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## Biomonitoring of selected freshwater bodies using diatoms as ecological indicators

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Lakes supply water for irrigation, drinking, fisheries, etc., and thus have significant economic and recreational value. In limnetic ecosystem, water quality is influenced by physical, chemical and biological factors. Freshwater communities are very much sensitive to environmental variables. The algal flora constitutes a vital link in the food chain and its productivity depends on water quality at a given time. Diatoms, in particular are of utmost importance, as they are the potential indicators of water quality due to their sensitivity and strong response to many physical, chemical and biological changes. Occurrence of diatom communities in selected fresh water bodies of Goa along with physico-chemical parameters have been studied for a period of two consecutive years and the data has been used in bio-monitoring. Using OMNIDIA GB 5.3 software, Louis Leclercq IDSE/5 index is derived and the level of degradation due to organic and antropogenic pollution has been found out. Findings showed seasonal variations in physico chemical parameters and diatom population. The diversity of diatoms was considerably high in Syngenta, Lotus and Curtorim lakes as compared to Khandola pond. *Gomphonema parabolium*, *Navicula halophila*, *Navicula microcephala*, *Navicula mutica* were indicating organic pollution in all water bodies. *Amphora ovalis*, *Stauroneis phoenicenteron*, *Synedra ulna* were indicating antropogenic pollution at Syngenta, Lotus and Curtorim lakes while *Navicula rhynococephala* was indicating antropogenic pollution at Khandola pond. Biomonitoring has been proven to be necessary and hence the importance of diatoms as ecological indicators of water quality has been stressed.

### Biography

R U Sawaiker is a Research Scholar in the Department of Botany, Goa University, India on Limnological studies of fresh water bodies in Goa. During her research, she has analyzed water samples for physico-chemical and biological parameters from four selected fresh water bodies for a period of two years following standard protocols. It was observed that physical and chemical variables tested during study, were possible drivers of diatom communities. This particular paper deals with use of modern software like OMNIDA GB 5.3 to derive Louis Leclercq IDSE/5 index. Diatoms encountered during study were found to be most powerful ecological indicators of degradation levels of selected water bodies. They are right tools for biomonitoring, as indicator value of diatoms is well accepted and highly used across the continents. It is an ideal means by which progress towards integrated water resources management can be monitored.

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