Phytoplankton Diversity of Atpadi Water Tank, Atpadi, Maharashtra

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Abstract: This study presented preliminary ecological information of this aquatic body. The aim of the research was to study the planktonic organisms inhabiting the Atpadi water reservoir for the period of one year from Feb. 2016 to Jan.2017. The changes in total algal counts throughout the investigation coincided closely with Bacillariophyceae, chlorophyceae, euglenophyceae and cyanophyceae. Total 23 species of phytoplanktons were identified all over the period of the investigation. Out of the 23 species of phytoplanktons, 6 species belongs to Bacillariophyceae, 7 species belongs to chlorophyceae, 4 species belongs to euglenophyceae and 6 species belongs to cyanophyceae.

Key Words: Phytoplankton, Atpadi water tank.

INTRODUCTION

Phytoplanktons are primary producers, which forms the base of an autotrophic food chain. They are of great importance as a source of live food for zooplanktons and fishes. The present investigation is an attempt to study the phytoplankton community in Atpadi water reservoir of Sangli district, Maharashtra during the period Feb. 2016 to Jan.2017.

MATERIALS AND METHODS

The samples of water containing phytoplanktons were collected from four sampling stations once in every month from the Atpadi water reservoir during the investigation period Feb. 2016 to Jan. 2017. The samples were collected from surface water. The phytoplanktons were counted by drop count method (Lackey,1957). The phytoplankton species were identified by following Edmondson (1966), Needham and Needham (1978) and APHA (1998). The results were expressed as number of organisms/ml.

RESULTS AND DISCUSSION

During the current investigation 23 genera of phytoplanktons belonging to Bacillariophyceae, chlorophyceae, euglenophyceae and cyanophyceae family were recorded. Phytoplankton population in the reservoir was composed of 4 groups namely Bacillariophyceae, Cyanophyceae, Euglenophyceae and Chlorophyceae. The identified groups of algae were 6 genera belonging to Bacillariophyceae as shown in Table No.1, 7 genera belonging to chlorophyceae as shown in Table No.2, 4 genera belonging to Euglenophyceae as shown in Table No.3 and 6 genera belonging to Cyanophyceae as shown in Table No.4. The distribution data of various groups of algae reveals that in all sites all groups were dominant. The important work in this field were Ganapati (1940), Srivastav (1955), Zafar (1964), Lakshminarayan (1965), Singh (1960), Patil (1976), patil et.al (1985), Goel, Trivedy (1985), (1986), Boney (1989), Nandan and patel (1992), Bhosale Sabale and Mulik (1994), Mukherjee and Pankajakshi (1995), Kanhere (1997), Hari Krishnan (1999), Thorat (2000), Patil et.al (2002), Ramkrishna (2002), Sampathkumar (2004), Synudeen Sahib (2004) and Meshram (2005). Many workers concentrate such studies towards understanding ecology of phytoplankton and important of fish food, indicators of pollution and tropic status of the water bodies. In present investigation such type of studies of tank water has been carried out.

Chlorophyceae represented the bulk of the phytoplankton throughout the period of study followed by Bacillariophyceae, Cyanophyceae and Euglenophyceae. Temperature may affect the seasonal cycle of phytoplankton in temperate zones McCombie (1953), Hutchinson (1957) mentioned that temperature is important in controlling both the quality and quantity of planktonic flora. Jana (1973) and Chari (1980) observed that temperature is a critical factor for the seasonal periodicity of phytoplankton, Nazneen (1980). The water temperature plays an important role in controlling the occurrence and abundance of

phytoplankton. The maximum occurrence of all groups of phytoplankton in the present study during pre-monsoon period could be attributed to increased temperature and light during this season. Similar results were reported by Kopoczynsk (1980), Verma and Mohanty (1995), Sabu Thomas (1999) and Singh (1999).

Table No. 2 Monthly variation of the members of Bacillariophyceae in Atpadi water reservoir during Feb. 2016 to Jan. 2017

	Feb.	Feb.	Mar.	Mar.	April	April	May	May	Jun	Jun	July	July	Aug.	Aug.	Sept.	Sept.	Oct.	Nov.	Dec.	Jan.
Melosira dendriticus	+	-	-		+	++	+	+	+	-	-		-	-	-	-	--		+	--
Cyclotella ambigua		+	+		+	+	+	+	-	-	-		-	-	-	-	--	+	+	--
Navicula radiosa		+	+		++	+	++	++	+	-	-		-	-	-	-	--	-	-	--
Mastogloia danseii	+	-	++		+	-	+	+	+	-	-		-	-	-	-	--	-	+	--
Fragilaria capucina	+	+	-		-	+	+	+	++	-	-		-	-	-	-	--	-	-	--
Cyclotella stelligera	+	+	+		+	+	+	+	+	-	-		-	-	-	-	--	-	-	++
Tabellaria sp.	+	+	+		+	+	+	+	+	-	-		-	-	-	-	--	-	-	++
Kirchnerielia obesa			* - + Present, ++ More Present, - Absent														-	-	+	-

* + Present, ++ More Present, - Absent

Table No. 3 Monthly variation of the members of Euglenophyceae in Atpadi water reservoir during Feb. 2016 to Jan. 2017

	Feb.	Mar.	April	May	Jun	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
Euglena cherenbergiia	+	+	+	++	-	-	-	-	-		+	-
Euglena acus	++	-	+	+	-	-	-	-	-	+	-	-
Phacus quinuemarginatus	+	+	++	-	-	-	-	-	+	-	-	-
Phacus suecica	-	+	+	+	-	-	-	-	-	-	-	+
* + Present, ++ More Present, - Absent												

Table No. 4 Monthly variation of the members of Cyanophyceae in Atpadi water reservoir during Feb. 2016 to Jan. 2017

	Feb.	Mar.	April	May	Jun	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
Anacystis cyanea	+	+	-	+	-	-	-	-	-		-	+
Coccochloris stagnina	+	-	+	+	-	-	-	-	-	+	+	+
Oscillatoria chlorina	++	+	+	-	-	-	-	-	-	-	-	-
Phormidium autumnata	+	+	++	+	-	-	-	-	-	-	+	+
Microcrosis germinata	-	-	+	+	-	-	-	-	-	-	-	+
Oscillatoria tenuis	+	+	+	++	-	-	-	-	-	-	-	++
* + Present, ++ More Presents, - Absents												

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