

HEAVY METAL CONCENTRATION IN *Pholas* sp. AND *Anadara* sp.  
COLLECTED IN NORTHERN SELANGOR

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HEAVY METAL CONCENTRATION IN *Pholas* sp. AND *Anadara* sp.  
COLLECTED IN NORTHERN SELANGOR

By

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APPROVAL AND CERTIFICATION FROM  
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## LIST OF ABBREVIATION

AAS	Flame atomic Absorption Spectrophotometer
Al	Aluminium
Cd	Cadmium
Co	Cobalt
Cr	Chromium
Cu	Copper
Fe	Iron
FIAM	Free Ion Activity Model
H <sub>2</sub> O <sub>2</sub>	Hydrogen Peroxide
HNO <sub>3</sub>	Nitric Acid
ICPMS	Inductive Couple Plasma Mass Spectrophotometer
Mg	Magnesium
mg	milligram
Pb	Lead
ppm	Parts per million
RBC	Red Blood Cells
US	United Stated (America)
USDA	U.S. Department of Agriculture, Agricultural Research Service
Zn	Zinc

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# Heavy Metal Concentration in *Pholas* sp and *Anadara* sp Collected In Northern Selangor

## ABSTRACT

*Pholas* sp are one of bivalve species that can be found high abundant at a Northern Selangor Beach. *Pholas* sp. and *Anadara* sp. are same Family that has same characteristic such as sessile, and can accumulate particles that exist in the environment. Therefore, study need to be conducted on the heavy metal concentration to determine if *Pholas* sp. is safe for human consumption. *Pholas* sp. and *Anadara* sp. were collect at same place from different five stations. The heavy metal that detect by ICPMS (Inductive Couple Plasma Mass Spectrophotometer) are Aluminium (Al), Cadmium (Cd), Cobalt (Co), Chromium (Cr), Copper (Cu), Iron (Fe), Magnesium (Mg), Lead (Pb), and Zinc (Zn). Majority heavy metal such Aluminium (Al), Cobalt (Co), Chromium (Cr), Copper (Cu), Iron (Fe), Magnesium (Mg), Manganese (Mn), and Lead (Pb) are more higher in *Pholas* sp. compare to *Anadara* sp. The highest concentration of heavy metal in *Pholas* sp. was Magnesium=1744.369ppm and the lowest concentration is Cadmium=0.032ppm. Meanwhile, *Anadara* sp. the highest heavy metal concentration are Magnesium=1340.965ppm and the lowest concentrations are Cobalt = 0.088ppm. Events the concentration heavy metals in *Pholas* sp are higher then *Anadara*, but the concentration not higher then safety level for food.



**Kepekatan Kandungan Logam Berat Di Dalam *Pholas* sp dan *Anadara* sp yang  
di Kutib di Kawasan Utara Selangor.**

**ABSTRAK**

Mentarang (*Pholas* sp) adalah satu sepesis bivalve yang baru-baru ini didapati banyak di kawasan pantai utara Selangor. Memandangkan mentarang adalah sepesis yang sama keluarga dengan kerang (*Anadara* sp) yang mempunyai ciri-ciri tidak bergerak, dan mampu mengumpulkan (accumulate) bahan – bahan yang terdapat di persekitaran ke dalam tisu badannya, jadi kajian kandungan logam berat adalah kajian yang sesuai. Mentarang dan kerang dikutib di tempat yang sama daripada lima setesen yang berlainan tempat. Antara logam berat yang di kesan menggunakan ICPMS (Inductive Couple Plasma Mass Spectrophotometer) ialah Aluminium (Al), Cadmium (Cd), Cobalt (Co), Chromium (Cr), Copper (Cu), Iron (Fe), Magnesium (Mg), Lead (Pb), dan Zinc (Zn). Daripada perbandingan jumlah kepekatan kandungan logam berat di dalam mentarang dan kerang, didapati kebanyakan logam berat seperti Aluminium (Al), Cobalt (Co), Chromium (Cr), Copper (Cu), Iron (Fe), Magnesium (Mg), Manganese (Mn), and Lead (Pb) terdapat lebih banyak di dalam mentarang berbanding kerang. Didalam mentarang, kepekatan logam berat yang paling tinggi ialah Magnesium-1744.369ppm dan kepekatan yang terendah ialah Cadmium-0.032ppm. Untuk kerang pula, kepekatan logam berat paling tinggi ialah Magnesium=1340.965ppm dan kepekatan terendah ialah Cobalt = 0.088ppm terdapat. Walaupun kandungan logam berat di dalam mentarang tinggi berbanding dengan kerang tetapi kepekataannya tidak melebihi kepekatan garis selamat piawai pemakan.