



**THE SEASONAL ROTIFER DIVERSITY IN KARMAVEER KANNAMWAR
RESERVOIR REGADI,TAH.-CHAMORSHI,DISTRICT GADCHIROLI(MS),
INDIA.**

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Abstract:

Qualitative study of Rotifer was conducted in Karmaveer Kannamwar reservoir Regadi, District Gadchiroli, state Maharashtra (India) during the three seasons of July 2011 to June 2012. Total 15 species of rotifers were recorded of which 9 species belongs to genus Brachionus and 2 sp. of genus Keratella (f. Brachionidae), 1 species of genus Asplanchna (family Asplanchnidae), 2 species of genus Lecane (family Lecanidae), and 1 species of genus Trichocera (family Trichoceridae). During the study, summer season and winter season have maximum diversity of rotifers observed than the monsoon season.

Keywords:

Qualitative study, Zooplankton, rotifer diversity, KK reservoir.

Introduction:

Zooplanktons are the most common component of the water bodies. Among different group of zooplanktons rotifers are minute aquatic organism exist in both fresh water and sea water habitat. Rotifers are minute metazoan animals characterized by presence of anterior ciliated corona, a stiff body wall named lorica bearing variable appendages and a specialized pharyngeal organ, the mastax containing hard element, termed tropharynx. They are non-motile and drift in water along water current to move long distance. They are pseudocoelomate and also commonly known as “wheel animalcule” because of their characteristic wheel organ and size ranging from 50 – 2000µm. They are heterotrophic in nature and play important role in aquatic food chain and food web linking the primary producers and higher trophic level. They play important role as bioindicator in different aquatic habitats, Sharma (1996) and Segers (2008). They also serve as indicators of water quality Sladeczek in (1983),





Berzins and Pejler (1989). The Karmaveer Kannamwar Reservoir is situated in Gadchiroli district near the village Regadi, Tah. Chamorshi (Maharashtra). Geographically the reservoir lies between 19°-47'-0" altitude and 80°-7'-0" longitude. The Reservoir is surrounded by green forest and hills. It is constructed on Deena River and hence also known as Deena Project and Deena Dam. The reservoir is primarily used for agricultural irrigation purpose and secondarily also used for culturing fishes by different fishermen societies.

Material and Method:

Monthly samples were collected from three study sites (S1, S2 & S3) for the period July 2011 to June 2012. Samples were collected once in a midmonth, in the morning between 08:00 am to 09:30 am. Samples were collected by plankton net made of bolting net having mesh size 50 µm. At the time of sampling temperature, pH and turbidity were measured with the help of Secchi disc. Collected samples were preserved with 4 % formalin at the site itself. Samples were observed under the binocular microscope for qualitative analysis. Rotifers were identified by using standard literature like Edmondson (1959), Chandrashekhar and Kodarkar (1995) and other regional publications (Dhanpati 1975; Kodarkar 1995; Dhanpati 2000).

Result and Discussion:

Observation table depicts Seasonal diversity of rotifers observed during three seasons viz. monsoon, winter and summer in Karmaveer Kannamwar reservoir, Regadi. During the period of one year total 15 species were recorded. It has been observed that summer and winter season having most rotifer diversity than the monsoon season (Tijare & Thosar, 2008). During summer rotifer diversity were maximum indicating influence of various physico chemical factors which was supported by positive correlation between summer temperature, high pH, alkalinity nutrients and rotifer population. pH and water temperature are the main factors in appearance and abundance of different rotifers (Banik and Datta, 1991). Rotifers are chiefly fresh water forms abundant existence is related to the suitable conditions (Dhanpati 2000). During the





summer season 12 species of rotifers were recorded. These are *Brachionus caudatus*, *B. calciflorus*, *B. forficula*, *B. rubens*, *B. quadridentatus*, *B. falcatus*, *Keratella tropica*, *K. cochlearis*, *Asplanchna brightwelli*, *Lecane luna*, *Rotaria sp.*, while 11 species were recorded during winter season. These are *Brachionus caudatus*, *B. rubens*, *B. quadridentatus*, *B. falcatus*, *B. angularis*, *B. bidenta*, *Keratella tropica*, *K. cochlearis*, *Asplanchna brightwelli*, *Lecane luna* and *Trichocera similis*. However, only 6 species were recorded during monsoon season. They are *Brachionus forficula*, *B. calciflorus*, *B. falcatus*, *B. angularis*, *K. cochlearis*, *Lecane luna*. An abundance of *Brachionus* in tropical freshwater bodies were observed by Fernando, 1983 and Sharma 1983. According to Dhanpati (2000) more species of rotifers have preference for more alkaline water. Due to high nutrient load rotifer furnish effectively good during summer and our result agrees with the above findings. Lower population density were observed during monsoon season this might be due to more turbidity, less nutrient, low dissolved oxygen and less pH (Kumar 2001). Similar results were observed by Priyawada et.al. (2012), Sinha et.al. (1983) and D.N. Singh (2000). The results show the positive correlation between water temperature, pH, dissolved oxygen and nutrients.

Sr..No.	Group - Rotifera	Genus-Species	Seasons		
			Monsoon	Winter	Summer
A.	Family- Brachionidae	<i>Brachionus caudatus</i>	-	+	+
		<i>B. calciflorus</i>	+	-	+
		<i>B. forficula</i>	+	-	+
		<i>B. rubens</i>	-	+	+
		<i>B. quadridentatus</i>	-	+	+
		<i>B. falcatus</i>	+	+	+
		<i>B. angularis</i>	+	+	+
		<i>B. diversicornis</i>	-	-	-
		<i>B. bidenta</i>	-	+	-
		<i>Keratella tropica</i>	-	+	+
		<i>K. cochlearis</i>	+	+	+
B.	Family-Asplanchnidae	<i>Asplanchna brightwelli</i>	-	+	+
C.	Family- Lecanidae	<i>Lecane luna</i>	+	+	+
D.	Family- Trichoceridae	<i>Trichocera similis</i>	-	+	-
E.	Family- Philodinidae	<i>Rotaria sp.</i>	-	-	+





Conclusion:

The current study reveals that the KK reservoir is enriched with nutrients supporting diversity of rotifer fauna. Rotifers are most abundant during summer and winter season while monsoon season have least abundance.

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