



THE ASSAM
ROYAL GLOBAL UNIVERSITY
— GUWAHATI —

CRITERION 1

CURRICULAR ASPECTS

METRIC NO.
1.3.3

M.Sc. Microbiology

Field Work / Research Project / Internship





ROYAL GLOBAL UNIVERSITY
— GUWAHATI —

ROYAL SCHOOL OF BIOSCIENCES
FINAL PROJECT REPORT
ON

**“A comparative study of water and sugar impact on
Ralstonia solanacearum F1C1 virulence in tomato
seedlings through root dip and leaf clip inoculation”**

Submitted in partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE

IN

DEPARTMENT OF MICROBIOLOGY

SUBMITTED BY

AFRID AHMED

Roll No.: 214153002

Reg. No.: 1211620

Under the Supervision of

PANKAJ LOSAN SHARMA

Assistant Professor, Department of Microbiology

RSBSC

ROYAL GLOBAL UNIVERSITY, GUWAHATI

July 10, 2023



ROYAL GLOBAL UNIVERSITY
GUWAHATI

ROYAL SCHOOL OF BIOSCIENCES

DEPARTMENT OF MICROBIOLOGY

CERTIFICATE OF COORDINATOR

This is to certify that AFRID AHMED of M.Sc 4th semester, Department of Microbiology has worked on the project entitled “**A comparative study of water and sugar impact on *Ralstonia solanacearum* FIC1 virulence in tomato seedlings through root dip and leaf clip inoculation**” towards the partial fulfillment of the degree of Masters of Science under The Assam Royal Global University, Guwahati. No part of this study has been submitted elsewhere for the award of any degree

Date:10/07/2023

Place: RGU, Guwahati

DR.NIRAJ SINGH

COORDINATOR

Department of Microbiology

(RSBSC)

HOD/Coordinator

Department of Microbiology

Royal School of Bio- Sciences

The Assam Royal Global University

Betkuchi, NH 37 Guwahati 781035

**"A Study on Endophytic Bacteria Isolated from Brinjal Seedlings and
Their Effects on *Ralstonia solanacearum* FIC1 Infection."**

**A Report submitted in partial fulfilment of requirements for the
degree of
Masters of Science in Microbiology.
Under,**



**ROYAL GLOBAL UNIVERSITY
GUWAHATI**

SUBMITTED BY:

DEEP JYOTI SAIKIA

ROLL NO: 214153007

REG. NO: 1211625

M.SC. 4TH SEMESTER

DEPARTMENT OF MICROBIOLOGY

UNDER THE SUPERVISION OF:

DR. NIRAJ SINGH

ASSISTANT PROFESSOR & COORDINATOR,

DEPARTMENT OF MICROBIOLOGY

THE ASSAM ROYAL GLOBAL UNIVERSITY

Dr. Niraj Singh

Assistant Professor

Department Of Microbiology

Royal School of Bio-Sciences

Phone No.: 9678462554

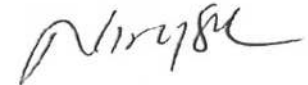
Email: n.singh@rgu.ac

CERTIFICATE OF THE SUPERVISOR

This is to certify that Mr. Deep Jyoti Saikia, student of M.Sc. 4th semester, Department of Microbiology has worked on the project entitled, "**A study on Endophytic Bacteria Isolated from Brinjal Seedlings and Their Effects on *Ralstonia solanacearum* F1C1 Infection**" under my supervision towards the partial fulfilment of the requirements of the degree of Master of Science in Microbiology under The Assam Royal Global University, Guwahati. No part of this study has been submitted elsewhere for award of any degree.

