OCCURRENCE OF HARMFUL ALGAE BLOOM (HAB) AND EFFECTS OF AQUACULTURE ACTIVITY THAT CAUSES HAB IN SG.SERUSUP, TUARAN

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ABSTRACT

This study was carried out to determine the occurrence of Harmful Algae Bloom (HAB) and the effects of aquaculture activities on HAB species in Sungai Serusup, Tuaran. Weekly and daily sampling was carried out. During the weekly sampling, water samples were taken at two stations from three different depths (2m , 4m, 6m) for seven consecutive weeks from 24th of September to 5th of November 2005 to study the distribution at different depths. For daily sampling, samples were taken at three selected stations from 5th December to 9th December 2005. Station 3 represents the control station which is situated approximately 4km away from the hatchery. This study consist of in- situ and ex-situ analyses. In- situ analyses comprises of collecting water samples and measurement of physical parameters such as salinity, temperature, pH and transparency. Ex-situ analyses included enumeration of phytoplankton. Cell counting was done in the laboratory. There were 5 HAB species identified present in the waters of Sg.Serusup, namely *Chaetoceros* sp., *Ceratium* sp., *Prorocentrum* sp., *Protoperidinium* sp., and *Pyrodinium bahamense*. On weekly sampling method, the density of these HAB species showed significant changes with depth ($p < 0.05$).The number of HAB species decreases when it gets deeper. On daily sampling, density was the highest in the two stations in hatchery compared to station 3(control station). *Pyrodinium bahamense* did not occur in Station 3. Density of HAB species were highest in Station 1 and 2 for daily and weekly sampling, because they were situated in the hatchery and high nutrient inflow due to feeding process. Comparison of physical parameters in all sampled stations showed that temperature has significant impact on the density of HAB species ($p = 0.011$).