Rotifers of Foum El Ghis Dam

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Keywords
Fresh water • *Keratella* • *Lecane* • Lacustrine system • Rotifer • Algeria

1 Introduction

Rotifers are microscopic organisms that could be present in fresh as in brackish water. Some species are widely tolerant of the environmental conditions, while others are characteristic of fresh water (Brummett 2000). Knowledge of rotifer fauna in Algeria is very limited. For this purpose the main objective of this work was to update the list of rotifers species in Algeria. The study area is Foum El Ghis dam characterized by a maximum depth that does not exceed 2 m and a transparency of less than 0.5 m, as well as the presence of emerging aquatic vegetation.

2 Materials and Methods

Plankton samples were collected seasonally between spring 2014 and winter 2015, using a 50-µm mesh net. Samples were fixed in 5% formalin solution. Rotifers were identified using conventional light microscopy and appropriate identification keys. We used a bottle with a capacity of 1 L. Six physico-chemical variables were measured in situ (temperature, pH, conductivity, salinity and dissolved oxygen by a multiparameters analyser of the type WTW 340i and transparency by a Secchi disk).

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3 Results and Discussion

The temperature values of the water are high in summer 22.6 °C and low in winter 12.9 °C. (The high value was related to the time of collection which was at 6:10 Am) but generally follows a seasonal trend. The minimum concentration of dissolved oxygen was 4.9 mg/l. The very low values of this latter recorded during the summer season are related to the increase in water temperature (Arrignon 1998). Salinity varied between 0 and 0.2 psu, and conductivity between 520 and 844 µs cm^{-1}. The average pH value was 7.59. The depth is 0.5 in summer and 5 m in spring. Transparency values varied between 0.1 m during summer season and 0.2 m in spring.

The faunistic census of the rotifer species shows the presence of 23 species, two are mentioned for the first time in Algeria. These species are *Lecane stenroosi* (Meissner 1908) and *Trichocerca lophoessa* (Gosse 1886). Their distribution in each season is shown in Table 1.

The total absence of rotifer species during spring is related to the high turbidity of the water (depth: 5 m and transparency: 0.2 m). The decline in specific richness in winter is due to floods. *K. tecta* is the most abundant species in our study site, despite the presence of its predator *As. priodonta*. According to (Gopko and Telesh 2013), this species has the ability to reproduce under favorable conditions despite their predator which is present in low density, reflecting that our environment is favorable for its development. The second species *K. tropica* is abundant especially in summer. This species is widespread in tropical fresh

A. Kallel et al. (eds.), *Recent Advances in Environmental Science from the Euro-Mediterranean and Surrounding Regions*, Advances in Science, Technology & Innovation, https://doi.org/10.1007/978-3-319-70548-4_118

Table 1 Temporal distribution of rotifer species in the Foum El Ghis dam

Summer	Autumn	Winter
Keratella tropica	*Cephalodella gibba*	*Cephalodella* sp.
Filinia terminalis	*Anuraeopsis fissa*	*Lecane punctata*
Filinia longiseta	*Keratella tecta*	*Notholca squamula*
Asplanchna priodonta	*Polyarthra remata*	*Testudinella patina*
Lecane stenroosi	*Polyarthra* sp.	*Trichocerca bicristata*
Trichocerca sp.	*Asplanchna priodonta*	*Colurella uncinata*
	Synchaeta pectinata	*Trichotria pocillum*
	Brachionus angularis angularis	
	Lecane hamata	
	Keratella tropica	
	Filinia terminalis	
	Filinia longiseta	
	Trichocerca lophoessa	
	adineta sp.	

waters, extending into sub-tropical areas in the summer (Green 1980). It has the capacity to tolerate high temperatures (Khalifa et al. 2015). The two species *Lecane stenroosi* and *Trichocerca lophoessa* have a wide distribution. They are present in Afrotropical, Australian, Nearctic, Neotropical, Oriental and Palearctic regions (Segers 2007). Most of the studied species develop in similar intervals of temperature and pH to those described by De manuel (2000). Some species such as *K. tropica, F. terminalis, F. longiseta, As. priodonta, L. stenroosi* and *Trichocerca* sp. can develop at low oxygen values.

4 Conclusion

This study allowed us to better our knowledge about the richness of rotifer species in the Algerian fresh waters and also to discover Two new species for the Algerian fauna. The temporal evolution of the rotifers community depended on several environmental factors, some of them are tolerant of anoxic conditions, whereas others require high concentrations of oxygen. Other factors (e.g. floods) can also influence the species composition.

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