Date: 13/07/23

Place: Guwahati, Assam



Dr. Niraj Singh

(Supervisor)
HOD/Coordinator
Department of Microbiology
Royal School of Bio- Sciences
The Assam Royal Global University
Betkuchi, NH 37 Guwahati 781035

THE ASSAM ROYAL GLOBAL UNIVERSITY, BETKUCHI, NH-37, GHY-781035, ASSAM, INDIA

**Isolation and Biochemical Characterization of
Plant Growth Promoting (PGP) Bacteria**



ROYAL GLOBAL UNIVERSITY
— GUWAHATI —

**A dissertation submitted to the Department of
Microbiology, The Assam Royal Global University
for the partial fulfilment of the degree of Master of
Science in Microbiology .**

SUBMITTED BY

Arindram Kalita

Royal School of Bio-Sciences

Department of Microbiology

Rollno.- 214153004.

UNDER THE SUPERVISION OF

Dr. Debajit Kalita

Assistant Professor

Department of Microbiology

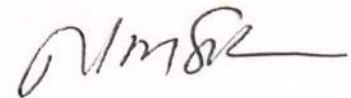
The Assam Royal Global University

The Assam Royal Global University
CERTIFICATE OF COORDINATOR

This is to certify that Mr Arindram Kalita of MSc 4th semester, Department of microbiology has worked on the project entitled "Isolation and Biochemical Characterization of Plant Growth Promoting (PGP) Bacteria" towards partial fulfilment of the degree of Masters of Science in Microbiology under the Assam Royal Global University, Guwahati. No part of this study has been submitted elsewhere for the award of any degree.

Date: 12/11/23

Place:



Dr. Niraj Singh

HOD/Coordinator
Department of Microbiology
Royal School of Bio- Sciences
The Assam Royal Global University
Betkuchi, NH 37 Guwahati 781035

Identification of potent AmpC β -lactamase inhibitors from *Phlogacanthus thyrsiformis*



ROYAL GLOBAL UNIVERSITY

— GUWAHATI —

A dissertation submitted to Department of Microbiology, The Assam Royal Global University for the partial fulfilment of the degree of Masters of Science in Microbiology

Submitted by

Phrasodao Langthasa

Roll no: 204153007

Reg. No: 1201395

M.sc 4th Semester

Department Of Microbiology

Under the Supervision of

Dr. Birson Ingti

Asst. Professor

Department Of Microbiology

The Assam Royal Global University



ROYAL GLOBAL UNIVERSITY
GUWAHATI

Royal School of Bio-science
Under Royal Global University
Betkuchi, NH-37, Ghy-781035, Assam, India
Phone: 0361-2270100/0361-2270300
Email: career@rgu.ac

CERTIFICATE FROM CO-ORDINATOR

This is to certify that the topic incorporated in this Project Proposal on "Identification of potent AmpC β -lactamase inhibitors from *Phlogacanthus Thyrsiformis*" being submitted by **PHRASODAO LANGTHASA**, Roll no 204153007, in the partial fulfilment of the requirements for the award of degree of **MASTER in MICORBIOLOGY** is a genuine and legitimate research work to be carried out at **Royal School of Bio-Science Laboratory**, Royal School of Bio-Science affiliated to **Royal Global University, Guwahati, Assam, India** during the academic year 2020-2022.

Date: 05/01/2022
Place: Guwahati, Assam

Signature

Head of Department

Dr. Niraj Singh

Microbiology Department
HOD/Coordinator

Department of Microbiology

Royal School of Bio- Sciences

The Assam Royal Global University

Betkuchi, NH 37 Guwahati 781035

Antagonistic activity of endophytic microbes from *Cissus adnata* (kongouyen)



ROYAL GLOBAL UNIVERSITY
— GUAHATI —

A dissertation submitted to The Assam Royal Global University In partial fulfillment of the requirements for the award of the degree of

