

***“BIODIVERSITY OF HELMINTH PARASITES OF FRESH WATER FISHES FROM
AHMEDNAGAR DISTRICT”***

***MINOR RESEARCH PROJECT
IN
ZOOLOGY***



***SPONCERED BY
UNIVERSITY GRANT COMMISSION, NEW DELHI
(REGINAL OFFICE, PUNE)***

BY

***DR. DANDAWATE RAJENDRA RAKHAMAJI
Assistant Professor
DEPARTMENT OF ZOOLOGY***

***MULA EDUCATION SOCIETY'S
ARTS, COMMERCE AND SCIENCE COLLGE
SONAI TAL NEWASA DIST AHMEDNAGAR
MS INDIA PIN 41105***

SUMMARY OF PROJECT

The Project entitled

“BIODIVERSITY OF HELMINTH PARASITES OF FRESH WATER FISHES FROM AHMEDNAGAR DISTRICT”

Duration- April 2012 to December 2013.

The project includes four sections

SECTION –A MORPHOLOGY

The survey of fishes and their parasites was done at Dams such as Bhandardara, Mula, Nathasagar Dam and Rivers like Mula, Pravara and Godavari for two years period. For Morphological study, the cestodes were collected from intestines of freshwater fishes and were flattened and placed in 4 % formalin.

This part deals with the morphology of Cestode parasite from fresh water fishes the order Pseudophyllidea, Proteocephalidea and families like Proteocephalidae, Lecanocephalidae, Phychobothridae were studied. The species like *Circumoncobothrium koparganesis* n.sp from intestine of fish *Clarias batrachus* from river Godavari at Kopargaon, *Proteocephalus pravarensis* from intestine of *Mastacembellus armatus* from Pravara river at Pravarasangam Dist Ahmednagar and *Lytocestus bhandardarensis* from *clarias batrachus* from Bhandardara Dam during from April 2012 to December 2013 was done.

SECTION-B BIO-CHEMISTRY

For Histopathological study, different fresh water fishes were dissected to observed tge rate of infection. both infected and non infected intestine of fishes fixed in Bouins fluid then they were washed, dehydrated through alcoholic grade, cleared in xylene and embedded in paraffin. For Biochemical analysis, Some parasite were dried and powdered study The Glycogen estimation from *Circumoncobothrium kopargaonesis* was done by Kemp et.al (1994) method. The estimation of protein was done by Lowry's Method. The cestode species treated was *Proteocephalus pravarensis* n.sp. and its host *Clarius batrachus*. The lipid estimation was done in *Lytocestus bhandardarensis* and its host *Clarius batrachus*

=

SECTION-C HISTOPHODOLOGY

For the histopathological study different types of fresh water fishes such as *Mastacembellus armatus* and *Clarias batrachus* were dissected. These fishes were infected by *Proteocephalus pravaraensis* and *Circumoncobothrum kopargaonensis*. It observed that the rate of infection is higher in low age and high in Adult stage

SECTION-D SEASONAL VARIATION

For Seasonal variation study the quantities study of fishes was done
The quantitative analysis of helminth and structural grouping was studied during three annual cycles such as

1. Rainy season (June 2012 to September 2012)
 2. Winter season (October 2012 to January 2013)
 3. Summer season (February 2013 to May 2013)
- On the basis of incidence of infection the influence of annual season on the population of cestode parasites of fishes was carried out. It is observed that , The infection level were low in young stage and remarkable rise in infection in Adult stage . The references were studied from different Journals, Reference books ,Manuals from different libraries Two research papers were published in national Journals

PROJECT OUTCOME /CONCLUSION

The quantitative analysis and structural grouping and seasonal variation of Cestode parasites like *Proteocephalus praverensis* n.sp., *Lytocestus bhandardarensis* n.sp., *Circumoncobothrium kopargaonensis* n.sp. was studied during April 2012 to December 2013 in three annual cycles. Each annual cycle comprises seasons like Rainy season, Winter season and Summer season.

It is observed that the incidence of infection in these parasites increased with age of host and season. In old age of host the infection is largest where as young fish host it is lowest. The infection is increases in summer season ,decrease in rainy season ,it is lowest in winter. The histological result shows that the cestode finds the nutritive material in intestine which is essential for nourishment and growth. The Biochemical estimation of Lipid shows that the percentage of lipid is high in cestodes as compare to their host ,the cestode absorbing most of nourishing from host and fulfilling its need ,causing hindrance in proper development of Host. The *Circumoncobothrium kopargaonensis* n.sp.could maintain a good balance in glycogen content and also maintaining histopathological relation with host *clarias batrachus* The *Proteocephalus praverensis* n.sp. could maintain a balance in protein content and the histopatological relation with the host *Mastecembelus atmatus*. Seasonal variation shows that population of fishes increases in rainy season, lowers in summer and lowest in winter season.

(Dr R.R. Dandawate)

Principal Investigator