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SUBSISTENCE OF SOME FREE LIVING PROTOZOAN'S IN DIFFERENT WATER BODIES OF AURANGABAD.

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Abstract

The Protista kingdom has seven groups that are divided into fifteen phyla. These subdivisions show the wide range of morphology and various factor which influences their distribution & population in a given body of water, (Anderson, O.R. (1997). The abundance depends on these entire factors. Present Study deals with occurrence of protozoa in sangvi dam along with Harsul lake (Aurangabad MS).the study reveals mass of free living protozoan's in which cillliates where dominant over flagellates. The maximum percentage of prevalence was recorded in the month of January that is 80%

Keywords : Protista, Free living Protozoa , Sangvi dam ,Harsul lake

Introduction

Sangvi dam located near about two Km to Harsul lake , it is artificially build up for water store fishing of carp fishes are regular in practice and hence due to its favourable environment for fauna and flora ,this is a nice destination for survival of aquatic animals

and vegetation**.** Protozoa are efficient at gathering microbes as food, and they are sufficiently small to have generation times that are similar to those of the food particles on which they feed.

They are, in quantitative terms, the most important grazers of microbes in aquatic environments, and they probably control the abundance of bacteria. The heterotrophic flagellates alone can probably consume all bacterial production in the aquatic environment (Kudo, R. R. 1966). Different protozoan species were identified by the methods described in Albert Westphal, (1976); Anderson, O.R. (1997); Andrei Tsyganov and Yuri Mazei (2006); Bhatia, B.J. (1936); Page, F.C. (1988);Kudo, R. R. (1966); Theodore Louis Jahn et al, (1979) They act as. Bioindicators in freshwaters due to their environment sensitivity, rapid turnover rate, to detect organic pollution in freshwater and heavy metal pollutants.

Earlier works on free living protozoa from India were, initiated by Naidu ,Mahajan, Nair. and Mishra Das Bindu (2008, 2010) and Bindu and Das were explored from India (Shaikh, J.D, Shaikh *et al*, 2012).

Material and Methods

For Ciliophora culture powdered hay added to glass distilled H_20 and boil for 5 min. Then glass distilled H_20 were added to compensate for H_20 lost by evaporation, Filter through What man #1 filter paper, 0.59 % Na_2HP0_4 added (Finlay B.J.*et. al* G.F. 2001)., Dispensed 5 ml of medium per 16 x 125 mm screw-capped test tube. Loosen cap one half

turn and autoclaved for 15 min at 121^{O} C A septically add 0.1 ml of a growing protist culture which is at or near peak density to a tube Incubate at 25^{0} C.By using a clean large mouth 10 ml pipette, 1µl of suspended material was placed in counting cell slot. The counting cell was then covered with a glass slide and examined under a compound trinocular microscope at a magnificent of 40 X to 100 X. The Protozoan samples were observed under a compound microscope.

For protozoan's analysis, heliber bacteria single round cell was identified (Theodore Louis Jahn etal, 1979). The specimens were identified up to genera level. Quantitative analysis was followed by the total count method of Welch (1948). Identification was made following. For immobilizing the movement methyl cellulose (2%) was added on slide (J.J. Lee *et. al*1992). A drop of methyl cellulose was added to one edge of preparation so that it seeps under the cover sleep & defuses across.

Result and Discussion

Shaikh et al. (2012) reported 10 species of protozoa from Salim Ali Lake, Aurangabad and stated that the factor which influence the distribution of protozoa and population by physico-chemical parameters and the food present in the water and degree of adaptability of protozoa to various environmental changes. In this study 3 genera of the protozoan were identified from sangvi dam. From the accumulated data in the total study period abundance

of protozoan's per sampling (per week) varied from 15 individuals/l in March'2013 to 196 individuals/l in October 2013 with an average of 93 individuals/l.Variations in the percentage composition of average protozoan's during the study period were 55.5% in Harsul lake and 32.06% in Sangvi dam.

The distribution and abundance of fresh water protozoan is guided like to other microbial communities by a variety of ecological factors. However some of the factors show great variability from place to place and time to time(Vidhya pradhan et .al. 2011). The environmental conditions in which ciliate can live and multiply, there is always an optimum range for each group. Bick (1972) made an-extensive study of several environmental factors on more than sixty five species of fresh water ciliates and come to conclusion that the nature and the quantity of available food was more important than other single factors. The present research work covers prevalence of free living protozoa from water bodies of Harsul Lake and sangvi dam, Aurangabad.During Feb-2013 to March-2014 total 112 water samples were collected, of which 48 samples were found to be positive for protozoa and total percentage of prevalence was 46.86.The maximum percentage of prevalence was recorded in the month of January (80 %) which gradually decreases up to March (16.6%). In the month of May there was no protozoa recorded from the samples and hence the prevalence reaches to zero. Then it again gradually increase from June (33.3%) to August (54.5%) and gradually decrease in the month of September (35.7%)

