



SEASONAL VARIATION OF ZOOPLANKTON IN BHIMA RIVER NEAR MACHNUR VILLAGE, DIST: SOLAPUR, (MAHARASHTRA).

A.N. DEDE

Department of Zoology, Karmaveer Bhaurao Patil Mahavidyalaya, Pand harpur 41304, District Solapur (MS) India

A. L. DESHMUKH

Department of Zoology, Shankarrao Mohite Patil Mahavidyalaya, Akluj, Taluka Malshiras, District- Solapur.

ABSTRACT

The present study is carried out during the period of Jan 2014 to Dec 2014 to investigate seasonal variation of zooplankton in Bhima river near Machnur village Dist Solapur (M.S). During study period total 21 zooplankton species were found belonging to different group Rotifera consist of 9 species, Cladocera consist of 6 species, Copepoda consist of 5 species, and 1 species of Ostracoda. The number of zooplankton was highest in summer season followed by winter and monsoon season.

KEYWORDS : Zooplankton, Bhima River, Mangalwedha, Density.

INTRODUCTION

The zooplanktons are important animal in freshwater and marine water habitat. Zooplanktons are microscopic animal and freely movement in water bodies. Zooplanktons are important role in food web and food chain for aquatic habitat. Zooplankton is connecting link between autotrophs and heterotrophs in fresh water ecosystem. Zooplanktons are bioindicators in detecting the health and trophic status of aquatic bodies, Jakhar (2013). The Zooplanktons are useful indicator of aquatic community structuring and water condition, (Bhat et al 2014). Therefore the present study deals with the seasonal variation of zooplankton in Bhima river near Machnur village.

MATERIALS AND METHODS

Study area:

The Bhima River is runs along the Machnur village in Mangalwedha taluka of Solapur district. It is situated in longitude. 170 56' and 640 71'E and Latitude 750 56' and 740 53'N.

Sample collection and Biological analysis:

The present study was conducted for the period of one year from Jan 2014 to Dec 2014. The water samples were collected monthly between 8 am to 12 am. The data was articulated seasonally as summer, winter, and monsoon. The plankton samples were collected through 50 liters of water by standard plankton net made up bolting silk cloth No. 20 and the collected samples were fixed in 4% formalin. The zooplanktons are identified with the help of standard literature up to generic level by using standard keys of Edmondson, (1959). Dhanapathi, (2000), Reddy (1994). The qualitative and quantitative analysis of the organism is carried out by 'Sedgwick rafter cell' as per the standard methods APHA (1998).

RESULTS AND DISCUSSION

During the present study period zooplankton diversity in Bhima river was represented by 21 species consisting of 9 species of rotifera, 6 species cladocera, 5 species copepod, 1 species ostracoda (Table no.1). Seasonal variation of zooplankton was present in study period (Fig. no. 1). Rotifera was dominant groups in study period. The total zooplankton density was high in summer followed by winter and monsoon season similar observation was reported in Malaprabha River. (Sunkad et al 2013). According to Pandey et al (2013), Barchionus species was indicate organic pollution and also interspecific and intraspecific factors influence the distribution of zooplanktons.

The maximum number of zooplankton was high in summer during present study area. The zooplanktons are bioindicators of changes in water quality and affects environmental condition, (Gayathri et al, 2014). The zooplankton population was high in summer season because high temperature, low transparency and great availability of food production of primary producers in Thoppaiyar resevier, (Manickam et al, 2014). Similar observation was made by Ramakrishna et al (2014). therefore the present study helpful for conservation and

awareness of water pollution in river.

CONCLUSION

Thus we can conclude that rotifer appear most dominating community throughout study period. The zooplankton population of river was more diversify to indicate that rich nutrient of water body and helpful for fish population.

