

CULTURE AND DEVELOPMENT OF A HARPACTICOID SPECIES IN
DIFFERENT SALINITY AND TEMPERATURE

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**CULTURE AND DEVELOPMENT OF A HARPACTICOID SPECIES IN
DIFFERENT SALINITY AND TEMPERATURE**

By

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**Research Report submitted in partial fulfillment of
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**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

Culture and Development of a Harpacticoid Species in Different Salinity and Temperature oleh **Farahiyah Ilyana Jamaludin**, No.Matrik **UK 12545** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Marin sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains (Biologi Marin), Fakulti Pengajian Maritim dan Sains Marin, Universiti Malaysia Terengganu.

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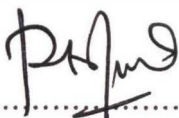
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LIST OF ABBREVIATIONS

ml	-	mililiter
ppt	-	parts per thousand
°C	-	degree celcius
g/L	-	gram per liter

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ABSTRACT

Copepods play a major role as food link for larger animals and it is also important as a live food source for the aquaculture industry. There are only few reports of the influence of temperature and salinity towards the growth and development of copepods. In this study, two physical parameter, temperature (5 and 25 °C) and four different salinity regime (5, 10, 25 and 35 ppt) was used to determine the growth and population development in a marine harpacticoid, *Pararobertsonia sp.* in a laboratory condition. The findings shows that there was a significant difference ($P < 0.05$) detected between the salinity treatment and it shows that different salinities have different effects on the population number of the copepod cultured in the same temperature (ambient, $25 \pm 1^\circ\text{C}$). Whereas for copepods reared in cold temperature ($5 \pm 1^\circ\text{C}$), no observation was made and the copepods did not survive the very low temperature. Copepods reared in 25 ppt salinity show the highest population density that can be achieved at one time with 3.7 individuals per milliliter. However, copepods in 35 ppt treatment shows the most stable population growth among the others. From this experiment, it can be concluded that 35 ppt and ambient temperature ($25 \pm 1^\circ\text{C}$) is the optimum condition for the maximum production of *Pararobertsonia sp.* in the laboratory condition.

KULTUR DAN PERKEMBANGAN *Pararobertsonia* sp. DI DALAM SUHU DAN SALINITI YANG BERBEZA

ABSTRAK

Kopepoda merupakan sejenis organisma planktonik yang memainkan peranan penting dalam rantai makanan organisma yang lebih besar. Ianya juga penting sebagai salah satu sumber makanan dalam industri akuakultur. Terdapat hanya beberapa laporan dan kajian telah dijalankan melibatkan kesan suhu dan saliniti terhadap perkembangan kopepoda. Dalam kajian ini dua parameter fizikal telah diuji untuk melihat kesannya terhadap perkembangan kopepoda marin, *Pararobertsonia* sp. yang di kultur di dalam keadaan makmal, iaitu suhu (5 dan 25 °C) dan empat jenis saliniti (5, 10, 25 dan 35 ppt. Kajian mendapati terdapat perbezaan yang ketara ($P < 0.05$) di antara rawatan setiap saliniti dan ini menunjukkan bahawa saliniti berbeza mempunyai kesan yang berbeza terhadap populasi kopepoda yang di kultur di dalam suhu yang sama (suhu persekitaran, $25 \pm 1^\circ\text{C}$). Manakala kopepoda yang di kultur di dalam suhu sejuk ($5 \pm 1^\circ\text{C}$) tidak menunjukkan sebarang tindak balas dan kopepoda ini tidak berjaya hidup dalam suhu yang rendah ini. Kopepoda yang di kultur di dalam saliniti 25 ppt menunjukkan kepadatan tertinggi dengan populasinya yang boleh mencapai sehingga 3.7 individu dalam satu milliliter pada sesuatu masa. Walaubagaimanapun, kopepoda yang di kultur di dalam saliniti 35 ppt menunjukkan populasi yang paling stabil berbanding dengan rawatan yang lain. Daripada kajian ini, didapati bahawa saliniti 35 ppt dan suhu persekitaran ($25 \pm 1^\circ\text{C}$) merupakan keadaan yang optima untuk penghasilan maksima *Pararobertsonia* sp. di dalam makmal.