

ABSTRACT

Linggar Ridha Kawasa, 24020122140139. Human Health Risk Assessment of Cu, Cd, and Pb in Green Mussels (*Perna viridis*) from the Coastal Area of Teluk Awur, Jepara. Under the guidance of Sapto Purnomo Putro and Rizki Sandhi Titisari.

Heavy metal pollution in coastal waters is a serious environmental issue due to its persistent nature and potential to accumulate in aquatic organisms and the human body. Green mussels (*Perna viridis*), as filter-feeding organisms, are widely used as bioindicators of water quality and as an important food commodity. This study aimed to analyze the concentrations of Cu, Cd, and Pb in seawater and soft tissues of *P. viridis* collected from the coastal waters of Teluk Awur, Jepara, to compare the results with applicable quality standards, and to evaluate potential health risks for consumers. Sampling was conducted temporally from June to August 2025 using a purposive sampling method in the Floating Net Cage (FNC) area. Heavy metal analysis was performed using Atomic Absorption Spectrophotometry (AAS). The results showed that Cu and Cd concentrations in seawater were below the detection limit, while Pb was detected at a maximum concentration of 0.0025 mg.L⁻¹, which remained below the seawater quality standard for marine biota. In the soft tissues of *P. viridis*, the highest concentrations of Cu and Cd were 2.515 mg.kg⁻¹ and 0.84 mg.kg⁻¹, respectively, whereas Pb was not detected. All heavy metal concentrations in the soft tissues of *P. viridis* were below the permissible limits for food safety. Health risk assessment indicated that the Estimated Weekly Intake (EWI) values were below the Provisional Tolerable Weekly Intake (PTWI), the Target Hazard Quotient (THQ) and Hazard Index (HI) values were less than one, indicating no non-carcinogenic health risk, and the Target Cancer Risk (TCR) values were within the acceptable risk category for Cd and negligible for Pb. Therefore, consumption of *P. viridis* from the coastal waters of Teluk Awur, Jepara is considered safe and complies with national and international food safety standards.

Keywords: Perna viridis, Bioaccumulation, Cadmium, Copper, Lead, Awur Bay