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HARPACTICOID SPECIES IN DIFFERENT TYPES OF SEAWEEDS IN PULAU BESAR, MALACCA.

By

Nazia Binti Abdul Kadar

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

Department of Marine Science
Faculty of Science and Technology
KOLEJ UNIVERSITY SAINS DAN TEKNOLOGI MALAYSIA
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PROJEK PENYELIDIKAN 1 DAN 11

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk : "HARPACTICOID SPECIES IN DIFFERENT TYPES OF SEAWEEDS IN PULAU BESAR, MALACCA." oleh NAZIA BINTI ABDUL KADAR No. Matrik UK 7774 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Samudera sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah SARJANA MUDA SAINS BIOLOGI MARIN Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

Disahkan oleh:

.....

Penyelia Utama

Dr. Zaleha Binti Kassim
Pensyarah
Jabatan Sains Samudera
Fakulti Sains dan Teknologi
Kolej Universiti Sains dan Teknologi Malays
21030 Kuala Terengganu

Nama:

Cop Rasmi:

Tarikh: 29/04/06

.....

Penyelia Kedua (jika ada)

Nama:

Cop Rasmi:

Tarikh:.....

.....

Ketua Jabatan Sains Samudera

Nama:

Cop rasmi:

Tarikh:.....

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LIST OF ABREVIATIONS / SYMBOLS

aw	: *Amphiroa* weed
as	: *Amphiroa* sediment
cm	: Centimeter
g	: gram
gw	: *Gracilaria* weed
pw	: Padina weed
P.1-P.4	: Periopod 1 – Periopod 4
uw	: *Ulva* weed
us	: *Ulva* sediment
sp.	: Species
±	: Standard deviation
%	: Percentage
um	: Micrometer
mm	: Millimeter
ml	: Milliliter
<	: Less than
>	: More than
0	: Degree

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ABSTRACT

Two samplings were done in Pulau Besar, Malacca in July and September, 2005. Four different seaweed species, which were *Ulva reticulata*, *Padina* sp., *Amphiroa fragilissima* and *Gracilaria salicornia* were collected from tide pool during low tide. Sediment adjacent to these seaweeds was also taken. 25 harpacticoid species from 11 families and 16 Genera were identified. Five families were related to vegetated area, which were Thalestridae, Diosaccidae, Harpacticidae, Porcellidiidae, and Metidae. Other families were Laophontidae, Parastenhellidae, Longipediidae, Louriniidae, Ameiridae, and Ectinosomatidae. The family Diosaccidae was the most important family on the seaweeds and sediments. *Harpacticus uniremis, Diarthrodes tetrastachyus, Phyllothalestris mysis* and *Porcellidium fimmbriatum* showed preference to seaweeds while *Robertgurneya diversa* and *Robertgurneya oligochaeta* preferred sediment. *Lourinia armata, Harpacticus spinulosus* and *Metis jusseaumei* were found in both seaweed and sediment. Phytal harpacticoid species was larger while benthic species was in fusiform shape. Harpacticoid copepods were the dominant taxa in the seaweed and the sediment. The density of harpacticoid copepods was the highest in *Padina* sp., which was 449.07 ± 268.374 individual per gram algal dry weight. The lowest density was found in *Ulva reticulata,* which was 9.43 ± 4.58 individual per gram algal dry weight. Two-way crossed ANOSIM showed that harpacticoids was significantly different ($P<0.001$) when compared between each seaweed species. Based on ANOSIM, comparison between

seaweed and sediment also showed that harpacticoids was significantly different ($P<0.002$) from both substrate.

ABSTRAK

Sebanyak dua sampling telah dijalankan di Pulau Besar, Melaka, iaitu pada bulan Julai dan September tahun 2005. Empat spesies rumpai laut telah dikutip dari lopak air di pantai berbatu iaitu *Ulva reticulata*, *Padina* sp., *Amphiroa fragilissima* dan *Gracilaria salicornia* ketika air surut. Sebanyak 25 spesis harpaktikoid dari 11 famili dan 16 Genera telah dikenalpasti. Lima famili dikenali sebagai famili yang berasosiasi rapat dengan rumpai laut iaitu Thalestridae, Diosaccidae, Harpacticidae, Porcellidiidae, dan Metidae. Family lain pula ialah Laophontidae, Parastenhellidae, Longipediidae, Lauriniidae, Ameiridae, dan Ectinosomatidae. Famili Diosaccidae merupakan famili yang penting kerana banyak dijumpai pada rumpai laut dan juga sedimen yang berhampiran. *Harpacticus uniremis, Diarthrodes tetrastachyus, Phyllothalestris mysis* dan *Porcellidium fimbriatum* berasosiasi rapat dengan rumpai laut manakala *Robertgurneya diversa* dan *Robertgurneya oligochaeta* hanya dijumpai di sedimen. *Lourinia armata, Harpacticus spinulosus* dan *Metis jusseaumei* dijumpai di rumpai laut dan sediment. Harpakticoid di kawasan tumbuhan lazimnya mempunyai struktur abdomen yang lebih besar manakala spesies bentik berbentuk fusiform. Harpaktikoid merupakan taxa dominant di kawasan rumpai laut dan sedimen. Kepadatan harpaktikoid adalah tertinggi dalam *Padina* sp., iaitu 449.07 ± 268.374 individu per gram berat kering alga. Kepadatan terendah didapati pada *Ulva reticulata,* iaitu 9.43 ± 4.58 individu per gram berat kering alga. ANOSIM dua-hala menunjukkan perbezaan bererti ($P<0.001$) bagi spesies

harpaktikoid yang dijumpai pada rumpai laut yang berbeza dan perbezaan bererti ($P<0.002$) bagi spesies harpaktikoid yang dijumpai di rumpai laut dan juga sedimen.