

## Heavy Metals Concentration Relationship with *Perna viridis* Physical Properties in Mengkabong Lagoon, Sabah, Malaysia

### ABSTRACT

*Perna viridis* (*P. viridis*) has been identified as a good biological indicator in identifying environmental pollution, especially when there are various types of Heavy Metals Accumulations (HMA) inside its tissue. Based on the potential of *P. viridis* to accumulate heavy metals and the data on its **physical properties**, this study proffers to determine the relationships between both properties. The similarities of the **physical properties** are used to **mathematical model** their relationships, which included the size (length, width, height) and weight (wet and dry) of *P. viridis*, whilst the heavy metals are focused on concentrations of Pb, Cu, Cr, Cd and Zn. The concentrations of metal elements are detected by using Flame Atomic Adsorption Spectrometry. Results show that the mean concentration of Pb, Cu, Cr, Cd, Zn, length, width, height, wet weight and dry weight are:  $1.12 \pm 1.00$ ,  $2.36 \pm 1.65$ ,  $2.12 \pm 2.74$ ,  $0.44 \pm 0.41$  and  $16.52 \pm 10.64$  mg kg<sup>-1</sup> (dry weight), 105.08±14.35, 41.64±4.64, 28.75±3.92 mm, 14.56±3.30 and 2.37±0.86 g, respectively. It is also found out that the relationships between the Heavy Metals Concentrations (HMA) and the **physical properties** can be represented using Multiple Linear Regressions (MLR) models, relating that the HMA of Zinc has affected significantly the physical growth properties of *P. viridis*.