Concentration of heavy metals Cu, Cd and Pb in liver, gonad and muscle of the Caspian Kutum, *Rutilus kutum* and the Caspian Roach, *Rutilus rutilus* in the southeast coasts of Caspian Sea

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Abstract

Heavy metal pollution of aquatic ecosystem and consequently accumulation of these metals in aquatic organism tissues is one of the recent concerns in seafood industries. Current study has been focused on concentration of some essential and non–essential (toxic) heavy metals in different tissues of the Caspian Kutum, *Rutilus kutum* and Caspian Roach, *Rutilus rutilus* as species for human consumption, that are very dangerous for environment. A total of 100 fish samples of two species, *Rutilus kutum* and *Rutilus rutilus* were caught from Babolsar and Tonekabon stations (in the southeast of Caspian Sea) during fishing seasons in 2011 and 2012. The muscle, liver and gonad samples from two species were carefully dissected for the determination of heavy metals, Copper, Lead and Cadmium levels. Heavy metals studied at this research are hazardous substances in the environment. Levels of heavy metals were determined using Atomic Absorption Spectrophotometer and statistical analysis was carried out by SPSS19 software. The result showed that the Lead concentration was the maximum levels followed by Cu > Cd, while metal abundance in different organs of these fish was in the order liver>gonad>muscle. Cadmium was the least accumulated metal. The highest levels of Pb and Cu were recorded in liver tissues. Linear regression analysis showed that there was a significant increase in the level of Pb in muscles, livers and gonads of both in Kutum and Roach. Also there was a significant positive relationship between fish size and the Cu in livers of the fishes. The data showed that the edible part of fish do not carry heavy metals loads and their concentrations were below the legal value for fish and fish products established by World Health Organization (WHO), NHMRC and UK (MAFF) showed that the fish from investigated region are safety for consumers.

Keywords: *Rutilus kutum*, *Rutilus rutilus*, Heavy metals, Body organs.