

# A PROJECT REPORT ON

“Biocontrol potential of *Bacillus thuringiensis* isolated from soil samples against the mosquito larvae from Baramati Tehsil, Pune District (MH),  
India.”

SUBMITTED TO

TULJARAM CHATURCHAND COLLEGE OF ARTS, COMMERCE  
AND SCIENCE, BARAMATI, PUNE



AS A PARTIAL FULFILMENT OF THE DEGREE OF MASTER OF

SCIENCE IN ZOOLOGY BY

PATIL ABHISHEK JINENDRA

ROLL NO: 16792

UNDER THE GUIDANCE OF

Prof. Dr. Vitthal B. Nale

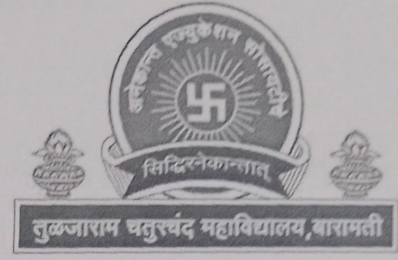
P. G. DEPARTMENT OF ZOOLOGY,

TULJARAM CHATURCHAND COLLEGE, BARAMATI.

(AUTONOMOUS)

2023-2024





Anekant Education Society's  
**Tuljaram Chaturchand College**  
of Arts, Science & Commerce, Baramati Dist. Pune  
(Autonomous)

**CERTIFICATE**

This is to certify that the project entitled "BIOCONTROL POTENTIAL OF BACILLUS THURINGIENSIS ISOLATED FROM SOIL SAMPLES AGAINST THE MOSQUITO LARVAE FROM BARAMATI TEHSIL, PUNE DISTRICT (MH), INDIA." submitted by Mr. Patil Abhishek Jinendra, for the award of M.Sc. degree in Zoology of Savitribai Phule Pune University. He has worked under my supervision and his work is original.

Date: 02-05-2024

Place: Baramati

DR. NALE V. B.

(PROJECT GUIDE)

Dr. SANGALE. D. M

(P. G. CO-ORDINATOR)

Dr. CHORDIYA S. P.

(CO-GUIDE)

Dr. CHORDIYA S. P.

(HEAD OF DEPARTMENT)

EXTERNAL EXAMINER



**BIODIVERSITY AND MORPHOTAXONOMY OF SOME ACARI FAUNA  
FROM BARAMATI TEHSIL.**

**A PROJECT REPORT SUBMITTED  
TO  
DEPARTMENT OF ZOOLOGY**

**TULJARAM CHATURCHAND COLLEGE,  
BARAMATI (AUTONOMOUS)  
FOR THE PARTIAL FULFILAMENT**

**M.SC IN ZOOLOGY**

**BY**

**MISS. Shaikh Shaheen Moinuddin**

**M.SC-II**

**ROLL NO.: 16795**

**UNDER THE GUIDENCE OF**

**Dr. S. S. Jadhav**

**P.G.DEPARTMENT OF ZOOLOGY  
TULJARAM CHATURCHAND COLLEGE  
BARAMATI  
YEAR – 2023-24**





**Anekant Education Society's  
Tuljaram Chaturchand College  
of Arts, Science & Commerce, Baramati Dist. Pune  
(Autonomous)**

**CERTIFICATE**

This is to certify that the project entitled “**BIODIVERSITY AND ECOLOGY OF ACARI FAUNA FROM BARAMATI TEHSIL**” submitted by Miss Shaikh Shaheen Moinuddin, for the award of M.Sc. degree in Zoology of Savitribai Phule Pune University. She has worked under my supervision and her work is original.

