

## Metal Levels in Commercial Pelagic Fishes and Their Contribution to Their Exposure in Turkish People of the Black Sea

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**Aim of the study:** In the last few decades, urbanization and industrialization has been created environmental pollution due to the intensive nature of human activities in the Black Sea. Heavy metal contaminations in marine organisms especially fish are of great concern because of their persistence, non-biodegradable and toxicity to consumer via food chains. Four commercially important pelagic fish *Sarda sarda*, *Pomatomus saltatrix*, *Trachurus mediterraneus* and *Engraulis encrasicolus* were captured in four of the most important fishing municipalities in the southern Black Sea coasts, to determine the levels of heavy metals in the muscle and to evaluate the possible risk associated with their consumption.

**Material and Methods:** The fish samples were taken randomly during the fishing season in 2015 from Igneada, Sinop, Samsun, and Trabzon ports of the southern Black Sea and only consumed sizes were used. Fish samples were then labelled, preserved and transported to the main laboratory. All the samples were stored at -210C prior to pre-treatment and analysis. Metal analysis (arsenic, copper, zinc, mercury, iron, cadmium and lead) in the edible tissues of fish samples was performed using m-AOAC 999.10- ICP/MS (Inductively Coupled Plasma – Mass Spectrometer) method by accredited Laboratory Services. EN 15763 European Standard methods was applied.

**Results:** The levels of Hg, Cd, As and Pb in all fish species were below the limit of detections (0.05, 0.02, 0.05 and 0.05, respectively). Results showed that the concentration varied from 3.61 (*E. encrasicolus*) to 18.30 (*S. sarda*) mg/kg wet wt. for Zn; from 4.12 (*T. mediterraneus*) to 23.14 (*P. saltatrix*) mg/kg wet wt. for Fe; from 0.14 (*T. mediterraneus*) to 0.47 (*S. sarda*) mg/kg wet wt. for Cu. Concentrations in studied coasts gradually decreased from Igneada to Sinop, and then significantly increased at Samsun and Trabzon. Estimated hazardous quotients of the metals were below 1, therefore these metals in fish do not present any danger to human health.

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**Keywords:** Black Sea, heavy metal, Estimated Weekly Intakes, Hazardous Quotients