



ISOLATION OF SOIL ALGAE FROM THE CULTURED SOIL SAMPLES OF SINA-KOLEGAON DAM OSMANABAD, MAHARASHTRA

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ABSTRACT

Sina River is about 15 kms away from the Paranda townof Osmanabad district in the Marathwada region of Maharashtra. The water body has good number of fishes, aquatic animals and mostly consists of the members of Family Cyperaceae and Poaceae,there are also a good number of plants of Nymphaea,and they all give a beautiful view to dam area. The present paper deals with the study of algal biodiversity from the cultured soil samples of Sina-Kolegaon dam during January 2009 to December 2009.A total of 167 taxa under 51 genera were encountered.

Key words: Isolation, algae, soil culture,Sina- Kolegaon

Introduction

India has a very rich and diversified algal flora.Biodiversity of algae from different aquatic habitats were extensively studied in India by various workers. In the present century great advances have been made in the investigation of fresh water algae,marine algae ,atmospheric micro algae but very few workers Marathe (1967,1969) ,Patel (1973) ,Bhoge and Goyal (1985) and Ragothaman (2007) have paid attention on soil algae , to fulfill this lacuna present investigation was carried out.

Materials and Methods

The soil samples were collected from the bank of the dam area. The dried soil samples were collected in polythene bags in January 2009. The soil samples were taken from surface to the depth of 5cms. All the necessary precautions were taken while collecting the samples. Each soil sample was thoroughly mixed in the laboratory. Two grams of soil from each sample was used for preparing the cultures. Filtered dam water was used as culture media. Dam water was added to the cultures whenever it was necessary. The specimen bottles of 250-500cc capacity were used for the cultures. These cultures were maintained in a well lighted window in the laboratory. The algae from these cultures were examined after three weeks and then preserved for the further study. The soil of the dam area is black clayey. The pH of the filtered dam water (culture medium) was determined by digital pH.meter

Result and Discussion

The pH of the culture medium ranges between 8.50 to 9.5 (-10). It was found that algae appeared in all the cultures within 25-30 days after inoculation. After observations of these collections it was found that a total of 167 taxa under 51 genera were identified, of these 58 taxa under 18 genera were belonged to Chlorophyceae, 81 taxa under 20 genera were belonged to Cyanophyceae, 11 taxa under 03 genera were belonged to Euglenophyceae and 17 taxa under 10 genera were belonged to Bascillariophyceae (Table 1). The members of Cyanophyceae were dominant and followed by Chlorophyceae.

Conclusion

The laboratory temperature, sunlight, pH, and also as the filtered water from dam was added after a month or so, all these probably suited favorably for the better growth of algae in soil cultures. The algae growing in cultures have little competition in growth among themselves, it favors in the growth of algae. Due to limited area and noninterference of any external factors, so that a taxon may grow well in soil cultures. Soil samples represented only a very small part of the soil of the dam so that algae present in the soils grew well upon a certain period. Animals feeding on the algae were totally absent in the cultures as the water added to the cultures was filtered so that even microscopic animals were absent in the cultures. In this respect the algae in the cultures

were more safe. The results were agreed with Ashtekar (1981), Kottawar and Panchpande (1983), Marathe, K.V. (1967 and 1969).

List of algal forms isolated from the cultured soil samples

Chlorophyceae		Euglenophyceae		Bacillariophyceae		Cyanophyceae	
Genus	species	Genus	species	Genus	species	Genus	species
18	58	3	11	10	17	20	81

Chlorophyceae : *Gloeocystis ampla*, *Gloeocystis vesiculosa*, *Stigeoclonium tenue*, *Protooccus viridis*, *Oedogonium areolatum*, *Oedogonium gunnii*, *Oedogonium inconspicuum*, *Oedogonium pisanum*, *Characium ambiguum*, *Pediastrum boryanum*, *Pediastrum integrum* var. *scutum*, *Pediastrum obtusum*, *Pediastrum tetras*, *Tetraedron caudatum*, *Tetraedron minimum*, *Tetraedron quadratum*, *Tetraedron trigonum*, *Oocystis pusilla*, *Coelastrum microporum*, *Crucigenia lauterbornii*, *Crucinia tetrapedia*, *Scenedesmus acutiformis*, *Scenedesmus armatus*, *Scenedesmus bijugatus*, *Scenedesmus dimorphus*, *Scenedesmus quadricauda*, *Mougeotia floridana*, *Mougeotia quadrangulata*, *Mougeotia scalaris*, *Zygnemacyanosporum*, *Zygnemaczurdae*, *Spirogyra fluvialis*, *Spirogyra micropunctata*, *Closterium acicularae*, *Closterium cornu*, *Closterium leibleinii*, *Closterium parvulum*, *Closterium tumidulum*, *Euastrum pinulosum*, *Cosmarium angulosum*, *Cosmarium angulosum* var. *concinnum*, *Cosmarium contractum*, *Cosmarium garrolense*, *Cosmarium granatum* var. *delpontii*, *Cosmarium impressulum*, *Cosmarium incavatum*, *Cosmarium leave*, *Cosmarium leave* var. *acervatum*, *Cosmarium leave* var. *octangularae*, *Cosmarium pseudopyramidatum*, *Cosmarium repandum*, *Cosmarium subpressulum*, *Cosmarium tetragonum*, *Cosmarium undulatum*, *Cosmarium venustum*, *Cosmarium venustum* var. *basichondrum*, *Staurastrum muticum*, *Staurastrum quebecense*,

