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THE PERIODICITY OF THE PHYTOPLANKTON IN THE NEGOMBO LAGOON

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Physico-chemical factors and their effects on phytoplankton periodicity in the Negombo Lagoon were studied over a period of 6 months as from February 1982. Samples were collected once a month from 4 sites in the lagoon. Three sites were located on the west side (i.e sites 1, 2 and 3) and the other was on the eastern side (site 4) in close proximity to the Free Trade Zone at Katunayake.

Physico-chemical factors and phytoplankton periodicity varied with the prevailing weather conditions. Rainfall had a direct bearing on salinity. With rains, salinity dropped to 0.5 ‰ S, during the dry period values ranged from 21-29 ‰ S. These values compared well with previous observations.[1] Site 4 was more eutrophic when rains prevailed and could have been due to a freshwater influx *via* the Dandagamu Oya and Jaela.

The productive months were May-July 1982 when counts of 268×10^3 — $1\ 120\times10^3$ cells/l substantiated with chlorophyll data were recorded.

Dinoflagellates dominated when the waters were warm, highly saline and depleted of nutrients. The diatoms seemed to favour cooler waters with high salinities and nutrient levels.

Asterionella japonica, *Coscinodiscus* sp. *Navicula* sp. *Pleurosigma* sp., and *Grammatophora* sp. dominated the flora throughout the period of sampling.

Asterionella japonica, a marine species dominated the water in close proximity to the estuary, whilst *Grammatophora* sp. favoured less saline waters and was dominant at site 4.

BOD_5, COD and DO levels indicated mild pollution when dry weather prevailed. With rains BOD_5 increased from 3 mg/l to 6.63 mg/l indicating fairly high levels of pollution at sites 2, 3 and 4, which were highly urbanized and subjected to domestic as well as industrial waste loading.

Reference

1 De Silva, S. S. *and* Silva, E. I. L. (1979). *Bull. Fish. Res. Stn., Sri Lanka*, **29**, 63-78.