Comparative Studies on Phytoplanktonic Community Structure of River Yamuna and Western Yamuna Canal in Relation to Industrial Pollution in Yamunanagar, Haryana

Priyanka Malhotra[1], Girish Chopra[2], Anita Bhatnagar[3]

Department of Zoology, Kurukshetra University, Kurukshetra- 136119, INDIA

ABSTRACT

Phytoplankton contribute significant role in aquatic ecosystem as their abundance is directly related with river's water quality.The present studies deals with the phytoplanktonic population of river Yamuna and Western Yamuna Canal and the effect of industrial pollution on their distribution and diversity. Three sampling stations were selected on river Yamuna and western Yamuna canal as pre-effluent point, point of influx of effluents and post effluent point (few Kms downstream from point of influx of effluents).Thirtyfive taxa from river Yamuna and sixteen taxa from western Yamuna canal have been observed belonging to Chlorophyceae, Bacillariophyceae, Cyanophyceae andDinophyceae. Among Chlorophyceae*Chlorella*, *Ulothrix*, *Dactyloccous*, *Netrium* and *Volvox* were the common taxa observed at both river Yamuna and Western Yamuna canal. Among Bacillariophyceae and Cyanophyceae*Surirella, Navicula, Synedra, Oscillatoria and Synechococcus*were the common taxa at both the selected sites. However they all showed a decreasing trend at the point of influx of pollution from pre-effluent point but in case of western Yamuna canal their number further goes down at post effluent point. In river Yamuna only taxon*Dactyloccous* showed a decreasing trend at post effluent point. *Cladophora, Ankitodes, Chaetophora, Diatoma, Spirulina* and *Nostoc*were the taxa found only in western Yamuna canal but not in river Yamuna. The abundance, distribution, total population, group percentage and species diversity were studied andcorrelated with pollution indicating water quality characteristics. Species diversity values indicated a decrease from pre-effluent point to effluent discharge channel and post effluent discharge point in river Yamuna and western Yamuna canal.