

Algal Farming - A sustainable agriculture for food, feed and fertiliser

Pushpa Srivastava

Algal Biotechnological Laboratory

Department of Botany, University of Rajasthan, Jaipur - 302 04

ABSTRACT

Algal farming is a novel source of food, feed and fertiliser in contrast to conventional agriculture. Algal biomass rich in all the required nutrients for human body acts as food as well as medicine in the treatment of a number of therapeutic and chemopreventive diseases. It is the best food for ruminants and nonruminants both without any hazardous, toxic or antinutritional properties. Besides, algae being a natural food source for fish, when added increased body weight and imparted brilliant colour to the ornamental fishes and carps. Algae were equally beneficial to animals like pigs and frog being in use as food. One of the most common use of algae is for poultry birds, which enhanced body weight, quality egg production and hatchability, fertility and yolk colour. One of the oldest use of algae in India and abroad is that of algal biofertilisers. It enhanced the crop yield of all the cereals, especially in case of rice crops. Even saline algae as biofertiliser has an edge over other sources of biofertilisers.

Indian Hydrobiology, 13(1) : 13 - 18, 2010

Additions to the Volvocales of Maharashtra

A.K. Jawale, D.A. Kumawat and N.A. Chaudhari

P.G. Research Centre, Department of Botany

Dhanaji Nana Mahavidyalaya, Faizpur - 425 503, Dist. Jalgaon, Maharashtra

ABSTRACT

The paper deals with an account of 15 taxa of Volvocales, Chlorophyceae, collected from fresh water from Jalgaon and Dhule districts, Maharashtra. All taxa are reported for the first time from Maharashtra. Of these, *Sphaerollopsis bistigmata* is new to science.

Comparative studies on the WSSV infected wild and cultured *Penaeus monodon* (Fab) along the South East Coast of India

N. Chandrakala¹ and M. Ayyavoo²

^{*1}Dept. of Zoology, K.N.G.A. College for Women (Autonomous)
Thanjavur - 613 007, Tamilnadu, India

²Periyar Maniyammai University, Vallam, Thanjavur - 613 005, Tamilnadu, India

^{*}Corresponding author e-mail - nc_kala@hotmail.com

ABSTRACT

The survey on the detection of pathogenic virus revealed that the sample collected along the South East Coast of India revealed the Nagapattinam Coastal region showed the highest percentage of (87.05%) sample and was followed by Nagore coastal region (83.03%). But in cultured *P.monodon*, Mallipattinam region showed the highest percentage of infected sample (97.31%) and was followed by Nagapattinam (91.2%). Infected gill of wild and cultured *P. monodon* revealed 650 bp amplification product after single step PCR and 300 bp amplification product after nested PCR.

On the genus *Dichothrix* Zanardini (Family Rivulariaceae) from Dhule, North Maharashtra

Neelima Patil and Leela T. Deore

P.G. Department of Botany

Z.B. Patil College, Dhule - 424 002, Maharashtra

ABSTRACT

The present paper deals with an account of three species of genus *Dichothrix* Zanardini namely *D. baueriana* (Grun.) Born. et. Flah., *D. gypsophila* (Kuetz) Born. et. Flah., *D. Compacta* Born. et. Flah. described from district Dhule of North Maharashtra. The taxa have been discussed w.r.t. habitat & morphological details. The algae are for the 1st time reported from North Maharashtra region.

Scytonemataceae Rabenhorst (Order Nostocales) from Khandesh region, Maharashtra

Neelima Patil and Leela T. Deore

P.G. Department of Botany

Z.B. Patil College, Dhule - 424 002, Maharashtra

ABSTRACT

The present communication deals with the study of blue green algae belonging to family Scytonemataceae from Khandesh region. The survey showed presence of four genera and nine species i.e. *Plectonema* (01), *Camptylonemopsis* (01), *Scytonema* (06) and *Tolypothrix* (01). Morphology and ecology of these taxa have been thoroughly discussed. Out of the nine taxa *Camptylonemopsis lahorensis* (Ghose) Desikachary, *Scytonema burmanicum* Skuja, & *S.malaviyaensis* Bharadwaja are seem to be rare and reported for the first time from this area.

Cyanophyceae of Western Uttar Pradesh, India

*P.K. Misra, Santosh Kumar Tripathi, S. Kishore, S.K. Singh and
Rajveer Singh Chauhan*

Phycology Research Laboratory

Department of Botany, University of Lucknow, Lucknow - 226 007, India

ABSTRACT

The present paper deals with 27 Cyanophycean taxa from different aquatic habitats of Western Uttar Pradesh, *i.e.* Saharanpur, Meerut and Ghaziabad districts. Geographically district Saharanpur is located between (29°, 58', N latitude and 77°, 32', E longitude), Meerut is located between (28°, 98' N latitude and 77°, 07' E longitude) and Ghaziabad is located between (22°, 24' N latitude and 77°, 25' E longitude). The genera are represented by *Microcystis* Kuetz. (3 spp.), *Chroococcus* Naegeli (3 spp.), *Aphanothece* Naegeli (2 spp.), *Merismopedia* Meyen (2 spp.), *Gleocapsa* (Kuetz) Elenkin (1 sp.), *Coelosphaerium* Naegeli (1 sp.), *Oscillatoria* Vaucher (4 spp.), *Lyngbya* Smith (2 spp.), *Spirulina* Turpin (3 spp.), *Arthospira* Stizenberger (2 spp.), *Anabaena* Bory (2 spp.), *Nodularia* Mertens (1 sp.), *Gloeotrachia* Agardh (1 sp.). All these taxa are being reported for the first time from the study area.

