

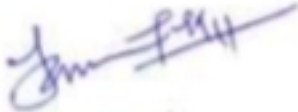
**NUTRITIONAL, ANTIOXIDANT AND PHYTOCHEMICAL  
ANALYSIS OF TWO INDIGENOUS RICE (*ORYZA SATIVA* L.)  
VARIETIES OF KERALA- NJAVARA AND KURUVA**


**This dissertation is submitted to the  
UNIVERSITY OF CALICUT  
For the partial fulfilment of the award of the degree of  
MASTER OF SCIENCE IN BOTANY**

**Submitted by  
AMBILY K. M.  
REG. NO: CRATMBT001**



**PG and Research Department of Botany  
Carmel College, Mala  
(Affiliated to the University of Calicut)  
2020 – 2021**

  
**Supervisor**

  
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**Dr. BINDHU K.B MSc.B.Ed. PhD.  
Assistant Prof. & Head  
Dept. of Botany  
CARMEL COLLEGE  
Mala, Thrissur**



**DIVERSITY ASSESSMENT OF FRESH WATER ALGAE IN SUMMER  
SEASON:  
A CASE STUDY IN PEECHI VAZHANI WILDLIFE SANCTUARY**

**This dissertation is submitted to the  
UNIVERSITY OF CALICUT  
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MASTER OF SCIENCE IN BOTANY**

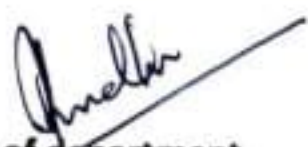
**Submitted by  
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Mala, Thrissur

**Preliminary Phytochemical screening, Allelopathic effect and a comparative study on Antibacterial activity, Antioxidant potential and Mosquito Larvicidal activity of *Mimosa diplotricha* C.Wright ex Sauvalle and *Sphaeranthus indicus* Linn.**

Project report submitted to the University of Calicut for the partial fulfillment of the award of the degree of Master of Science in Botany.

By

**ATHIRA P K**

**CRATMBT003**

UNDER THE SUPERVISION OF

**Ms. JIPCYMOL P**

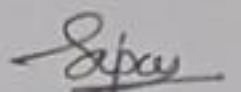


**PG AND RESEARCH DEPARTMENT OF BOTANY**

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**BIO SYNTHESIS AND CHARACTERIZATION OF  
*ALLIUM SATIVUM* L. SILVER NANOPARTICLES AND  
AN ASSESSMENT ON ITS ANTIBACTERIAL AND  
ANTHELMINTHIC PROPERTIES**

This dissertation is submitted to the  
**UNIVERSITY OF CALICUT**  
For the partial fulfilment of the award of the degree of  
**MASTER OF SCIENCE IN BOTANY**

Submitted by  
**BRIGITH VENEZA D'SILVA**  
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**Preliminary Phytochemical Screening, Antibacterial Activity and  
Antioxidant Activity of *Mentha piperita* L.**

Project report submitted to the University of Calicut for the partial fulfillment of  
the award of the degree of

**MASTER OF SCIENCE IN**

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**Assistant Professor**



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**CARMEL COLLEGE**  
**Mala, Thiruvananthapuram**

**A Comparative Study of Two Populations of  
*Rhinacanthus nusutus* (L.) Kurz (Acanthaceae)**

Project report submitted to the  
University of Calicut for the partial  
fulfillment of the award of the degree of

**MASTER OF SCIENCE IN  
BOTANY**

By

**JESNA T J**

Register No. **CRATMBT007**

UNDER THE SUPERVISION OF

**Dr. Sinjumol Thomas**



**POST GRADUATE AND RESEARCH DEPARTMENT OF BOTANY**

**CARMEL COLLEGE, MALA**

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Head of the Department

**Dr. BINDHU K B MEEHAN, PhD**  
Assistant Prof. & Head  
Dept. of Botany  
CARMEL COLLEGE  
Mala, Thrissur





**A COMPARATIVE ACCOUNT ON *Cleome viscosa* Linn,  
*C. rutidosperma* DC. (Cleomaceae)**

Project report submitted to the University of Calicut for partial fulfillment of the award of the degree of MASTER OF SCIENCE IN BOTANY

By  
**KAVYA E C**  
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UNDER THE SUPERVISION OF

