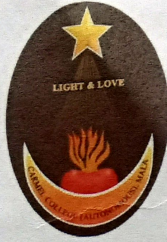
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Name:SSNEHA.K.S

Mala

11/3/24



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MALA PANCHAYATH”**

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University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: AHLIYA

Reg No: CRAVSBO008

Research and PG Department of Botany

Carmel College (Autonomous), Mala

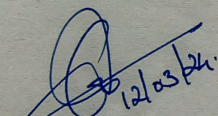
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CARMEL COLLEGE (Autonomous), MALA



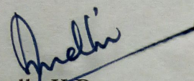
CERTIFICATE

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12/03/24

Dr. Geo Joseph

Research Guide



Dr. Bindhu K.B.

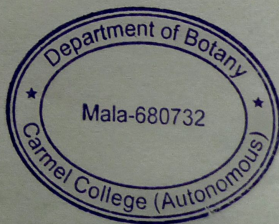
Head of the Department

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

Valued

1. Jm
13/3/24

2. Jm
13/3/24



DECLARATION

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Name: Ahliya



Place : Mala

Date : 11-3-2024



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This dissertation is submitted to the
University of Calicut

For partial fulfillment of
Bachelor of Science in Botany

Submitted by

Name: AJINI RAJ .K

Reg No: CRAVSBO009

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024


RESEARCH AND PG DEPARTMENT OF BOTANY


CARMEL COLLEGE (Autonomous), MALA



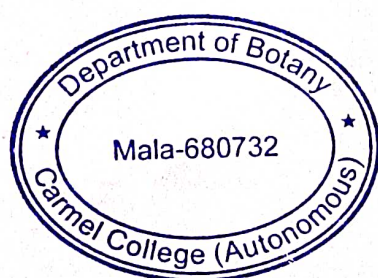
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Dr. Geo Joseph
Research Guide


Dr. Bindhu K.B.
Head of the Department
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

Vahud
1. Jm 13/3/24
2. m/m 13/3/24



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Name:AJINIRAJ.K



Mala

11/3/24



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For partial fulfillment of

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Submitted by

Name: Aleena Biju

Reg No: CRAVSBO010

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY

CARMEL COLLEGE (Autonomous), MALA



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This is to certify that the dissertation entitled “ **Microalgal diversity of selected ponds in mala panchayath**” is a record of bonafide project work successfully completed by **Aleena Biju** with Reg. No. **CRAVSBO010**, Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of **Dr. GEO JOSEPH**, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

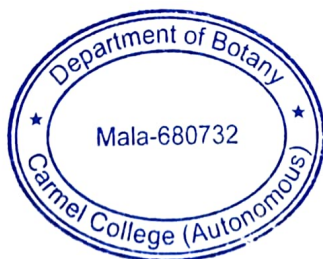

Dr. Geo Joseph

Research Guide


Dr. Bindha K.B.

Head of the Department

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



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1. Jm
13/3/2024
2. m/m
13/3/24

DECLARATION

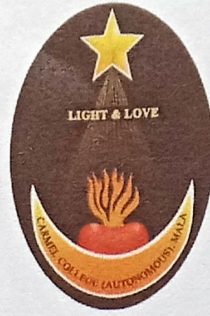
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Name : Aleena Biju



Place : Mala

Date : 11.03.2024



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Name: ANITT JAMES

Reg No: CRAVSBO012

Research and PG Department of Botany

Carmel College (Autonomous), Mala

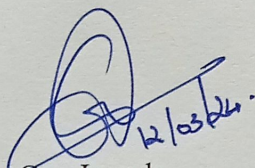
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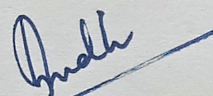
RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA

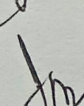


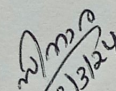
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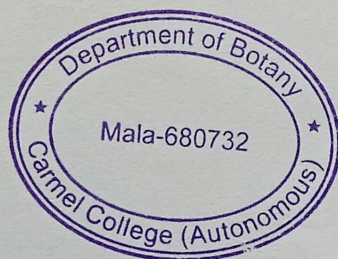
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Dr. Geo Joseph
Research Guide


