

Current status of algae biodiversity and succession in North Lake of Hutan Simpan Ayer Hitam, Puchong

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Abstract

This study presents data on the diversity and succession of algae in North Lake, Hutan Simpan Air Hitam (HSAH) as well as its relationship with chemical and physical factors. Algae samples were collected weekly from three different sites in North Lake started from October 2015 until January 2016 (15 weeks). Physico-chemical parameters such as pH, temperature, light, dissolved oxygen (DO), total dissolved solid (TDS) and nutrients statuses were measured simultaneously. A total of 18 species were recorded comprising Bacillariophyta (3 species), Charophyta (4 species), Chlorophyta (4 species), Cyanobacteria (2 species), Dinophyta (4 species), and Ochrophyta (1 species). The highest total density of algal cells were phyla Dinophyta (24%) followed by Charophyta (22%), Bacillariophyta (19%), Ochrophyta (18%), Cyanophyta (10%) and Chlorophyta (7%). *Dinobryon sertularia* was the most frequent species found throughout the 15 weeks of sampling and became dominant in week 3, 4, 6, 10 and 13; whereas *Staurastrum* sp. achieved the highest algal counts in week 1 and 2. *Gonyaulax apiculata* was dominant during week 5, 8, 14 and 15. The Shannon-Weaver diversity Index, H' classified North Lake as being moderately polluted, whereas the pH values indicates that the lake was quite acidic by having pH lower than 7 and ranged between 4.28 and 5.57. The occurrence of some phytoplankton groups may be influenced by pH, as has been found in acidic natural lakes and also in extremely acidic lakes around the world. In addition, other physico-chemical factors may also give impact on algae structure and community.

Keywords: Acidic lake, Hutan Simpan Ayer Hitam, algae, biodiversity, succession.

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