Ms. Gopika V D  
Assistant Professor on contract  
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Dr. BINDHU K. B. MSc. B.Ed. PhD  
Assistant Prof. & Head  
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**A STUDY ON THE WATER PURIFICATION ACTIVITIES OF  
SELECTED MEDICINAL PLANTS**

This dissertation is submitted to the  
**UNIVERSITY OF CALICUT**  
for the partial fulfilment of the award of the degree of  
**MASTER OF SCIENCE IN BOTANY**

Submitted by  
**KEERTHANA T P**  
**REG. NO: CRATMBT009**  
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**COMPARITIVE STUDY OF ANTIOXIDANT ACTIVITY, ANTIBACTERIAL  
ACTIVITY AND PRELIMINARY PHYTOCHEMICAL SCREENING OF  
ANACARDIUM OCCIDENTALE L. LEAF AND GUM**

Project report submitted to the University of Calicut for the partial fulfillment of the award of  
the degree of Master of Science in Botany

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**LJIJ K**

**CRATMBT011**

UNDER THE SUPERVISION OF  
Ms. GOPIKA V.D



**DEPARTMENT OF BOTANY  
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CARMEL COLLEGE

Mala, Thrissur

**Preliminary Phytochemical Screening, Antioxidant activity and  
Antibacterial activity of *Morinda citrifolia* L.**

Project report submitted to the University of Calicut for partial fulfilment for  
the award of the Degree of Master of Science in Botany

By

**NEENA A.S.**

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Mala, Thrissur**



A comparative study of the populations of *Impatiens cordata* Wight,  
(Balsaminaceae)

Project report submitted to the University of Calicut for the partial fulfillment  
of the award of the degree of Master of Science in Botany

By  
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Register No. CRATMBT006  
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**DEPARTMENT OF BOTANY  
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**Dr. BINDHU K B** MSc, B.Ed., Ph.D.  
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**PRELIMINARY PHYTOCHEMICAL SCREENING AND A COMPARATIVE  
STUDY ON ANTIBACTERIAL AND ANTIOXIDANT PROPERTIES OF  
*Moringa oleifera* Lam. AND *Tamarindus indica* L.**

Project report submitted to the  
University of Calicut for the partial  
Fulfillment of the award of the degree of  
**MASTER OF SCIENCE IN BOTANY**

By

**SANGEETHA BETSON**

**Reg. No: CRATMBT013**

UNDER THE SUPERVISION OF

**Ms. JIPCYMOLP**



**PG AND RESEARCH DEPARTMENT OF BOTANY**


**CARMEL COLLEGE, MALA**

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Head of the Department

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Malu, Thiruvananthapuram

**Preliminary phytochemical and quantitative analysis of latex of *Carica papaya*, L. and *Achras sapota*, L.**

Project report submitted to the University of Calicut for the partial fulfillment of the award of the degree of Master of Science in Botany.

By

**SELMA JOHNSON**

**CRATMBT014**

UNDER THE SUPERVISION OF

**DR. BINDHU K.B**



**DEPARTMENT OF BOTANY**

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**Head of the Department**



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Assistant Prof. & Head  
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**Preliminary phytochemical and quantitative analysis of *Capsicum annum*  
L. and *Capsicum frutescens* L.**

Project report submitted to the University of Calicut for the partial fulfillment of the award of  
the degree of Master of Science in Botany.

By

**VAISHNA THIAMBAN**

**CRATMBT015**

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**DR. BINDHU K.B**



**DEPARTMENT OF BOTANY**

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**Evaluation of Amylase Activity of Phytozymes extracted from  
*Syzygium aromaticum* L.**

Project report submitted to the University of Calicut for partial fulfilment of the  
award of Degree of Master of Science In Botany.

**By**

**YARDLY MARIYA BENNY**  
**Reg. No: CRATMBT016**

**UNDER THE SUPERVISION OF**  
**Dr. Sinjumol Thomas**



**DEPARTMENT OF BOTANY**  
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**Assistant Professor & Research Guide**  
**Department of Botany**  
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**Thrissur - 680732, India**

**Head of the Department**

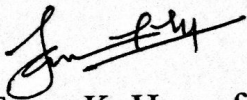
**Dr. BINDHU K.B MSc.B.Ed. PhD.**  
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**CARMEL COLLEGE**  
**Mala, Thrissur**



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CARMEL COLLEGE, MALA

**CERTIFICATE**

This is to certify that the dissertation entitled “Nutritional, antioxidant and phytochemical analysis of two indigenous rice (*Oryza sativa* L.) varieties of Kerala-Navara and Kuruva” is an authentic record of work carried out by AMBILY K. M., Reg. No. CRATMBT001, Carmel College, Mala, under the supervision and guidance of Dr. Femy K. Haneef, Assistant Professor on contract in Post Graduate and Research Department of Botany, Carmel College, Mala for the partial fulfilment for the award of the degree of Master of Science in Botany and no part of this work has been presented before for the award of any degree in any University.



