

STUDIES ON CHITOSAN BEAD REJECTION PROCESS OF FUNGIID CORAL

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by
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**DEPARTMENT OF MARINE SCIENCE
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DECLARATION AND VERIFICATION REPORT

FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled:
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LIST OF ABBREVIATIONS

c.c.	-	Cubic centimetre
g	-	Gram
hr	-	Hour
L	-	Litre
mm	-	Milimetre
df	-	Degree of freedom
%	-	Percentage
°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* ($86.09\% \pm 10.04\%$) mencapai tahap penyingkiran yang tertinggi, diikuti oleh *F. scruposa* ($81.93\% \pm 11.81\%$) dan *F. repanda* ($80.00\% \pm 19.53\%$). 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 septal. Saluran gastrovascular ini dipercayai untuk pengambilalihan makanan dan juga tempat pencernaan makanan.