Dr. Bindhu K. B.
Head of the Department
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

Valued
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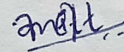
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Name: Anitt James



Place : Mala

Date : 11.03.2024



**" MICROALGAL DIVERSITY OF SELECTED PONDS IN
MALA PANCHAYATH "**

This disertation is submitted to the
University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: ANUNANDA. M R

Reg No: CRAVSBO013

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024


RESEARCH AND PG DEPARTMENT OF BOTANY

CARMEL COLLEGE (Autonomous), MALA

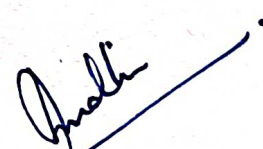


CERTIFICATE

This is to certify that the dissertation entitled “ **Microalgal diversity of selected ponds in mala panchayath**” is a record of bonafide project work successfully completed by **Anunanda.M R** with Reg. No.**CRAVSBO013**, Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of **Dr.Geo Joseph**, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.


12/03/24
Dr. Geo Joseph

Research Guide.

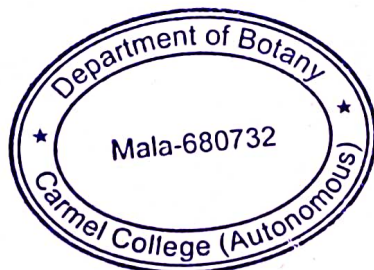

Dr. Bindhu K. B

Head of the Department

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

Valued
1. Jm
13/3/2024

2. Am
13/3/24



DECLARATION

I hereby declare that the dissertation entitled “ **Microalgal diversity of selected ponds in mala panchayath**” submitted to Calicut University in partial fulfillment of the requirement for the award of Bachelor of Science in Botany has been originally carried out under the guidance of Dr.Geo Joseph, Assistant Professor, Research and PG Department of Botany, Carmel College (Autonomous), Mala. Any part of this dissertation has formed the basis for the award of any degree, Diploma, Associate ship or other title of any University or Institution.

Name : Anunanda.M R



Place : Mala

Date : 11/12/2024



PROJECT

**UNVEILING THE BOTANICAL SYMPHONY:
MORPHOLOGICAL AND ANATOMICAL INSIGHTS INTO
DIVERSE STEM MODIFICATIONS**

DISSERTATION SUBMITTED

To the University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: Arya K S

Reg No: CRAVSBO014

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



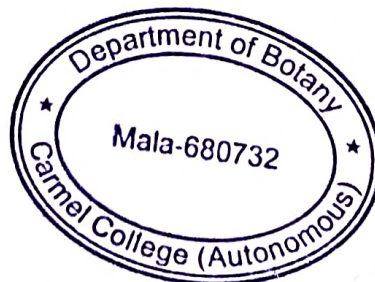
CERTIFICATE

This is to certify that the dissertation entitled “Unveiling the Botanical Symphony: Morphological and Anatomical Insights into Diverse Stem Modifications.” is a record of bonafide project work successfully completed by ARYA K S with Reg. No. CRAVSBO014 Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of DR . DHANYA THOMAS TT, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

Dr. Dhanya Thomas TT

Dr. Bindhu K.B.

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



Valued
1. 13/3/24
2. 13/3/24

DECLARATION

I hereby declare that the dissertation entitled “**Unveiling the Botanical Symphony: Morphological and Anatomical Insights into Diverse Stem Modifications**” submitted to Calicut University in partial fulfillment of the requirement for the award of Bachelor of Science in Botany has been originally carried out under the guidance of Dr.Dhanya Thomas T.T, Assistant Professor, Research and PG Department of Botany, Carmel College (Autonomous), Mala. Any part of this dissertation has formed the basis for the award of any degree, Diploma, Associate ship or other title of any University or Institution.