Taxonomical Enumeration of Chroococcales from Rice Field Soils of Northern Orissa, India

*H.S. Dey and A.K. Bastia**

Department of Botany

North Orissa University, Baripada - 757 003, Orissa, India

ABSTRACT

Chroococcales, a group of unicellular and colonial cyanobacterial forms, are distributed in various ecological habitats of the world. In the present study an attempt has been made for systematic enumeration of some chroococcalean cyanobacteria from rice field soils of northern Orissa. The samples were collected from rice field soils of Mayurbhanj district, Orissa during 2006 to 2009 both in rabi and kharif seasons. During our field survey altogether 22 species belonging to 11 genera were encountered. Out of these 6 species belonged to genus *Microcystis*, 4 to *Aphanothece*, 2 species each to *Aphanocapsa*, *Gloeocapsa*, *Dactylococcopsis* and 1 species each to *Chroococcus*, *Coelosphaerium*, *Merismopedia*, *Myxosarcina*, *Hydrococcus* and *Gomphosphaeria*. The dominant taxa were *Aphanothece*, *Microcystis*, *Aphanocapsa*, *Gloeocapsa* and *Chroococcus*. *Microcystis robusta* was found to be most dominant species in the region.

Genetic Transformation of *Tolypothrix* sp. MKU 696

G Suresh^a, S. Suguna^{a,b} and S. Shanmugasundaram^{a, b*}

Department of Microbial Technology, Center for Nanotechnology^b,
School of Biological Sciences, Madurai Kamaraj University
Madurai - 625 021, Tamilnadu, India

*Corresponding Author : e-mail : profss@yahoo.com

ABSTRACT

Preparation of a native cyanobacterium for gene cloning will provide an opportunity to improve the strain for industrial use such as production of oil. The present study is a report on the successful transformation of a open rice field filamentous heterocystous cynaobacterium *Tolypothrix* sp. MKU 696.

Comparative studies of Cyanobacteria in freshwater lentic systems of Silicon city, Bangalore, Karnataka

N. Latha and M. Ramachandra Mohan

Lake Management and Water Quality Research Unit

Department of Zoology, Bangalore University, Bangalore - 560 056

ABSTRACT

In the present investigation altogether eight genera of Cyanobacteria namely *Oscillatoria*, *Spirulina*, *Anabaena*, *Nostoc*, *Microcystis*, *Arthrospira*, *Lynbya* and *Gleocapsa* have been recorded in both the waterbody. Among them the percentage of *Oscillatoria* is high.

Bacterial community associated with fish and water from Thippasandra lake of Bangalore, Karnataka and thier antibiotic resistance

N. Latha and M. Ramachandra Mohan

Department of Zoology, Bangalore University, Bangalore - 560 056

ABSTRACT

A bacteriological study of fish and water from Thippasandra lake, Bangalore was conducted. From the analysed fish, *Glossogobius giuris* bacteria belonging to *Pseudomonas*, *Acinetobacter*, *Aeromonas*, *Enterobacteriaceae*, *Micrococcus*, *Bacillus* and *Lactobacillus* were isolated. The group most frequently isolated from fish was *Aeromonas*. In the water, the bacterial groups detected were *Pseudomonas*, *Acinetobacter*, *Aeromonas*, *Enterobacteriaceae*, *Bacillus* and *Flavobacterium*, of which *Pseudomonas* was the most abundant. The numbers of Colony Forming Units per millilitre of water and the susceptibilities/resistances of the isolated strains to antimicrobial substances varied.

Seasonal variation of physico-chemical and bacteriological parameters of Kengeri lake, Bangalore, Karnataka

N. Latha and M. Ramachandra Mohan

Lake Management and Water Quality Research Unit

Department of Zoology, Bangalore University, Bangalore - 560 056

ABSTRACT

Physico-chemical analysis is the prime consideration to assess the quality of water for its best utilization like drinking, irrigation, fisheries and helpful in understanding the complex processes, interaction between the climatic and biological processes in the water. In the present investigation, the study of monthly variation of different physico-chemical and bacteriological characteristics are carried out from January 2004 to December 2004 to assess the water quality of Kengeri lake, situated near Kengeri, Mysore Road, Bangalore City. The physico-chemical parameters studied are pH, temperature, TDS, total hardness, dissolved oxygen, biological oxygen demand, chemical oxygen demand, phosphates, sulphates, nitrates, potassium and chloride, the bacteriological indicators comprised the total coliform and fecal coliform. The study revealed that few physicochemical parameters were within the permissible limit prescribed by WHO while the bacteriological indicator exceeded the limit for bathing water, and also exceeded the null values for drinking water, indicating small scale water pollution from animal and human wastes.

Enumeration of *Escherichia coli* in groundwaters of Mysore city, Karnataka, India

C. Nagalambika, S. Mahadeva Murthy*, T.S. Harsha¹ and Keshava Nireswalia²

Department of Microbiology

Yuvaraja's College, University of Mysore, Mysore - 570 005, Karnataka, India

¹Co-ordinator, Department of Environmental Science

KSOU, Manasagangotri, Mysore - 570 006, Karnataka, India

²Scientist, Central Food Technological Research Institute, Mysore-570 020, Karnataka, India

*Corresponding author : e-mail : smmurthy2025@gmail.com

ABSTRACT

Bacterial pollution of groundwater has become a great problem in these days. Due to use of contaminated drinking water, the population suffers from a variety of waterborne diseases. Coliform organisms are considered as an indicator of fecal pollution. The membrane filter technique for the bacteriological analysis of water is simple, quick and less cumbersome as compared to multiple tube dilution technique. The present paper deals with bacteriological analysis of groundwater in Mysore city by using Membrane filter technique for the period of two years from 2006 to 2008, which revealed that the water samples collected from all the zones, are contaminated with *Escherichia coli*. The results were also confirmed by biochemical analysis.