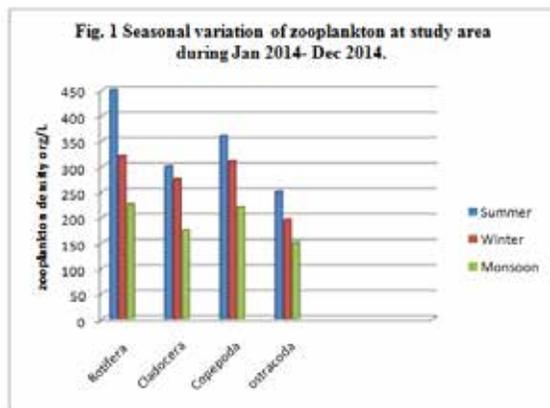
ACKNOWLEDGEMENT

The authors are thankful to Principal and Head of Department of Zoology, Shankarrao Mohite Patil Mahavidyalaya Akluj, for providing Laboratory and library facility for the present research work.

Table. 1. Zooplankton Species recorded in Study area during Jan 2014 to Dec 2014.

Sr.no	Zooplankton Groups	Family	Name of species
1	Rotifera	Brachionidae	Brachionus caudatus
2			Brachionus falcatus
3			Brachionus angularis
4			Brachionus forficula
5			Brachionus calyciflorus
6			Brachionus diversicornis
7			Keratella chochlearis
8			Keratella tropica
9			Keratella crassa
10	Cladocera	Moinidae	Moina micrura
11			Moina Brachiata
12		Chydoridae	Chydrous sphaericus
13			Bosmina longirostris
14		Sididae	Diaphanosoma sarsi
15		Daphniidae	Cerodaphnia corcuta
16	Copepoda	Diaptomidae	Mesocyclops
17			Undinula valgaris
18			Thermocyclops
19			Microcyclops
20			Nauplius larva
21	Ostracoda		
22		Cyprididae	Stenocypris

Fig. 1 Seasonal variation of zooplankton at study area during Jan 2014- Dec 2014.



REFERENCES

- APHA (1998). Standard methods for examination of water and waste water. (20th edition), American public health Association, Washington D.C.
- Bhat. N. A, Wanganeo.A and Raina. R (2014); The composition and diversity of net zooplankton species in a tropical water body (Bhoj wetland) of Bhopal India, International journal of biodiversity and conservation 6(5); 373-381. | Dhanapathi, M.V.S.S (2000). Taxonomic notes on the Rotifera, Indian association of aquatic Biologist, Hyderabad, Vit, pp.178. | Edmondson,W.T. (1959). Fresh water biology, Edward and hipple, 2 nd Edn. John willy son. Inc; Newyork, pp. 95-189. | Jakhar.P. (2013); Role of phytoplankton and zooplankton as health indicator of aquatic ecosystem, International Journal of innovative research and studies 2(12); 490-500. | Manickam,N, Saravana B.P, Santhanam. P, Muralisankar. T, Srinivasan.V, Radhakrishnan. S Vijayadevan.K, Chitrarasu.P and Jawahar.A (2014); Seasonal variation of zooplankton diversit in a perennial reservoir at thoppaiyar, Dharmapuri district, south India, Austin Journal of aquaculture and marine biology, 1(1); 1- 7. | Pandey, B.N, Siddhartha. R, Tanti. K.D and Thakur. A. K. (2013); Seasonal variation in zooplanktonic community in Swampof Purnia (Bihar) India, Journal of aquatic biology research 1(1); 1-9. | Ramakrishna.S (2014); Zooplankton seasonal abundance in relation to physicochemical feature in Yelahanka Lake, Bangalore, Global journal for research analysis, 3(6): 218-219. | Reddy,Y. R.(1994). Copepod,Cladocera Diaptomidous Guide to the identification of microinvertebrate of the continental water of the world, Vol.5, SPB. Publisher the Hague, Netherland. | S. Gayathri, N. Latha, and M.R. Mohan (2014); Studies on population dynamics and seasonal abundance of zooplankton community in Doddavoderahalli lake, Bangalore, International Journal of emerging trends in engineering and development 4(1); 50-55. | Sunkad., B.N, Chavan. V. A (2013); Zooplankton abundance in Malaprabha river impact of environmental variable, International Interdisciplinary research Journal, 3(5); 133-141.