

Phytoplankton (BGA) Diversity in relation to Physico-chemical properties of River Water

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ABSTRACT

Noon river is highly deteriorated by the Industrial wastes and sewage water of city Orai of Distt. Jalaun (U.P.). In this investigation two sampling sites were made. The physico-chemical and biological variation found during study period (July 2005-March 2006) were studied. In physico-chemical parameters pH, total alkalinity, total hardness, total solids, dissolved oxygen, BOD & chloride are highly variable. Total alkalinity ranged between upto 277-338 (m eq/l), while total hardness ranged between 610-776 (m. eq/l). Chloride also ranged near to total hardness (617-771 m.eq/l). Water quality of river indicated high level of pollution when compared with standards and may be hazardous for near villagers if they consume it. In biological parameters the phytoplankton are of utmost occurrence. The growth of algal flora specially B.G.A. is enhanced due to polluted water. The common cyanobacterial species recorded from the aquatic system of Noon river, Ragauli were *Microcystis flos-aquae*, *Gleocapsa quaternata*, *Aphanocapsa littoralis*, *Merismopedia tenuissima*, *Spirulina major*, *Lyngbya contorta*, *Calothrix marchica*, *Gloeotrichia pisum*, *Cylindrospermum musicola*, *Oscillatoria formosa*, *Nostoc commune*, *Nostoc hatei*, *Chroococcus minutus*, *Phormidium ambiguum*, *Anabaena oscillatorioides* and *Aphanothece microscopica*.

Introduction

Knowledge of ecology of lentic water bodies like ponds, lakes, and reservoir etc. provides an important tool for their scientific management. A few systems require the study of their structure and function. Algal role in oxygenation of water, binding and removal of certain toxic substances are crucial for water quality improvement.

The rapid rise in population and speedy industrialization on a large scale has placed an ever increasing demand on lakes, reservoirs, ponds and rivers for the provision of potable or drinking water, fish production as well as depositories or store houses of wastes and sewage effluents. An interesting aspect of these reservoirs is the drastic change due to seasonal variations resulting in change

in water volume, salt concentration, dissolved substances, gases and organic matters and thereby in plant life.

Aquatic environment supporting hydrophytic vegetation is endowed with luxuriant growth of algae. Considerable amount of work has been done in India about systematic survey, distribution, periodicity and ecology of algae in different habitats (Pandey, 1973; Kumar, *et al.* 1974; Prasad and Saxena, 1980; Mohan, *et al.* 1989).

Study Site

Noon River flows near village Ragauli 10 km. away from Orai City (Head quarter of Distt. Jalaun, U.P.) on 25 N.H. (Kanpur-Jhansi), lying between 26°27' & 25° 56' north latitude and 79°52' & 78°56' east longitude. Many large scale industries namely Urbashi (cloth

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