



Evaluation of toxic metal levels in edible tissues of three wild captured freshwater fishes

Katya PEYCHEVA*; Lubomir MAKEDONSKI, Albena MERDZHANOVA and Mona STANCHEVA

Department of Chemistry, Faculty of Pharmacy, Medical University of Varna, 55 Marin Drinov Str., 9000 Varna

Abstract River ecosystems are vulnerable to heavy metal pollution. Fish samples are considered as one of the most indicative factors, in fresh water systems, for the estimation of trace metals pollution potential since they are the final chain of aquatic web. The objective of the present study is to evaluate the concentration of some toxic elements (As, Hg, Pb, Cd and Ni) in edible part of three wild fresh water fish species (zander (*Sander lucioperca*), wels catfish (*Silurus glanis*) and European carp (*Cyprinus Carpio*)) caught from Bulgarian part of Danube river collected during 2010. The Danube River is the European Union's longest and the continent's second longest river that passes through or touches the borders of ten countries. It has a great importance in regard to biodiversity, economics and transportation. The elements (As, Pb, Cd and Ni) were assayed using Perkin Elmer Zeeman 3030 electrothermal atomic absorption spectrometer with an HGA-600 atomizer. Determination of Hg was performed using Milestone Direct Mercury Analyzer DMA-80. The results were expressed as $\mu\text{g/g}$ dry weight. The order of heavy metal accumulation in the edible part of zander is $\text{As} > \text{Hg} > \text{Pb} > \text{Ni} > \text{Cd}$ while the other two fish species show a different metal accumulation $\text{Hg} > \text{As} > \text{Pb} > \text{Ni} > \text{Cd}$. In all heavy metals, the accumulation of mercuric and arsenic proportion was significantly high in all three fish types.

Keywords: Danube River, fish, toxic elements, ETAAS, Mercury Analyzer
