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Effects of Some Hydrological Factors on Zooplankton Biodiversity in Agaie/Lapai
Dam Reservoir of Niger State, Nigeria

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Abstract

The effects of some hydrological factors (rainfall, inflow and depth of water) on phytoplankton biodiversity in Lapai Dam Reservoir (situated at 9° 39' N latitudes and 6° 33' E longitudes, located near Bakaje at the confluence of the Jatau River) were studied by monthly samplings and measurements. Samples of zooplankton were collected from the water body from five chosen Stations along the River using plankton net of 30cm diameter and 50µm mesh size which was hauled vertically. Four groups of zooplankton were identified from the Reservoir as follows: Cladocera, Copepoda, Rotifera and Ostracoda. Rotifera dominated the groups with 2.24 and 2.23 Shannon index for both wet and dry season respectively, the least was the Ostracoda group. Margalef's species richness for the taxa revealed Rotifera had 1.74 leading the remaining species. For the equitability distribution of the taxa in the water body Cladocera group were evenly spread in the reservoir with the value of 0.98 and the least was 0.91 for Copepoda. The hydrological factor that had inverse correlation with Zooplankton was rainfall but there was an increase in the abundance of Zooplankton with increased inflow from the tributaries into the Reservoir. Water level (depth) had positively weak correlation with the Zooplankton.

Key words: Hydrological factors, Hauling, Plankton, Species richness, Equitability.