Abstract

Water is a major part of the aquatic ecosystem that has a great impact on the conservation of aquatic environment and ecological balance. A study was conducted to investigate quality of two river systems in the wet zone of Sri Lanka. The monthly sampling programme covered the catchment of Kelani and Kalu rivers from the foothills of Adam's peak, coastal flood plain upto the estuarine outlets. Sixteen Physico-Chemical Parameters and a bacteriological parameter were studied since January 1994 for two and a half-year. An effort was also made to collect some information on persistence pesticide residues in aquatic organisms inhabiting these two river systems.

The results revealed that catchment waters were of good quality and recorded very low turbidity levels low dissolved salts and nutrients. The saturation of Dissolved Oxygen kept the Bio- Chemical Oxygen Demand low even during the pilgrimage season. The middle courses of both rivers contained significantly high levels of nutrients leaching from agro chemical use in the plantation sector. The enrichment of nutrients in the reservoirs has resulted in the presence of blue green algal blooms.

The contamination of water in the middle course of two rivers at locations downstream of townships was detected due to anthropogenic activities and improper disposal of wastes. Microbiological results revealed the presence of coliform bacteria throughout both river systems. High levels of Bio- Chemical Demand were recorded in the coastal flood plains. The estimated loads of pollution indicated that Kalu River carried more pollution than Kelani River. The Calcium and Magnesium concentrations in the samples gave some indication of soil erosion. The values recorded for Keleni River for two years were more or less similar. However, Kalu River released significantly high levels of those elements to the coastal region.

Results of pesticides analysis also indicated the presence of some persistence residues in fish samples. Fish inhabiting Kalu River contained higher levels of residues of DDT and DDE. than in the samples collected from Kelani River. The levels were not threatening to the human health at present. In conclusion the river Kalu transported more pollution load than Kelani River during the period of this study.