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Comparison of heavy metal concentration of some marine fishes from Black and Aegean Seas

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Abstract. Major part of healthy human diet consist of marine fish and seafood products. And it is not surprising that there are numerous studies based on metal accumulation in various fish species. Fish may also be used for heavy metal monitoring programs of marine environments due to their easy sampling, sample preparation and chemical analysis. Concentrations of lead, cadmium, nickel, copper, manganese, zinc, iron, chromium, total mercury and total arsenic were determined in edible part of two commercially valuable fish Greek aquaculture species European sea bass *(Dicentrarchus labrax*) and gilthead sea bream (*Sparus aurata*) purchased from Bulgarian market during 2011. The concentration of metals was measured by atomic absorption spectrophotometry (AAS). The concentration of the heavy metals in examined fish species ranged as follow: Pb 0.008 – 0.013; Cd 0.0017 – 0.022; Ni 0.007 – 0.012; Cu 0.054 - 0.115; Mn 0.043 – 0.09; Zn 0.14 – 0.15; Fe 0.17 – 0.19; Cr 0.05 – 0.07; Hg 0.11 - 0.13; As 1.6 - 1.8 mg kg^{-1} wet weight, respectively.

The concentration of the heavy metals obtained from this study is compared with the results of a Black Sea bluefish (*Pomatomus saltatrix*) caught during the same year. The concentration of metals was significantly affected by the sampling site and fish species. Difference in the heavy metal concentration between European sea bass, gilthead sea bream is observed for Cu, Mn, Zn and Fe. Although, the heavy metals in the edible parts of the investigated fish were in the permissible safety levels for human uses.

Keywords: Black Sea, fish, toxic elements.

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