KEY WORDS
Kuttanad, hydrography, pollution, wetlands

Abstract

Wetlands are important ecosystems since they are the preferred habitats for resident as well as migratory fish and shellfish species, and Kuttanad the unique wetland of Kerala is no exception. It supports about 1 million people. The core area of Kuttanad is constituted by two deltaic formations which are formed by 4 riverine systems namely, Achencoil, Pampa, Manimala and Meenachil. The human, animal and agricultural wastes and industrial effluents which are emptied into the aquatic system is changing Kuttanad into a poison bowl.

The present study, carried out for a period of 12 months concentrated on the hydrography, plankton and fisheries. Study sites for the present investigation were fixed along the entire stretch of Kuttanad covering different agroecological zones like Vaikom region, North Kuttanad, Kayal land, Lower Kuttanad, Upper Kuttanad and Purakkad Kari. Three sites were fixed at Vaikom region (Two from the north side of Thanneermukkom bund and one from just south of bund), one each from north Kuttanad region, Kayal area, Lower Kuttanad, Upper Kuttanad and Kari land.

The hydrographic data were collected regularly from eight stations. Various hydrological parameters like atmospheric temperature, water temperature, extinction coefficient, hydrogen ion concentration, salinity, dissolved oxygen concentration and nutrients like nitrite–nitrogen, nitrate–nitrogen, phosphate–phosphorous and silicate–silicon were recorded and analysed.

Extinction coefficient, salinity and phosphate–phosphorous showed a significant variation between stations and months while hydrogen ion concentration, dissolved oxygen and nitrite–nitrogen showed significant variation only between stations. Atmospheric temperature, water temperature nitrate–nitrogen and silicate–silica showed no significant
variation between the stations in Kuttanad and it only varied significantly between months.

Monthly percentage composition of phytoplanktons and zooplanktons were analysed. Phytoplankton groups identified in the present study were Chlorophyceae, Bacillariophyceae, Myxophyceae and Euglenophyceae. Major zooplankton groups collected were Copepoda, Rotifera Cladocera and Protozoa. Rotifera formed the prominent group in all the stations. Data regarding the relative percentage composition, seasonal abundance, distribution and relative percentage abundance of fishes and crustaceans were recorded and analysed. 40 species of fishes and 6 species of crustaceans were collected from Kuttanad of which 23 species of fishes were prominent in the local markets.

Kuttanad needs an eco-correction to revitalize the aquatic ecosystem and in the light of the present study certain recommendations are also provided in the text.