MASTER IN SCIENCE

In

MICROBIOLOGY

Submitted by,

Cheangku R Marak

Roll no: 204153002

MSc Microbiology 4th Semester

Under the supervision of

Dr. Trishnamoni Gautom

Assistant Professor

Department of Microbiology

Royal School of BioScience

THE ASSAM ROYAL GLOBAL UNIVERSITY

Betkuchi, NH-37, GHY-781035, ASSAM, INDIA

2022



ROYAL GLOBAL UNIVERSITY
GUWAHATI

Dr. Niraj Singh

Assistant Professor

Department of Microbiology

Royal School of Bioscience

Ph No: 96784622554

Email ID: n.singh@gmail.com

CERTIFICATE OF CO-ORDINATOR

This is to certify that Mr. Cheangku R Marak, student of M.Sc. 4th semester, Department of Microbiology has worked on the project entitled, "**Antagonistic activity of endophytes isolated from *Cissus adnata* (kongouyen)**" towards the partial fulfilment of the award of the degree of M.Sc. in Microbiology under The Assam Royal Global University, Guwahati. No part of this study has been submitted elsewhere for award of any degree.

Date: 28.07.22

Place: Guwahati, Assam

Dr. Niraj Singh

HOD/Coordinator
Department of Microbiology
Royal School of Bio- Sciences
The Assam Royal Global University
Betkuchi, NH 37 Guwahati 781035

Betkuchi, (opposite to Tirupati Balaji Temple), Guwahati – 781035, Assam, India

ROYAL SCHOOL OF BIO-SCIENCES
GUWAHATI - 781035



ROYAL GLOBAL UNIVERSITY
— GUWAHATI —

PROJECT REPORT

ON

"Isolation of Bacteriophages and its Antagonistic Properties Against *Ralstonia Solanacearum* F1C1 strain"

Submitted in partial fulfillment of the requirement for the

Degree of Master of Science in Microbiology

PROJECT GUIDE-

Mr. Pankaj Lohan Sharma

ASSISTANT PROFESSOR

DEPARTMENTMENT OF MICROBIOLOGY

Royal Global University

SUBMITTED BY-
NAME- Krishnasaugh
Bhattacharjee
REGISTRATION NO-
120064543

The Assam Royal Global University, Betkuchi, NH-37, Glnv - 781035, Assam



ROYAL GLOBAL UNIVERSITY

GUWAHATI

Department of Microbiology

Royal School of Bio-Sciences

The Assam Royal Global University, Betkuchi, NH-37, Ghy- 781035, India

Dr. Niraj Singh
Coordinator
Dept. of Microbiology

Phone: 9678462554
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CERTIFICATE OF THE COORDINATOR

This is to certify that Mr. Krishnaangsh Bhattacharjee a student of B.Sc. 6th semester, the Department of Microbiology has worked on the project entitled, "Isolation of Bacteriophages and its Antagonistic Properties Against *Ralstonia Solanacearum* F1C1 strain."

Under my supervision towards the partial fulfillment of the degree of B.Sc. in Microbiology under the Assam Royal Global University, Guwahati. No part of this study has been submitted elsewhere for the award of any degree.

Date: 10/7/23

Place: Guwahati, Assam


(Dr. Niraj Singh)
HOD/Coordinator
Department of Microbiology
Royal School of Bio-Sciences
The Assam Royal Global University
Betkuchi, NH 37 Guwahati 781035

THE ASSAM ROYAL GLOBAL UNIVERSITY, BETKUCHI, NH-37, GHY-781035, ASSAM, INDIA

**Passive air sampling from populated and less-populated in and around the
Guwahati city areas to identify the pathogenic and drug resistance organisms.**

**A Dissertation submitted to the Department of Microbiology, The Assam
Royal Global University for the partial fulfillment of the degree of Master of
Science in Microbiology.**



ROYAL GLOBAL UNIVERSITY
— GUAHATI —

---: SUBMITTED BY: ---

SALVIUSH CHINGKU S MARAK

ROLL NO: 194153018

M.Sc. IVth SEMESTER

DEPARTMENT OF MICROBIOLOGY

UNDER THE SUPERVISION OF

Dr. Birson Ingti

Assistant Professor

DEPARTMENT OF MICROBIOLOGY

THE ASSAM ROYAL GLOBAL UNIVERSITY

Betkuchi, NH-37, Ghy-781035, Assam, India



ROYAL GLOBAL UNIVERSITY
GUWAHATI

Department of Microbiology

Royal school of Bio Science

The Assam royal global university, Betkuchi, NH-37, Ghy-781035; Assam, India.

