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## Organochlorine contaminants (PCBs, DDTs, HCB & HBDE) in fish from the Lake Varna and Lake Beloslav, Bulgaria

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**Abstract.** Concentrations of organochlorine compounds such as polychlorinated biphenyls (PCBs), DDT and its metabolites, hexachlorobenzene (HCB) and hexachlorobutadiene (HBDE) were determined in three fish species: goby (*Neogobius melanostomus*), golden grey mullet (*Mugil auratus*) and silverside (*Atherina boyeri*). Samples were collected from the Lake Varna and the Lake Beloslav in 2014. The edible fish tissues were analyzed in order to investigate the presence of pollutants in species from the lakes near Varna City, Bulgaria and compared the results to the levels in other aquatic ecosystems. The fifteen congeners of PCBs, HCB, HCBd, DDT and its two main metabolites DDE and DDD were determined by capillary gas chromatography system with mass spectrometry detection. The OCPs levels in the wild fish were found in the order DDTs > PCBs. The other contaminants HCB and HCBd were not detected or were below the analytical detection limit. Among the pesticides, essentially only the metabolites *p, p'*-DDE and *p, p'*-DDD were found.

The concentrations of DDTs were determined from 2.66 to 17.97 ng/g wet weight and PCBs concentrations were found from 0.43 to 8.05 ng/g ww (in goby and golden grey mullet, respectively). The sum of the six Indicator PCBs did not exceed the European maximum limit 75 ng/g wet weight. The concentrations of DDTs and PCBs were found lower compared to those in similar fish species from other aquatic ecosystems.

**Keywords:** PCBs, DDTs, HCB, HCBd, fish, Bulgaria.

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