Arya K S



Place : Mala

Date : 13/3/2024



PROJECT

**UNVEILING THE BOTANICAL
SYMPHONY: MORPHOLOGICAL AND ANATOMICAL
INSIGHTS INTO DIVERSE STEM MODIFICATIONS**

DISSERTATION SUBMITTED

To the University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: Asna VN

Reg No: CRAVSBO015

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



CERTIFICATE

This is to certify that the dissertation entitled “Unveiling the Botanical Symphony: Morphological and Anatomical Insights into Diverse Stem Modifications.” is a record of bonafide project work successfully completed by ASNA VN with Reg. No. CRAVSBO015 Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of DR . DHANYA THOMAS TT, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

Dr. Dhanya Thomas TT

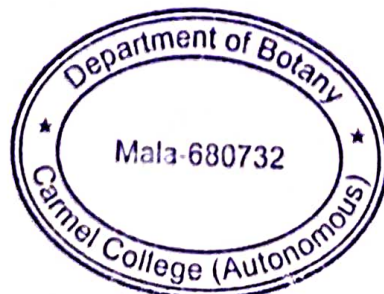
Dr. Bindhu K.B.

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

Valued

1. Jm
13/3/2024

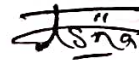
2. Amma
13/3/24



DECLARATION

I hereby declare that the dissertation entitled “Unveiling the Botanical Symphony: Morphological and Anatomical Insights into Diverse Stem Modifications” submitted to Calicut University in partial fulfillment of the requirement for the award of Bachelor of Science in Botany has been originally carried out under the guidance of Dr.Dhanya Thomas T.T, Assistant Professor, Research and PG Department of Botany, Carmel College (Autonomous), Mala. Any part of this dissertation has formed the basis for the award of any degree, Diploma, Associate ship or other title of any University or Institution.

Asna VN



Place : Mala

Date : 13/03/2024



PROJECT

**“UNVEILING THE BOTANICAL
SYMPHONY: MORPHOLOGICAL AND ANATOMICAL
INSIGHTS INTO DIVERSE STEM MODIFICATIONS”**

This dissertation is submitted to the
University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: Aswathi A A

Reg No: CRAVSBO016

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



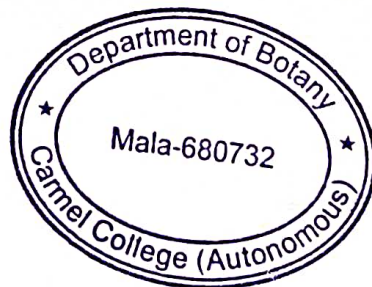
CERTIFICATE

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Dr. Dhanya Thomas TT

Dr. Bindhu K. B.

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



Valued

1. 13/3/24

2.

13/3/24

DECLARATION

I hereby declare that the dissertation entitled “**UNVEILING THE BOTANICAL SYMPHONY:MORPHOLOGICAL AND ANATOMICAL INSIGHTS INTO DIVERSE STEM MODIFICATIONS**” submitted to Calicut University in partial fulfillment of the requirement for the award of Bachelor of Science in Botany has been originally carried out under the guidance of Dr Dhanya Thomas TT Assistant Professor, Research and PG Department of Botany, Carmel College (Autonomous), Mala. Any part of this dissertation has formed the basis for the award of any degree, Diploma, Associate ship or other title of any University or Institution.

Name: Aswathi A A



Place : MALA

Date :



PROJECT

**“UNVEILING THE BOTANICAL
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This dissertation is submitted to the
University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: Aswathy PA

Reg No: CRAVSBO017

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



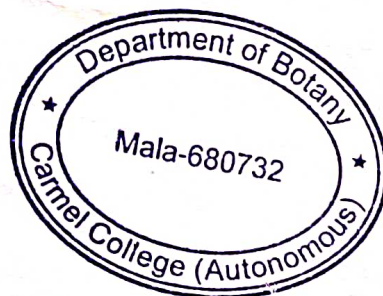
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Dr. Dhanya Thomas TT

Dr. Bindhu K.B.

