

Studies The Prevalence Of Free-living Protozoa From Reservoir At Makni, Dist. Osmanabad (M.S), India

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ABSTRACT

The protozoan constitutes the basic food sources of any aquatic ecosystem which supports fish and other aquatic animals. Protozoan diversity is one of the most important ecological parameters in water quality assessment. They are good indicator of the changes in water quality because they are strongly affected by environmental conditions and respond to change in water quality. Protozoa are unicellular, microscopic animals found in all habitats. Present study deals with the free-living protozoa from fresh water body. The factor which influences their distribution and population in a given water body that is Temperature, light, ph, chemical composition and amount of food present in water and degree of adaptability of the individuals protozoa various environmental changes.

Keywords:

Free- Living Protozoa, Seasonal Fluctuation, Prevalence, Reservoirat Makni, Osmanabad (MS).

Introduction

Protozoa are unicellular animals. They are most abundant animals on the earth. The body of Protozoa is morphologically a single cell and manifests all characteristics common to the living thing. Thus in this sense Protozoa are "Complete Organism" in the meaning of Ehrenberg. Dobell (1911) considered that the Protozoan is a non-cellular but complete organism, differently organized as compared with cellular organism, the metazoan and metaphyta. Although some writers (Hyman, 1940; Lwaff, 1951) follow this view, the majority of Protozoologist continues to consider the Protozoa as unicellular animals. The Protozoa are considered to be a sub kingdom of the animalia. Anton Van Leeuwenhock was the first person to see Protozoa, using microscope. More than 65,000 species have been described. There are 16 Phyla of Protista contain Free-living freshwater Protozoan species. Protozoans are most important grazers of microbes in aquatic environment and the only grazers of any importance in anoxic habitat. Finlay (1988) studied 50 species of freshwater Protozoa to various concentration of sea water either by direct transfer or by the gradual addition of the sea water. Protozoa are principally grazers of bacteria increasing mineralization and making nutrient more available to other organism. Protozoans are playing an important role in food chain in an aquatic ecosystem.

Materials And Methods:

This Makni reservoir is selected for the study of fluctuation in population density of ciliates in relation to Physico-chemical parameters. The present study was considered for the period of one year from August 2009 to July 2010. The water samples for the analysis were collected from selected reservoir between 9 to 11 am in 1st and 15th of every month from depth of 5 to 10 cm below the surface of water. Separate sample were collected for dissolved oxygen in 250ml reagent bottle and O₂ was fixed by adding alkali iodide

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reagent as suggested by Winkler's method (Welsh and Smith, 1990). The estimation of Physico-chemical parameters was carried out with the help of APHA. The movements of ciliates were slowed down by using 5% Methyl Cellulose for observation and counting. Counting was done with the help of Sedgwich Rafter counting chamber. The population was calculated on the basis of total number of ciliates per ml. The identification of ciliates is based on Corliss and Kudo R.R.

Result And Discussion:

The samples were randomly collected from Reservoir at Makni and month wise prevalence was recorded for one year i.e. From August 2009 to July 2010. The present work covers Physico-chemical factors of selected Reservoir. During the study total number of ten species of ciliates has been recorded.

Table: Showing the month wise prevalence (%) of Fresh water Protozoa during the period of August 2009 to July 2010.

Sr. No.	Month	Total no. of samples collected	No. of samples positive	Percentage (%) of Prevalence
1	August 2009	13	10	70
2	Sep.	12	10	50
3	Oct.	12	09	69.23
4	Nov.	10	07	91.66
5	Dec.	10	07	80
6	Jan.	12	07	54.54
7	Feb.	10	05	55.55
8	Mar.	10	04	57.14
9	Apr.	06	02	42.85
10	May	08	02	16.66
11	June	12	06	61.53
12	July 2010	12	09	83.33
Total		127	78	61.04

During this period of one year from August 2009 to July 2010 total 127 water samples were collected. Out of which 78 samples were found to be positive and total percentage of prevalence was 61.04. The maximum percentage of prevalence was recorded in the month of November (91.66%) which gradually decrease up to May (16.66%). Then it gradually increase from June (61.53%) to July (83.33%) and gradually decrease in the month of August (70%).

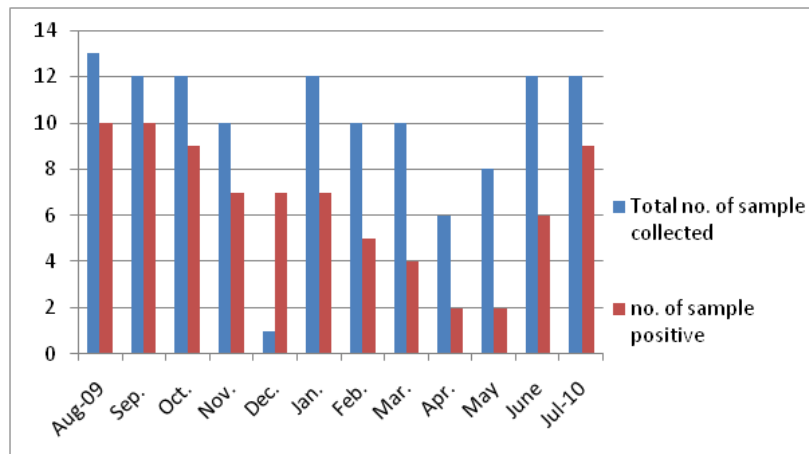
Conclusion:

The Present study shows the month wise fluctuation in the prevalence of protozoa because of seasonal wise fluctuation in the physico-chemical parameters of the Makni reservoir. So This Makni reservoir is shows the fluctuation in population density of ciliates in relation to Physico-chemical parameters.

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Graph 1: Showing the Month wise Prevalence (%) of Fresh water Protozoa during the Period of August 2009 to July 2010.



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