



BLUE GREEN ALGAL DIVERSITY OF DOMESTIC SEWAGE WATER.

Botany

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ABSTRACT

In order to study the diversity of blue green algae of domestic sewage water, kham river located in Aurangabad city is selected for algal collections. Algal samples were collected for the period of two years i.e. from Jun 2015 to May 2017. Collected algal samples were identified with the help of standard literature. A total of 42 taxa under 17 genera of blue green algae were identified and recorded. Species of *Microcystis*, *Chroococcus*, *Gloeotheca*, *Aphanocapsa*, *Aphanothece*, *Synechococcus*, *Merismopedia*, *Chlorogloea*, *Myxosarcina*, *Arthrospira*, *Spirulina*, *Oscillatoria*, *Phormidium*, *Lyngbya*, *Microcoleus*, *Nostoc*, *Plectonema*, and *Scytonema* were identified and recorded.

KEYWORDS

Blue green algae, Domestic sewage water, kham river .

INTRODUCTION

Blue green algae grows in variety of habitats like fresh water, soil, on moist rocks, barks and in polluted water also. Present study deals with diversity of blue green algae of domestic sewage water. Similar type of work has been done by Ahmadi et al. (2005), Ansari, and Nandan, (2005). Baruh et. al. (2009), Boominathan (2005), Chevalier, et.al.(2000), Dora, et.al.(2010), Dubey, et.al.(2011), Ganpati, and Chaco, (1951). Gunale, and Balkrishnan, (1981). Khare, (1999). Mahadik, and Jadhav (2014). Nandan, and Mahajan, (2003). Nandkar, et.al.(1993). Sanjay, et. al. (2011). Vijaykumar, et. al. (2007). reported dominance of blue green algae from different waste water habitats such as organically polluted lakes, oil refinery effluents, paper mill waste water, dairy effluent sugar mill waste water and pharmaceutical industry waste water.

MATERIALS AND METHODS

To study blue green algal forms, domestic sewage water released in Kham river located at Aurangabad city was selected. Algal collections were made at monthly intervals from June 2015 to May 2017. Floating , planktonic and submerged algal forms were collected in acid washed collection bottles. Collected algal samples were brought to the laboratory for identification and taxonomic study. Blue green algal forms were observed under research microscope and identified with the help of standard literature on algae.

RESULTS AND DISCUSSION

During present phyecological investigations, a total of 42 species under 17 genera belonged to blue green algae were identified and recorded (Table 1). Unicellular, colonial and filamentous blue green algal forms were identified. Species of *Microcystis*, *Chroococcus* , *Gloeotheca*, *Aphanocapsa*, *Aphanothece*, *Synechococcus*, *Merismopedia*, *Chlorogloea*, *Myxosarcina*, *Arthrospira*, *Spirulina*, *Oscillatoria*, *Phormidium*, *Lyngbya*, *Microcoleus*, *Nostoc*, *Plectonema* and *Scytonema* were identified and recorded.

During present investigation Genus *Oscillatoria* was represented by 08 species *Phormidium* is represented by 05 species and *Spirulina* represented by 04 species, where as *Chroococcus*, *Microcoleus* and *Plectonema* represented by 03 species each. *Microcystis*, *Aphanothece*, *Merismopedia*, *Lyngbya*, *Nostoc* were represented by 02 species each. *Gloeotheca*, *Synechococcus*, *Chlorogloea*, *Myxosarcina*, *Arthrospira*, *Scytonema* were represented by 01 species each (Table 1). The most frequent and dominant blue green algal taxa are *Aphanothece nidulans*, *Gloeotheca palea*, *Chroococcus minutus*, *Chroococcus turgidus*, *Aphanothece saxicola*, *Merismopedia tenuissima*, *Microcystis aeruginosa*, *Plectonema gracillimum*, *Oscillatoria obscura*, *Oscillatoria subbrevis*, *Oscillatoria quadripunctulata*, *Myxosarcina burmensis*, *Phormidium molle*, *Phormidium jenkelianum*, *Spirulina gigantea*, *Spirulina labrinthiformis*, *Spirulina laxissima*, *Microcoleus acutissimus*, *Nostoc muscorum* and *Scytonema bohneri*.

Hence it was concluded that blue green algal diversity of domestic sewage water of Kham river is remarkable. Blue green algae are found in diverse form. Present study will be definitely enriching the knowledge of blue green algal biodiversity of Marathwada region of Maharashtra.

Tabl 1 : Blue green algal taxa recorded from domestic sewage water of Kham river.

Microcystis aeruginosa, *Microcystis robusta*, *Chroococcus minor*, *Chroococcus minutus*, *Chroococcus turgidus*, *Gloeotheca palea*, *Aphanothece nidulans*, *Aphanothece saxicola*, *Synechococcus aeruginosus*, *Merismopedia punctata*, *Merismopedia tenuissima*, *Chlorogloea microcystoides*, *Myxosarcina burmensis*, *Arthrospira platensis*, *Spirulina gigantea*, *Spirulina labyrinthiformis*, *Spirulina laxissima*, *Spirulina major*, *Oscillatoria acuminata*, *Oscillatoria acuta*, *Oscillatoria animalis*, *Oscillatoria formosa*, *Oscillatoria obscura*, *Oscillatoria princeps*, *Oscillatoria quadripunctulata*, *Oscillatoria subbrevis*, *Phormidium abronema*, *Phormidium jadinianum*, *Phormidium jenkelianum*, *Phormidium molle*, *Phormidium usterii*, *Lyngbya birgei*, *Lyngbya gracilis*, *Microcoleus acutissimus*, *Microcoleus sociatus*, *Microcoleus subtorulosus*, *Nostoc microscopium*, *Nostoc muscorum*, *Plectonema gracillimum*, *Plectonema hansgirgi*, *Plectonema nostocorum*, *Scytonema bohneri*.

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