

Study of seasonal variations of Algae from Chandrapur District (M.S)

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Abstract

The present investigation deals with the study of seasonal variations of Algae from Rajura Taluka of Chandrapur district of Maharashtra state. The study was done during the period of 2009 to 2010 in years of data to be noted. The growth of Algal density accordingly season and temperature fluctuations have been attempted. Algal samples collected in month wise manner. Different sampling sites to be taken for this investigations. The Algal flora from polluted water bodies show the dominance of Blue Green Algae and diatoms.

Keywords

Seasonal variations, Algal samples, Sampling sites, Algal density, temperature fluctuations. Two years data, wardha River.

Introduction

Chandrapur district of Maharashtra state is one of the richest district abounds in minerals with large reserve of high grade iron ore, metals, and coal industries and tropical forest type. The district is famous for it's sprawling coal mines and Tadoba wildlife sanctuary which is an important Tiger reserves in country, from environment point of view coal mining is major habitat in Rajura and have adverse effect on growth of Algae, for the study of growth of Algae in relation to season, Wardha river from Rajura Taluka of Chandrapur district was selected. This is major river of district is perennial and 10 kms away from Chandrapur city flows through Ballarshah. The Algal flora of polluted water bodies shows dominance of Algal growth. The main objectives of present review was to gather information of Algae from Rajura locality of Chandrapur district. Water and life have an inspirable relationship and were considerable two sides of coin. Many reports were available in India (Chandra Mathur, 1983) [1] (Sawane, 2002) [7] . As for the qualities of Algae it has been dominative investigated by (Jawale and Chudhari, 2010) [3]

Objectives

- 1) To see the temperature fluctuations on the growth of Algae
- 2) To see the seasonal variations of growth of Algae.
- 3)To gather the information of Algal flora from Rajura locality.
- 4) To explore the Algal periodicity from different polluted sites of Wardha river

Material and Methods

Algal samples were collected in every month for period of two years. All the four sites of Wardha river was selected. The selected samples were brought immediately to the laboratory. Half of the material were stored or preserved in formalin in compressed glass bottles a leak proof cork and kept in laboratory in cool and dark places for further investigation. The research flora were identified with help of Algal monograph and recent literature, available books of (Fritch, 1935) [4] . Three sampling sites were selected along stretch of river at a distance of 1 to 1.5 kms, from upstream to downstream same investigation were done by (Venkateshwarlu, V, 1962) [8] . (Hosmani, S.P, 1982) [2], (Zafar, A.R, 1967) [6] .From these exploration of Algal forms, the collection procedure were repeated accordingly with season. The first period of three months were selected that is June to August, and September to November 2009. Another period of collection December to February and March to May, for four sites of Wardha river. Same procedure was repeated for next year 2010.

Seasonal variations of Algal growth

Month June to August 2009					
Sr.No	Site	Time	Temperature	Depth of light	Identifications
1)	Sw1	9-10 am	28°C	Not found	Less in number of Blue Green Algae
2)	Sw2	9-10 am	28°C	Not found	Less in number of Blue Green Algae
3)	Sw3	9-10 am	28°C	1 feet	Spirullina was observed and Fillaments formed
Month September to November 2009					
Sr.No	Site	Time	Temperature	Depth of light	Identifications
1)	Sw1	9-10 am	25°C	Not found	Less in number of Blue Green Algae
2)	Sw2	9-10 am	22°C	Not found	Less in number of Blue Green Algae
3)	Sw3	9-10 am	27°C	1 feet	Spirullina was observed and Fillaments

					formed
Month December 2009 to February 2010					
Sr.No	Site	Time	Temperature	Depth of light	Identifications
1)	Sw1	9-10 am	25°C	Not found	Less in number of Blue Green Algae
2)	Sw2	9-10 am	22°C	Not found	Less in number of Blue Green Algae
3)	Sw3	9-10 am	27°C	1 feet	Spirullina was observed and Fillaments formed
Month March to May 2010					
Sr.No	Site	Time	Temperature	Depth of light	Identifications
1)	Sw1	9-10 am	25°C	Not found	Less in number of Blue Green Algae
2)	Sw2	9-10 am	22°C	Not found	Less in number of Blue Green Algae
3)	Sw3	9-10 am	27°C	1 feet	Spirullina was observed and Fillaments formed

Month wise exploration of Algae

Sr.No	Month	Year	Temperature	Growth of Algae
1)	June	2009	28°C	Not found
2)	July	2009	28°C	Not found
3)	August	2009	25°C	Rarely fond
4)	September	2009	25°C	Minimum growth
5)	Octomber	2009	25°C	Minimum growth
6)	November	2009	26°C	Minimum growth

7)	December	2009	25°C	Maximum
8)	January	2010	27°C	Maximum
9)	February	2010	27°C	Maximum
10)	March	2010	37°C	Minimum
11)	April	2010	37°C	Minimum
12)	May	2010	41°C	Desmids eugleneids one found

Result and Discussion

Result

The present month wise study of Algal growth in respect to season, show different periodicity of algal population of River Wardha. The Algae has whole reach their maximum growth during winter (December- January) and touch minimum during rainy season (September – November). The rate of water current is more or less inversely proportion to the total number of Algae at all the stations. High temperature seem to reduce the number of Algae present at that site. Desmids which one or more in number at station 1 and 2 favoured by high summer temperature and total solids. Diatoms form main bulk of Algal population at all stations, attain their maxima in winter (December to January and February) and minimum during summer. These algae shows flucuations of temperature and inverse relationship with temperature. Algal growth reduce during summer (March to May).

Discussion

In the Wardha river high peak of algal development have been recorded during winter in the month of December to February, and also Algae shows minimum development during rainy season (June to August). This is more or less in agreement with the velocity of current is one of important factors controlling water age and emphasizes more on the stability of ecological conditions for plankton production depending on it, (Blum, 1957) [5]. Same results were obtained by (Iyengar, 1951), [9] from the river from Madras.

Conclusion

Based on present research of work temperature and organic matter responsible for the growth of Algae. As the temperature increase in summer, the growth of Algae reduce. High temperature seem to be unfavourable but in winter maximum development. However as pointed out earlier, the increasing urbanization and industrialization in this area is posing a very serious threat in that result also shift in Algal community from upstream to downstream due to increasing organic enrichment.

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