

EFFECT OF TEMPERATURE ON TRILOBITE LARVAE OF MALAYSIAN
HORSESHOE CRAB (*Tachepleus gigas*; Müller)
FOR BETTER SURVIVAL

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HORSESHOE CRAB (*Tachypleus gigas*; Müller) FOR BETTER SURVIVAL

by

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Research Report submitted in partial fulfilment of the requirement for the degree of Bachelor
of Science (Marine Biology)

Department of Marine Science

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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:
Effect of Temperature on trilobite larvae of Malaysian horseshoe crab (*Tachypleus gigas*; Müller) for their better survival under controlled conditions by Nurul Nur Hawa Jaffar, Matric No. UK21989 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 Bachelor of Science (Marine Biology), Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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LIST OF ABBREVIATIONS

%	-	Percentage
mm	-	millimetre
cm	-	centimetre
°C	-	Degree Celcius
ppt	-	Part per thousand

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ABSTRACT

The samples of fertilized eggs of *Tachypleus gigas* were taken from The Horseshoe Crab Aquaculture Farm, Sedili Kecil, Johor. The eggs were brought back to hatchery and wait until they hatched into trilobite larvae. The larvae were reared through the first tailed stage under five different temperature (10, 20, 25, 30 and 35° C) with three replicate for each treatment. The percentage of survival and the percentage of moulting were observed. Low temperature recorded the low survival. Rapid increase in mortality can be observed in treatment 10° C. The high water temperature was not favourable for the survival and growth of larvae. Larvae in the treatment of 25 and 30° C do not change from the start to the end of the experiment and the survival nearly 100%. Horseshoe crabs must moult for growing, same as other arthropods. In current study, the moulting process only occurs in the treatment of 25 and 30° C. The larvae can tolerate with wide range of temperature.

Kesan suhu terhadap larva trilobit belangkas Malaysia (*Tachypleus gigas*;Müller) untuk kemandirian yang lebih baik.

ABSTRAK

Sampel telur *Tachypleus gigas* yang telah disenyawakan diambil dari Tempat Penternakan dan Penetasan Belangkas, Sedili Kecil, Johor. Telur-telur dibawa pulang ke tapak penetasan dan tunggu sehingga ia menetas menjadi larva trilobit. Larva ditenak melalui peringkat pertama ekor pada lima suhu yang berbeza-beza (10, 20, 25, 30 dan 35° C) dengan tiga replikasi untuk setiap rawatan. Peratusan hidup dan penggantian karapas diperhatikan. Suhu yang rendah merekodkan kemandirian yang rendah. Peningkatan pesat dalam kematian dapat dilihat dalam rawatan 10° C. Suhu air yang tinggi adalah tidak sesuai untuk kehidupan dan tumbesaran larva. Kemandirian larva di dalam rawatan 25 dan 30° C tidak berubah dari awal hingga akhir kajian dan kelangsungan hidup hampir mencecah 100%. Belangkas harus melalui proses persalinan kulit untuk membesar, sama seperti haiwan arthropoda lain. Dalam kajian ini, proses penyalinan kaparapas hanya berlaku pada rawatan 25 dan 30°C. Larvae boleh bertoleransi dengan pelbagai perubahan suhu.