Dr. Femy K. Haneef



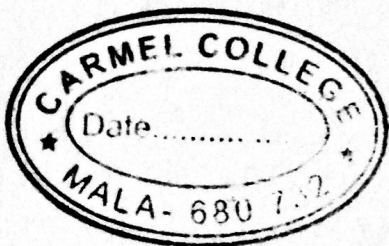
Dr. Bindhu K.B.

Dr. BINDHU K.B MSc.B.Ed. PhD.  
Assistant Prof. & Head  
Dept. of Botany  
CARMEL COLLEGE  
Mala, Thrissur

Examiners

1.

2.

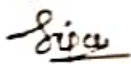


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This is to certify that the dissertation entitled "Diversity Assesment Of Fresh Water Algae In Summer Season : A Case Study In Peechi – Vazhani Wildlife Sanctuary" is an authentic report of work carried out by Ammini C.J., Reg.No. CRATMBT002 under the supervision and guidance of Dr. V.B. Sreekumar, Senior Scientist, Forest Botany Department, KFRI, Peechi and Ms. Jipsymol P, Assistant Proffesor on contract, PG and Research h Department of Botany, Carmel College, Mala, for the partial fulfilment of the requirements for the award of Master Of Science In Botany.




Ms. Jipsymol P

Examiners

1.

2.



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Dr. BINDHU K B MSc B.Ed. PhD  
Assistant Prof. & Head  
Dept. of Botany  
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Mala, Thrissur





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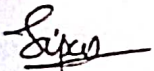
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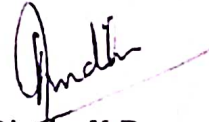
**CERTIFICATE**

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GUIDE,

Ms. Jipcymol P  
Assistant Professor on Contract  
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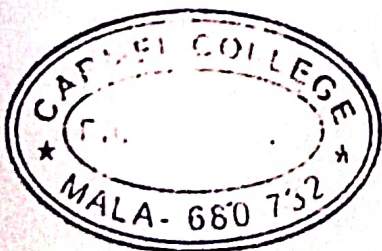
Dr. Bindhu K B

Dr. BINDHU K.B MSc. B Ed. PhD  
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1.


2.



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**CERTIFICATE**

This is to certify that the dissertation entitled “**Bio synthesis and characterization of *Allium sativum* L. silver nanoparticles and an assessment on its antibacterial and anthelmintic properties**” is an authentic record of work carried out by **BRIGITH VENEZA D’SILVA.**, Reg. No. **CRATMBT004**, Carmel College, Mala, under the supervision and guidance of Dr. Femy K. Haneef, Assistant Professor on contract in Post Graduate and Research Department of Botany, Carmel College, Mala for the partial fulfilment for the award of the degree of Master of Science in Botany and no part of this work has been presented before for the award of any degree in any University.



Dr. Femy K. Haneef



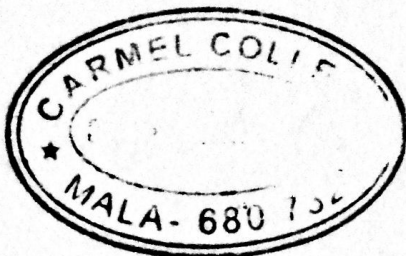
Dr. Bindhu K.B.

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POST GRADUATE AND RESEARCH DEPARTMENT OF BOTANY

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CERTIFICATE

This is to certify that the project report entitled "Preliminary Phytochemical Screening, Antibacterial activity and Antioxidant Activity of *Mentha piperita* L." is an authentic report of work carried out by Ms. Fany Joseph under my supervision and guidance in the Post Graduate and Research Department of Botany, Carmel College, Mala, for the partial fulfillment of the requirement for the award of Master of Science in Botany.

