

Development of edible dietary fiber powder utilizing industrial waste food grade Biocellulose

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

MASTER OF SCIENCE IN BIOTECHNOLOGY

Submitted by

Yoganand R (Reg No. 222BT001)

Under the Guidance of

Dr.V.Elakkiya M.Sc. Ph.D Assistant Professor



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-Accredited by the NAAC with A+ (4th Cycle)

College of Excellence (UGC)

29th Rank among Colleges in NIRF 2023

Coimbatore-641 029

April-2024

**Dry Carica papaya leaf medicated Green synthesized Silver Nanoparticles Doped
with Lanthanum Nitrate for their Antibacterial Activity against
Human Pathogenic Bacteria**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

MASTER OF SCIENCE IN BIOTECHNOLOGY

Submitted by

Vishnuprasath M (Reg No. 222BT002)

Under the Guidance of

Dr.S Bhargavi M.Sc. Ph.D Assistant Professor



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-Accredited by the NAAC with A+ (4th Cycle)

College of Excellence (UGC)

29th Rank among Colleges in NIRF 2023

Coimbatore-641 029

April-2024

Production of Xanthan gum from *Xanthomonas campestris* for food packaging application

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

MASTER OF SCIENCE IN BIOTECHNOLOGY

Submitted by

Swathisree G (Reg No. 222BT003)

Under the Guidance of

Dr.V.Elakkiya M.Sc. Ph.D Assistant Professor



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-Accredited by the NAAC with A+ (4th Cycle)

College of Excellence (UGC)

29th Rank among Colleges in NIRF 2023

Coimbatore-641 029

April-2024

**Analysing the Antibacterial Property
of Algal Biomass Against Multidrug
resistance Staphylococcus aureus**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

MASTER OF SCIENCE IN BIOTECHNOLOGY

Submitted by

Subiksha V (Reg No. 222BT004)

Under the Guidance of

Dr.R Sathishkumar M.Sc. Ph.D Assistant Professor



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-Accredited by the NAAC with A+ (4th Cycle)

College of Excellence (UGC)

29th Rank among Colleges in NIRF

2023Coimbatore-641 029

April-2024

**Formulation and Characterization of Cymbopogon
nardus (Citronella) Insect Repellent Lotion by
using Microencapsulation technique**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

MASTER OF SCIENCE IN BIOTECHNOLOGY

Submitted by

Arshika S

(Reg No. 222BT005)

Under the Guidance of

Dr. B Vishnupriya M.Sc. Ph.D
Assistant Professor



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-Accredited by the NAAC with A+ (4th Cycle)

College of Excellence (UGC)

29th Rank among Colleges in NIRF 2023

Coimbatore-641 029

April-2024

**Formulation and Characterization of Vitex
negundo (Nochi leaves) Insect Repellent Lotion by
using Microencapsulation technique**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

MASTER OF SCIENCE IN BIOTECHNOLOGY

Submitted by

Priya R (Reg No. 222BT007)

Under the Guidance of

**Dr. B Vishnupriya M.Sc. Ph.D
Assistant Professor**



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-Accredited by the NAAC with A+ (4th Cycle)

College of Excellence (UGC)

31st Rank among Colleges in NIRF 2023

Coimbatore-641 029

April-2024

**Development and Characterization of
Herbal sunscreen gel from Flax seed
and Green tea extract using
Microencapsulation technique**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

MASTER OF SCIENCE IN BIOTECHNOLOGY

Submitted by
Lenin Robert M

(Reg No. 222BT008)

Under the Guidance of

Dr. G T Ishwarya M.Sc. Ph.D
Assistant Professor



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-Accredited by the NAAC with A+ (4th Cycle)

College of Excellence (UGC)

29th Rank among Colleges in NIRF 2023

Coimbatore-641 029

April-2024

**Formulation and Evaluation of Transdermal
patches using Cassia auriculata leaves with
chitosan Nanoparticles**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of
MASTER OF SCIENCE IN BIOTECHNOLOGY

Submitted by
Vaishnavi S

(Reg No. 222BT009)

