DIVERSITY AND COMPOSITION OF PHYTOPLANKTON FOR WATER QUALITY ANALYSIS IN THE ALOO RIVER, SIDOARJO

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ABSTRACT

The study aimed are to find out the diversity, species composition and community structure of phytoplankton and status of organic pollution in Aloo river, Sidoarjo. Samples of phytoplankton and water were collected from four stations during May to June 2010. The water samples were analyzed to measure the physical (temperature, TSS, TDS) and chemical (DO, BOD, COD, phosphate, nitrate) quality parameters. The research were collected 30 – 41 species of phytoplankton, with abundance ranging from 2.552.450 – 5.000.000 individu/ m$^3$ and dominated by Oscillatoria tenuis, Oscillatoria sp1 dan Oscillatoria sp2 species. The Shannon-Wiener Diversity index measurement were ranged from 0.6 to 1.46, while the Evenness index ranged from 0.23 – 0.49 and dominance index ranged from 0.26 – 0.73. Based on those three indices, the stability of phytoplankton communities in Aloo river is relatively low. Pollution Index (IP) showed that there is relatively low level of organic pollution in Aloo river, which ranged 1.65 – 2.20.

Keywords: Phytoplankton, Community Structure, Pollution Index (PI)