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



Valued
1. Jm
13/3/2024
2. m/m
13/3/24

DECLARATION

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Name: Aswathi PA



Place: MALA

Date :



PROJECT

**“UNVEILING THE BOTANICAL
SYMPHONY: MORPHOLOGICAL AND ANATOMICAL
INSIGHTS INTO DIVERSE STEM MODIFICATIONS”**

This dissertation is submitted to the
University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: Devika sadanandan

Reg No: CRAVSBO019

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

**RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA**



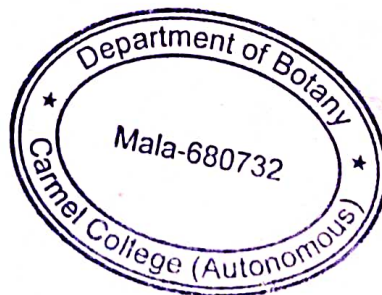
CERTIFICATE

This is to certify that the dissertation entitled “Unveiling the Botanical Symphony: Morphological and Anatomical Insights into Diverse Stem Modifications.” is a record of bonafide project work successfully completed by **DEVIKA SADANANDAN** with Reg. No. **CRAVSBO019** Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of **DR . DHANYA THOMAS TT**, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

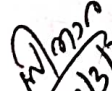

Dr. Dhanya Thomas TT


Dr. Bindhu K.B.

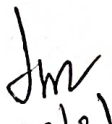
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



Valued

1. 
13/3/24

2.


13/3/2024

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Name: Devika Sadanandan

Devika

Place : MALA

Date : 13/03/2024



**STUDIES ON PLANT POLLINATORS IN MALA GRAMA
PANCHAYAT**

This dissertation is submitted to the
University of Calicut

For the partial fulfillment of
Bachelor of Science in Botany

Submitted by
Name: GIODIKA. D. G.
Reg. No: CRAVSB0021

**Research and PG Department of Botany
Carmel College (Autonomous), Mala
2023 - 2024**

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



CERTIFICATE

This is to certify that the dissertation entitled “ *STUDIES ON PLANT POLLINATORS IN MALA GRAMA PANCHAYAT* ” is a record of bonafide project work successfully completed by GOPIKA O. G with Reg. No.CRAVSBO021, Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of Dr. ROBY T J,, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

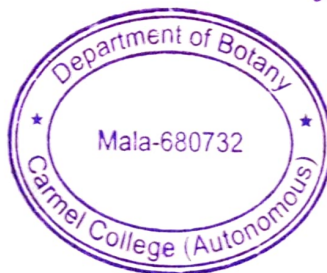
Dr. Roby T J

Research Guide

Dr. Bindhu K B

Head of the Department

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



Valued
I. M. D. S.
13/3/24

a
Jm
13/3/2024

DECLARATION

I hereby declare that the dissertation entitled "*Studies on plant pollinators in Mala Grama Panchayat*" submitted to Calicut University in partial fulfillment of the requirement for the award of Bachelor of Science in Botany has been originally carried out under the guidance of Dr. ROBY T J, Assistant Professor, Research and PG Department of Botany, Carmel College (Autonomous), Mala. Any part of this dissertation has formed the basis for the award of any degree, Diploma, Associateship, or other title of any University or Institution.

Mala

07-03-2024

GOPIKA Q. G





STUDIES ON PLANT POLLINATORS IN MALA GRAMA PANCHAYAT

This dissertation is submitted to the
University of Calicut

For the partial fulfillment of
Bachelor of Science in Botany

Submitted by

Name: **KRISHNENDU P.U**

Reg. No: **C.R.A.V.S.B.O.O.2.2**

**Research and PG Department of Botany
Carmel College (Autonomous), Mala
2023 - 2024**

**RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA**



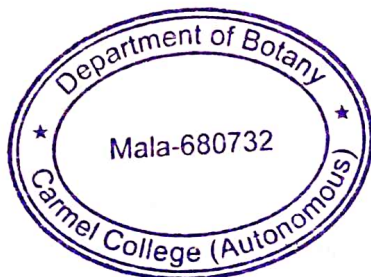
CERTIFICATE

This is to certify that the dissertation entitled “ *STUDIES ON PLANT POLLINATORS IN MALA GRAMA PANCHAYAT* ” is a record of bonafide project work successfully completed by KRISHNENDU P. U with Reg. No.CRAVSBO022, Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of Dr. ROBY T J,, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

