



## Cyanophycean algal flora of Khelna reservoir in Aurangabad district of (MS) India

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### Abstract

Cyanophyceae is a most primitive group of algae. They occur in variety of habitats. Fresh water bodies are the unique habitats where Cyanophycean algae grows abundantly and found in diverse form. In present research work Cyanophycean algal flora has been studied in detail. Khelna reservoir is located in Sillod thehsil area of Aurangabad district in Maharashtra. Algal collections were made at monthly intervals for two consecutive years i.e. from October 2014 to September 2016. A total 42 taxa of Cyanophycean algae were recorded. Seasonal variation study reveals that Cyanophycean algae were found dominant in summer season.

### INTRODUCTION

Cyanophycean algae is a most primitive group of algae constitutes heterogenous assemblage of organisms ranging from unicellular to branched filamentous forms. They are also known as blue green algae and occur in variety of habitats. Cyanophycean algae colonize almost all kinds of terrestrial and aquatic ecosystems. They have a capacity to grow in all possible habitats including terrestrial, aquatic, lithophytic, endophytic, epizoic, epiphytic etc. They prefer to grow in fresh water ecosystems. The fresh water bodies are the unique habitats where Cyanophycean algae grows abundantly. They are very common in springs, puddles, streams, rivers and lakes. In order to study Cyanophycean algal flora of fresh water reservoir, Khelna reservoir at Palod, Taluka Sillod, District Aurangabad, Maharashtra state has been selected for algal collections. Water of Khelna reservoir is used for irrigation and drinking purpose.

### MATERIALS AND METHODS

To study Cyanophycean algal flora of Khelna reservoir, algal samples were collected at monthly

intervals from four sites of reservoir. Algal collections were made at monthly intervals for two consecutive years i.e. from October 2014 to September 2016. Attached, floating and planktonic algal forms were collected in acid washed collection bottles. Collected algal samples were brought to the laboratory and preserved in 4% formalin for further taxonomic study. Fresh as well as preserved algal samples were observed thoroughly under research microscope and identified following Smith (1950), Prescott (1951) and Desikachary (1959).

### RESULTS AND DISCUSSION

The Cyanophycean algal taxa recorded were quite diverse which belonged to order Chroococcales, Pleurocapsales and Nostocales. A total of 42 taxa under 19 Genera of Cyanophyceae were recorded from Khelna reservoir. Genus *Phormidium* is represented by 7 species whereas *Oscillatoria* is represented by 5 species. *Chroococcus*, *Merismopedia* and *Nostoc* were represented by 3 taxa each. *Microcystis*, *Aphanothece*, *Spirulina*, *Lyngbya*, *Microcoleus*,

**Table 1: Cyanophycean algae recorded from Khelna reservoir**

<p><i>Microcystis aeruginosa</i>, <i>Microcystis robusta</i>, <i>Chroococcus minor</i>, <i>Chroococcus minutus</i>, <i>Chroococcus turgidus</i>, <i>Gloeocapsa rupestris</i>, <i>Gloeotheca palea</i>, <i>Aphanocapsa pulchra</i>, <i>Aphanothece nidulans</i>, <i>Aphanothece saxicola</i>, <i>Synechocystis aquatilis</i>, <i>Merismopedia glacua</i>, <i>Merismopedia punctata</i>, <i>Merismopedia tenuissima</i>, <i>Chlorogloea microcystoides</i>, <i>Myxosarcina burmensis</i>, <i>Arthrospira platensis</i>, <i>Spirulina laxissima</i>, <i>Spirulina major</i>, <i>Oscillatoria acuta</i>, <i>Oscillatoria acuminata</i>, <i>Oscillatoria animalis</i>, <i>Oscillatoria princeps</i>, <i>Oscillatoria quadripunctulata</i>, <i>Phormidium abronema</i>, <i>Phormidium ambiguum</i>, <i>Phormidium corium</i>, <i>Phormidium jenkelianum</i>, <i>Phormidium molle</i>, <i>Phormidium mucosum</i>, <i>Phormidium usterii</i>, <i>Lyngbya birgei</i>, <i>Lyngbya hieronymusii</i>, <i>Microcoleus acutissimus</i>, <i>Microcoleus sociatus</i>, <i>Nostoc linckia</i>, <i>Nostoc muscorum</i>, <i>Nostoc punctiformae</i>, <i>Plectonema gracillimum</i>, <i>Plectonema nostocorum</i>, <i>Scytonema bohneri</i>, <i>Scytonema schmideli</i>.</p>
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**Table 2: Taxonomic categorization of Cyanophycean algae recorded from Khelna reservoir**

Sr. No.	Order	Family	Genera	Species
1	Chroococcales	Chroococcaceae	09	15
2	Pleurocapsales	Pleurocapacesae	01	01
3	Nostocales	Oscillatoriaceae	06	19
4		Nostocaceae	01	03
5		Scytonemataceae	02	04

*Plectonema* and *Scytonema* were represented by 2 taxa each. *Gloeocapsa*, *Gloeotheca*, *Aphanocapsa*, *Synechocystis*, *Chlorogloea*, *Myxosarcina* and *Arthrospira* were represented by single species each (Table 1). The Cyanophycean taxa which were found at all sites of reservoir are *Aphanothece nidulans*, *Merismopedia punctata*, *Myxosarcina burmensis*, *Arthrospira platensis* and *Phormidium jenkelianum*. The most frequent and dominant Cyanophycean taxa in order of their dominance were *Aphanothece nidulans*, *Aphanothece saxicola*, *Chroococcus turgidus*, *Gloeotheca palea*, *Phormidium jenkelianum*, *Phormidium molle*, *Plectonema gracillimum*, *Merismopedia punctata*, *Merismopedia tenuissima*, *Microcoleus acutissimus*, *Spirulina laxissima*, *Spirulina major*, *Nostoc muscorum*, *Nostoc punctiformae*, *Scytonema bohneri*, *Oscillatoria acuta*, *Lyngbya heironymusii* and *Gloeocapsa rupestris*. Results of present research work is in conformity with earlier reports (Ashtekar and Kamat 1979, Talekar and Jadhav 2013, Magar and Jadhav 2014, and Mahadik and Jadhav, 2014). Overall seasonal variation study reveals that Cyanophycean algae were found dominant in summer season. Similar type of observations were made by Philipose (1960), Jain (2002), Magar (2008) and Talekar (2009). Hence it is concluded that diversity of Cyanophycean algae in terms of quantity and quality were observed in Khelna reservoir. Dominance of Cyanophyceae members were found in summer season.

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