Under the Guidance of

Dr. R Arvindhganth M.Sc. Ph.D
Assistant Professor



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-Accredited by the NAAC with A+ (4th Cycle)

College of Excellence (UGC)

29th Rank among Colleges in NIRF 2023

Coimbatore-641 029

April-2024

**Formulation and Evaluation of Chitosan
Nanoparticles based Medicated soap by using
*Clerodendrum inerme***

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of
MASTER OF SCIENCE IN BIOTECHNOLOGY

Submitted by
Vaishnavi S

(Reg No. 222BT009)

Under the Guidance of

Dr. R Arvindhganth M.Sc. Ph.D
Assistant Professor



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-Accredited by the NAAC with A+ (4th Cycle)

College of Excellence (UGC)

29th Rank among Colleges in NIRF 2023

Coimbatore-641 029

April-2024

**Impact of LDPE microplastics on developmental
toxicity in zebra fish (Danio rerio) embryo**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of
MASTER OF SCIENCE IN BIOTECHNOLOGY

Submitted by
Ganesh S (Reg No. 222BT012)

Under the Guidance of

Dr. A U Thangavelu M.Sc. Ph.D
Assistant Professor



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-Accredited by the NAAC with A+ (4th Cycle)

College of Excellence (UGC)

29th Rank among Colleges in NIRF 2023

Coimbatore-641 029

April-2024

**Biochar- enhanced Hydrogen Production from
cassava industrial waste residue using *Enterobacter
aerogenes***

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

MASTER OF SCIENCE IN BIOTECHNOLOGY

Submitted by
Vinita A (Reg No. 222BT010)

Under the Guidance of

**Dr. A U Thangavelu M.Sc. Ph.D
Assistant Professor**



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-Accredited by the NAAC with A+ (4th Cycle)

College of Excellence (UGC)

29th Rank among Colleges in NIRF 2023

Coimbatore-641 029

April-2024

**BIOFORTIFICATION FOR NUTRITION IMPROVEMENT AND
LIQUID TREE FOR CARBON SEQUESTRATION AND OXYGEN PRODUCTION**

CASE STUDY SUBMITTED TO

**KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

BACHELOR OF SCIENCE IN BIOTECHNOLOGY

SUBMITTED BY

R. Ramya (Reg. No 211BT013)

A. Ragul (Reg. No 211BT012)

P. Lincy mary (Reg. No 211BT007)

III BSC BIOTECHNOLOGY

UNDER THE GUIDANCE

Dr. A.U. Thangavelu, M.Sc, Ph.D

Assistant Professor and

Head, department of biotechnology



PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY

KONGUNADU ARTS AND SCIENCE COLLEGE

(AUTONOMOUS)

[Re-accredited by the NAAC with A+ Grade (4th cycle)]

[College of excellence (UGC)]

29th Range among college in NIRF 2023

Coimbatore-641 029, Tamilnadu, India

APRIL 2024

REJUNVENATION OF RIVER
CASE STUDY SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of
BACHELOR OF SCIENCE IN BIOTECHNOLOGY

SUBMITTED BY

S. SANDHIYA (Reg. No 211BT010)

R. AISHWARYA (Reg. No 211BT026)

C. S SRIVARSHINI (Reg. No 211BT027)

III B. Sc BIOTECHNOLOGY

UNDER THE GUIDANCE

Dr. R. SATHISH KUMAR, M.Sc., Ph. D,



Assistant professor

PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)

[Re-accredited by NAAC with A+ Grade (4th Cycle)]

[College of excellence (UGC)]

29th Range among college in NIRF 2023

Coimbatore-641 029, Tamilnadu, India

APRIL 2024

**OVERVIEW OF *HELICOBACTER PYLORI* INFECTION, CLINICAL
FEATURES, DIAGNOSIS AND TREATMENT**

**CASE STUDY SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University

In partial fulfilment for the award of the degree of
BACHELOR OF SCIENCE IN BIOTECHNOLOGY

SUBMITTED BY

Jeev Sheen Joseph (211BT014)

Manigandan. T (211BT 015)

Mukila. C (211BT004)

