ABSTRACT

Ecological study of tehsil Vehari with interaction of physiochemical parameters with special reference to phytoplankton was done. This is the first work done in that specific area. Vehari City is the capital of district Vehari. In 1976 Vehari district was formed which consisted of 3 tehsil Vehari, Burewala and Mailsi. Physiochemical analysis of water taken on seasonal basis from sampling point that were being consumed by phytoplankton. Total 13 physiochemical parameters of water were studied like Temperature, pH, Electrical Conductivity (EC), Humidity, Total dissolved solids (TDS), Carbonates, Bicarbonates, Chloride, Sulphates, Calcium, Magnesium, Sodium, Potassium, Phosphates, Nitrates. Altogether 71 phytoplankton species belonging to 27 Genera, 16 Families, 6 Order, 5 Classes, 4 Phyla were observed. Class Bascillariophyceae found to be most abundant including 39 species which were belonged to 18 genra, Volvocophyceae included 5 genra containing 15 species, Desmidiophyceae includes 2 genra and 8 species while Euglenophyceae and Chroocophyceae included only one genra, 6 and 3 species respectively. The present research work showed the role of physiochemical factors in the population of phytoplankton i.e. Temperature ranges from 24°C to 31°C. pH showed the alkaline nature while EC showed a narrow range. The amount of CO_3^{-2}, HCO_3^{-1}, Ca^{+2} and Mg^{+2} depicted that Vehari has hard Water quality. Temperature, Nitrates and Phophates showed a positive correlation to phytoplankton families while pH, EC, TDS, Carbonates, Bicarbonates, Sodium, Potassium, Sulphates, Chlorides, Calcium, Magnessium, showed negative correlation.