Dr. Roby T J
Research Guide

Dr. Bindhu K B
Head of the Department

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



Valuee

1. 13/3/2024

2. 13/3/2024

DECLARATION

I hereby declare that the dissertation entitled "*Studies on plant pollinators in Mala Grama Panchayat*" submitted to Calicut University in partial fulfillment of the requirement for the award of Bachelor of Science in Botany has been originally carried out under the guidance of Dr. ROBY T J, Assistant Professor, Research and PG Department of Botany, Carmel College (Autonomous), Mala. Any part of this dissertation has formed the basis for the award of any degree, Diploma, Associateship, or other title of any University or Institution.

Mala

07-03-2024

KRISHNENU P. U

Krishnenu P. U



**STUDIES ON PLANT POLLINATORS IN MALA GRAMA
PANCHAYAT**

This dissertation is submitted to the
University of Calicut

For the partial fulfillment of
Bachelor of Science in Botany

Submitted by

Name: **NANDANA .K.M**

Reg. No: **CRAVSB0023**

**Research and PG Department of Botany
Carmel College (Autonomous), Mala
2023 - 2024**

**RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA**

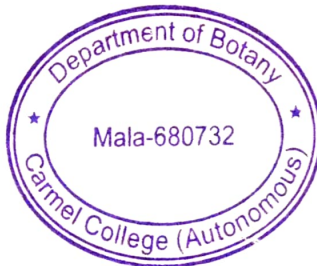


CERTIFICATE

This is to certify that the dissertation entitled “ *STUDIES ON PLANT POLLINATORS IN MALA GRAMA PANCHAYAT* ” is a record of bonafide project work successfully completed by NANDANA K. M with Reg. No.CRAVSBO023, Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of Dr. ROBY T J,, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

Dr. Roby T J
Research Guide

Dr. Bindhu K B
Head of the Department
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



Valued
1. M/2024
13/3/24

2. Jm
13/3/2024

DECLARATION

I hereby declare that the dissertation entitled "*Studies on plant pollinators in Mala Grama Panchayat*" submitted to Calicut University in partial fulfillment of the requirement for the award of Bachelor of Science in Botany has been originally carried out under the guidance of Dr. ROBY T J, Assistant Professor, Research and PG Department of Botany, Carmel College (Autonomous), Mala. Any part of this dissertation has formed the basis for the award of any degree, Diploma, Associateship, or other title of any University or Institution.

Mala
07-03-2024

NANDANA K. M





**STUDIES ON PLANT POLLINATORS IN MALA GRAMA
PANCHAYAT**

This dissertation is submitted to the
University of Calicut

For the partial fulfillment of
Bachelor of Science in Botany

Submitted by

Name: **REEMA K J**

Reg. No: **CRAYS.B0024**

**Research and PG Department of Botany
Carmel College (Autonomous), Mala
2023 - 2024**

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



CERTIFICATE

This is to certify that the dissertation entitled “ *STUDIES ON PLANT POLLINATORS IN MALA GRAMA PANCHAYAT* ” is a record of bonafide project work successfully completed by REEMA K. J with Reg. No.CRAVSBO024, Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of Dr. ROBY T J., Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