III. BSc. BIOTECHNOLOGY

Under the Guidance of

Dr. B. Vishnupriya, MSc., PhD
Assistant Professor



**PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

[Re-Accredited by the NAAC with A+ Grade (4th Cycle)]

[College of Excellence (UGC)]

29th Rank among Colleges in NIRF 2023

Coimbatore – 641029, Tamil Nadu, India

APRIL-2024

**NANOPARTICLES MEDIATED TREATMENT FOR BREAST AND
LUNG CANCER THAT NAVIGATES CANCER CARE TOWARDS
NANOSCALE**

CASE STUDY SUBMITTED TO

**KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

BACHELOR OF SCIENCE IN BIOTECHNOLOGY

SUBMITTED BY

Bharath Raj. V (Reg. No 211BT005)

Dharneesh. M (Reg. No 211BT008)

Darun. Rithik. M (Reg. No 211BT011)

Perumal. P (Reg. No 211BT020)

III BSC BIOTECHNOLOGY

UNDER THE GUIDANCE OF

Dr. S. BHARGAVI, M.Sc., M.phil., Ph. D SET,

Assistant Professor



PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY

KONGUNADU ARTS AND SCIENCE COLLEGE

(AUTONOMOUS)

[Re-accredited by the NAAC with A+ Grade (4th cycle)]

[College of excellence (UGC)]

29th Range among college in NIRF 2023

Coimbatore-641 029, Tamilnadu, India

APRIL 2024

BACTERIOPHAGE AND IT'S THERPEUTIC APPLICATION IN DRUG DELIVERY

CASE STUDY SUBMITTED TO

**KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

BACHELOR OF SCIENCE IN BIOTECHNOLOGY

SUBMITTED BY

J. Genga Lakshmi (Reg. No 211BT001

P. Pavithra (Reg. No 211BT003)

U. Vishnu Prabha (Reg. No 211BT019)

C. Akshara (Reg. No 211BT023)

III BSc BIOTECHNOLOGY

UNDER THE GUIDANCE OF

Dr. R. ARVINDGANTH, M.Sc., M.Phil., Ph. D.

Assistant Professor



PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY

KONGUNADU ARTS AND SCIENCE COLLEGE

(AUTONOMOUS)

[Re-accredited by the NAAC with A+ Grade (4th cycle)]

[College of excellence (UGC)]

29th Range among college in NIRF 2023

Coimbatore-641 029, Tamilnadu, India

APRIL 2024

**HERBS AND PHYTO PHARMA TECHNOLOGIES FOR
WOUND CARE APPLICATIONS**

CASE STUDY SUBMITTED TO

**KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

BACHELOR OF SCIENCE IN BIOTECHNOLOGY

SUBMITTED BY

Nivedhitha. A. S (Reg. No 211BT002)

Lokesh. R (Reg. No 211BT009)

P. Nandhana. Prashanth (Reg. No 211BT024)

Solairaj. S (Reg. No 211BT025)

III BSC BIOTECHNOLOGY

UNDER THE GUIDANCE OF

Dr. V. ELAKKIYA, M.Sc., Ph. D,

Assistant Professor



PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY

KONGUNADU ARTS AND SCIENCE COLLEGE

(AUTONOMOUS)

[Re-accredited by the NAAC with A+ Grade (4th cycle)]

[College of excellence (UGC)]

29th Range among college in NIRF 2023

Coimbatore-641 029, Tamilnadu, India

APRIL 2024

**MICROPLASTICS IN COSMETICS: ENVIRONMENTAL ISSUES AND NEED FOR
ALTERNATIVES**

**CASE STUDY SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Affiliated to Bharathiar University in partial fulfillment for the award of the degree of

BACHELOR OF SCIENCE IN BIOTECHNOLOGY

SUBMITTED BY

M. LAVANYA (211BT016)

M. KEERTHANA (211BT017)

S. ANBARASU (211BT018)

M. POOVARASAN (211BT022)

III BSC BIOTECHNOLOGY

UNDER THE GUIDANCE

Dr. G. T. ISWARIYA
Assistant Professor



PG AND RESEARCH DEPARTMENT OF BIOTECHNOLOGY

KONGUNADU ARTS AND SCIENCE COLLEGE

(AUTONOMOUS)