Date: 2-5-2024

Place: Baramati

  
**DR. JADHAV S. S.**

(PROJECT GUIDE)

  
**Dr. SANGALE. D. M**  
(P. G. CO-ORDINATOR)

  
**Dr. CHORDIYA S. P.**  
(HEAD OF DEPARTMENT)

  
  
**EXTERNAL EXAMINER**

# STUDY OF PHYSICO-CHEMICAL ANALYSIS OF WATER AND ACCUMULATION OF HEAVY METALS IN FISHES.

**Savitribai Phule Pune University**

सावित्रीबाई फुले पुणे विद्यापीठ



**RESEARCH PROJECT SUBMITTED TO THE SAVITRIBAI PHULE  
PUNE UNIVERSITY, PUNE  
FOR THE DEGREE OF MASTER OF SCIENCE IN ZOOLOGY**

**BY**

**MISS. MALVE VAISHNAVI HARISH**

**16793**

**EXAM SEAT NO:**

**RESEARCH PROJECT GUIDE**

**DR. JADHAV SAMEER SADASHIV**



**APRIL-2024**



**Anekant Education Society's  
Tuljaram Chaturchand College  
of Arts, Science & Commerce, Baramati Dist. Pune  
(Autonomous)**

**CERTIFICATE**

This is to certify that the project entitled "STUDY OF PHYSICO-CHEMICAL ANALYSIS OF WATER AND ACCUMULATION OF HEAVY METALS IN FISHES FROM UJANI BACKWATER, MAHARASHTRA." submitted by Miss Malave Vaishnavi Harish, for the award of M.Sc. degree in Zoology of Savitribai Phule Pune University. She has worked under my supervision and her work is original.

Date: 02/05/2024.

Place: Baramati

  
**DR. JADHAV S. S.**

(PROJECT GUIDE)



**Dr. SANGALE. D. M**

(P. G. CO-ORDINATOR)



**Dr. CHORDIYA S. P.**

(HEAD OF DEPARTMENT)

  
02/05/24  
**EXTERNAL EXAMINER**



**“POTENTIAL OF FISH MANURE FOR GERMINATION OF SEED  
AND INITIAL GROWTH”**

**A PROJECT REPORT SUBMITTED  
TO**

**DEPARTMENT OF ZOOLOGY,  
TULJARAM CHATURCHAND COLLEGE,  
BARAMATI (AUTONOMOUS)**

**FOR THE PARTIAL FULFILMENT  
M.Sc. IN ZOOLOGY**

**BY**

**Miss Nikam Nita Vitthal  
M.Sc. II  
Exam Seat No: \_\_\_\_\_**

**UNDER THE GUIDANCE OF  
PROF. KISHOR UTTAM MORE**

**P.G. DEPARTMENT OF ZOOLOGY,  
TULJARAM CHATURCHAND COLLEGE  
BARAMATI**

**MAY- 2024**





**Anekant Education Society's  
Tuljaram Chaturchand College  
of Arts, Science & Commerce, Baramati Dist. Pune  
(Autonomous)**

**CERTIFICATE**

This is to certify that the project entitled "POTENTIAL OF FISH MANURE FOR GERMINATION OF SEED AND INITIAL GROWTH" submitted by Miss Nikam Nita Vitthal, for the award of M.Sc. degree in Zoology of Savitribai Phule Pune University. She has worked under my supervision and her work is original.

Date:

Place: Baramati

**ASST. PROF. MORE K. U.**

(PROJECT GUIDE)

**Dr. SANGALE. D. M**  
(P. G. CO-ORDINATOR)

**Dr. CHORDIYA S. P.**  
(HEAD OF DEPARTMENT)

**EXTERNAL EXAMINER**





**“TO STUDY THE EFFECT OF LEMON PLANT LEAF EXTRACT AGAINST  
RICE WEEVIL AND MOSQUITO LARVAE”**

**A PROJECT REPORT SUBMITTED  
TO**

**DEPARTMENT OF ZOOLOGY,  
TULJARAM CHATURCHAND COLLEGE,  
BARAMATI (AUTONOMOUS)**

**FOR THE PARTIAL FULFILMENT  
M.Sc. IN ZOOLOGY**

**BY**

**Miss Gawade Dipti Vikas**

**M.Sc. II**

**Exam Seat No: \_\_\_\_\_**

**UNDER THE GUIDANCE OF  
PROF. KISHOR UTTAM MORE**

**P.G. DEPARTMENT OF ZOOLOGY,  
TULJARAM CHATURCHAND COLLEGE  
BARAMATI**

**MAY- 2024**



**Anekant Education Society's  
Tuljaram Chaturchand College  
of Arts, Science & Commerce, Baramati Dist. Pune  
(Autonomous)**

