Fish and fish products has a significant role in nutrition and benefits to human health. However, it can be the source of toxic metals such as arsenic (As), cadmium (Cd), mercury (Hg) and lead (Pb). The aim of this survey was to estimate toxic metal concentrations in commercially important fish such as sardine, hake and tuna, purchased in food stores in different cities in Croatia. The concentrations of As, Cd and Pb were measured using inductively coupled plasma with mass detector (ICP-MS) and Hg by mercury analyser. Mean metal levels measured in three fish species were (mg kg$^{-1}$): sardine As 3.70, Cd 0.0094, Hg 0.064, Pb 0.057; hake As 1.23, Cd 0.005, Hg 0.035, Pb 0.01; tuna As 0.91, Cd 0.022, Hg 0.11, Pb 0.01. Significantly higher As and Pb levels were found in sardine than those in hake and tuna ($p<0.0001$, all). Also, significantly higher Hg levels ($p<0.01$) was found in tuna than in hake. Cadmium content was significantly higher in sardine ($p<0.01$) than in hake. Obtained Cd, Hg and Pb concentrations were far below the maximal residue limits (MRL) established by the European Community regulations. For As no MRL is yet established at European level.

The estimated weekly intakes have been estimated and compared with the provisional tolerable weekly intakes (PTWI) for each metal. The highest contribution to the PTWI value was calculated for As (%): sardine 17.1, hake 5.67, tuna 4.20. Mercury measured in tuna contributed 4.88% to the PTWI while sardine and hake contributed as 2.75% and 1.53%. Contribution of Cd to PTWI was below 1% and for Pb contribution was 1.56% for sardine while for other two fishes was below 0.03%. Therefore, the consumption of moderate amounts of these three fish species does not seem to pose a risk to the consumers.

Keywords: food safety, fish, toxic metals, dietary exposure