[Re-accredited by the NAAC with A+ Grade (4th cycle)]

[College of excellence (UGC)]

29th Range among college in NIRF 2023

Coimbatore-641 029, Tamilnadu, India

APRIL 2024



भा.कृ.अनु.प.- गन्ना प्रजनन संस्थान
ICAR - SUGARCANE BREEDING INSTITUTE

भारतीय कृषि अनुसंधान परिषद
Indian Council of Agricultural Research

(Ministry of Agriculture and Farmers' Welfare, Govt. of India)

कोयंबटूर - 641007 तमिलनाडु
COIMBATORE - 641007 TAMILNADU



F.No. 3-5/2023-24/PME

Dated: 09.06.2023

CERTIFICATE OF TRAINING

This is to certify that *Ms. Genga Lakshmi. J, II year B.Sc. Biotechnology*, student of Kongunadu Arts and Science College, Coimbatore, underwent an exposure-training programme at ICAR - Sugarcane Breeding Institute, Coimbatore from 22.05.2023 to 09.06.2023 under the guidance of Dr.K.Lakshmi, Senior Scientist (Plant Biotechnology), Division of Crop Improvement. During this period, she was exposed to *Training on Molecular Biotechnology and Techniques*.

(G. HEMAPRABHA)
Director



14.06.2023

TO WHOMSOEVER IT MAY CONCERN

Ms. A.S. Nivedhitha, who is studying II BSc Biotechnology at Kongunadu Arts and Science College has successfully completed her internship training for 21 days between 22.05.2023 to 14.06.2023 under my supervision at Reproductive Immunology and Molecular pathology laboratory, Department of Biotechnology, Bharathiar University, Coimbatore- 46. During the period of training she has learnt various molecular biology techniques such as RNA isolation, cDNA synthesis, PCR, Protein isolation and protein estimation and SDS-PAGE and Western blotting. The student showed good commitment in learning and performed well in the internal assessment.

Dr. S. VELAYUTHAPRABHU, Ph.D.
Assistant Professor
Department of Biotechnology
Bharathiar University
Coimbatore - 641 046



பாரதியார் பல்கலைக்கழகம்

BHARATHIAR UNIVERSITY

COIMBATORE - 641 046, TAMILNADU, INDIA.

State University | Re-accredited with "A" Grade by NAAC | Ranked 14th among Indian Universities by MHRD-NIRF

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. P. Pavithra (211BT003), from the Department of Biotechnology, Kongunadu Arts and Science College, Coimbatore, has done her summer internship program in the Molecular Genetics and Cancer Biology laboratory, under my guidance, from the Department of Human Genetics and Molecular Biology, Bharathiar University, Coimbatore during 1st June – 17th June 2023. During her internship programme, she has learned the basic techniques in Molecular Biology and Bioinformatic tools. Her performance during the training was very good.

I wish her all success

Address for correspondence

Dr. R. Sivasamy
Assistant Professor and Head i/c
Molecular Genetics and Cancer Biology Laboratory
Department of Human Genetics and Molecular Biology
Bharathiar University
Coimbatore- 641 046

R-S
23/6/2023
R. Sivasamy

DR. R. SIVASAMY, Ph.D.,
Assistant Professor & Head i/c
Dept. of Human Genetics &
Molecular Biology
Bharathiar University
Coimbatore - 641 046.



भा.कृ.अनु.प.- गन्ना प्रजनन संस्थान
ICAR - SUGARCANE BREEDING INSTITUTE

भारतीय कृषि अनुसंधान परिषद
Indian Council of Agricultural Research

(Ministry of Agriculture and Farmers' Welfare, Govt. of India)

कोयंबटूर - 641007 तमिलनाडु
COIMBATORE - 641007 TAMILNADU

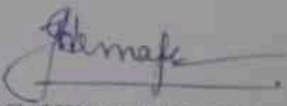


F.No. 3-5/2023-24/PME

Dated: 09.06.2023

CERTIFICATE OF TRAINING

This is to certify that *Ms. Mukila. C, II year B.Sc. Biotechnology*, student of Kongunadu Arts and Science College, Coimbatore, underwent an exposure-training programme at ICAR - Sugarcane Breeding Institute, Coimbatore from 22.05.2023 to 09.06.2023 under the guidance of Dr.K.Devakumar, Senior Scientist (Plant Biotechnology), Division of Crop Improvement. During this period, she was exposed to *Exposure on Molecular Biotechnology Technique.*


