

STUDY OF COBALT FINN ESSENCE AND THEIR
AFFECTION TO ZOOPLANKTON

MEMORANDUM

DEPARTMENT OF BIOLOGY OF THE UNIVERSITY OF CALIFORNIA
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**A STUDY OF CORAL FLUORESCENCE AND THEIR
ATTRACTION TO ZOOPLANKTON**

By

Teh Lay Hoon

**Research Report submitted in partial fulfillment of
the requirements for the degree of
Bachelor of Science (Marine Biology)**

**Department of Marine Sciences
Faculty of Maritime Studies and Marine Science
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FAKULTI PENGAJIAN MARITIM DAN SAINS MARIN
UNIVERSITI MALAYSIA TERENGGANU**

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LAPORAN PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

A Study of Coral Fluorescence and its Attraction to Zooplankton oleh Teh Lay Hoon
No. Matrik UK9288 telah diperiksa dan semua pembetulan yang disarankan telah
dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Marin sebagai memenuhi
sebahagian daripada keperluan memperoleh Ijazah Sarjana Muda Sains (Biologi
Marin) Fakulti Pengajian Maritim dan Sains Marin, Universiti Malaysia Terengganu.

Disahkan oleh:

Penyelia Utama : **PROF. MADYA LIEW HOCK CHARK**
Nama : Pensyarah
Cop Rasmi : Institut Oseanografi
Universiti Malaysia Terengganu (UMT)
21030 Kuala Terengganu, Terengganu.

Tarikh: 30 April 2007

Penyelia Kedua : **DR. HII YII SIANG**
Nama : Pensyarah
Cop Rasmi : Jabatan Sains Perikanan dan Akuakultur
Fakulti Agroteknologi dan Sains Makanan
Universiti Malaysia Terengganu
21030 Kuala Terengganu

Tarikh: 30 April 2007

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LIST OF ABBREVIATIONS

$\text{g C m}^{-2}\text{yr}^{-1}$	-	grams of Carbon per meter square per year
nm	-	nanometer
GMBV	-	Genetic Modified Baculovirus
RCFP	-	reef coral fluorescent proteins
PS	-	photosystem
GFP	-	Green Fluorescent Protein
DOM	-	Dissolved Organic Matter
CPCe	-	Coral Point Count with Excel extension
m	-	meter
cm	-	centimeter
°C	-	degree Celsius
ml	-	milliliter
BOD	-	Biological Oxygen Demand
μm	-	micrometer

ABSTRACT

This study attempts to describe the diversity of fluorescing corals and to determine its attraction to zooplankton as a possible ecological function. Distribution of fluorescing corals at two sampling sites in Redang Island was determined by line transect for its area cover. Description study of fluorescing corals conducted through photographs and categorized based on fluorescing morphs. Coral fluorescence and its attraction to zooplankton was determined by exposing *Artemia* sp. to a fluorescing and a non-fluorescing coral within a 3 chambered Perspex box and its distribution enumerated. The efficiency of capturing zooplankton between fluorescing and a non- fluorescing coral was conducted by placing the corals into separate beakers with a known amount of *Artemia* sp. and the remaining individuals were determined after exposure. There were 28 fluorescence coral species. Varied fluorescence morphs were observed within species, between the colonies and between different families and species, hence there was heterogeneity in fluorescence morph unrelated or specifically associated with coral taxonomy. No significant difference was detected in the distribution between the two sampling sites ($\text{Chi}^2_{0.05, 4} = 4.7627, p = 0.31 > \alpha = 0.05, n = 102$), suggesting that it is not affected by its water quality. The relationship between coral fluorescence and zooplankton attraction and capture was unable to be correlated although fluorescent *Fungia* sp. ($df = 5, p = 0.0016$) did show to attract zooplankton while *Galaxea* sp. and *Favia* sp. did not. This could be caused by the feeding behaviour and its state of health of corals or the weak effect of coral fluorescence.