Dr. Birson Ingti

Phone:+919678821745

Assistant professor

email:ingtibir1012@gmail.com

CERTIFICATE OF THE SUPERVISOR

This is to certify that Salviush Chingku S Marak, student of MSc. Final semester, Department of Microbiology has worked on the project titled "Passive air sampling from populated and less-populated in and around the Guwahati city areas to identify the pathogenic and drug resistant organisms" under my supervision towards the partial fulfillment of the award of the degree of MSc. In Microbiology under "The Assam Royal Global University, Guwahati

HOD/Coordinator
Department of Microbiology
Royal School of Bio- Sciences
The Assam Royal Global University
Betkuchi, NH 37 Guwahati 781035

Date:


Dr. Birson Ingti

Place: RGU, Guwahati

(Supervisor)

**STUDY OF ANTIBACTERIAL PROPERTIES OF "MIKANIA
MICRANTHOS" LEAVES EXTRACT AGAINST THE
DIFFERENT BACTERIA**

*A Dissertation submitted to the Department of Microbiology, The
Assam Royal Global University for the partial fulfillment of the
degree of Master of Science in Microbiology.*



THE ASSAM

ROYAL GLOBAL UNIVERSITY

---: Submitted By: --

Mariyam Aktar

**Royal School of Bioscience, Under
The Assam Royal Global University
Berkuchi, NH-37, Ghy-781035, Assam,
India**

M.Sc. Microbiology 4th Semester

Roll no: 19415300

Registration No: 191317

Department of
Microbiology
The Assam Royal Global University, Betkuchi, NH-37, Ghy-781035, Assam,
India.

Dr. Niraj Singh

Asst. Professor,

Department of Microbiology
Email ID. Neerajsingh710@gmail.com
Phone No: +919678462554

CERTIFICATE OF THE SUPERVISOR

This is to certify that Mariyam Aktar, student of M.Sc. final semester, Department of Microbiology has worked on the project entitled "Study of antibacterial properties of "mikania micranthaas" leaves extract against the different bacteria" under my supervision towards the partial fulfillment of the award of the degree of M.Sc. in Microbiology under The Assam Royal Global University, Guwahati.

Date: 21/10/2021

Place: RGU, Guwahati

Niraj Singh

Dr. Niraj Singh

Dept. of Microbiology

(Supervisor)

HOD/Coordinator

Department of Microbiology
Royal School of Bio- Sciences
The Assam Royal Global University
Betkuchi, NH 37 Guwahati 781035

TOPIC: TO ACCESS PATHOGENIC BACTERIA FROM
DIFFERENT LOCALLY AVAILABLE MILK PRODUCTS (CURD)

A Dissertation submitted to the Department of Microbiology, The Assam Royal
Global University for the partial fulfilment of the degree of Master in
Microbiology



ROYAL GLOBAL UNIVERSITY
GUWAHATI

SUBMITTED BY:

Bedika Salkia

ROLL NO. 194153006

Msc 4th Semester

Department of Microbiology

Under the Supervision of

Dr. Birson Ingti

Assistant professor

Department of Microbiology

The Assam Royal Global University

Betkuchi, NH-37, Ghy-781035, Assam, India

(Duration of the Project - 2020-2021)

Department of Microbiology
Royal school of Bioscience
The Assam Royal Global University
Betkuchi, NH-37, Guwahati, 781035, Assam, India

Dr. Birson Ingti
Assistant Professor

Phone No - 9678821745
Email:ingtibir1012@gmail.com

CERTIFICATE OF SUPERVISOR

This is to certify that Ms. Bedika Saikia, student of Msc final semester, Department of Microbiology has worked on the project entitled "To access pathogenic bacteria from different locally available milk and milk products (curd)" under my supervision towards the partial fulfillment of the award of the degree of Msc in Microbiology under The Assam Royal Global University, Guwahati.