(G. HEMAPRABHA)
Director



Sri Ramakrishna Hospital

Medical Service : M/s. S.N.R. SONS CHARITABLE TRUST

395, SAROJINI NAIDU ROAD, SIDHAPUDUR, COIMBATORE - 641 044.
Phone : 0422- 4500000, Grams : "RAMHOSP" Fax : 0422-2240521

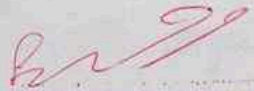


SRH/DEAN/F.19/2023

08.06.2023

CERTIFICATE

This is to certify that **Mr.BARATH RAJ.V**, Roll No.211BT005 II year B.Sc., Biotechnology student of Kongunadu Arts and Science College, Coimbatore underwent Internship observation Training Programme in the Microbiology, Clinical Biochemistry, Pathology and Histopathology from 22nd May 2023 to 7th June 2023 in this hospital.


Dr. P. SUKUMARAN, M.S.,M.Ch.,FIACS
DEAN
SRI RAMAKRISHNA HOSPITAL,
395, Sarojini Naidu Road,
Sidhapudur, Coimbatore - 641 044.
Regd. No. 31441



भा.कृ.अनु.प.- गन्ना प्रजनन संस्थान
ICAR - SUGARCANE BREEDING INSTITUTE

भारतीय कृषि अनुसंधान परिषद
Indian Council of Agricultural Research

(Ministry of Agriculture and Farmers' Welfare, Govt. of India)

कोयंबटूर - 641007 तमिलनाडु
COIMBATORE - 641007 TAMILNADU



F.No. 3-5/2023-24/PME

Dated: 09.06.2023

CERTIFICATE OF TRAINING

This is to certify that *Ms. Lincy. P, II year B.Sc. Biotechnology*, student of Kongunadu Arts and Science College, Coimbatore, underwent an exposure-training programme at ICAR - Sugarcane Breeding Institute, Coimbatore from 22.05.2023 to 09.06.2023 under the guidance of Dr.P.T.Prathima, Senior Scientist (Plant Biotechnology), Division of Crop Improvement. During this period, she was exposed to *Exposure on Molecular Biology Technique*.

(G. HEMAPRABHA)
Director



பாரதியார் பல்கலைக்கழகம்
BHARATHIAR UNIVERSITY
COIMBATORE - 641 046, TAMILNADU, INDIA

| State University | Accredited With A** Grade - 3.63 CGPA by NAAC | 15th Rank among Indian Universities by MoE-NIRF |

Certificate

This is certified that Mr. R. LOKESH, II. B.Sc., BIOTECHNOLOGY, Kongunadu arts and science college (Autonomous), Coimbatore, has successfully completed his Internship under my supervision in Plant Biotechnology Laboratory, Department of Botany, Bharathiar University, Coimbatore - 641 046 from 24.05.2023 - 08.06.2023.

Date: 8.06.2023.

Place: Coimbatore

Signature of the Supervisor

(Dr. P. Gurusaravanan)

Dr. P. GURUSARAVANAN, MSc, M.Phil, Ph.D.
Assistant Professor
Department of Botany
Bharathiar University
Coimbatore - 641 046, Tamilnadu, India.



AICTE International Recognition
Organisation Reference ID
COE/PO/2017/12494/4/2023/12/17/2023



CERTIFICATE

AWARDED TO

Sandhiya S.

Reg. No: 211BT010, Department of Biotechnology,
Kongunadu Arts and Science College (Autonomous)
Coimbatore- 641 029, Tamil Nadu, India.

