

Physico-Chemical and Phytoplankton Analyses of Kazaure Dam, Jigawa State, Nigeria

Authors : Aminu Musa Muhammad, Muhammad Kabiru Abubakar

Abstract : Monthly changes in Phytoplankton periodicity, nutrient levels, temperature, pH, suspended solids, dissolved solids, conductivity, dissolved oxygen and biochemical oxygen demand of Kazaure Dam, Jigawa State, Nigeria were studied for a period of six months (July-Dec.-2011). Physico-chemical result showed that temperature and pH ranged between 17-25°C and 5.5-7.5, while dissolved solids and suspended solids ranged between 95-155 mg/L and 0.13-112 mg/L respectively. Dissolved oxygen (DO), Biochemical oxygen demand (BOD), Chemical oxygen demand (COD), conductivity, nitrate, phosphate and sulphate ion concentrations were within the ranges of 3.5-3.6 mg/L, 4.8-7.2 mg/L, 8.10-12.30 mg/L, 21-58 µΩ/cm, 0.2-8.1 mg/L, 2.4-18.1 mg/L, and 1.22-15.60 mg/L respectively. A total of 4514 Org/L phytoplankton were recorded, of which four classes of algae were identified. These comprised of Chlorophyta (44.1%), Cyanophyta (30.62%), Bacillariophyta (3.2%), Euglenophyta (32.1%). Descriptive statistics of the result showed that phytoplankton count varied with variation of physico-chemical parameters at 5% level during the study period. The abundance and distribution of the algae varied with the variation in the physico-chemical parameters. Pearson correlation showed that temperature and nutrients were significantly correlated with phytoplankton, while DO, sulphate and pH were insignificantly correlated, while there was no significant correlation with COD and phytoplankton.

Keywords : correlation, phytoplankton, physico chemical, kazaure dam

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