

LEVEL OF TRIBUTYLTIN CONTAMINATION IN *Perna viridis*

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Tributyltin (TBT) that belongs to the group of Persistent Organic Pollutants (POPs) is an organotin compound extremely toxic to aquatic fauna. At micromole concentrations, TBT affects cell metabolism by causing malformations of the mitochondrial membranes with resulting reproductive abnormalities such as imposex. The lipophilic nature confirmed that TBT bioaccumulates in living organisms. Molluscs, bivalves and gastropods are the organisms most sensitive to TBT exposure. In this study *Perna viridis* (green mussel) was selected as a biological sample based on its availability, sessile lifestyle, easy sampling, etc. The main objective of this study was to detect the level of TBT contamination in the biological sample (*P. viridis*) using the modified HS/SPME-GCMS method. The average TBT concentrations of three different size classes (0 - 15, 15 - 30 and 30 - 45 g) of *P. viridis* were recorded as 12 ng kg⁻¹, 22 ng kg⁻¹ and 42 ng kg⁻¹, respectively. The highest concentration of TBT in *P. viridis* was detected in the sample collected from Dikovita fishery harbor. The TBT concentrations in *P. viridis* were recorded in ascending order following the average body weight ranges of 0 - 15 g < 15 - 30 g < 30 - 45 g, respectively. A positive correlation between the number of *P. viridis* male and TBT concentrations ($p < 0.05$) was found suggesting possible imposex development in aquatic invertebrates exposed to high concentrations of TBT continuously. Therefore, continuous monitoring of TBT is needed to find its effect on the biodiversity in the coastal environment. Thus, in the present study, a sensitive, cost-effective and precise modified method was introduced to identify and quantify the concentrations of TBT in the environment at parts per trillion ($\mu\text{g L}^{-1}$) level.

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