STUDIES ON CHITOSAN BEAD REJECTION PROCESS OF FUNGIID CORAL

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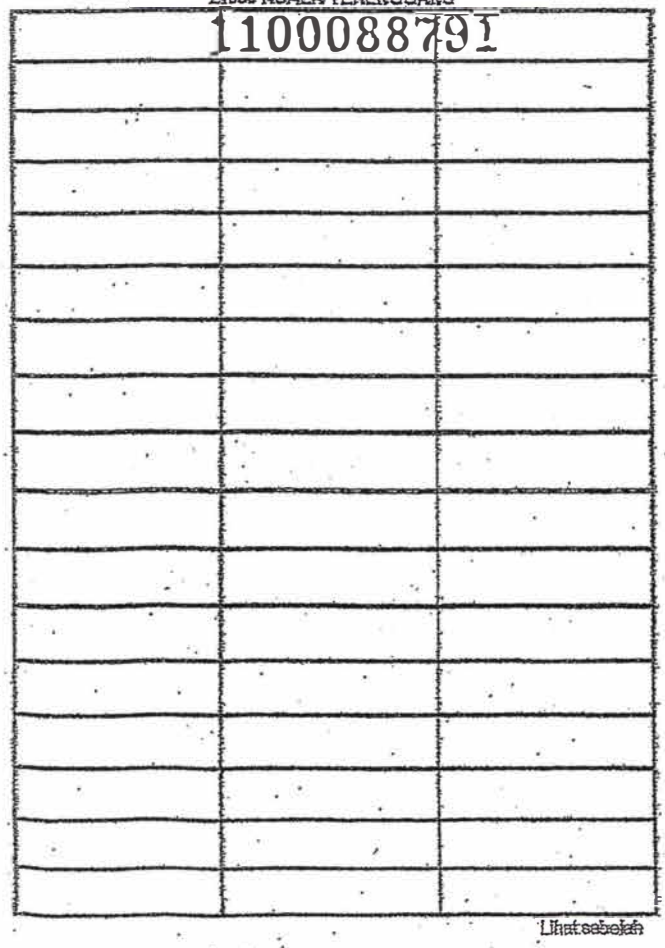
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU

2011



STUDIES ON CHITOSAN BEAD REJECTION PROCESS OF FUNGIID CORAL

by
Chong Chin Kian

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

**Department of Marine Science
Faculty of Maritime Studies and Marine Science
UNIVERSITI MALAYSIA TERENGGANU**
2011

DEPARTMENT OF MARINE SCIENCE
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU

DECLARATION AND VERIFICATION REPORT

FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled:
Studies on Chitosan Bead Rejection Process of Fungiid Coral by **Chong Chin Kian,** Matric No. **UK16494** have been examined and all errors identified have been corrected. This report is submitted to the Department of Marine Science as partial fulfillment towards obtaining the Degree of **Bachelor of Science (Marine Biology),** Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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LIST OF ABBREVIATIONS

c.c.	-	Cubic centimetre
g	-	Gram
hr	-	Hour
L	-	Litre
mm	-	Milimetre
df	-	Degree of freedom
%	-	Percentage
^{o}C	-	Degree Celcius
v/v	-	Volume to volume
w/v	-	Weight to volume
HUFA	-	Hyper unsaturated fatty acids
NaOH	-	Sodium Hydroxide

ABSTRACT

This study was conducted to test the rejection percentage of the three species of fungiid coral specially *Fungia fungites* (4n), *Fungia scruposa* (3n) and *Fungia repanda* (3n) with artificial feed with containing 7 % (w/v) chitosan. A high percentage of total rejected chitosan bead (84.46% - 96.08%) was found. The diameter of the rejected chitosan is much smaller compare to the fresh chitosan diameter. *Fungia fungites* has highest rejection speed (8.259 $mm.h^{-1}$) chitosan via the gastrovascular canals, followed by *Fungia repanda* (7.160 $mm.h^{-1}$) and *Fungia scruposa* (6.677 mm.h-^{1}). Histological examination of Fungiids show that under the membrane and along the spetal of the Fungiids, there is a lot of the continuous gastrovascular canals present. Those canals are believed to accommodate the acquisition of food and also serve as a digestion place for food particles.

KAJIAN MENGENAI PENYINGKIRAN BIJIAN CHITOSAN OLEH BATU KARANG, FUNGIIDS

ABSTRAK

Kajian ini dijalankan untuk menguji peratusan penyingkiran makanan tiruan yang diperbuat daripada bijian "chitosan" pada tiga jenis batu karang Fungiid, iaitu *Fungia fungites* (n=4), *Fungia scruposa* (n=3) dan *Fungia repanda* (n=3). *F. fungites* (86.09% ± 10.04%) mencapai tahap penyingkiran yang tertinggi, diikuti oleh *F. scruposa* (81.93% ± 11.81%) dan *F. repanda* (80.00% ± 19.53%). Saluran penyingkiran utama adalah melalui mulut (purata= 80.93%), dan hanya sebahagian kecil bijian "chitosan" disingkirkan melalui saluran "gastrovascular" (purata=1.75%). Diameter bijian "chitosan" yang disingkirkan melalui mulut batu karang, Fungiids adalah lebih kecil berbanding dengan diameter bijian "chitosan" segar. *F. fungites* (8.259 $mm.h^{-1}$) mempunyai kelajuan penyingkiran bijian "chitosan" tertinggi dan diikuti dengan *F.repanda* (7.160$mm.h^{-1}$) dan *F.scruposa* (6.677 $mm.h^{-1}$). Kajian histologi batu karang, Fungiids menunjukkan bahawa terdapat banyak saluran gastrovascular yang berterusan di bawah membran dan di sepanjang spectal. Saluran gastrovascular ini dipercayai untuk pengambilalian makanan dan juga tempat pencernaan makanan.