Effect of Cadmium absorption and filtration rates in *Mytilaster lineatus* and *Palaemon elegans* of Caspian Sea using mesocosm

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Abstract

Cadmium is one of the most important environmental pollutants that have been increased in parallel to population growth and industrial development in aquatic ecosystems such as the Caspian Sea in recent years. Marine invertebrates such as crustaceans and bivalves for the reason of sessile can absorb essential and non-essential heavy metals surroundings themselves and cause transfer them to top of the network food. This study was conducted to study filtration rate of *Mytilaster lineatus* and *Palaemonelegans* exposed to Cd (62 and 620 μgl^{-1}) and its ability to remove these metals from water. The experiments were carried out in a designed mesocosm system. The results showed no significant different in filtration rate of *M. lineatus* and *P. elegans* exposed to Cd. These two species reduced the filtration rate and even they returned excess metals to the environment. It was also shown that the shrimp *Palaemon elegans* and bivalves *Mytilaster lineatus* can be the biological indicators for the assessment of cadmium in the aquatic environment.

Keywords: Cadmium, *Mytilaster lineatus*, *Palaemonelegans*, Caspian Sea, Filtration rate.

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