**CERTIFICATE**

This is to certify that the project entitled "TO STUDY THE EFFECT OF LEMON PLANT LEAF EXTRACT AGAINST RICE WEEVIL AND MOSQUITO LARVAE" submitted by Miss Gawade Dipti Vikas for the award of M.Sc. degree in Zoology of Savitribai Phule Pune University. She has worked under my supervision and her work is original.

Date:

Place: Baramati

**ASST. PROF. MORE K. U.**

(PROJECT GUIDE)

**Dr. SANGALE. D. M**

(P. G. CO-ORDINATOR)

**Dr. CHORDIYA S. P.**

(HEAD OF DEPARTMENT)

**EXTERNAL EXAMINER**





ESTIMATION OF PROTEIN BY LOWRY'S METHOD FROM  
MUSCLE TISSUE OF LABEO ROHITA AND CARASSIUS FISH  
FROM BARAMATI FISH MARKET.

**A PROJECT REPORT SUBMITTED**

**TO**

DEPARTMENT OF ZOOLOGY

TULJARAM CHATURCHAND COLLEGE,

BARAMATI (AUTONOMOUS)

**FOR THE PARTIAL FULFILAMENT**

M.SC IN ZOOLOGY

**BY**

MISS. KUMBHAR SHITAL SIDDHESHWAR

**M.SC-II**

**ROLL NO.: 16799**

**UNDER THE GUIDENCE OF**

PROF : S.K. JAMBALE

P.G.DEPARTMENT OF ZOOLOGY

TULJARAM CHATURCHAND COLLEGE

BARAMATI

YEAR – 2023-24



**Anekant Education Society's  
Tuljaram Chaturchand College  
of Arts, Science & Commerce, Baramati Dist. Pune  
(Autonomous)**

**CERTIFICATE**

This is to certify that the project entitled "ESTIMATION OF PROTEIN BY LOWRY'S METHOD FROM MUSCLE TISSUE OF ROHU AND CARAS FISH FROM BARAMATI FISH MARKET" submitted by Miss Kumbhar Shital Siddheshwar, for the award of M.Sc. degree in Zoology of Savitribai Phule Pune University. She has worked under my supervision and her work is original.

Date: 21/5/2024

Place: Baramati

**ASST. PROF. JAMBALE S. K.**

(PROJECT GUIDE)

**Dr. SANGALE. D. M**

(P. G. CO-ORDINATOR)

**Dr. CHORDIYA S. P.**

(HEAD OF DEPARTMENT)

**EXTERNAL EXAMINER**



Research project report on



**“Morphometric and meristic analysis of *Oreochromis mossambicus* from  
Nira river of Baramati tehsil of Maharashtra”**

Submitted to

**Tuljaram Chaturchand College of Art, Science and Commerce,  
Baramati (Autonomous)**

In the partial fulfillment of the requirements for the Awards of Master of  
Science (M.Sc.) Zoology

Submitted by

**Ms. Gadhave Monali Shivaji (Role number- 16800)**

Under the guidance of

**Mr. Mayur S. Shitole (Guide)**

**&**

**Mr. Samadhan D. Kare (Co-guide)**

Department of Zoology, Tuljaram Chaturchand College, Baramati, Dist pune,  
Maharashtra, India,

**April 2024**



Anekant Education Society's  
**Tuljaram Chaturchand College**  
of Arts, Science & Commerce, Baramati Dist. Pune  
(Autonomous)

**CERTIFICATE**

This is to certify that the project entitled "MORPHOMETRIC AND MERISTIC ANALYSIS OF OREOCHROMIS MOSSAMBICUS FROM NIRA RIVER OF BARAMATI TEHSIL OF MAHARASHTRA" submitted by Miss Gadhve Monali Shivaji, for the award of M.Sc. degree in Zoology of Savitribai Phule Pune University. She has worked under my supervision and her work is original.

