

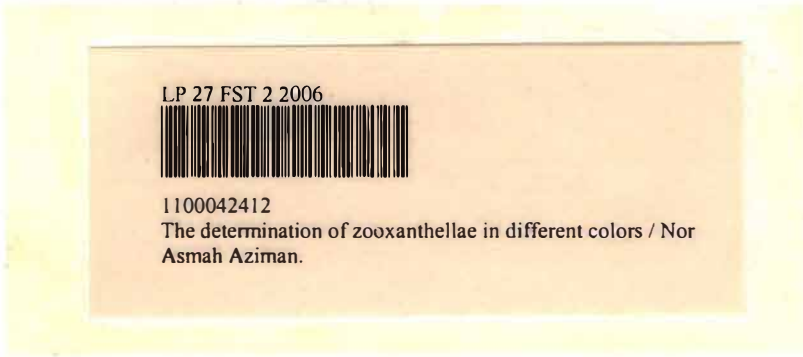
THE DETERMINATION OF ZINC AND LEAD IN CORALS OF DIFFERENT COLORS

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**THE DETERMINATION OF ZOOXANTHELLAE IN CORALS OF DIFFERENT
COLOURS**

By

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**Research Report submitted in partial fulfillment
the requirements for the degree of
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JABATAN SAINS SAMUDERA
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PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah diakui dan disahkan bahawa laporan penyelidikan bertajuk:

The Determination of Zooxanthellae in Corals of Different Colours

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LIST OF SYMBOLS

SYMBOLS

DO

μm

mm

mL

cm^2

FSW

DPX

$^{\circ}\text{C}$

mg/l

ppt

P.dami

A.form

Mon. aeq

A.hya

Pav. fron

MEANINGS

Dissolved Oxygen

Micrometer

Milimeter

Mililitre

Centimeter square

Filtered Seawater

Distrene Plasticizer Xylene

Degree celcius

milligram per litre

Part Per Thousand

Pocillopora damicornis

Acropora formosa

Montipora aequituberculata

Acropora hyacinthus

Pavona frondifera

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ABSTRAK

Terumbu karang merupakan salah satu daripada ekosistem yang paling cantik dan menarik pelancong dari seluruh dunia datang ke Malaysia untuk melihat dengan mata sendiri. Banyak kajian berkaitan dengan karang telah dijalankan dan mendapati terdapatnya sejenis alga yang bersimbiosis dengan karang, yang dikenali sebagai *zooxanthellae* yang terbukti memberikan warna kepada karang. Tetapi tidak banyak kajian dijalankan dalam mengenalpasti perbezaan kecerahan warna karang. Perbezaan ini sama ada ini disebabkan oleh perbezaan pigmen dalam *zooxanthellae* ataupun kepadatan *zooxanthellae* dalam karang yang mempunyai warna yang sama. Kajian ini dijalankan dengan mengira kepadatan *zooxanthellae* daripada karang yang sama warna tetapi berlainan kecerahan. 'Coral Colour Chart' yang diperkenalkan oleh University of Queensland, Brisbane, Australia telah digunakan dalam membandingkan perbezaan kecerahan karang tersebut. Keputusan menunjukkan bahawa *zooxanthellae* bertanggungjawab dalam memberi warna kepada karang, tetapi perbezaan kecerahan juga turut disebabkan oleh pigmen yang terdapat dalam karang tersebut. Karang yang berwarna gelap tidak semestinya mempunyai kepadatan *zooxanthellae* yang tinggi kerana alga ini dapat mengubah kepadatan, pigmen dan strain apabila terdedah kepada keamatan cahaya dan komposisi air laut yang berbeza.

ABSTRACT

Coral reef is one of the most beautiful ecosystem that attracted people from around the world to visit Malaysia and see with their own eyes. Lots of research have been done on coral and reported that the symbiotic algae in coral, also known as zooxanthellae are proved to make coral appear in various colour. But not so much study was done to find out about the different brightness in coral. Either it is because of the different pigments in zooxanthellae or the density of zooxanthellae itself in the coral that contribute to the different brightness of the same colour of coral. This study is done by counting the density of zooxanthellae from the same colour of coral but different in brightness. The Coral Colour Chart that introduced by University of Queensland, Brisbane, Australia and have been used to monitor the different brightness of coral. Results show that zooxanthellae are responsible to give colour to coral but the brightness is also contributed by the pigments in coral tissues itself. Darker colour of corals are not necessarily contain high number of zooxanthellae because these symbiosis algae can change the number, pigment and strain due to different light intensity and water composition condition.