EUGLENOPHYCEAE: *Euglena acus*, *Euglena convoluta*, *Euglena gracilis*, *Phacus anacoelus*, *Phacus carinatus*, *Phacus helicoides*, *Phacus onyx*, *Trachelomonas allia*, *Trachelomonas dybowskii*, *Trachelomonas robusta*, *Trachelomonas volvocina*.

BACILLARIOPHYCEAE : *Cyclotellameneghiniana*, *Fragillariaintermedia*,
Cocconiesplacentula, *Gyrosigma scalpoides*, *Caloneissilicula*, *Neidium longiceps*,
Neviculapupula, *Neviculamicrocephala*, *Neviulagastrum*, *Neviculafulva*, *Pinnulaiabrevicostata*,
Pinnulariadolosa, *Pinnularialegumen*, *Pinnulariamesolepta*, *Cymbella ventricosa*,
Nitzschia closterium, *Nitzschiaobusta*.

CYANOPHYCEAE : *Chroococcus limniticus*, *Chroococcus pallidus*,
Chroococcus schizodermaticus, *Gloeocapsa compacta*, *Gloeocapsa murlis*,
Gloeocapsa polydematica, *Gloeocapsa stegeophila*, *Gloeothece samoensis*, *Aphanocapsa bifurcata*,
Aphanocapsa grevillei, *Aphanothecebullosa*, *Aphanothececastagnei*, *Aphanothecepellida*,
Aphanothece nageli, *Merimopaedia tenuissima*, *Arthrospiraspirulinoides*,
Spirulina major, *Spirulina princeps*, *Oscillatoria agardhi*, *Oscillatoria amoena*, *Oscillatoria*
amphibia, *Oscillatoria anguina*, *Oscillatoria animalis*, *Oscillatoria geitleriana*,
Oscillatoria irrigua, *Oscillatoria okeni*, *Oscillatoria princeps*, *Oscillatoria proboscidea*,
Oscillatoria quadripunctuata, *Oscillatoria sancta*, *Oscillatoria splendida*, *Oscillatoria subbrevis*,
Oscillatoria tenuis, *Phormidium ambiguum*, *Phormidium bigranulatum*, *Phormidium corium*,
Phormidium crustaceum, *Phormidium mucicola*, *Phormidium mole*,
Phormidium pachydermaticum, *Phormidium fragile*, *Phormidium foveolarum*,
Phormidium dimorphum, *Phormidium microtomum*, *Phormidium laminosum*,
Phormidium tenue, *Phormidium munterii*, *Phormidium rubrotericola*, *Lyngbya aeruginosa*,
Lyngbya aestuarii, *Lyngbya birgei*, *Lyngbya ceylanica*, *Lyngbya dendrobia*, *Lyngbya hieronymusii*,
Lyngbya limnetica, *Lyngbya martensiana*, *Lyngbya pusilla*, *Lyngbya spiralis*, *Lyngbya truncicola*,
Schizothrix fresii, *Schizothrix vaginata*, *Microcoleus lacustris*, *Nostoc calcicola*,
Nostoc commune, *Nostoc punctiforme*, *Nostoc muscorum*,
Nostoc microscopicum, *Nostoc linckia*, *Nostoc piscinale*, *Anabaena fertilissima*, *Anabaena torulosa*,
Aulosira fertilissima, *Aulosira prolifica*, *Gloeotrichia raciborskii* var. *longispora*,
Cylindrospermum sphaerica, *Cylindrospermum stagnale*, *Cylindrospermum muscicola*,
Microcoleus setonoplastes, *Microcoleus lacustris*, *Calothrix fusca*

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