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QUALITATIVE ESTIMATION OF ROTIFER SPECIES OF FRESH WATER ECOSYSTEM IN WASHIM TOWN MAHARASHTRA, INDIA



Kute M. R.

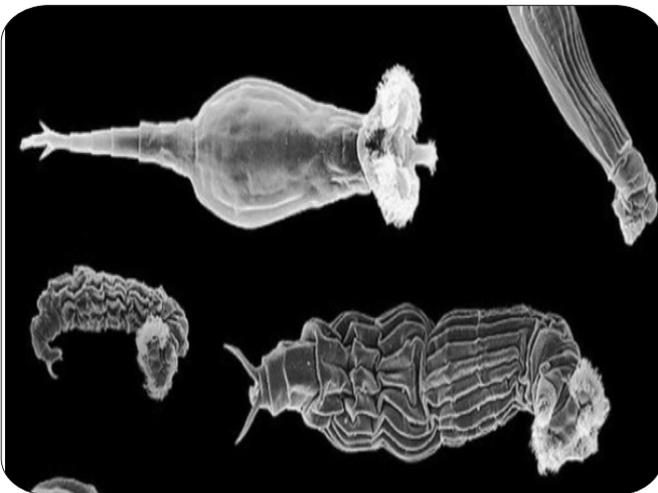
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Co - Author Details :

Tandale M. R. and D. S. Dabhade

Post Graduate and Research Department of Zoology, R. A. Arts,
Shri M. K. Commerce and Shri S. R. Rathi Science Mahavidhyalaya, Washim.



ABSTRACT

Zooplanktons' are the major group of organism which is present in the water bodies or ecosystems. They are four different types that may Cladocera, Copepoda, Ostracoda and Majority of Rotifera is observed in general fresh water habitat. On the presence and absences of several zooplanktons we can also understood the quality of water bodies. In the present research article qualitative estimation of Rotifers in Washim town were carried out to know the information of it. In the present investigation 9 species of Rotifers belonging to monoganata families were recorded which

includes *Brachinous calcyflorus*, *Keratella tropica*, *Asplanchna brightwelli*, *Brachizonus plicatilis*, *Filinia longiseta*, *Brachionus falcutus*, *Lecane leontina*, *Brachionus durgae*, *Asplanchna sieboldi*.

KEYWORDS : Washim, Rotifers, fresh water, ecosystem.

INTRODUCTION:

An aquatic ecosystem is said as liquid of life. Communities of organisms that are dependent on each other and on their environment live in aquatic ecosystems. Most of the rotifers are non-motile but about 100 species are holoplanktonic. Rotifers are highly efficient reproducers. This ability allows rotifers to conserve energy in good conditions and adapt to their environment in stressful conditions. Rotifers or Rotatoria, wheel animalcules are ubiquitous but majority live in fresh water and slightly saline biotopes. The term Rotifers has the remembrance of cilia to a rotating wheel. They were first

described by Rev. John Harris in 1696, and other forms were described by Antonie van Leeuwenhoek in 1703.

Qualitative study of Rotifer species was carried out by many researchers worldwide. **Arora and Mehra (2003), Khaleqsefat et al., (2003), Morales and Gutierrez (2004), Ortells et al., (2006), George et al., (2011), Bekleyen et al.,(2011)** studied Rotifers qualitatively to a large extent from Indian continent. Rotifers form a very important link in the fish food chain. The Rotifer species have been little studied in aquatic ecosystems of Washim Maharashtra region. Therefore, Rotifers play a pivotal role in many freshwater ecosystems. So there is need to study the structure and life of rotifers. The qualitative analysis of zooplanktons especially rotifers has been focused in the present work, obtained from different locations of the Washim town.

MATERIAL AND METHODS:

The four sampling sites namely Deotalav, Padmatirtha talav, Ekburji dam and Aquarium pond were taken from Washim town. For zooplankton identification water samples were collected in early morning hours from all the sampling stations. Samples were collected in separate glass phials with label containing name of site, date of sampling, time of sampling etc. Samples were collected with 25- μ m mesh plankton net. These nets are very useful for qualitative analysis. The zooplankton collections are carried by the horizontal sampling the net is towed at a slow speed usually 5 to 10 ml. After the sampling, the fixation of samples is carried out to avoid damage to animal tissue by bacterial action and autolysis. The most common fixing and preserving reagent is (4-5%) formaldehyde (formalin). Allow 10 days as the minimum fixation periods. After fixation, the zooplankton are transferred and stored in airtight containers with sufficient quantity of preservative. While transferring, due care should be taken so that no part of the zooplankton sample is lost.

RESULT AND DISCUSSION:

Data obtained from the present investigation represents the species of rotifers recorded in the four ponds in Washim region. Along with the rotifers, copepods, Cladocera, and ostracoda also recorded, but the study was focused mainly on the rotifers species. The number of rotifers was found in fresh water body which may be due to the higher population of bacteria and organic matter of dead and decaying vegetation. The abundance of rotifers among the zooplanktons and their special mode feeding has earned them an important place in the aquatic food chain. Among the recorded rotifer some species dominated in certain seasons while some disappeared in the other seasons indicating the different growing patterns of the species. In the present study total 9 rotifer species were observed in the four water bodies including namely as *Brachionus calcyflorus*, *Keratella tropica*, *Asplanchna brightwelli*, *Brachionus plicatilis*, *Filinia longiseta*, *Brachionus falcutus*, *Lecane leontina*, *Brachionus durgae*, *Asplanchna sieboldi*. Maximum rotifers were observed in Deo talav followed by Aquarium pond, Ekburji dam and Padmatirth talav. In the present study *brachionus species such as brachionus calcyflorus, brachionus falcutus, brachionus plicatilis and brachionus durgae, asplanchna brightwelli, keratella trophica, filinia longiseta* were observed in the dev talav. From the present study it was reported that rotifers were more abundant in dev talav the dense investigation of this species was observed in padmatirth talav, this species found in fresh water which may be due to the higher population of bacteria and organic matter.

