

Accumulation and depuration of heavy metals in the hard clam (*Meretrix meretrix*) under laboratory conditions

Abstract

Heavy metal accumulation and depuration may alter the effectiveness of *Meretrix meretrix* as a biomonitoring organism for water quality assessment. Therefore, this study was conducted to evaluate the effects of heavy metal accumulation and depuration on *M. meretrix*, by immersing it in Copper (Cu), Zinc (Zn), and Lead (Pb) solutions under laboratory conditions. The results showed that *M. meretrix* is able to accumulate Cu, Zn, and Pb at the rate of 0.99, 21.80, and 0.57 $\mu\text{g/g}$ per day, respectively, and depurates at the rate of 0.42, 23.55, and 1.01 $\mu\text{g/g}$ per day, respectively. These results indicate that *M. meretrix* could be effectively used as a biomonitoring organism for Cu because the accumulation rate is significantly ($p \leq 0.05$) higher than the depuration rate. However, this was not the case for Zn because the accumulation rate was almost similar to the depuration rate, while for Pb, accumulation or depuration did not occur in *M. meretrix*.