

DETERMINATION SURVIVAL RATE OF *Tachypleus gigas*  
TRILOBITE LARVAE IN DIFFERENT CADMIUM CONCENTRATION

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**DETERMINATION SURVIVAL RATE OF *Tachypleus gigas* TRILOBITE LARVAE IN  
DIFFERENT CADMIUM CONCENTRATION**

**By**

**Nurul Nadheerah Bte Baharudin**

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### DECLARATION AND VERIFICATION FINAL YEAR RESEARCH PROJECT

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

**Determination Survival Rates Of *Tachypleus gigas* Trilobite Larvae In Different Cadmium Concentration** by **NURUL NADHEERAH BINTI BAHARUDIN**, Matric No. **UK 16881** 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 Science)**, Faculty of Maritime Studies and Marine Science, University Malaysia Terengganu.

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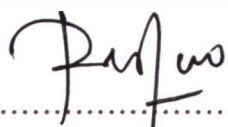
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## LIST OF ABBREVIATIONS

Cd	-	Cadmium
°C	-	Celcius
%	-	Percentage
g	-	gram
mL	-	milliliter
mg/L	-	milligram per liter
ppt	-	part per thousand
ppm	-	part per million
AAS	-	Atomic Absorption Spectrophotometer
CdCl <sub>2</sub>	-	Cadmium chloride

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## DETERMINATION SURVIVAL RATES OF *Tachypleus gigas* TRILOBITE LARVAE IN DIFFERENT CADMIUM CONCENTRATION

### ABSTRACT

Metal contamination of the environment is a serious subject around worldwide. The effect of heavy metals on survival rate of horseshoe crab trilobite larvae to cadmium exposure in 96 hours was assessed in this study. This study was conducted to determine the survival rate for continuous exposure of Cd on *Tachypleus gigas* trilobite larvae. Metals accumulation in *T.gigas* trilobite larvae also was measured. There is no mortality occurred in preliminary experiment with low of cadmium concentration and the same situation also happened in exposure of *T.gigas* trilobite larvae to medium concentration of Cd for 96 hours. The continuous exposure of to high concentration of Cd (100 mg/L) gave the mortality of *T.gigas* trilobite larvae. There were mortality occur in 60 and 80 mg/L of Cd concentration after 96 hours of exposure. Metal accumulation in *T.gigas* trilobite larvae tissue for exposure to 100 mg/L of Cd concentration is highest which is 0.5141  $\mu\text{g/g}$  compared to others.



# **PENENTUAN TAHAP KELANGSUNGAN HIDUP LARVA TRILOBIT BAGI *Tachypleus gigas* DALAM KEPEKATAN LOGAM CADMIUM YANG BERBEZA**

## **ABSTRAK**

Pencemaran logam terhadap persekitaran adalah masalah yang serius melanda seluruh dunia. Kesan pendedahan kepada logam berat Kadmium (Cd) dalam tempoh masa 96 jam telah dijalankan bagi kajian ini. Kajian ini dilakukan untuk menentukan tahap kelangsungan hidup larva belangkas (*Tachypleus gigas*) apabila didedahkan kepada kepekatan Cd yang tertentu dengan kadar yang berterusan selama 96 jam. Pengesanan pengumpulan logam dalam larva *T.gigas* juga diukur. Tiada kematian yang direkodkan dalam kepekatan Cd yang rendah dan keadaan yang sama juga berlaku kepada pendedahan larva *T.gigas* secara berterusan selama 96 jam dengan kepekatan Cd yang sederhana. Pendedahan terhadap kepekatan Cd yang tinggi iaitu 100 mg/L telah menyebabkan kematian larva *T.gigas*. Namun begitu, terdapat juga kematian larva yang berlaku pada kepekatan Cd sebanyak 60 dan 80 mg/L selepas didedahkan selama 96 jam. Pengumpulan logam Cd oleh larva *T.gigas* yang tertinggi telah direkodkan dalam kepekatan 100 mg/L iaitu sebanyak 0.5141 µg/g berbanding dengan kepekatan Cd yang lain contohnya ialah 60 dan 80 mg/L.