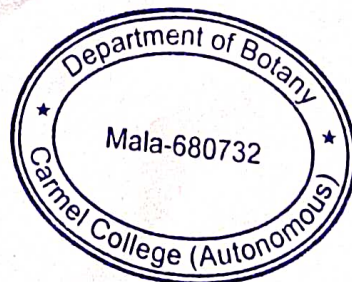
Dr. Roby T J

Research Guide

Dr. Bindhu K B

Head of the Department

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



Valued

1. M/ma
13/3/24

2. Jm
13/3/2024

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Mala

07-03-2024

REEMA K. J





**“Preparation Herbal Oil from Datura and Ocimum
and antibacterial studies”**

This dissertation is submitted to the
University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: Sruthy V.R

Reg No: CRAVSBO026

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

**RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA**



CERTIFICATE

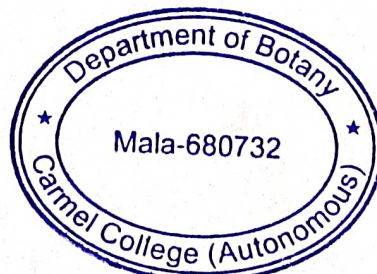
This is to certify that the dissertation entitled “**Preparation Herbal Oil from Datura and Ocimum and antibacterial studies**” is a record of bonafide project work successfully completed by **Sruthy V.R** with Reg.No **CRAVSBO026**, Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of **Dr. Sinjumol Thomas**, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

Valued
Dr. Sinjumol Thomas *Dr. Sinjumol Thomas*
Assistant Professor & Research Guide
Department of Botany
Carmel College (Autonomous) Mala
Thrissur - 680732, India

Dr. Bindhu K. B.
Dr. Bindhu K.B.
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

Examiner 1 :

Examiner 2 :



DECLARATION

I hereby declare that the dissertation entitled “**Preparation Herbal Oil from Datura and Ocimum and antibacterial studies**” submitted to Calicut University in partial fulfillment of the requirement for the award of Bachelor of Science in Botany has been originally carried out under the guidance of Dr. Sinjumol Thomas, Assistant Professor, Research and PG Department of Botany, Carmel College (Autonomous), Mala. Any part of this dissertation has formed the basis for the award of any degree, Diploma, Associate ship or other title of any University or Institution.



Name : Sruthy V.R

Place : Mala

Date : 04/03/2024



**“Preparation Herbal Oil from Datura and Ocimum
and antibacterial studies”**

This dissertation is submitted to the
University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: Suvarna M.S

Reg No: CRAVSBO027

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

**RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA**



CERTIFICATE

This is to certify that the dissertation entitled “**Preparation Herbal Oil from Datura and Ocimum and antibacterial studies**” is a record of bonafide project work successfully completed by **Suvarna M Swith** Reg. No. **CRAVSBO027**, Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of **Dr. Sinjumol Thomas**, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

Value
Dr. Sinjumol Thomas **Dr. Sinjumol Thomas**
Assistant Professor & Research Guide
Department of Botany
Carmel College (Autonomous) Mala
Thirissur - 680732, India

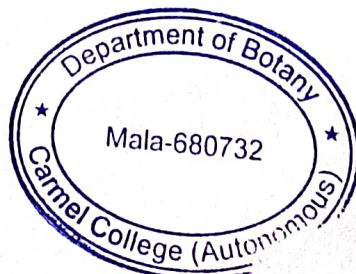
Examiner 1 :

Anjali
Dr. Bindu K B
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

Examiner 2 :

m/m
13/3/24

Jm
13/3/2024



DECLARATION

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Name: Suvarna M S

Place : Mala

Date : 04-03-2024



**“Preparation Herbal Oil from Datura and Ocimum
and antibacterial studies”**

This dissertation is submitted to the
University of Calicut

For partial fulfillment of
Bachelor of Science in Botany

Submitted by

Name: ThrishaKrishna E.S

Reg No: CRAVSBO028

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



CERTIFICATE

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Dr. Sinjumol Thomas

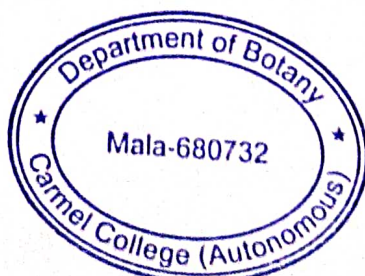
Examiner 1 :

Examiner 2 :

[Signature]
12/03/24
Dr. Sinjumol Thomas
Assistant Professor & Research Guide
Department of Botany
Carmel College (Autonomous) Mala
Thrissur - 680732, India

Dr. Bindhu K.B.