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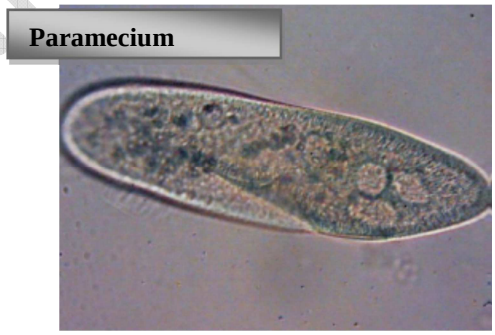
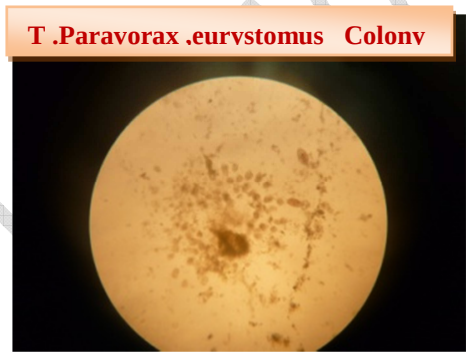
Free Living Protozoan From Aurangabad Vicinity

Sr.No.	Location	Free Living Protozoans
01	Sangvi dam	a) Paramcium species b) Vorticella c) ophrydium
02	Harsul Lake	a) T.peravorx b) Paramecium species c) E.eurystomus d) Holophyra simplex





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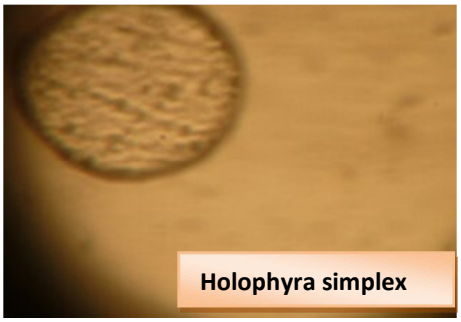
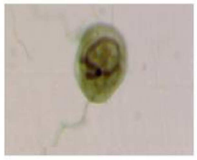


Oxytricha ludibunda



Vorticella convallaria

Generally it is found in several studies that ciliates dominate by number and types in every type of water body and the same was found in this study .It is evident from the study that the protozoan's showed variation in the selected aquatic environments(Nerad, TA 1991.). The variation depends on the different physicho-chemical variables that exist in the pond ecosystem. However, considering the nature of the lake, as no fertilizer or nutrients added in the systems, natural productivity of the studied area were very high

Percentage of Abundance of fresh water free living Protozoa during the period Feb 2013 to March 2014

Month	Total No of Samples Collected	Total No of Samples Positives	Percentage of prevalence (%)
Feb 2014	06	02	33.00
Mar 2014	05	01	20.00
April 2014	05	00	00.00
May 2014	06	00	00.00
June 2014	10	04	40.00
July 2014	08	04	50.00
Aug 2014	10	06	60.00
Sept 2014	08	03	37.00
Oct 2014	10	04	40.00
Nov 2014	08	05	62.00
Dec 2014	09	06	66.00
Jan 2014	10	08	80.00
Total	**112**	**48**	**46.86**

Therefore, it can be concluded that protozoan's constitute an important component of aquatic ecosystem and that should not be ignored in limn logical distribution

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Reference

- Albert Westphal (1976) "Protozoa", published by Blakie and Son Ltd.
- Anderson, O.R. (1997) Annual abundances, diversity and growth potential of Gymn amoebae in a shallow freshwater pond. J Andrei Tsyganov and Yuri Mazei (2006): Morphology, biometry and ecology of Arcella gibbosa Penard 1890 (Rhizopoda,estacealobosea), Protistology 4 (3) pp 279-294
- Bhatia, B.J. (1936) The Fauna of British India, Protozoa: Ciliophora. London: Taylor and Francis.Finlay B. J. (1997). The diversity and ecological role of protozoa in fresh waters. Freshwater Biol. Asso. Pp 113-125.
- Finlay B. J. And G. F. Esteban (1998) Freshwater protozoa: biodiversity and ecological function. Biodiversity and conservation 7, pp 1163-118
- Finlay B.J. and Esteban G.F. (2001). Exploring Leeuwenhoek's legacy, the abundance and diversity of protozoa. Int. Microbiol, 4:pp 110-116.
- J.J. Lee and A,T. Soldo.Protocol in protozoology (1992) pp 39,53

http://www.ksijmr.com

- Kudo, R. R. 1966. Protozoology. Springfield: Thomas Charies C. pp. 1174 Kamble, U.P. 2012. Studies on some free living protozoan from Pawailake, Mumbai (Maharashtra). Ind. J. Fundamen. Appl. Life Sci. 2(4): pp 141-143
- Nerad,TA (1991.) Catalogue of Protists, 17th Edition, American Type Culture Collection, Rockville, MD pp, 88
- Theodore Louis Jahn etal, (1979), How to Know the Protozoa, Second edition, Wim C. Brown Company Publishers
- T.T.Shaikh(2006). Studies On Some Free Living & Parasitic CiliatesAurangabad. M.S. India. Thesis,
- Dr. Babasaheb Ambedkar Marathwada University. pp 193
- Shaikh, J.D, Shaikh, T.T, Kamble, U.P, Jadhav, T.J. and Kazum, M. 2012. Studies on some free living protozoan from Salim Ali Lake, Aurangabad. Int. Multidiscip. Res. J. 2(6): pp 27-29
- Vidhyapradhan and Shaikh, J.D. 2011. Freshwater biodiversity from Terna River T. Nilanga District.Latur Maharashtra state, India. Ann. Biol. Res. 2(4): pp 498-502.

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