Date: 2-5-2024

Place: Baramati

ASST. PROF. SHITOLE M. S.

(PROJECT GUIDE)

*Dmeangale*

Dr. SANGALE. D. M

(P. G. CO-ORDINATOR)

*Chordiya*

Dr. CHORDIYA S. P.

(HEAD OF DEPARTMENT)

*02/05/2024*

*02/05/24*

EXTERNAL EXAMINER





**“Comparative *In-silico* studies on mitochondria genome of *Lebeo* genus”**

Submitted to

**Tuljaram Chaturchand College of Art, Science and Commerce,  
Baramati (Autonomous)**

In the partial fulfillment of the requirements for the Awards of Master of Science  
(M.Sc.) Zoology

Submitted by

**Ms. Dhaygude Aakanksha Rajendra (Role number- 16802)**

Under the guidance of

**Dr. Dipali M. Sangale (Guide)**

**&**

**Mr. Mayur S. Shitole (Co-guide)**

Department of Zoology, Tuljaram Chaturchand College, Baramati, Dist pune,  
Maharashtra, India,

**April 2024**



**Anekant Education Society's  
Tuljaram Chaturchand College  
of Arts, Science & Commerce, Baramati Dist. Pune  
(Autonomous)**

**CERTIFICATE**

IN-SILICO STUDIES ON

This is to certify that the project entitled "COMPARATIVE MITOCHONDRIAL GENOME" submitted by Miss Dhaygude Aakanksha Rajendra, for the award of M.Sc. degree in Zoology of Savitribai Phule Pune University. She has worked under my supervision and her work is original.

Date: 02/05/2024

Place: Baramati

*D. Sangale*

**Dr. SANGALE. D. M**

(PROJECT GUIDE)

*D. Sangale*

**Dr. SANGALE. D. M**

(P. G. CO-ORDINATOR)

*Shitole*

**ASST. PROF. SHITOLE M. S.**

(CO-GUIDE)

*Chordiya*

**Dr. CHORDIYA S. P.**

(HEAD OF DEPARTMENT)

*Chordiya*  
02/05/24

**EXTERNAL EXAMINER**



Research project report on



**“Comparative *In-silico* studies on mitochondria genome of *Lebeo* genus”**

Submitted to

**Tuljaram Chaturchand College of Art, Science and Commerce,**

**Baramati (Autonomous)**

In the partial fulfillment of the requirements for the Awards of Master of Science  
(M.Sc.) Zoology

Submitted by

**Ms. Shende Pooja Prakash (Role number- 16803)**

Under the guidance of

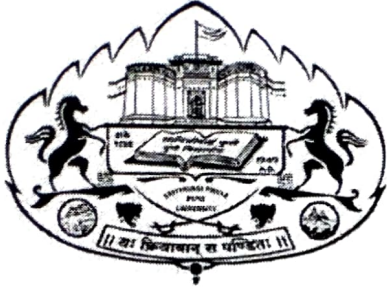
**Dr. Dipali M. Sangale (Guide)**

**&**

**Mr. Mayur S. Shitole (Co-guide)**

Department of Zoology, Tuljaram Chaturchand College, Baramati, Dist pune,  
Maharashtra, India,

**April 2024**



Anekant Education Society's  
**Tuljaram Chaturchand College**  
of Arts, Science & Commerce, Baramati Dist. Pune  
(Autonomous)

**CERTIFICATE**

IN SILICO STUDIES ON  
This is to certify that the project entitled "COMPARATIVE MITOCHONDRIAL GENOME" submitted by Miss Shende Pooja Prakash, for the award of M.Sc. degree in Zoology of Savitribai Phule Pune University. She has worked under my supervision and her work is original.

