

EXPERIMENTAL STUDY OF WATER AND SEDIMENT  
PURIFICATION BY GASTROPOD FAUNUS ATER  
FROM UMT MENGABANG TELIPOT  
ENCLOSED LAGOON

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**EXPERIMENTAL STUDY OF WATER AND SEDIMENT PURIFICATION BY  
GASTROPOD *Faunus ater* FROM UMT MENGABANG TELIPOT ENCLOSED  
LAGOON**

**By**

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**Research Report submitted in partial fulfillment of  
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**DECLARATION AND VERIFICATION REPORT**  
**FINAL YEAR RESEARCH PROJECT**

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

Experimental study of water and sediment purification by gastropod *Faunus ater* from UMT Mengabang Telipot enclosed lagoon by Muhammad Firdaus Bin Nor Hashim, Matric No. UK 16774 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 Science (Marine Biology), Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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## LIST OF ABBREVIATIONS

kg	-	kilogram
g	-	gram
°C	-	degree celcius
mg L <sup>-1</sup>	-	milligram per litre
g Kg <sup>-1</sup>	-	gram per Kilogram

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## ABSTRACT

This study was done in order to confirm whether the gastropod *Faunus ater*, which were taken from the enclosed lagoon of UMT, could purify the water and sediment. For the purification of water, dissolved oxygen concentration, biological oxygen demand, total solids and turbidity changes were studied while the change of the total organic carbon was done for the sediment. Besides all the parameters, the stomach content of the snails and the water used were observed after the experiment. Three different tanks that consist of different numbers of snails were used in the experiment. Tank 1 was act as a control without animals while there were 5 individuals in tank 2 and 10 individuals in tank 3. There was a significant changes in the concentration of dissolved oxygen and total solids in the water and total organic carbon in the sediment that have been observed in all tanks after the experiments. Meanwhile, there were no significant changes that could be found for the biological oxygen demand and turbidity value after the experiment. For the observation of the snail stomach, the presence of green algae and microorganism could be seen while there was accumulation of particulate matter in the water that placed in the tanks after the experiment. So, it was proven that the snail can purify the water by reducing the amount of total solids in the water column and at the same time purifying the sediment by reducing the concentration of Total Organic Carbon.

## ABSTRAK

Kajian ini dijalankan untuk mengetahui samada siput *Faunus ater* yang diambil daripada kawasan lagun Mengabang Telipot dapat meningkatkan kualiti air dan tanah. Untuk kajian kualiti air, parameter seperti kepekatan oksigen, keperluan kepada oksigen, jumlah partikel dan kekeruhan air telah dipilih. Sebarang perubahan untuk parameter tersebut telah dikenalpasti. Untuk kajian kualiti tanah pula, perubahan untuk jumlah bahan organik di dalam tanah telah dikaji. Selain itu, kandungan bahan yang terdapat di dalam perut siput tersebut dan juga air yang digunakan selepas tamat eksperimen turut diperhatikan. Tiga tangki yang mempunyai jumlah siput yang berlainan telah digunakan. Tangki 1 berfungsi sebagai pemalar manakala tangki 2 mempunyai 5 siput dan tangki 3 mempunyai 10 siput. Perubahan kepekatan oksigen, jumlah partikel dan jumlah bahan organik telah dikenalpasti selepas eksperimen dijalankan. Dalam masa yang sama, tidak terdapat sebarang perubahan untuk parameter keperluan kepada oksigen dan kekeruhan air selepas eksperimen. Bagi pemerhatian kandungan di dalam perut siput, terdapat alga hijau dan mikroorganisma telah dijumpai manakala terdapat penggumpalan partikel di dalam air selepas eksperimen. Jadi, telah terbukti bahawa siput ini mampu meningkatkan kualiti air dengan mengurangkan jumlah partikel di dalam air dan juga meningkatkan kualiti tanah dengan mengurangkan jumlah bahan organik.