

## Heavy metals and PCBs level of bluefish (*Pomatomus saltatrix*) from Bulgarian Black sea waters

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**Abstract** The concentration of some heavy metals (Cd, Mn, Fe, Cu and Pb) and polychlorinated biphenyls (PCBs) were determined in muscle tissue of bluefish (*Pomatomus saltatrix*) collected from the coast of Bulgarian Black Sea. Quantitative determination of the PCBs compounds was performed by gas chromatography–mass spectrometry detection (GC–MS), while the heavy metals were determined by atomic absorption spectrophotometry. The validation of the heavy metal procedure was performed by analysis of standard reference material (DORM-2 Dogfish Muscle). Pb and Cd were under the detection limits for the samples from year 2004. The levels of iron showed the highest value trough the two year period of investigation (from 6.51 µg/g up to 7.06 µg/g).

The fourteen congeners of PCB were analyzed including the set of 7 indicators PCBs (IUPAC No 28, 52, 101, 118, 138, 153, 180). PCBs were found in all samples with maximum level in year 2004 ( $\Sigma$  PCBs = 9.1 mg/kg product). The levels of these organochlorines are considered to be comparable to baseline levels.

From an ecotoxicological point of view, the concentrations of heavy metals and polychlorinated biphenyls compounds reflect a comparatively clean and pollution-free environment. These concentrations may be, thus, considered as useful background levels to which to refer for comparison within the Black Sea.

**Keywords:** Heavy metals, PCBs, bluefish, AAS, GC–MS, Black Sea, Bulgaria

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