Guide,

  
Dr. Sr. Kochuthressia K. P  
Assistant Professor  
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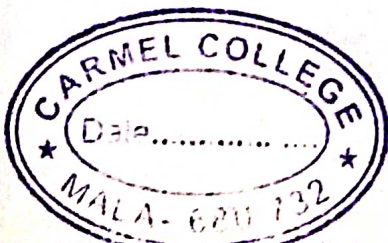
  
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Dr. BINDHU K.B MSc.B.Ed. PnD.  
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**PG AND RESEARCH DEPARTMENT OF BOTANY**

**CARMEL COLLEGE, MALA**

**(Affiliated to the University of Calicut)**

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**CERTIFICATE**

This is to certify that the dissertation entitled "**A comparative study of the populations of *Impatiens cordata* Wight, (Balsaminaceae)**" is an authentic record of work carried out by **GREESHMA K M**, Reg No. **CRATMBT006**, Carmel College, Mala, under the supervision and guidance of Dr. Sinjumol Thomas, Assistant Professor, Post Graduate and Research Department of Botany, Carmel College, Mala, for the partial fulfillment for the award of degree of Master Science in Botany.

Dr. Sinjumol Thomas.



**DR. SINJUMOL THOMAS**  
Assistant Professor & Research Guide  
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Dr. Bindhu K B

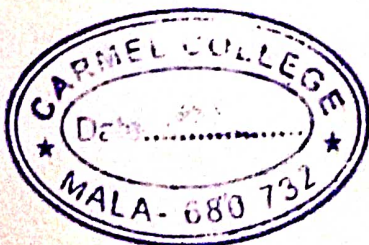


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Examiners

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(Affiliated to the University of Calicut)

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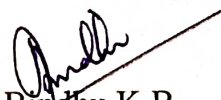
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Dr. Sinjumol Thomas



**DR.SINJUMOL THOMAS**  
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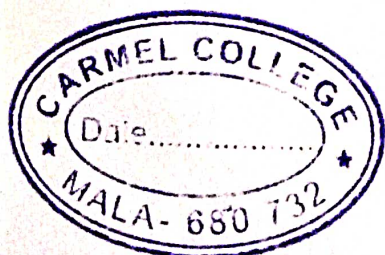
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- 2.





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This is to certify that the dissertation entitled "A Comparative Account on *Cleome viscosa* Linn, *C.rutidosperma* DC. (Cleomaceae)" is an authentic record of work carried out by KAVYA EC, Register No. CRATMBT008, Carmel College, mala, under the supervision and guidance of Ms. Gopika V D Assistant Professor on contract in Post Graduate and Research Department of Botany, Carmel College, Mala, for the partial fulfillment for the award of degree of Master Science in Botany.

  
Ms. Gopika V D

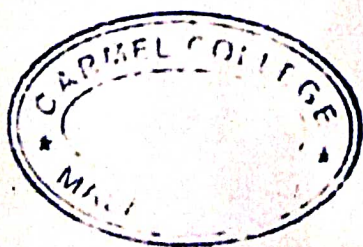
  
Dr. Bindhu K B

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Examiners

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This is to certify that the dissertation entitled "A study on the water purification activities of selected medicinal plants" is an authentic record of work carried out by KEERTHANA T.P. , REG. No. CRATMBT009, Carmel College, Mala, under the supervision of Dr. Bindhu K. B., Assistant professor and HOD of Post Graduate and Research Department of Botany, Carmel College, Mala for the partial fulfilment for the award of the degree of Master of Science in Botany.



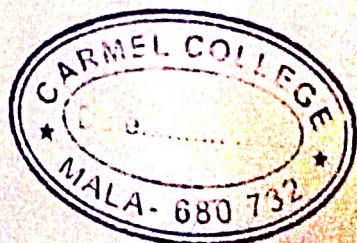
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**Assistant Prof. & Head**  
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**Examiners**

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2.



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### CERTIFICATE

This is to certify that the dissertation entitled "Comparative study of Antioxidant activity, Antibacterial activity and Preliminary Phytochemical screening of *Anacardium occidentale* L. Leaf and Gum" is an authentic record of work carried out by Liji.K, Reg.No.CRATMBT011, Carmel College, Mala, under the supervision and guidance of Ms.GOPIKA V.D Assistant Professor in Post Graduate and Research Department of Botany, Carmel College, Mala for the partial fulfillment for the award of degree of Master of Science in Botany.



Ms. Gopika V.D

Assistant professor on contract

P G and Research Department of Botany

Carmel College, Mala, Thrissur.