[Signature]
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732



Valued
1. *[Signature]*
13/3/24

2. *[Signature]*
13/3/2024

DECLARATION

I hereby declare that the dissertation entitled "Preparation Herbal Oil from *Datura* and *Ocimum* and antibacterial studies" submitted to Calicut University in partial fulfillment of the requirement for the award of Bachelor of Science in Botany has been originally carried out under the guidance of Dr. Sinjumol Thomas, Assistant Professor, Research and PG Department of Botany, Carmel College (Autonomous), Mala. Any part of this dissertation has formed the basis for the award of any degree, Diploma, Associate ship or other title of any University or Institution.



Name : ThrishaKrishna E.S

Place : Mala

Date : 04/03/2024



**“Preparation Herbal Oil from Datura and Ocimum
and antibacterial studies”**

This dissertation is submitted to the
University of Calicut

For partial fulfillment of

Bachelor of Science in Botany

Submitted by

Name: Vismaya A.M

Reg No: CRAVSBO029

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



CERTIFICATE

This is to certify that the dissertation entitled “Preparation Herbal Oil from Datura and Ocimum and antibacterial studies” is a record of bonafide project work successfully completed by Vismaya A.M with Reg. No. CRAVSBO029 Department of Botany, Carmel College (Autonomous), Mala, under the supervision and guidance of Dr. Sinjumol Thomas, Assistant Professor in Research and PG Department of Botany, Carmel College (Autonomous), Mala, for the partial fulfillment of requirement for the award of the degree of Bachelor of Science in Botany.

Dr. Sinjumol Thomas

[Signature]
12/3/24
Dr. Sinjumol Thomas
Assistant Professor & Research Guide
Department of Botany
Carmel College (Autonomous) Mala
Thrissur - 680732, India

Examiner 1 :

Dr. Bindhu K.B

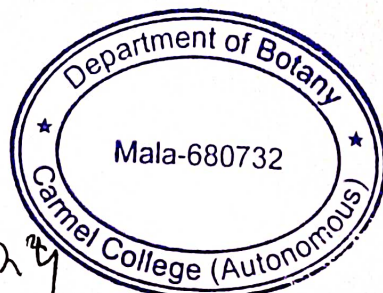
[Signature]
Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

Examiner 2 :

Valued

1. *[Signature]*
13/3/24

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Name : Vismaya .A.M



Place : Mala

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Submitted by

Name: Vrindha T Ramesh

Reg No: CRAVSBO030

Research and PG Department of Botany

Carmel College (Autonomous), Mala

2023-2024

RESEARCH AND PG DEPARTMENT OF BOTANY
CARMEL COLLEGE (Autonomous), MALA



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Dr. Sinjumol Thomas

S. Thomas
12/03/24
Dr. Sinjumol Thomas
Assistant Professor & Research Guide
Department of Botany
Carmel College (Autonomous) Mala
Thrissur - 680732, India

Examiner 1 :

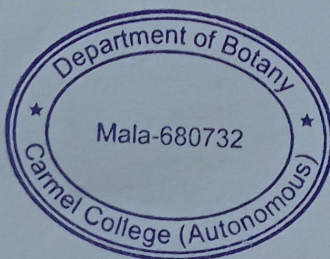
Bindhu K B
Dr. Bindhu K B

Head
Department of Botany
Carmel College (Autonomous)
Mala-680732

Examiner 2 :

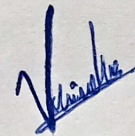
Dr. M. S. S.
13/3/24

Jm
13/3/2024



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Name: Vrindha T Ramesh

Place :Mala

Date :04/03/2024