ELIES BIOTECH PRIVATE LIMITED Agricultural and Environmental Biotechnology Products certify that the Entrepreneurial skills and technical requirements covering the scope of Applied Microbiology hands-on training has been evaluated after the successful completion of the training from 25.05.2023 to 10.06.2023 and found Excellent to be in accordance with the curriculum

SCOPE OF TRAINING

Mushroom Tissue Culture

Commercial Mushroom Spawn Production

Calocybe indica (Milky mushroom) Cultivation - Integrated Farming model system

GLP, GMP and HACCP Principles and Implementation

Number of Training Days: 15

Approval Date: 22, May 2023

To check this certificate details please call: +91 994 2921 613

Further clarifications regarding the scope of this certificate and applicability of the study program requirements may be obtained by consulting the Organisation.

Certificate Number: Fo1/KNASC/2023-06

Date: 10.06.2023

J. Aravindh S.

DR. ARAVINDH S

Course Coordinator
Executive Director & CSO



K. Indumathy Aravindh

DR. K INDUMATHY ARAVINDH

Managing Director



பாரதியார் பல்கலைக்கழகம்

BHARATHIAR UNIVERSITY

COIMBATORE - 641 046, TAMILNADU, INDIA.

State University | Re-accredited with "A" Grade by NAAC | Ranked 14th among Indian Universities by MHRD-NIRF

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Darun Rithik (211BT011), from the Department of Biotechnology, Kongunadu Arts and Science College, Coimbatore, has done his summer internship program in the Molecular Genetics and Cancer Biology laboratory, under my guidance, from the Department of Human Genetics and Molecular Biology, Bharathiar University, Coimbatore during 1st June – 17th June 2023. During his internship programme, he learned the basic techniques in Molecular Biology and Bioinformatic tools. His performance during the training was very good.

I wish him all success

Address for correspondence

Dr. R. Sivasamy
Assistant Professor and Head i/c
Molecular Genetics and Cancer Biology Laboratory
Department of Human Genetics and Molecular Biology
Bharathiar University
Coimbatore- 641 046


19/06/2023
R. Sivasamy

Dr. R. SIVASAMY, Ph.D.
Assistant Professor & Head i/c
Dept. of Human Genetics &
Molecular Biology
Bharathiar University
Coimbatore - 641 046.



M S SWAMINATHAN
RESEARCH FOUNDATION

Community Agrobiodiversity Centre

Puthoorvayal PO., Kalpetta, Wayanad, Kerala 673 577

Tel.: +91 4936 20 4477, 20 7019

Fax: +91 4936 20 7019

E-mail: office@mssrfcabrc.res.in

www.mssrfcabrc.res.in

CERTIFICATE

This is to certify that the dissertation entitled "**Mushroom technology, Bio input production technology, Vermicomposting**" submitted to the Kongunadu Arts and Science College, Coimbatore for partial fulfillment of the requirement for the award of degree of BSc biotechnology is a bonafide record of original internship work done by **Mr. RAGUL. A (211BT012)**, during the period of 15 days. The work has been carried out at M.S. Swaminathan Research Foundation CABc, Wayand under the guidance of Mrs. Asiya P, Scientist of this institution.

The internship work comprises of both theoretical and practical study in the specified topic. He has applied himself to this work and completed the work successfully.

Kalpetta
12/06/2023



Dr. Shakeela V
Director

Community Agrobiodiversity Centre

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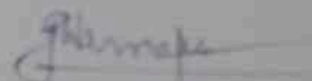


F.No. 1-5/2023-24/PMI

Dated: 09.06.2023

CERTIFICATE OF TRAINING

This is to certify that *Ms. Ramya. R, II year B.Sc. Biotechnology,* student of Kongunadu Arts and Science College, Coimbatore, underwent an exposure-training programme at ICAR - Sugarcane Breeding Institute, Coimbatore from 22.05.2023 to 09.06.2023 under the guidance of Dr.P.T.Prathima, Senior Scientist (Plant Biotechnology), Division of Crop Improvement. During this period, she was exposed to *Exposure on Molecular Biology Technique.*


(G. HEMAPRABHA)
Director



KANNUR DISTRICT PANCHAYAT
DISTRICT AGRICULTURE FARM, THALIPARAMBA

*Certified that Mr./ Ms JEEV SHEEN JOSEPH has successfully completed
Fifteen days internship in Tissue culture Production Technology and Biocontrol agents
conducted at this institution from 23.05.2023 to 06.06.2023*



Date : 06.06.2023


Superintendent
SUPERINTENDENT
DISTRICT AGRICULTURE FARM
THALIPARAMBA, KANNUR
KANNUR, PIN 570 102



CERTIFICATE

AWARDED TO

Lavanya M.

