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Rotifer diversity of Mehakari Reservoir near Ashti, Maharashtra, India

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Abstract
A systematic investigation on diversity and dynamics of rotifers from Mehakari reservoir near Ashti town of Beed district (Maharashtra, India) was carried out for a period of one year (from August 2023 to July 2024). The present investigation revealed the occurrence of 9 species of rotifers. The rotifer diversity fluctuated seasonally and the maximum number of 630 organisms/liter was recorded during month of March and minimum number of 104 organisms/liter during the month of September.

Keywords: Rotifer diversity, bori reservoir, Maharashtra, India

Introduction
The rotifers also known as 'rotifera', 'rotatoria' or 'wheel animalcules' form an integral link in the food chain of aquatic ecosystem. They are pseudocoelomate animals with a size ranging from 50 to 2000µm and occur in all types of fresh and brackish water habitats. Nearly 95% of species are reported from freshwater habitats and remaining 5% are from marine environment (Sharma, 1996) [16, 17]. The studies on rotifer diversity from Beed district of Marathwada region of Maharashtra (India) is limited (Sakhare 2006, 2007, 2012, 2017 [10, 11, 12, 13]; Chalak and Sakhare 2000, 2014, 2018 [2, 3, 4]; Sakhare and Chalak 2021 [14, 15], and Sakhare *et al* 2021) [14, 15]. Therefore the present investigation was carried out from Mehakari reservoir near Ashti town of Beed district of Maharashtra. It is is an earthfill dam construcuted in year 1966 across river Mehakari with surface area of 38 km^2. Height and kength of reservoir is 27.63 meters and 1308 meters rrespectively.

Materials and methods
With aim to investigate the seasonal diversity of the rotifers, a small reservoir (Mehakari) in Ashti tehsail of Beed district in Maharashtra was surveyed monthly between June 2023 and May 2024. Approximately 50 litres of water was filtered through plankton net of standard bolting cloth number 25 (0.03 – 0.04 µ mesh size). The filtrate was taken in plastic vials and preserved in 5% formaldehyde solution. These fixed samples were brought to the laboratory for taxonomical studies and identified with standard texts (Pennak, 1978; Battish, 1992 and Dhanapathi, 2000) [1, 5]. Drop count method was followed for enumeration of cladocerans and expressed as organisms per litre.

Results and discussion
During present investigation rotifers were represented by 9 species, out of which genus Brachionus was represented by 4 species.The highest density of rotifers was observed in the month of March (630 organisms/Liter) and lowest in 104 (September organisms/Liter). Throughout the summer months, rotifer population was maximum.However,during rainy season, the rotifer population was less.The species *Filinia longiseta* and *Asplanchna intermedia* were present thorughtout the investigation while *Keratella tropica*, *Brachiouns diversicornis*, *Brachionius calyciflourus*, *Brachiouns rubens*, *Brachiouns forcifula* and *Lecane bulla* were absent in one month of investigation,and *Trichocera porcellus* was absent in two months i.e., July and September.

Table 1: Species composition of rotifers (Density: Organisms/Liter) during year 2023-2024

	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Keratella tropica	10	09	00	12	17	35	39	55	40	69	74	68
Brachionus diversicornis	23	00	07	19	29	25	35	47	67	69	57	57
Brachionus calyciflorus	29	18	32	00	16	24	45	50	48	70	74	73
Brachionus rubens	00	10	20	12	36	28	29	62	73	68	67	58
Brachionus forcifula	14	24	00	12	26	37	32	48	59	66	60	70
Flilnia longiseta	23	10	25	17	32	28	47	57	69	77	88	72
Lecane bulla	03	20	10	00	14	23	16	38	44	69	79	55
Trichocera porcellus	08	00	05	00	13	04	20	30	39	63	56	69
Asplanchna intermedia	02	15	19	32	28	35	44	48	72	79	71	49
Total	112	106	118	104	211	239	307	435	511	630	626	571

Sharma and Naik (1996) [16, 17] observed 72 species of rotifers belonging to 30 genera and 17 families from river Narmada of Madhya Pradesh. Solanke and Dabhade (2020) [18] reported 18 species of rotifers from Upper Morna reservoir of Washim district of Maharashtra.Wanjari *et al.*, (2019) [21] reported 11 species of rotifers from Ekburji reservoir of Washim district of Maharashtra. Vanjare and Pai (2013) [20] reported 45 rotifers belonging to 3 orders, 15 families and 26 different genera from seasonal pond of Pune (Maharashtra). On similar lines Tayade and Dabhade (2011) [19] prepared a check list of 97 species of rotifers from Washim district of Maharashtra. Out of these 97 species, only 8 species were recorded during present investigation.

Fathibi *et al.,* (2020) [7] recorded highest species richness of rotifers during pre-monsoon season and lowest during monsoon season from Thrissur Kole wetland of Kerala. Manoj Kumar and Khare (2015) [8] also noticed maximum rotifer density in summer and minimum in rainy season. During present investigation it was noticed that the density of rotifers was maximum in summer, intermediate in winter and minimum in rainy season. Similar findings were also reported by Dhembare (2011) [6] and Chalak and Sakhare (2018) [4].The present study showed similarities with above findings in terms of minima in monsoon and maxima in summer.All rotifer species recorded during present investigation are somewhat similar to Sakhare *et al*., (2021) [14, 15] and Sakhare and Chalak (2021) [14, 15].This might be due to the presence of investigation area in the same geo-climatic region.

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