ABSTRACT

The physico-chemical properties and phytoplankton community structure of Lake Solai were investigated between April 2018 and August 2018. Water temperature, conductivity (EC), dissolved oxygen (DO) content and pH were measured in-situ. Nutrient content and phytoplankton biomass were determined in the laboratory. All the water properties; temperature (mean: 23.19 ± 0.13 °C), DO (mean: 6.35 ± 0.03 mgL^{-1}), total suspended solids (TSS) (mean: 220.85 ± 8.11 mg L^{-1}), turbidity (mean: 702.51 ± 9.40 NTU), nitrate nitrogen (NO_3-N) (mean: 0.75 ± 0.02 mg L^{-1})total phosphorus (TP) (mean: 20.57 ± 0.51 mg L^{-1}) showed significant temporal variation ($P<0.001$). Five groups of phytoplankton were identified; Cyanobacteria, was the most dominant with 14 species, Chlorophyta (11 species), Bacillariophyta (8 species), Euglenophyta (3 Species) and Chrysophyta (2 species).The high TP concentration makes it a eutrophic system. The high turbidity create a poor light climate that select against a number of biota that could inhabit the lake allowing for few algal organisms, especially the Cyanobacteria that have the potential to exploit this niche and establish potentially harmful algal blooms. The DO levels were within the permissible limits recommended for fisheries and aquatic life. Hence, the possibility of introducing salt tolerant fish should be explored.

Keywords
Physico-chemical properties

Lake Solai

Eutrophic

Turbidity

Biomass