

## ABSTRACT

The coastal areas near the Saigon – Dong Nai (SG-DN) River Estuary is famous with the Ben Tre hard clam (*Meretrix lyrata*). However, this area is facing the pollution problems from the urban and industrial zone along SG-DN River basin. In 2015, a preliminary survey was conducted to monitor Cd, Pb, Cu and Zn contamination levels in sediment, suspended particulate matter (SPM), and river water at three sampling points along SG-DN River and determined those metals in *M. lyrata* and its living environment including sediment, SPM and coastal water at Can Thanh and Tan Thanh. It suggested that metal pollution from terrestrial areas might influence coastal environment as well as *M. lyrata*. Therefore, in the next phase of this study, some trace metals (Mn, Fe, Co, Ni, Cu, Zn, As, Se, Cd, Hg, and Pb) in the hard clam *Meretrix lyrata* and its habitat environment including surface water, SPM, sediment and porewater were determined to understand the metal contamination level in the environment as well as the bioaccumulation of trace metals in that hard clam. The samples were collected monthly in dry, transition, and wet seasons of the Viet Nam's Southern area from March to September 2016. The results of biota-sediment accumulation factor (BSAF) showed that Pb, Mn, Fe, and Co did not accumulate in *M. lyrata* (BSAF values < 1), whereas the BSAF of Cd in sediment habitats used by these clams were highest. In addition, the close correlation between metal concentrations in the hard clam (i.e. whole body, gills, digestive gland, remainder) and its physical stage as well as metals in SPM, surface water, sediment, porewater indicating that this hard clam might be considered to use as a biomonitor. The hazard index results of all studied trace metals in the hard clams for human health were within the safe limit suggested that the *M. lyrata* was safe for local consumers in case of trace metal toxicology consideration.