

# The Living Fossil (Horseshoe crab)

Kamaruzzaman Yunus

Akbar John

Ahmed Jalal Khan Chowdhury

Zaleha Kassim



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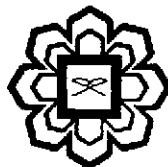
**Editors,**

**Kamaruzzaman Yunus**

**Akbar John**

**Ahmed Jalal Khan Chowdhury**

**Zaleha Kassim**



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## CHAPTER – 18

### Cu and Cd Bioaccumulation in Malaysian Horseshoe Crab

<sup>1</sup>Aqilah, M., <sup>1</sup>Kamaruzzaman, B.Y., <sup>1</sup>Akbar John, B., <sup>2</sup>Zaleha, K.

<sup>1</sup>*Institute of Oceanography and Maritime studies (INOCEM), Kulliyah of Science,  
International Islamic University Malaysia, Jalan Sultan Ahmad Shah,  
Bandar Indera Mahkota, 25200, Kuantan Pahang, Malaysia*

<sup>2</sup>*Institute of Tropical Aquaculture, University Malaysia Terengganu, 21030 Kuala  
Terengganu, Terengganu, Malaysia.*

#### Abstract

An attempt was made to determine the selected heavy metal (Copper and Cadmium) accumulative concentrations in different body parts of Malaysian horseshoe crabs [*Tachypleus gigas* (Muller, 1785)]. Heavy metal accumulation levels were determined using Inductively Coupled Plasma Mass Spectrometry (ICP-MS). Highest mean concentration ( $\mu\text{g g}^{-1}$  wet weight) of Copper (Cu) and Cadmium (Cd) was observed in Gut ( $129.94 \pm 13.8$  ppm) and apodeme ( $4.16 \pm 0.54$  ppm) samples respectively while lowest concentrations of metals were observed in leg tissues (Cu = 60.85 ppm; Cd = 2.12 ppm). Results clearly showed that bioaccumulation of essential metal (Co) concentration in all the analyzed body parts were higher than non-essential heavy metal (Cd) Statistical predictions revealed that bioaccumulation of metals were not significantly influenced by weight, total length and carapace width of the animal. The heavy metal accumulations in samples were higher than the national and international permissible limit range and hence further extensive studies need to be addressed to determine whether the horseshoe crab samples from Pahang coast is suitable for human consumption.

**Key words:** Bioaccumulation, heavy metals, horseshoe crabs, Nesting ground, apodeme.

#### Introduction

Horseshoe crabs are marine chelicerate arthropods remarkably retaining their genetic makeup and morphologically unchanged for more than 200 million years (Walls *et al.*, 2002; Hurton and Berkson, 2004). Out of four known species of horseshoe crab, three species (*Trachypleus gigas*.