BANDING PATTERNS AND GROWTH OF *Porites* CORALS IN PORT DICKSON

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Lihat Sebelah

BANDING PATTERNS AND GROWTH OF *Porites* CORALS IN PORT DICKSON

By

LEE SEE LUNG

Research Report submitted in partial fulfillment of

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FINAL YEAR PROJECT REPORT VERIFICATION

PENGAKUAN DAN PENGESAHAN LAPORAN

It is hereby declared and verified that this project report titled Banding Pattern and Growth of *Porites* Corals in Port Dickson by Lee See Lung, Uk 31319 have been examined and all errors identified have been corrected. This report is submitted to the School of Marine and Environmental Sciences as partial fulfilment towards obtaining the Bachelor of Science (Marine Science) from School of Marine and Environmental Sciences, Universiti Malaysia Terengganu.

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DECLARATION

It is hereby declared and verified that this project report titled Banding Pattern and Growth of Porites Corals in Port Dickson by Lee See Lung, Uk 31319 have been examined and all errors identified have been corrected. This report is submitted to the School of Marine and Environmental Sciences as partial fulfilment towards obtaining the Bachelor of Science (Marine Science) from School of Marine and Environmental Sciences, Universiti Malaysia Terengganu.

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ABSTRACT

Annual density banding pattern in massive *Porites* corals changes with the differences of environmental condition. Alizarin red dye was used to validate the deposition of skeleton by corals to determine the banding pattern. The banding pattern for *Porites* corals in Port Dickson was validated where the accretion of bright luminescent band started on October. The samples were then calculated for the banding and linear growth of the corals. The breadth of annual luminescent band was measured up to 0.01 cm accuracy for the linear growth rate. The linear extension rate range from 0.95 ± 0.01 cm yr^{-1} to 3.42 ± 0.01 cm yr^{-1}. All the samples showed no significant changes except for coral core PD-H showed significant negative growth ($P<0.05$). This was due to the low numbers in samples. The changes of growth in corals were closely related to the increase of SST. However, no significant changes were observed for the 4 decade records. The relationship of linear extension rate with SST was explored through linear regression and the statistic showed that there was no relationship between the two variables ($P>0.05$). However, it was suggested that the growth of *Porites* corals in Port Dickson was highly affected by sedimentation due to the high input of sediment, a result from the rapid development along the coastlines.

CORAK LINKARAN DAN PERTUMBUHAN KARANG *Porites* DI PORT DICKSON

ABSTRAK

Lingkaran tahunan terumbu karang masif *Porites* berubah selari dengan perbezaan alam sekitar. Pewarna merah Alizarin digunakan untuk mengesahkan masa pemendapan corak linkaran terumbu karang *Porites* di Port Dickson. Pemendapan linkaran luminasi bermula pada Oktober. Seterusnya, terumbu karang dianalisis untuk kadar pertumbuhan dimana keluasan lingkaran tahunan diukur dengan digital kaliper dengan ketepatan 0.01cm. Kadar pertumbuhan terumbu karang *Porites* berbeza daripada 0.95 ± 0.01 cm yr^{-1} sehingga 3.42 ± 0.01 cm yr^{-1}. Semua sampel tidak menunjukkan pertumbuhan yang signifikasi kecuali sampel PD-H menunjukkan pertumbuhan negatif yang signifikasi. Ini adalah disebabkan oleh bilangan sampel yang rendah dalam analisasi. Perubahan pertumbuhan karang berkait rapat dengan peningkatan SST. Tetapi, tiada perubahan yang ketara telah diperhatikan untuk 4 dekad yang dianalisi. Hubungan kadar lanjutan linear dengan SST telah diterokai melalui regresi linear dan statistik menunjukkan bahawa tidak ada hubungan antara kedua-dua pembolehubah ($P>0.05$). Walau bagaimanapun, ia telah dicadangkan bahawa pertumbuhan karang *Porites* di Port Dickson sangat dipengaruhi oleh pemendapan kerana kemasukan sedimen yang tinggi, hasil daripada pembangunan pesat di sepanjang pantai.