

DETERMINATION OF HYDROCARBON IN GREEN MUSSEL, *Perna viridis* ALONG THE SOUTHERN COAST OF PENINSULAR MALAYSIA

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FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU

2011

**DETERMINATION OF HYDROCARBON IN GREEN MUSSEL, *Perna viridis* ALONG
THE SOUTHERN COAST OF PENINSULAR MALAYSIA**

By

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**Research Project 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**

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**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:

Determination of Hydrocarbon in Green Mussel, *Perna viridis* along the Southern Part of Peninsular Malaysia by Hafizah Bt Anizaim Matric No. **UK17242** have been examined and all errors identified have been corrected. This report submitted to the Department of Marine Science and as a partial fulfillment toward obtaining the Degree of Marine Biology, Faculty of Maritime Study and Marine Science, University Malaysia Terengganu, Terengganu, Malaysia.

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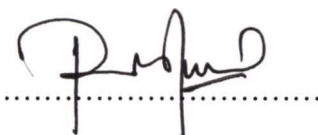
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ABSTRACT

This study was conducted in order to determine the composition of hydrocarbon in green mussel, *Perna viridis* and also the hydrocarbon composition in the sediment from the study areas. This study took place at five different study areas, along the southern coast of Peninsular Malaysia. The total aliphatic hydrocarbon (TAH) in green mussel, *Perna viridis* ranges between 7.202 to 574.282 $\mu\text{g.kg}^{-1}$ dry weight. Pasir Gudang Port area has the highest TAH concentration while Kg. Pasir Puteh area has the lowest TAH concentration. Other than that, TAH in sediment from all the study areas ranges between 0.238 to 848.381 $\mu\text{g.kg}^{-1}$ dry weight. The area with highest TAH concentration is Pantai Lido while Kg. Pasir Puteh area is the area with lowest TAH concentration in sediment. In contrast, polycyclic aromatic hydrocarbon (PAH) in *Perna viridis* ranges between 1.658 to 7.081 $\mu\text{g.kg}^{-1}$ dry weight. Highest PAH concentration can be found in green mussel from Pasir Gudang Port while lowest PAH concentration can be found in mussel samples from Tanjung Kupang. PAH in sediment from the study area ranges between 0.004 to 0.555 $\mu\text{g.kg}^{-1}$ dry weight. The highest PAH concentration was found in sediment sample from Pasir Gudang Port while the lowest PAH concentration was found in the sediment sample from Tanjung Kupang. C_{37} which is n-Heptatriacontane and C_{24} which is n-Tetracosane is the dominant TAH species found in green mussel samples and sediment samples respectively. Naphthalene and Fluoranthene is the dominant PAH species found in green mussel samples and sediment samples, respectively.

ABSTRAK

Kajian ini dijalankan bagi mengetahui komposisi hidrokarbon di dalam kupang, *Perna viridis* dan juga komposisi hidrokarbon di dalam tanah bagi kawasan kajian. Kajian ini dijalankan di lima kawasan kajian yang berbeza, yang terletak sepanjang kawasan selatan Semenanjung Malaysia. Jumlah alifatik hidrokarbon (TAH) di dalam kupang, *Perna viridis* berjulat di antara 7.202 hingga 574.282 $\mu\text{g.kg}^{-1}$ berat kering. Perlabuhan Pasir Gudang adalah kawasan yang mempunyai kepekatan alifatik hidrokarbon yang paling tinggi manakala kawasan Kg. Pasir Puteh adalah kawasan yang mempunyai kandungan alifatik hidrokarbon yang paling rendah. Selain itu, komposisi TAH di dalam tanah dari kesemua kawasan kajian berjulat di antara 0.238 hingga 848.381 $\mu\text{g.kg}^{-1}$ berat kering. Kawasan yang mempunyai kandungan TAH yang paling tinggi adalah Pantai Lido manakala kawasan yang mempunyai kandungan TAH paling rendah adalah Kg. Pasir Puteh. Kandungan aromatik hidrokarbon (PAH) dalam *Perna viridis* berjulat di antara 1.658 hingga 7.081 $\mu\text{g.kg}^{-1}$ berat kering. Kepekatan tertinggi PAH didapati dalam sampel kupang dari Perlabuhan Pasir Gudang manakala kandungan terendah PAH didapati dalam sampel kupang dari Tanjung Kupang. Kandungan PAH di dalam tanah dari kawasan kajian berjulat di antara 0.004 hingga 0.555 $\mu\text{g.kg}^{-1}$ berat kering. Kandungan PAH tertinggi dalam tanah dijumpai dalam tanah dari Perlabuhan Pasir Gudang manakala kandungan PAH terendah dijumpai dalam tanah dari Tanjung Kupang. C_{37} , n-Heptatriacontane dan C_{24} , n-Tetracosane adalah spesis TAH yang dominan dijumpai dalam sampel kupang dan tanah. Naphthalene dan Fluoranthene adalah spesis PAH yang dominan dijumpai dalam sampel kupang dan tanah.