



## Some cyanophyceae members from soil polluted by sugar factory waste from Sangamner tehsil, district Ahmednagar, Maharashtra

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### Abstract

Algae are the important components of environment. These are the special type of photosynthetic plants found in diverse habitats. Some algae grow on polluted soil and can be used as indicators of pollution.

The present study was undertaken to explore the soil algae growing on soil polluted by sugar factory waste from Sangamner tehsil of Ahmednagar district. Soil samples were collected from different sampling sites polluted by sugar factory waste. Samples were analyzed and identified. In present paper ten members of Cyanophyceae were observed and studied.

**Keywords:** polluted soil, algae, cyanophyceae, sugar factory waste

### Introduction

Sangamner taluka shows rich algal biodiversity. Water and soil pollution, faulty water management; excessive use of chemical fertilizers are the main problems for algal biodiversity. Work is done on aquatic algal flora of Sangamner. But soil algae are unexplored. Therefore it is thought to work on effect of soil pollution on biodiversity of soil algae.

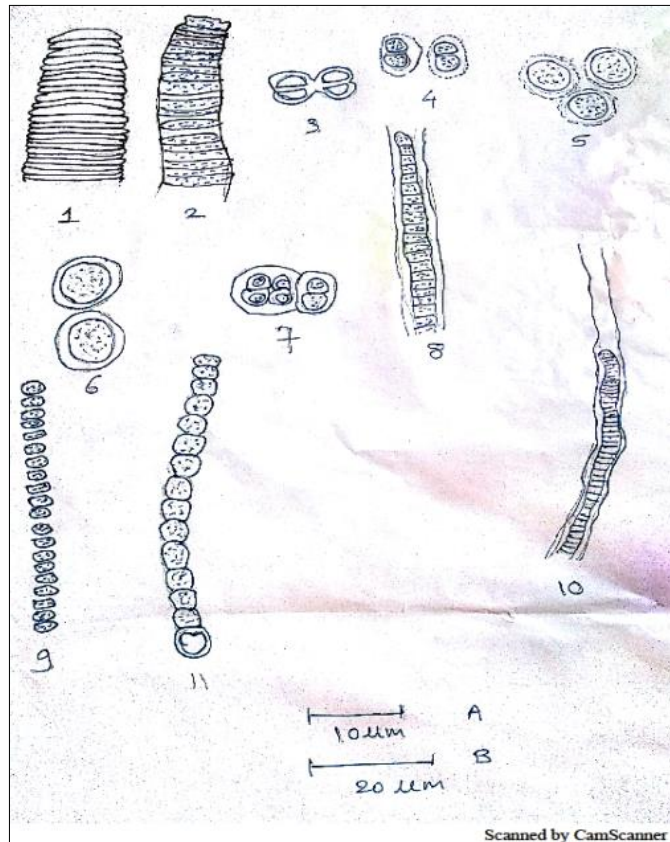
### Materials and Methods

Algal samples were collected during January 2015 to December 2015 from different sampling sites of Sangamner sugar factory. The Algal samples were brought to the laboratory and slides were prepared then it is preserved in 4% formalin solution for further study. The algae were identified under microscope with the help of standard literature and recent research publication.

### Systematic account

1. *Oscillatoria limosa* Ag. Ex Gomont Fig. 1.  
Desikachary, 1959, p.206, pl.42, Fig11.  
Thallus dark blue green, trichome straight, dull blue green, slightly constricted, cells broad, 2.5 to 5 µm long, granulated; end cell flattened and rounded. Sample No. 106.
2. *Oscillatoria princeps* Vaucher ex Gomont. Fig. 2.  
Desikachary, 1959, p. 210, pl.37, Fig 1.  
Trichome solitary, straight, slightly tapering towards the apices, not constricted at cross walls, 4.3µm long, granulated end cells with thickened outer membrane. Sample No.113.
3. *Chroococcus minutus* (Kuetz.) Naeg.Fig.3.  
Desikachary, 1959, p. 103-105, pl.24, fig4.  
Cells spherical, oblong, in group of 2-4 with light blue green pigment, with sheath 6.5- 11µm diameter, sheath not lamellated, colourless. Sample No.108
4. *Chroococcus minor* (Kuetz.)Naeg.Fig. 4  
Desikachary, 1959, p. 105, pl24, fig.1.  
Thallus slimy, gelatinous,dirty blue green;cells spherical, in pairs,diameter 3.5- 4 µm,sheath colourless, thin, hardly visible. Sample no. 101.
5. *Chroococcus indicus* Zeller Fig. 5.Desikachary, 1959, p.109.  
Thallus gelatinous, thin, pale brownish, oblong, 3 to 6µm in diameter, sheath hyaline, conspicuous with granules. Sample no. 118.
6. *Gloeocapsa rupestris* (Kuetz.) Fig.6.  
Desikachary, 1959, p.117.  
Thallus brownish, crustaceous; cells without sheath, 7.5 µm in diameter, sheath yellow, young colonies colourless and 16 to 18 µm in diameter. Sample no. 103.
7. *Gloeocapsa sanguine* (Ag.)Kuetz. Fig.7.  
Desikachary, 1959, p. 121, pl. 27, fig.7.Cells without sheath 4 to 6 µm in diameter, light blue green, sheath present inside the colony, dull bluish red. Sample No. 109.
8. *Lyngbya ceylanica* Wille Fig. 8.  
Desikachary, 1959, p.299, pl. 54, fig.4.  
Thallus olive green, filaments 10 to 13 µm broad, straight; sheath thin, trichome blue green, not constricted at cross walls, not attenuated at the ends; 7 to 9µm broad, 3.7 to 5.3 µm long, cells quadrate, without calyptra..Coll. No. 203.
9. *Lyngbya polysiphoniae* Freny Fig. 9.  
Desikachary, 1959, p. 287, pl. 53, Fig. 5.  
Filaments slightly curved, single, about 60 µm in length; sheath very thin, not coloured violet with chlor-zink-iodide; trichome pale blue green, constricted at the cross walls, about 3 µ broad apices not attenuated; cells as long

as broad, cross wall visible, not



1. *Oscillatoria limosa* Ag. Ex Gomont
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5. *Chroococcus indicus* Zeller
6. *Gloeocapsa rupestris* (Kuetz.)
7. *Gloeocapsa sanguine* (Ag.) Kuetz.
8. *Lyngbya ceylanica* Wille
9. *Lyngbya polysiphoniae* Freny
10. *Lyngbya spiralis* Geitler
11. *Rivularia hansgirgi* Schm. granulated; end cells convex, not capitates. Sample No. 183.

**Fig 1**

10. *Lyngbya spiralis* Geitler Fig. 10.  
Desikachary, 1959, p. 289, pl. 48, Fig. 1.  
Filaments forming thin leathery thallus blue green, 5μ broad, ends spiral, sheath smooth, not lamellated, colourless, trichome pale blue green, not attenuated, not capitates, 4 to 5μ broad, cells as long as broad, end cell broadly rounded, without thickened outer wall, calyptras absent.. Coll. No 201.
11. *Rivularia hansgirgi* Schm. Fig. 11.  
Desikachary, 1959, p. 549-550, pl. 112, Fig.7.  
Thallus expanded, flat, gelatinous, thin; trichome long, horizontally expanded, gradually tapering at the end, 3.6-5.7 μm broad; cells rectangular; heterocyst basal, single, hyaline about 6.1μm in diameter. Coll. No. 204.

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