BIOACCUMULATION OF HEAVY METALS IN SAND BUBBLER CRAB (*Scopimera globosa)* AT TANJUNG ARU BEACH, KOTA KINABALU, SABAH

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ABSTRACT

BIOACCUMULATION OF HEAVY METALS IN SAND BUBBLER CRAB (*Scopimera globosa*) AT TANJUNG ARU BEACH, KOTA KINABALU, SABAH

In this study, the sand bubblers (Scopimera globosa) and seawater were collected from Tanjung Aru Beach in order to obtain the data on the concentration of lead (Pb), cadmium (Cd), chromium (Cr) and cobalt (Co). Three samplings were conducted from March 2019 until May 2019. Adult sand bubbler crabs with carapace size bigger than 0.5 cm were used in this study. The aims of the study were to determine the concentration of heavy metals accumulation in seawater at Tanjung Aru Beach, to measure the concentration of heavy metals in sand bubbler crab at Tanjung Aru Beach and to analyze the potential use of sand bubbler crab for biomonitoring heavy metal pollution at Tanjung Aru Beach. It was obtained that in seawater there is a significant difference in mean between stations on concentration of Cd ($p = 0.04$) meanwhile there is no significant difference in mean were found between stations for Pb ($p = 0.70$), Cr ($p = 0.12$) and Co ($p = 0.12$). In sand bubbler crab, there is a significant difference in mean between stations on concentration of Pb ($p = 0.00$) and Co ($p = 0.00$) while there is no significant difference in mean between stations on concentration of Cd ($p = 0.96$) and Co ($p = 0.31$). Moreover, no significant difference is found in mean concentration of Pb ($p = 0.07$), Cd ($p = 0.71$), Cr ($p = 0.23$) and Co ($p = 0.16$) accumulated in sand bubbler crab and seawater. Besides that, results showed there is no relationship between concentration of heavy metals in seawater and concentration of heavy metals in sand bubbler crab where Pb ($p = 0.12$), Cd ($p = 0.10$), Cr ($p = 0.39$) and Co ($p = 0.93$). Hence, this suggests that sand bubbler crab, Scopimera globosa, cannot be used as a bioindicator biomonitoring heavy metal pollution at Tanjung Aru Beach. For recommendation, other heavy metal such as iron, zinc and copper in both seawater and sand bubbler crab should be analysed by using AAS. Apart from that, the concentration of heavy metals in sand bubbler crab according to the body parts such as carapace, walking leg, soft tissue and guts should be determined as well.