Reg. No: 211BT016, Department of Biotechnology,
Kongunadu Arts and Science College (Autonomous)
Coimbatore- 641 029, Tamil Nadu, India.

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Microbiology hands-on training has been evaluated after the successful completion of the training
from 25.05.2023 to 10.06.2023 and found Excellent to be in accordance with the curriculum

SCOPE OF TRAINING

Mushroom Tissue Culture

Commercial Mushroom Spawn Production

Calocybe indica (Milky mushroom) Cultivation - Integrated Farming model system

GLP, GMP and HACCP Principles and Implementation

Number of Training Days: 15

Approval Date: 22, May 2023

To check this certificate details please call: +91 994 2921 613

Further clarifications regarding the scope of this certificate and applicability of the study program
requirements may be obtained by consulting the Organisation.

Certificate Number: FO2/KNASC/2023-06

Date: 10.06.2023

DR. ARAVINDH S

Course Coordinator
Executive Director & CSD



DR. K. INDUMATHY ARAVINDH

Managing Director



CERTIFICATE

AWARDED TO

Keerthana M.

Reg. No: 211BT017, Department of Biotechnology,
Kongunadu Arts and Science College (Autonomous)
Coimbatore- 641 029, Tamil Nadu, India.

ELIES BIOTECH PRIVATE LIMITED Agricultural and Environmental Biotechnology Products
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Certificate Number: Fo3/KNASC/2023-06

Date: 10.06.2023

Aravindh S.

DR. ARAVINDH S

Course Coordinator

Executive Director & CSO



K. Indumathy

DR. K INDUMATHY ARAVINDH

Managing Director



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Certificate

This is certified that **Mr. S. ANBARASU, II. B.Sc., BIOTECHNOLOGY,** **Kongunadu arts and science college (Autonomous), Coimbatore,** has successfully completed his Internship under my supervision in Plant Biotechnology Laboratory, Department of Botany, Bharathiar University, Coimbatore - 641 046 from **24.05.2023 - 08.06.2023.**

Date : 08.06.2023

Place : Coimbatore

 08/06/23

Signature of the Supervisor

(Dr. P. Gurusaravanam)

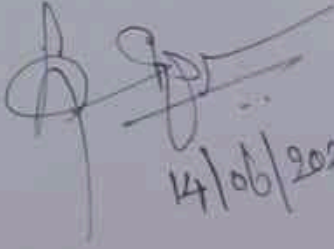
Dr. P. GURUSARAVANAN, M.Sc., M.Phil., Ph.D.,
Assistant Professor
Department of Botany
Bharathiar University
Coimbatore - 641 046, Tamilnadu, India.



14.06.2023

TO WHOMSOEVER IT MAY CONCERN

Ms. U. Vishnuprabha, who is studying II BSc Biotechnology at Kongunadu Arts and Science College has successfully completed her internship training for 21 days between 22.05.2023 to 14.06.2023 under my supervision at Reproductive Immunology and Molecular pathology laboratory, Department of Biotechnology, Bharathiar University, Coimbatore- 46. During the period of training she has learnt various molecular biology techniques such as RNA isolation, cDNA synthesis, PCR, Protein isolation and protein estimation, SDS-PAGE and Western blotting. The student showed good commitment in learning and performed well in the internal assessment.



14/06/2023

Dr. S. VELAYUTHAPRABHU, Ph.D.
Assistant Professor
Department of Biotechnology
Bharathiar University
Coimbatore - 641 046.



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Certificate

This is certified that Mr. P. PERUMAL, II. B.Sc., BIOTECHNOLOGY, Kongunadu arts and science college (Autonomous), Coimbatore, has successfully completed his Internship under my supervision in Plant Biotechnology Laboratory, Department of Botany, Bharathiar University, Coimbatore - 641 046 from 24.05.2023 - 08.06.2023.

