Bioavailability of some heavy metals in gill and muscle tissues of ghost crab (*Ocypode saratan*) in the tidal shores of Chabahar

Emdad Dadvar[1*]
Maryam Shapoori[2]
Mahmood Sinaei[3]

1. Islamic Azad University, Savadkooh Branch, Department of Natural Resources, Savadkooh, Iran
2. Islamic Azad University, Savadkooh Branch, Department of Natural Resources, Savadkooh, Iran
3. Islamic Azad University, Chabahar Branch, Department of Fisheries, Chabahar, Iran

***Corresponding author:**
Dadwar2002@yahoo.com

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Abstract

Study on crustaceans especially crabs is a suitable method for the study of marine polluted by heavy metals due to their high stability bioaccumulation in fish tissues can be taken to different levels of the food and ultimately human and thus it causes to dangerous consequences of these metals pollution. In this research, the levels of heavy metals in gill and muscle tissues of the crab *Ocypode saratan* were measured. Sampling of crabs carried out in the Chabahar beaches at five stations including: Shahid Beheshti, Tiss, Parak, Jazireh Kharchang and Pozem. To extract heavy metals from the tissues, the method of chemical wet digestion was used and the determination of heavy metals concentrations was done using atomic absorption scheme (AAS) in March 2013. Results of this study showed that the mean levels of mercury, nickel, chromium, cobalt, lead and cadmium in lobster gill tissue samples collected from different stations were 1.52 ± 0.20, 0.99 ± 0.13, 0.52 ± 0.05, 0.25 ± 0.03, 0.71 ± 0.08 and 0.29 ± 0.04 ppm on a dry weight basis, respectively. And also in muscle tissue were 0.91 ± 0.14, 0.12 ± 0.01, 0.24 ± 0.05, 0.06 ± 0.01, 0.25 ± 0.05 and 0.07 ± 0.03 ppm on a dry weight basis, respectively. Comparison of heavy metals like mercury, nickel and lead in lobster gill tissue sampled from different stations showed significant difference. Mercury in lobster muscle tissue showed significantly difference in different stations. ($p < 0.05$). In this research, the mean concentrations of heavy metals were minimum in muscle tissue and were maximum in gill tissue. The results showed that the amount of mercury and nickel in lobster muscle tissue were higher in comparison to World Health Organization (WHO) standards and the amount of lead and cadmium were lower in comparison to Food and Agricultural Organization (FAO) standards, the United Kingdom Ministry of Agriculture Fisheries and Food (UKMAFF), Food and Drug Administration (FDA) and National Health Medical Research Council (NHMRC).

Keywords: Pollution, Heavy metals, Chabahar bay, *Ocypode saratan.*