

**BACILLARIOPHYCEAE ABUNDANCE AT KUDLA DAM NEAR UMRI,
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Nanded (M.S) India.**ABSTRACT**

Diatoms constitute an important part of the fresh water or marine water planktons, which forms the basic food of the aquatic animals. Diatoms play an important role in primary production. As the dominant primary producer diatoms are in an advantageous position for use as a potential indicator of pollution of stress conditions, if we examine their diversity and abundance. They are basically unicellular, but some are colonial. The cell wall of diatoms consists of two lid like valves, one of which fits within the other. The cells have either bilateral or radial symmetry. The Indian waters have been studied with view point by Singh (1960), Zafar (1984). The ecology of freshwater diatoms has attracted by many workers. In the present investigations bacillariophyceae represented by species, Diatom, Navicula, Pinnularia, Tabellaria, Nitzschia, Gyrosigma.

KEYWORDS: Phytoplankton's, KUDLA Lake, Water Quality, Bacillariophyceae.**INTRODUCTION**

In oligotrophic lakes the populations of algae and animals feeding on them are lower because of low nutrients available in the lakes. Thus water remains clear, no algal blooms are seen. But in eutrophic lake there is high amount of nutrients present in the lake and so that phytoplankton (algal) grows thickly in eutrophic lakes. Excessive nutrients and organic inputs from human activities in lakes leads to eutrophication characterized by increase in phytoplankton biomass, algal blooms, loss of water clarity by the increased primary production and loss of oxygen in bottom waters. Phytoplankton's form the very basic aquatic food chain.

MATERIALS AND METHODS

Planktonic samples were collected on monthly basis from four sampling stations A, B, C and D during study period i.e. June 2016 to May 2017. Planktons were collected using plankton net made up of bolting silk cloth. (Trivedy and Goel,1986). Filtered samples were fixed and preserved by adding Lugol's iodine. The sample label had the date, time of sampling, study area, lake name and volume measured are pasted on containers of 50 ml capacity. The Sedwick-Rafter cell was used for plankton counting and was about 50 mm long by 20 mm wide and 1mm deep. The cell was covered by a thick cover slip. Preserved samples in bottles were mixed uniformly by gently inversion and then exactly 1ml of the sample was pipetted out into the plankton counting cell for analysis.

Identification was done with the help of keys of APHA and Kodarkar's methodology. The list of Phytoplankton recorded in the kudla Lake from four different sampling stations are listed below.

RESULTS AND DISCUSSIONS

Most of workers studied the periodicity and distribution of algae in Indian lotic bodies. Some workers have suggested that density of total phytoplanktons is greater in the winter season.(Chakraborty et.al. 1959, Philipose, 1960) on the other hand others showed the more no. of algae found during postmonsoon, winter and early summer and monsoon (Lakshiminyana, 1965); Roy, 1955, Venkatewarlu, 1969).

The density of Bacillariophyceae population was found to be closely associated with pH. Patrick (1948) observed that acidic waters are not supportive to the growth of bacillariophyceae while alkaline waters with pH above (8.0) support their growth. In present study the pH observed slightly alkaline which support the growth of Bacillariophyceae. Bacillariophyceae showed high growth with increase in pH, temperature, phosphate, chloride and total dissolved solids as was observed earlier by Zafar (1967). The present study ensures that the density of phytoplankton is dependent on different abiotic factors directly or indirectly. The amount of nutrient concentration is so important for the determination of density of algae in the lake (Wetzel 2001). In the month of March, April, the growth of algae was highest resulting from sufficient nutrient enrichment of water, and adequate solar radiations. Water transparency was high during dry season was characterized by absence of flow velocity, flood, surface run-off, suspended particles, which gave rise to high transparency increased food abundance, high photosynthetic activity.

Kumar (1990) estimated that the no. of phytoplanktons was greater in summer, postmonsoon and winter and it was minimum in the monsoon period. In the present study also, peak of the phytoplankton was observed during summer months followed by winter months. Altogether six species of phytoplankton belonged to class Bacillariophyceae. Palmer (1969) has shown nedesmus that the genera like Oscillatoria, Microcystis, Navicula, Nitzschia & Euglena are the species which found in organically polluted waters supported by Goel et.al; (1986). Similar genera were recorded in the present investigation. It has been observed that all forms were not present throughout the year and there was some frequency in their occurrence at all the stations. Monthly data was recorded during the study period for the year 2016-17. The presence of plankton is denoted by (+) sign and absence is denoted by (-) sign. The record for planktons is tabulated in table.

In present investigation the genera of Bacillariophyceae such as Diatom sp, Navicula sp and Pinnularia sp were found throughout the study period. In Sarsai Nawar lake the species of Bacillariophyceae observed were Nitzschia, Synedra, Navicula, Diatoms, Fragillaria and Pinnularia (Sharma and Rathore, 2000), Kamat (2000) observed the species of Bacillariophyceae were Pinnularia, Synedra, Melasira and Longbya in Mangeshi and Madkai temple pond in Ponda Taluka, Goa. Bacillariophyceae comprised of the total annual phytoplankton population. The kudla Lake has several pollution indicator species like Navicula and Pinnularia. The diatom is used as indicator of pollution(Patrick, 1973; Reynolds, 1973).

B) Bacillariophyceae

- i) Diatom
- ii) Navicula
- iii) Pinnularia
- iv) Tabellaria
- v) Nitzschia
- vi) Gyrosigma

Bacillariophyceae	jun	jul	aug	sept	Oct	nov	dec	jan	feb	mar	apr	May
Melosira	+	+	+	+	+	+	+	+	-	+	-	+
Navicula	+	+	+	+	+	+	+	+	+	+	+	+
Pinnularia	+	-	+	+	-	+	+	+	+	+	-	+
Tabellaria	-	-	+	+	+	+	+	-	+	-	+	-
Nitzschia	+	+	+	+	+	+	+	+	+	+	+	+
Gyrosigma	-	+	+	+	+	+	+	+	+	+	+	+

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