Concentration of some heavy metals in rice types available in Shiraz market and human health risk assessment

This investigation was conducted to survey the levels of some heavy metals such as cadmium, lead, chromium, nickel and cobalt in domestic cultivated and imported rice sold on the Shiraz – Iran markets. The potential human health risk assessment was conducted by considering estimated weekly intake (EWI) of toxic metals from eating rice and compared calculated values with provisional tolerable weekly intake (PTWI). The mean values for lead and cadmium in domestic cultivated and imported rice were considerably higher than allowable limits set by FAO/WHO. In combination of recent rice consumption data, the estimated weekly intakes of toxic element were calculated for Iranian population. EWI for cadmium, nickel, chromium through imported and domestic cultivated rice consumption was lower than the PTWI. The EWI for lead were considerably higher than other measured toxic metals. The highest mean level of EWI for lead was observed in some imported rice samples (25.76 μg/kg body weight).