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RESEARCH ARTICLE

SURVEY OF BLUE-GREEN ALGAL FLORA OF GOVERNMENT ARTS COLLEGE, COIMBATORE

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ABSTRACT

The blue-green algal flora of Government Arts College campus was studied. In the study, different blue-green algal forms were observed and they were identified. The present work is just an initiative to identify the different blue-green algal forms present in the ponds. These forms could be further isolated and cultured for use as biofertilizer.

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INTRODUCTION

Cyanobacteria, also known as blue-green algae, are the most primitive group of algae. They are simple but remarkably successful organisms (Sharma *et al*., 2011). Although they are most closely related to other bacteria, they have the same pigment for photosynthesis that plants have. Algae, like other plants, need nutrients to grow. Nitrogen and phosphorus are especially important to them, and these nutrients can be scarce in aquatic environments. The cyanobacteria consist of a heterogeneous assemblage of oxygen evolving photosynthetic prokaryotes, and composed of about 150 genera and 2,000 species (Pulz and Gross, 2004) including unicellular, colonial, filamentous to branched filamentous forms (Thajuddin and subramaniam, 2005). Cyanobacteria can be seen in fresh water ecosystems like lakes, ponds and rivers, marine environment like ocean, salt marshes, salt pans, estuaries, etc. and in association with all groups of plants as symbionts. The present work is undertaken to study the blue-green algal diversity in the GAC, Coimbatore campus.

MATERIALS AND METHODS

Sample Collection

Fresh water algae from different places of Government Arts College Campus (Coimbatore) were collected.

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The samples were observed under the microscope and blue-green algae present in the sample were identified with the help of Desikachary (1959).

RESULTS AND DISCUSSION

Identification and brief description of Blue-green algae

1) *Gloeocapsa* sp.

Cells spherical, 2-4 in a colony, many colonies forming an expanded mass, individual sheaths lamellated or unlamellated (Plate 1).

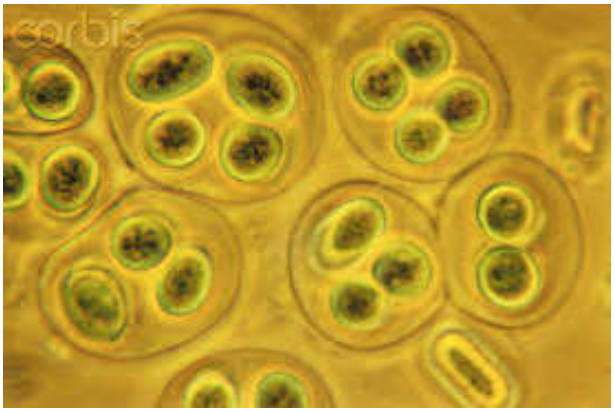

Plate 1. *Gloeocapsa* sp.

2) *Oscillatoria* sp.

Trichome more or less straight, dull blue-green, slightly constricted at cross-walls 11-20 µ broad, one end cell flatly rounded with slightly thickened membrane (Plate 2).

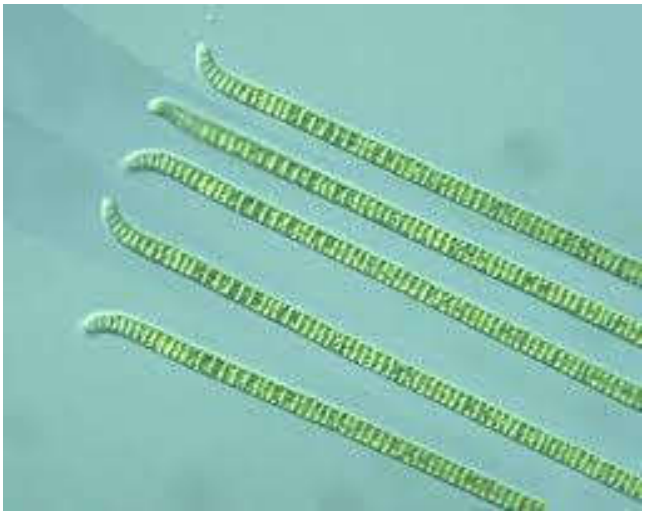

Plate 2. *Oscillatoria* sp

3) *Microcoleus* sp

Filaments more or less regularly cylindrical, not lamellated, sheath mostly colorless; trichomes many in each sheath, densely aggregated, often coiled or contorted like a rope (Plate 3).

Plate 3. *Microcoleus* sp

4) *Nostoc* sp.

Thallus mucilaginous, oblong, the periphery dense and darkly coloured; filaments flexuous, curved; cells spherical, heterocysts intercalary (Plate 4).

5) *Stigonema* sp.

Filaments variously curved, lateral branches like prostrate parent filaments and as many rows as the main filament; sheathing close to the trichome when young and broader in older ones. Heterocysts intercalary/lateral (Plate 5).

Plate 4. *Nostoc* sp

Plate 5. *Stigonema* sp

The abundance of cyanobacteria in water-logged areas and their mass cultivation for use as biofertilizer is an important aspect of economic relevance. Cyanobacteria occur abundantly in rice-fields and their nitrogen- fixing capacity has been studied by a number of scientists (Stewart, 1980; Anand and Murugesan, 1996; Anand and Gayathri, 1999). The present work is an attempt to study the blue-green algal flora present in various ponds and utilize them further for the growth of vegetable crops and medicinal plants.

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