

Impacts of marine pollution and toxicology: a Mussel Watch experience in Peninsular Malaysia

ABSTRACT

Based on a well-studied green lipped *Perna viridis*, the present review paper exemplified the impacts of marine pollution and toxicology in terms of a) chemicals/pollutant bioaccumulation, b) morphological and physiological responses and c) genetic polymorphism and differentiation. From the review based on Mussel Watch publications, three insights can be found. Firstly, the similar finding for both heavy metals and polycyclic aromatic hydrocarbons (PAHs) studies in the marine mussels was found in which elevated or higher levels (than the normal ranges) of the two types of pollutants in the mussels collected from anthropogenic receiving inputs areas. Secondly, the morphological response (shell deformities) and physiological responses (CI, FR and mortality) of mussels are results of heavy metal pollution in the marine coastal waters. Thirdly, the changes of genetic polymorphic loci in the polluted mussels were resulted from exposure to metal polluted coastal waters. Therefore, our Mussel Watch experience can be employed to understand the effects of marine pollution and toxicology.

Keyword: Marine pollution; Mussel watch; Physiological responses; Morphological response; Genetic polymorphism