Dr. Bindhu K B

Dr. BINDHU K.B MSc.B.Ed. PnD

Assistant Prof. & Head

Dept. of Botany

CARMEL COLLEGE

Mala, Thrissur

Examiners

1.

2.





**PG AND RESEARCH DEPARTMENT OF BOTANY**

**CARMEL COLLEGE, MALA**

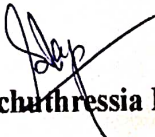
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**680732**



**CERTIFICATE**

This is to certify that the project report entitled "**Preliminary Phytochemical screening, Antioxidant activity and Antibacterial activity of *Morinda citrifolia* L.**" is an authentic report of work carried out by Ms. **NEENA A.S, Reg No: CRATMBT012** under my supervision and guidance of Dr. Sr. Kochuthressia K. P, Assistant Professor, Post graduate and Research Department of Botany, Carmel College, Mala, for the partial fulfilment of the requirement for the award of Master of Science in Botany.

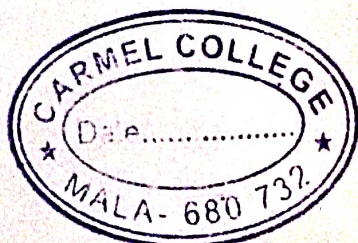
  
**Dr. Sr. Kochuthressia K. P**

  
**Dr. BINDHU K.B**

Dr. BINDHU K.B MSc.B.Ed. PhD.  
Assistant Prof. & Head  
Dept. of Botany  
CARMEL COLLEGE  
Mala, Thrissur

**Examiners:**

- 1.
- 2.





**PG AND RESEARCH DEPARTMENT OF BOTANY  
CARMEL COLLEGE MALA**

(Affiliated To the University Of Calicut)

680732

**CERTIFICATE**

This is to certify that the project report entitled “Preliminary Phytochemical Screening And A Comparative Study On Antibacterial And Antioxidant Properties Of *Moringa oleifera* Lam. And *Tamarindus indica* L.” is an authentic report of work carried out by Miss. Sangeetha Betson under my supervision and guidance in the PG And Research Department Of Botany, Carmel College Mala, for the partial fulfillment of the requirement for the award of Master Of Science In Botany.

  
Guide,

Ms. JIPCYMOL.P  
Assistant Professor On Contract  
PG and Research  
Department Of Botany  
Carmel College, Mala



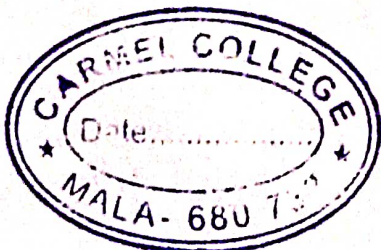
Dr. BINDHU K.B  
Head of the Department  
PG and Research  
Department of Botany  
Carmel College, Mala

Dr. BINDHU K.B MSc.B.Ed. PhD.  
Assistant Prof. & Head  
Dept. of Botany  
CARMEL COLLEGE  
Mala, Thrissur

**Examiners:**

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**PG AND RESEARCH DEPARTMENT OF BOTANY**

**CARMEL COLLEGE , MALA**

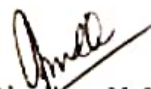
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**CERTIFICATE**

This is to certify that the project report entitled "Preliminary phytochemical and quantitative analysis of latex of *Carica papaya*, L. and *Achras sapota*, L." is an authentic record of work carried out by SELMA JOHNSON, Reg No.CRATMBT014 , Carmel College Mala, under the supervision and guidance of Dr. Bindhu K. B , Assistant professor, and HOD of Post graduate and Research Department of Botany ,Carmel College , Mala for the partial fulfilment for the award of the degree of Master of science in Botany and no part of this work has been presented before for the award of any degree in any University.

Guide

Dr.Bindhu K.B.



Dr. Bindhu .K.B

Head  
Department of Botany  
Carmel College, Mala  
Thrissur, Kerala - 680732

**Examiners:**

1.

2.



**TAXONOMY, ECOLOGY AND CONSERVATION STATUS (IUCN) OF  
*Diospyros crumenata* Thw. (Ebenaceae)**

Project report submitted to the  
University of Calicut for the partial  
fulfillment of the award of the degree of  
**MASTER OF SCIENCE IN BOTANY**

By

**K. S. SILPA**

**Reg. No: CRATMBT010**

UNDER THE SUPERVISION OF

Ms. JPCYMOL P.



