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Research Article

Ecological Studies on Phytoplankton in Aloor Perculation Lake from Rural Areas of Omerga Taluka (M.S.) India

GT Rathod*

Department of Zoology, Jawahar Arts, Science and Commerce College, Anadur, Osmanabad, India

***Corresponding Author:** GT Rathod, Department of Zoology, Jawahar Arts, Science and Commerce College, Anadur, Osmanabad, India.

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Abstract

The present investigation of Ecological Studies on Phytoplankton in Aloor Perculation lake from Rural Area of Omerga Taluka (M.S.) India. The work was carried out during a year June 2021 to May 2022.Location of Aloor Perculation lake 76°-25 Longitude and 17°-20 Latitude. It's manmade earthen lake having Maximum height 11.99m. it's catchment area 12.69 Sq.Kms. and capacity of live storage 9.29 mm^3 Lake is constructed year of completion 1972. The Aloor Perculation lake distance from omerga to dam about 65Km. Phytoplankton are ecologically significant as they trap radiant energy of sunlight and convert into chemical energy. In the present investigation there are 17 species of phytoplankton s belonging four different group such as Chlorophyceae (06), Bacillariophyceae (05), Cyanophyceae (04), and Euglenophyceae (02) species were found in Aloor Perculation lake.

Keywords: Ecology; Phytoplankton; Aloor Perculation Lake

Introduction

Phytoplankton are microscope organism which float on water surface and drift at the Mercy of water current and Phytoplankton are ecologically significant as they trap radiation energy of sunlight and convert into chemical energy. In pollution studies Phytoplankton are also biological indicator of water quality. The role of phytoplankton in energy budget of aquatic system their important in establishing their states is well known. The evolution of phytoplankton population in terms of their biomass density temporal distribution productivities and periodicity is important in management of ecosystem. The density of phytoplankton in water body determines stocking rate of fishes because of they are chief source of food of commercially important fishes. Such result are also been reported various workers on the Phytoplankton such as Anilkumar S. (2000), Abraham M. (1990). Das (1989), Eddy S. (1934) Hartman and Graffiti (1960), Sakhare V.B. (2007) [1-6]. There is no. related work back of phytoplankton in Aloor Perculation lake.

Material and Method

Aloor Perculation Lake is located at 76°- 25 longitude and 17° - 20 latitude. It's distance from about 56 kms away from omerga Tashil. Water sample were collected by using plankton net 38 cm. diameter of mouth and bolting silk no. 20 and preserved in 4% formalin. The samples were brought to laboratory further investigation. The Identification was done with the help of standard literature APHA (1998), Agarwal (1990), Adoni (1985), Kodarkar (1998), and Trivedi and Goal (1980) etc. [7-11].

Result and Discussions

The ecological characteristics of Lake with respect to phytoplankton mentioned in shown table 1 graph 1 and 2.

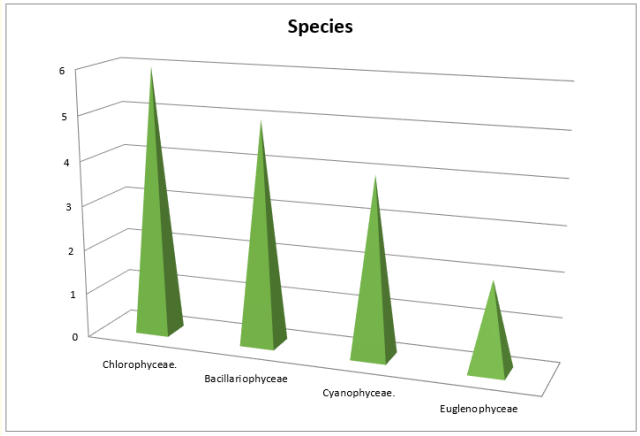
Phytoplankton are the major inhabitant of fresh water body Patil., *et al*. (2015) [12]. In fresh water ecosystem primary producer which absorbs the radiation energy and convert it into chemical role in aquatic food chain. Phytoplanktons communities do not respond only to natural changes into the lake, but may also present variation because of human variation of human activities affecting the water bodies Sumaiya and Singh (1917) [13].

