

## Full Length Article

# Algal flora of Brinjal field soil of Aurangabad

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### ABSTRACT

Algae are one of the significant components of soil microflora. They play an important role in fertility of soil. Present research work deals with the study of algal flora of Brinjal (*Solanum melongena* L) field of Aurangabad tehsil area. In order to study algal flora of Brinjal field, algal patches were collected at regular interval from April 2013 to July 2013. Collected algal samples were observed thoroughly under research microscope and identified with the help of standard literature on algae. A total of 21 species under 14 genera belonged to Chlorophyceae, Bacillariophyceae and Cyanophyceae were identified and recorded. Cyanophycean algae were found dominant followed by Bacillariophyceae and chlorophyceae. Algal forms *Aphanthece*, *Phormidium*, *Microcoleus*, *Plectonema*, *Spirulina*, *Oscillatoria*, *Lyngbya*, *Chorella*, *Nitzschia* and *Surirella* were found dominant in order of their abundance. Soil of Brinjal field was found to harbour a rich flora of Cyanophyceae members. Algal flora of Brinjal field is rich and it is in diverse form.

**Key words:** Algal flora, soil and Brinjal field.

### INTRODUCTION

Algae constitute an important group of soil microflora. They play a crucial role in fertility of soil. Particularly Cyanophyceae members are known to play an important role in the nitrogen economy of soils. Algae found in the soil have attracted the attention of Phycologists for past few decades (Meeting 1981, Bongale 1985, Prasad 2005, Auti and Pingle 2007, Jadhav 2010.) Algal biodiversity of paddey, banana, wheat and sugarcane fields has been well documented (Bongale and Bharati 1980, Santra 1983, Chaporkar and Gangawane 1984, Kolte and Goyal 1985, Kottawar and Pachpande 1986, Nayak et. al. 2001, Patil and Chaugule 2004, Prasad 2005, Auti and Pingle 2006). Brinjal (*Solanum Melongena* L.) is one of the important fruit vegetable crops of India. Review of literature reveals that very rare attention has been paid towards algal flora of Brinjal field. Therefore it has been decided to work on algal flora of Brinjal field.

### MATERIALS AND METHODS

A Brinjal field from Aurangabad tehsil area has been selected for soil algal samples collections. Algal patches were collected from moist places of selected Brinjal field at regular interval from April 2013 to July 2013. Algal samples were collected in sterilized collection bottles. Collected algal samples were brought to the laboratory and observed thoroughly under research microscope and identified with the help of standard literature of algae.

### RESULTS AND DISCUSSION

A total of 21 species under 14 genera of algae belonged to Chlorophyceae, Bacillariophyceae and Cyanophyceae, were identified and recorded from Brinjal field of Aurangabad tehsil area. Of these 2 species under 2 genera belonged to Chlorophyceae, 3 species under 3 genera belonged to Bacillariophyceae and 16 species under 9 genera belonged to Cyanophyceae (Table 1.).

Cyanophycean algal forms were found dominant. Bongale and Bharati (1984), Chaporkar and Gangawane (1984), Kottawar and Pachpande (1986), Auti and Pingle (2006) and Jadhav (2010) reported dominance of Cyanophycean algae in soils of different crop fields.

Classwise percentage contribution study of algae reveals that highest contribution was of Cyanophyceae (76.19%) followed by Bacillariophyceae (14.28%) and Chlorophyceae (9.52%) (Fig. 1) Algal species of *Aphanothece*, *Phormidium*, *Microcoleus*, *Plectonema*, *Spirulina*, *Oscillatoria*, *Lyngbya*, *Chlorella*, *Nitzschia* and

*Surirella* were found dominant in order of there abundance. During present research work, it has been observed that Cyanophycean algae constitute major part of soil algal population. Out of 9 genera of Cyanophyceae only one genus *Scytonema* is heterocystous and remaining 8 genera are non heterocystous. Unicellular, colonial and filamatus algal forms were recorded during present work. Filmentous algal forms were found in maximum number. Hence, it is concluded that algal flora of Brinjal field is rich and it is found in diverse form. Cyanophyceae members are dominant than Bacillariophyceae and Chlorophyceae.

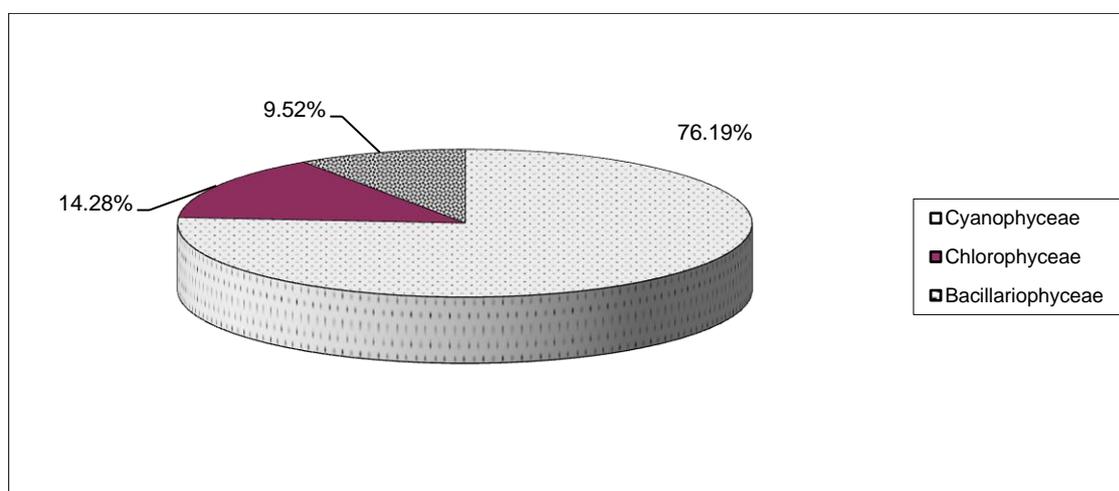


Fig. 1: Classwise percentage contribution of algal of Brinjal field soil

Table 1: Algal flora of Brinjal field soil.

<b>Chlorophyceae</b> <i>Chlorella vulgaris, spirogyra sp.</i>
<b>Bacillariophyceae</b> <i>Navicula cupsidata var ambigua, Nitzschia palea, Surirella sp.</i>
<b>Cyanophyceae</b> <i>Chroococcus turgidus, Aphanothece nidulans, Spirulina gidenta, Spirulina major, Oscillatoria princes, Phormidium jadinianum, Phormidium jenkelianum, Phormidium molle, Phormidium truncicola, Phormidium usterii, Lyngbya sp., Microcoleus acutissimus, Microcoleus subtorulosus, Plectonema gracillimum, Plectonema hansgirgi, Scytonema bohneri.</i>

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