

A Final Report

On

Minor Research Project Entitled

“Quantitative assessment of zooplankton and Morphometric - meristics of Rotifer’s from fresh water reservoir’s in Nanded district (M. S.). As a study tool to rejuvenate the reservoir fishery”

Submitted to

University Grants Commission,

Western Regional Office

Pune-411007

Submitted by

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UNIVERSITY GRANTS COMMISSION

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NEW DELHI – 110 002

**SUBMISSION OF INFORMATION AT THE TIME OF SENDING THE
FINAL REPORT OF THE WORK DONE ON THE PROJECT**

1. Title of the Project: **“Quantitative assessment of zooplankton and Morphometric - meristics of Rotifer’s from fresh water reservoir’s in Nanded district (M. S.). As a study tool to rejuvenate the reservoir fishery”.**
2. Name and Address Of The Principal Investigator : Dr.M.S.Kadam,
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3. Name And Address Of The Institution : YeshwantMahavidyalaya, VIP
Road, Nanded -431602 (M.S)
India.
4. UGC Approval Letter No. And Date: F.47-180/07(WRO)
02ndFeb 2008
5. Date Of Implementation : 12 Feb 2008
6. Tenure Of The Project: 02 years
7. Total Grant Allocated : **Rs.55,000/-**
8. Total Grant Received: **Rs.42,500/-**

9. Final Expenditure : **Rs. 59750/-**
10. Title Of The Project: **"Quantitative assessment of zooplankton and Morphometric - meristics of Rotifer's from fresh water reservoir's in Nanded district (M. S.). As a study tool to rejuvenate the reservoir fishery"**.
11. Objectives Of The Project :
- The main objective of the proposal is by using Phase Contrast Microphotography the rotifera Genera studied in detail to draw a conclusion about comparative number, seasonal variation , generic modifications seasonal impact.
- 1) Visited to Research site :- karadkhed dam, Ghagardara dam and Barul dam (Lower Manar project) Dist. Nanded(M.S.).
 - 2) Checked some new genera and species of zooplankton.
 - 3) Studied their seasonal dominance.
 - 4) Prepared micro slides as permanent study material.
 - 5) Morph metrics study and

plankton Photographs collected.

6)Conclusion-Thegrowth of Planktophagous fishes promoted to faster rate hence the reservoir fish production is possible to increases .

12. Whether Objectives Were Achieved :
(GIVE Details)

Yes, the present work is completed as per plan and objectives were achieved

13. Achievements From The Project :

The density of plankton in a water body determines the stocking rate of fishes because they are the chief source of food of many economically important fishes .

Plankton, due to it's key role in the ecosystem of the environment , is directly related to the fish catch potential of a reservoir . Zooplankton acts as food for planktophagous fishes .

14. Summary Of The Findings :
(In 500 Words)

Attached separately

15. Contribution To The Society :(Give Details)

1) Planktons are most important for the assessment of nutrition potential ityof any water body and there fore is an indication of perpetuality and survival of the

water body.
2)The Rotifer can be mass cultivated in large quantities and is an important live feed in Aquaculture.

16. Whether Any Ph.D. Enrolled/Produced Out Of The Project: No

17. No. Of Publications Out Of The Project : (Please Attach) No

(Dr.M.S.Kadam)

PRINCIPAL INVESTIGATOR

PRINCIPAL

(Seal)

Brief Summary of the Report

Marathwada is the draught prone region in Maharashtra, due to average rainfall and irregularities in the rainfall reflects its negative impact on agriculture production. Ground water level also very deep, upto 500 ft. at some places in the region. Irrigation based agriculture is in the form of patches. Reservoirs are the chief sources of water, mainly used for drinking water and secondarily used for the fishery activity.

Nanded and Parbhani districts in Marathwada region have few large, medium and minor reservoir projects. Total reservoirs in Nanded district are distributed as 03 medium (less than 500 ha.) and 10 minor (10-100 ha.)

reservoirs. (Sugunan, 2002)

Fluctuations in the physical and chemical properties have been observed by so many workers in the field of hydrobiology in this region. Very low fish production of only 12-13 kgs/ha. area is now here in the competition with world reservoir fish production or even not compatible with Asian reservoir fish production which is 50-55 kg/ha. (Ambore et,al 2005)

There are many reasons behind the low production of fish from the reservoir. less stocking of fish seed, no any effective control on predatory fishes, no use of proper fishing nets, dead stems of cut trees (bolder) as net entanglement and no any management on fish food and plankton productivity are the chief factors. From all these factors study of plankton production is essential to boost the reservoir fishery in this region.

Research Site : Karadkhed dam, Ghagardara dam and Barul dam (all are medium size) are the research sites 60-70 kms from the Nanded Headquarter.

Zooplankton from group viz. Rotifera were recorded in Kharadkhed dam, Ghagardhara dam & Barul dam. The most significant feature of zooplankton is it's immense diversity over space and time. Thus, similar aquatic systems may have dissimilar assemblage of organisms varying in species composition. Zooplankton diversity is one of the most important ecological parameters in water quality assessment various indices like richness, diversity and evenness index can be calculated when data on taxonomy of different zooplankter is available. Zooplankton from rotifers,

are considered to be most important in terms of population density, biomass production, grazing and nutrient regeneration in any aquatic ecosystem. Their diversity and density are mainly controlled by availability of food as favorable water quality. The zooplankton showed inverse relationship with water temperature. But temperature alone may not control vertical movements of zooplankton.

Rotifers accounted in all three reservoir from 8 % to 11 % during 2008 and 2009 respectively, with 4 species showing maximum in summer *Brachionus forficula*, *Brachionus havanaensis*, *Brachionus diversicornis*, *Brachionus calyciflorus* *Brachionus sp.*, was dominant among rotifers during both the years.

The Rotifer can be mass cultivated in large quantities and is an important live feed in aquaculture. Rotifers are regarded as living food capsules for transferring nutrients to fish larvae. In addition Rotifers treated with antibiotics may promote higher survival rates. The Possibility of preserving live rotifers as low temperature or through their resting eggs has been investigated.