**PG AND RESEARCH DEPARTMENT OF BOTANY**

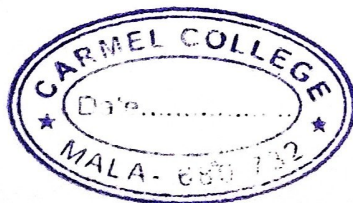
**CARMEL COLLEGE, MALA**

**THRISSUR, KERALA**

**2019-2021**

  
Supervisor

  
Head of the Department



Dr. BINDHU K.B MSc B Ed  
Assistant Prof. & Head  
Dept. of Botany  
CARMEL COLLEGE  
Mala, Thrissur



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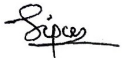
(Affiliated To the University Of Calicut)

680732

**CERTIFICATE**

This is to certify that the project report entitled "**Taxonomy, Ecology and Conservation Status (IUCN) of *Diospyros crumenata* Thw. (Ebenaceae)**" is an authentic report of work carried out by **Miss. K. S. Silpa** under the supervision and guidance of Dr. Amitha Bachan K. H., Research Director, Western Ghats Hornbill Foundation, and Ms. Jipcymol P., Assistant Professor on contract, PG and Research Department of Botany, Carmel College, Mala, for the partial fulfillment of the requirement for the award of Master of Science in Botany.

GUIDE,



Ms. Jipcymol P.,  
Assistant Professor on contract,  
PG and Research  
Department of Botany  
Carmel College, Mala.



Dr. Bindhu K. B.,  
Head of Department,  
PG and Research  
Department of Botany  
Carmel College, Mala.

Examiners:

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u/08/21

Dr. BINDHU K. B. M.Sc. B. Ed. Ph.D.  
Assistant Prof. & Head  
Dept. of Botany  
CARMEL COLLEGE  
Mala, Thrissur



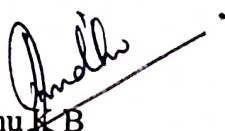
DEPARTMENT OF BOTANY  
CARMEL COLLEGE, MALA  
(Affiliated to the University of Calicut)

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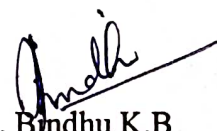
CERTIFICATE

This is to certify that the project entitled "Preliminary phytochemical and quantitative analysis of *Capsicum annum L.* and *Capsicum frutescensL.*" is an authentic report of the work carried out by MS. VAISHNA THAMBAN under my supervision and guidance in the Post graduate and Research Department of Botany, Carmel College, Mala, for the partial fulfillment of the requirements for the award of Master of Science in Botany.

Guide



Dr. Bindhu K.B

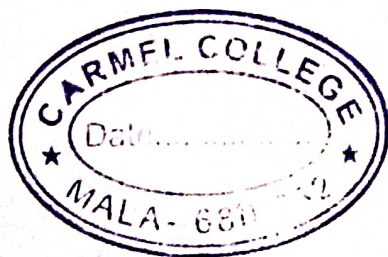


Dr. Bindhu K.B

Dr. BINDHU K.B MSc.B.Ed. PhD.  
Assistant Prof. & Head  
Dept. of Botany  
CARMEL COLLEGE  
Mala, Thrissur

Examiners:

- 1.
- 2.



**PG AND RESEARCH DEPARTMENT OF BOTANY**

**CARMEL COLLEGE, MALA**

**(Affiliated to the University of Calicut)**

**680732**

**CERTIFICATE**


This is to certify that the dissertation entitled "Evaluation of Amylase Activity of Phytozymes extracted from *Syzygium aromaticum* L." submitted by YARDLY MARIYA BENNY, Reg. No. CRATMBTO16, Carmel College, Mala, under the supervision and guidance of Dr. Sinjumol Thomas, Assistant professor, Post Graduate and Research Department of Botany, Carmel College, Mala for partial fulfilment for the Degree of Master of Science in Botany.

Dr. Sinjumol Thomas



**DR. SINJUMOL THOMAS**  
Assistant Professor & Research Guide  
Department of Botany  
Carmel College Mala  
Thrissur - 680732, India

Dr. Bindhu K B



Dr. BINDHU K. B MSc.B.Ed. PhD.  
Assistant Prof. & Head  
Dept. of Botany  
CARMEL COLLEGE  
Mala, Thrissur

Examiners

1.

2.