Date: 9/9/21

Place: Guwahati



Dr. Birson Ingti

Assistant professor (Supervisor)

HOD/Coordinator
Department of Microbiology
Royal School of Bio- Sciences
The Assam Royal Global University
Betkuchi, NH 37 Guwahati 781035

Antagonistic activity of endophytic microbes from *Cissus adnata* (kongouyen)



ROYAL GLOBAL UNIVERSITY
— GUAHATI —

A dissertation submitted to The Assam Royal Global University In partial fulfillment of the requirements for the award of the degree of

MASTER IN SCIENCE

In

MICROBIOLOGY

Submitted by,

Cheangku R Marak

Roll no: 204153002

MSc Microbiology 4th Semester

Under the supervision of

Dr. Trishnamoni Gautom

Assistant Professor

Department of Microbiology

Royal School of BioScience

THE ASSAM ROYAL GLOBAL UNIVERSITY

Betkuchi, NH-37, GHY-781035, ASSAM, INDIA

2022



ROYAL GLOBAL UNIVERSITY
GUWAHATI

Dr. Niraj Singh
Assistant Professor
Department of Microbiology
Royal School of Bioscience
Ph No: 96784622554
Email ID: n.singh@gmail.com

CERTIFICATE OF CO-ORDINATOR

This is to certify that Mr. Cheangku R Marak, student of M.Sc. 4th semester, Department of Microbiology has worked on the project entitled, "Antagonistic activity of endophytes isolated from *Cissus adnata* (kongouyen)" towards the partial fulfilment of the award of the degree of M.Sc. in Microbiology under The Assam Royal Global University, Guwahati. No part of this study has been submitted elsewhere for award of any degree.

Niraj Singh

Dr. Niraj Singh
HOD/Coordinator
Department of Microbiology
Royal School of Bio- Sciences
The Assam Royal Global University
Betkuchi, NH 37 Guwahati 781035

Date: 28.07.22

Place: Guwahati, Assam

Betkuchi, (opposite to Tirupati Balaji Temple), Guwahati - 781035, Assam, India

**A STUDY ON
"SCREENING OF ENDOPHYTIC MICROORGANISMS
FROM PLECTRANTHUS AMBOINICUS. LOUR FOR ITS
ANTAGONISTIC AND ANTIMICROBIAL ACTIVITY"**

**A Dissertation submitted in partial fulfillment of the requirements
for the degree of Master of Science under the Department of
Microbiology, The Assam Royal Global University**



**ROYAL GLOBAL UNIVERSITY
GUWAHATI**

Submitted by

Name: Chandramita Das

Registration No: 1201389

Roll No: 204153001

Msc 4th semester

Department of Microbiology

Academic project supervisor.

Dr. Susmita Paul

Assistant Professor

Department of Microbiology

Royal School of Bioscience

**THE ASSAM ROYAL GLOBAL UNIVERSITY
Betkuchi, NH-37, GHY-781035, Assam, India**



ROYAL GLOBAL UNIVERSITY
GUWAHATI

Dr. Niraj Singh

Assitant Professor

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E.mail: n.singh@gmail.com

CERTIFICATE OF CO-ORDINATOR

This is to certify that Miss Chandramita Das, student of M. Sc 4th Semester, Department of Microbiology has worked on the project entitled, "**Screening of endophytic microorganisms from *Plectranthus amboinicus. Lour* for its antagonistic and antimicrobial activity**" towards the partial fulfillment of the award of the degree of M.Sc in Microbiology under The Assam Royal Global University, Guwahati. No part of this study has been submitted elsewhere for award of any degree.

Date: 5/8/22

Place: Guwahati

Dr Niraj Singh

(Coordinator)
HOD/Coordinator

Department of Microbiology
Royal School of Bio- Sciences
The Assam Royal Global University
Betkuchi, NH 37 Guwahati 781035