Date : 08.06.2023

Place : Coimbatore

Dr. P. Gurusaravanan
08/06/23

Signature of the Supervisor

(Dr. P. Gurusaravanan)

Dr. P. GURUSARAVANAN, MSc. MPhil, PhD.
Assistant Professor
Department of Botany
Bharathiar University
Coimbatore - 641 046, Tamilnadu, India.



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Certificate

This is certified that **Mr. M. POOVARASAN, II. B.Sc., BIOTECHNOLOGY, Kongunadu arts and science college (Autonomous), Coimbatore**, has successfully completed his Internship under my supervision in Plant Biotechnology Laboratory, Department of Botany, Bharathiar University, Coimbatore - 641 046 from **24.05.2023 - 08.06.2023**.

Date: 08.06.2023

Place: Coimbatore

Dr. P. Gurusaravanam
08/06/23

Signature of the Supervisor

(Dr. P. Gurusaravanam)

Dr. P. GURUSARAVANAN, M.Sc., M.Phil., Ph.D.,
Assistant Professor,
Department of Botany
Bharathiar University
Coimbatore - 641 046, Tamilnadu, India.



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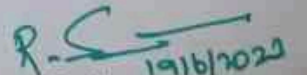
This is to certify that **Ms. P. Nandhana (211BT024)**, from the Department of Biotechnology, Kongunadu Arts and Science College, Coimbatore, has done her summer internship program in the Molecular Genetics and Cancer Biology laboratory, under my guidance, from the Department of Human Genetics and Molecular Biology, Bharathiar University, Coimbatore during 1st June – 17th June 2023. During her internship programme, she has learned the basic techniques in Molecular Biology and Bioinformatic tools. Her performance during the training was very good.

I wish her all success.

Address for correspondence

Dr. R. Sivasamy

Assistant Professor and Head i/c
Molecular Genetics and Cancer Biology Laboratory
Department of Human Genetics and Molecular Biology
Bharathiar University
Coimbatore- 641 046


R. Sivasamy

Dr. R. SIVASAMY, Ph.D.,
Assistant Professor & Head i/c
Dept. of Human Genetics &
Molecular Biology
Bharathiar University
Coimbatore - 641 046.



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COIMBATORE - 641007 TAMILNADU



F.No. 3-5/2023-24/PMF

Dated: 09.06.2023

CERTIFICATE OF TRAINING

This is to certify that *Ms. Aishwarya. R. II year B.Sc. Biotechnology*, student of Kongunadu Arts and Science College, Coimbatore, underwent an exposure-training programme at ICAR - Sugarcane Breeding Institute, Coimbatore from 22.05.2023 to 09.06.2023 under the guidance of Dr.K.Lakshmi, Senior Scientist (Plant Biotechnology), Division of Crop Improvement. During this period, she was exposed to *Training on Molecular Biotechnology and Techniques*.


(G. HEMAPRABHA)
Director

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General : EPBX : 0422-2472621, 2472723, 2472772, 2472823, 2473971, 2473194, Fax : 0422-2472923

E-mail : director.sbi@icar.gov.in, Website : <https://sugarcane.icar.gov.in>



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This is to certify that Ms. Srivarshini. C. S. (211BT027), from the Department of Biotechnology, Kongunadu Arts and Science College, Coimbatore, has done her summer internship program in the Molecular Genetics and Cancer Biology laboratory, under my guidance, from the Department of Human Genetics and Molecular Biology, Bharathiar University, Coimbatore during 1st June – 17th June 2023. During her internship programme, she has learned the basic techniques in Molecular Biology and Bioinformatics tools. Her performance during the training was very good.

I wish her all success

Address for correspondence

Dr. R. Sivasamy
Assistant Professor and Head i/c
Molecular Genetics and Cancer Biology Laboratory
Department of Human Genetics and Molecular Biology
Bharathiar University
Coimbatore- 641 046


R. Sivasamy
Dr. R. SIVASAMY, Ph.D.
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