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AGE-RELATED DIFFERENCES IN ELEMENT CONCENTRATION IN TISSUES OF RUFFE (GYMNOCEPHALUS CERNUA) AND EUROPEAN PERCH (PERCA FLUVIATILIS), CAUGHT IN THE DANUBE RIVER NEAR BELGRADE

*Katarina JOVICIC *, Srđan SUBOTIĆ **, Željka VIŠNJIĆ JEFTIĆ ***, Jasmina KRPO-CETKOVIC **, Aleksandar HEGEDIS **** and ***Mirjana LENHARDT****

* Institute for Biological Research "Siniša Stanković", University of Belgrade, Serbia, katarina.jovicic@ibiss.bg.ac.rs, lenhardt@ibiss.bg.ac.rs
** Faculty of Biology, University of Belgrade, Serbia, ssubotic@bio.bg.ac.rs, jkrpo@bio.bg.ac.rs
*** Institute for Multidisciplinary Research, University of Belgrade, Serbia, zvisnjic@imsi.rs, hegedis@imsi.rs

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Abstract

Concentrations of As, Cr, Cu, Fe, Hg, Mn, Se, and Zn were assessed by inductively coupled plasma optical emission spectrometry (ICP-OES) in muscle, gills, liver, and gonads of ruffe (*Gymnocephalus cernua*) and European perch (*Perca fluviatilis*) of different age classes. Fish were caught with portable fish nets at the confluence of the Danube River and the Sava River (44° 49′22.13″ N, 20° 26′ 19.22″ E), in Belgrade. Age-related differences in element concentration were assessed by ANOVA ($p<0.05$) and Tukey's (HSD) tests. In ruffe, liver is the main tissue for accumulation of Cu, Fe, and Se, in all age classes. Gills are the main tissue for accumulation of Mn, while gonads had a higher concentration of Zn than the other two tissues. Individuals aged 3+ had the highest concentrations of all elements in liver (except for Cr), while individuals aged 4+ had the highest element concentration in gonads (again, with the exception of Cr). However, these age-related differences in ruffe were not statistically significant. In European perch, the highest concentrations of As, Cu, Fe, Se, and Zn in majority of age classes were found in the liver. Individuals aged 1+ and 2+ had the highest concentration of Hg in gills. In subsequent age classes, muscle was the main tissue for accumulation of this element. Contrary to ruffe, age-related differences were observed for Se in liver, where age classes 4+ and 5+ had higher concentrations than age-class 1+, as well as for Zn in gonads, where age class 1+ had higher concentration than age class 3+.