Sr.no	Class	Species
1	Chlorophyceae	*Cosmariunm* sps.
		Chlorella sps.
		Eudorina sps
		Spirogyra sps.
		Staurstraum sps
		Volvex sps.
2	Bacillariophyceae	*Cymbella* sps.
		Diatoms sps.
		Fragillaria sps.
		Melosira sps
		Syndera sps.
3	Cyanophyceae	*Anabaena* sps.
		Microcystis
		Nostoc sps.
		Spenulina sps.
4	Euglenophyceae	*Euglena* sps.
		Fucus sps.

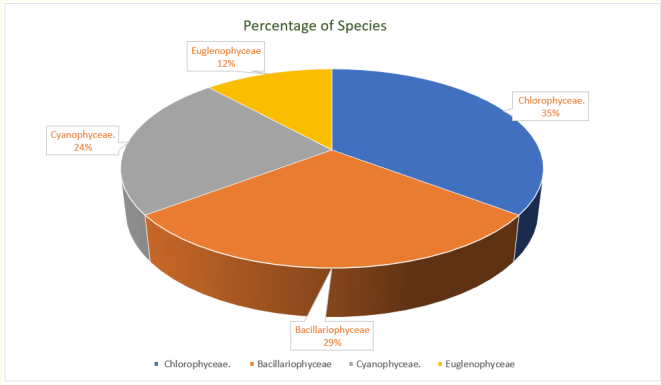
Table 1: Ecological Studies on Phytoplankton in Aloor Perculation lake from Rural area of Omerga Taluka (M.S.) India during a year June 2021 to May 2022.

In present investigation the ecological studies on phytoplankton in Aloor perculation lake from rural area of omerga Taluka. Result shows that comprise of total 17 species belonging to o4 classes. The member of Group chlorophyceae 06 (35%) species is dominant i.e. *Cosmariunm* sps. *Chlorella* sps, *Eudorina* sps, *Spirogyra* sps, *Stairstraum* sps., and *volvex* sps. other than next group. The second group Bacillariophyceae 05 (29%) species i.e. *Cymbella* sps., *Diatoms* sps., *Fragillaria* sps., *Melosira* sps and *Syndera* sps. The third group of Cyanophyceae. 04 (24%) species i.e. *Anabaena* sps., *Microcystis* sps., *Boston* sps., and *Spenulina* sps., and the fourth group of Euglenophyceae are 02 (12%) species i.e. *Euglena* sps and *Fucus* sps. occurance in Aloor perculation lake shown in Table 1 and Graph 1 and 2. Phytoplankton classes dominant over than others i.e. Chlorophyceae>Bacillariophyceae>Cyanophyceae>Eugl enophyceae.

Many worker are have their work of phytoplankton. Abraham M. (1990), Argariya Amita (2003), Balatito (2000), Bhaisare (2022), Darade (2010), Hartman and Grafficus (1960), Khanna., *et al*. (1998), M.H. Karennawar., *et al*. (2013). Patil (1976), Sumaiya., *et al*. (1917), Tonapi G. J (1980) [2,5,8,13-23].



Graph 1: Graphical representation of ecological studies on phytoplankton in Aloor perculation lake.



Graph 2: Graphical representation in percentage of ecological studies on phytoplankton in Aloor perculation lake.

Conclusion

The present research study has been focused into ecological studies on phytoplankton in Aloor perculation lake from rural area of omerga Taluka with respect to ecological deals on phytoplankton diversity. The lake had a diversified algal flora in which Chlorophyceae members were dominant (35%) in all four group than Bacillariophyceae (29%)> Cyanophyceae (24%) > Euglenophyceae (12%). Very essential study for assessment of the good or bad condition of the fresh water lake in ecosystem. It;s indicate that the lake not shown much eutrophic due to less presents of pollutants. In future it is also need to study the microbial in Aloor perculation lake.

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