Date: 02/05/2024

Place: Baramati

*Dmeangale*

Dr. SANGALE. D. M

(PROJECT GUIDE)

*[Signature]*

ASST. PROF. SHITOLE M. S.

(CO-GUIDE)

*Dmeangale*

Dr. SANGALE. D. M

(P. G. CO-ORDINATOR)

*[Signature]*

Dr. CHORDIYA S. P.

(HEAD OF DEPARTMENT)

*[Signature]*  
02/05/2024  
*[Signature]*  
02/05/2024  
EXTERNAL EXAMINER

Research project report on



**“Length-weight relationship of *Oreochromis mossambicus* from Nira river  
of Baramati tehsil of Maharashtra”**

Submitted to

**Tuljaram Chaturchand College of Art, Science and Commerce,  
Baramati (Autonomous)**

In the partial fulfillment of the requirements for the Awards of Master of  
Science (M.Sc.) Zoology

Submitted by

**Ms. Jadhav Priti Sanjay (Role number- 16801)**

Under the guidance of

**Mr. Mayur S. Shitole (Guide)**

**&**

**Mr. Samadhan D. Kare (Co-guide)**

Department of Zoology, Tuljaram Chaturchand College, Baramati, Dist pune,  
Maharashtra, India,

**April 2024**





Anekant Education Society's  
**Tuljaram Chaturchand College**  
of Arts, Science & Commerce, Baramati Dist. Pune  
(Autonomous)

**CERTIFICATE**

This is to certify that the project entitled "LENGTH-WEIGHT RELATIONSHIP OF OREOCHROMIS MOSSAMBICUS FROM NIRA RIVER OF BARAMATI TEHSIL OF MAHARASHTRA" submitted by Miss Jadhav Priti Sanjay, for the award of M.Sc. degree in Zoology of Savitribai Phule Pune University. She has worked under my supervision and her work is original.

Date: 02/05/2024

Place: Baramati

**ASST. PROF. KARE S. D.**

(PROJECT GUIDE)

**Dr. SANGALE. D. M**

(P. G. CO-ORDINATOR)

**Dr. CHORDIYA S. P.**

(HEAD OF DEPARTMENT)

**EXTERNAL EXAMINER**

Research project report on



**“Gonadosomatic and hepatosomatic index analysis of *Oreochromis mossambicus* from Nira river of Baramati tehsil of Maharashtra”**

Submitted to

**Tuljaram Chaturchand College of Art, Science and Commerce,  
Baramati (Autonomous)**

In the partial fulfillment of the requirements for the Awards of Master of  
Science (M.Sc.) Zoology

Submitted by

**Ms. Ghorpade Jyoti Kiran (Role number- 16805)**

Under the guidance of

**Mr. Mayur S. Shitole (Guide)**

**&**

**Mr. Samadhan D. Kare (Co-guide)**

Department of Zoology, Tuljaram Chaturchand College, Baramati, Dist pune,  
Maharashtra, India,

**April 2024**



Anekant Education Society's  
**Tuljaram Chaturchand College**  
of Arts, Science & Commerce, Baramati Dist. Pune  
(Autonomous)

**CERTIFICATE**

This is to certify that the project entitled "GONADOSOMATIC AND HEPATOSOMATIC INDEX ANALYSIS OF OREOCHROMIS MOSSAMBICUS FROM NIRA RIVER OF BARAMATI TEHSIL OF MAHARASHTRA" submitted by Miss Ghorpade Jyoti Kiran, for the award of M.Sc. degree in Zoology of Savitribai Phule Pune University. She has worked under my supervision and her work is original.

Date: 2-5-2024

Place: Baramati

  
ASST. PROF. SHITOLE M. S.

(PROJECT GUIDE)

  
Dr. SANGALE. D. M  
(P. G. CO-ORDINATOR)

  
Dr. CHORDIYA S. P.  
(HEAD OF DEPARTMENT)

  
EXTERNAL EXAMINER