Keratella trophica, brachionus falcutus, lacane leontina, asplanchna sieboldi, brachionus calcyflorus, brachionus durgae the investigation of this species was observed in fish farm of R.A. College. *Plationus patulus, filinia longiseta, brachionus calcyflorus, keratella trophica* these species

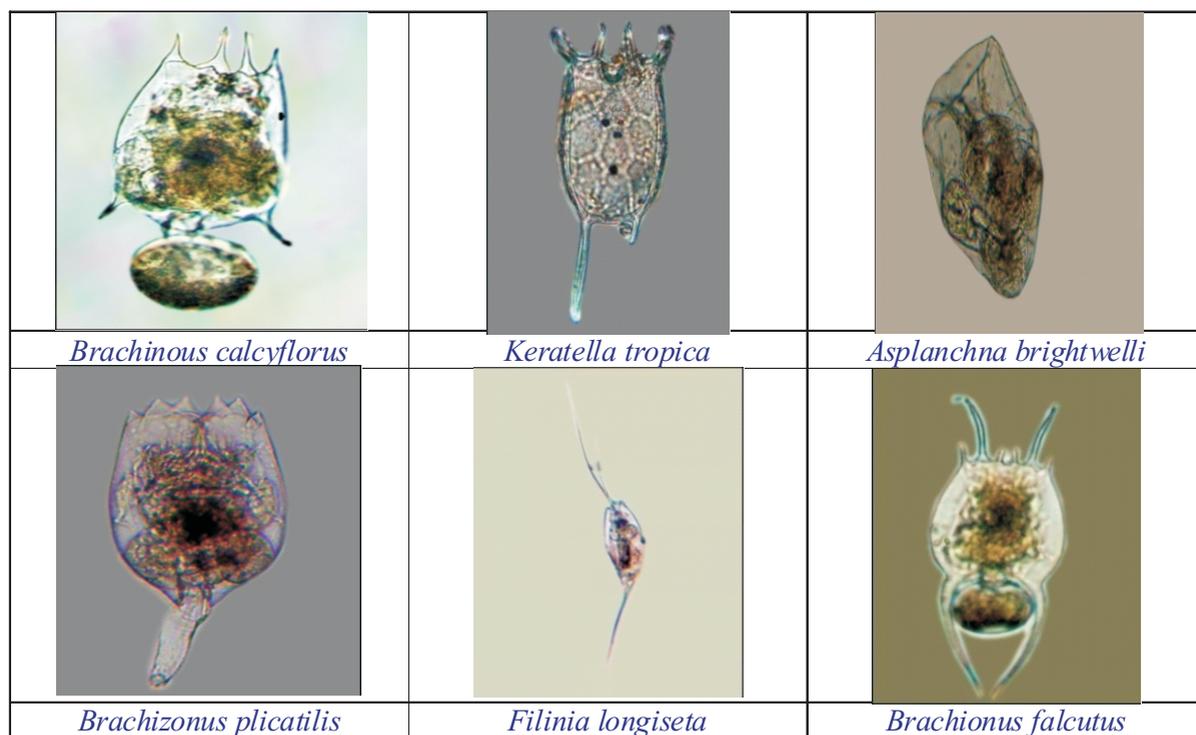
were observed in Ekburgi dam. In rotifers species the brachionus species are dominant among other species.

During the present research work, 9 species of rotifers were reported that are mentioned in the table given below

Sr. no.	Phylum	Class	Family	Genus	Species
1	Arthropoda	Rotifera	Brachionidae	<i>Brachionus</i>	<i>B. Calyciflorus</i>
2	Arthropoda	Rotifera	Brachionidae	<i>Keratella</i>	<i>K. tropica</i>
3	Arthropoda	Rotifera	Asplanthilidae	<i>Brightwelli</i>	<i>Asplanchna brightwelli</i>
4	Arthropoda	Rotifera	Branchionidae	<i>Branchionus</i>	<i>Plicatilis</i>
5	Arthropoda	Rotifera	Filiniidae	<i>Filinia</i>	<i>Longiseta</i>
6	Arthropoda	Monoqononta	Lecanidae	<i>Lecane</i>	<i>Leontina</i>
7	Arthropoda	Rotifera	Branchionidae	<i>Branchionus</i>	<i>Falcutus</i>
8	Arthropoda	Rotifera	Branchionidae	<i>Branchionus</i>	<i>Durgae</i>
9	Arthropoda	Rotifera	Asplanchnidae	<i>A. sieboldi</i>	<i>Asplanchna sieboldi</i>

Table: Taxonomic summary of Rotifers in Washim town.

Photo plate (Rotifers)





SUMMARY AND CONCLUSION:

The present study on qualitative estimation of Rotifer species reported 9 species which are as given below

- 1) *Brachionus clyciflorus* 2) *Keratella tropica* 3) *Asplanchana brightwelli*
 4) *Brachionus plicatilis* 5) *L. Leontina* 6) *B.durgae*
 7) *B. falcatus* 8) *A.sieboldi* 9) *F.longiseta*

Among these, *Brachionus* species were reported to be the most dominant species followed by *keratella tropica*, *Asplanchana brightwelli*, *Asplanchana sieboldi*, *Lecane leontina*, *Filina longiseta* etc in Dev Talav, Padmatirth, Ekburgi Dam and fish farm of R. A. college., An indication of pollution. So it can be inferred that the water of Aquafarm and Padmtirth Talav is highly polluted.

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