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0.49 THE EFFECTS OF FLOODING ON MICROBIOLOGICAL QUALITY AND GENOTOXIC POTENTIAL OF THE SAVA RIVER

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Object of the research: During catastrophic floods in May 2014, in the Serbian part of the Sava River, Obrenovac city was the most affected with estimation that about 90% of populated area was flooded. This had led to a complete evacuation of inhabitants, giving us an opportunity to examine effects of municipal wastewater exclusion on the microbiological quality of the Sava River. To assess the genotoxic potential of the Sava River comet assay was applied on blood cells of two cyprinid fishes.

Materials and methods: Sampling was performed from January to December 2014, on the Sava River, site Duboko. Sanitary pollution was assessed by detection of total coliforms, *E. coli* and faecal enterococci using enzymatic methods. Organic pollution was estimated by isolation of heterotrophic bacteria on the YEA. Comet assay was performed on blood cells of white bream (*Blicca bjoerkna*) and white-eye bream (*Ballerus sapa*).

Results: The lowest levels of sanitary and organic pollution were recorded during May and June when inhabitants were evacuated, indicating the role of the municipal wastewater in the pollution. The level of DNA damage in blood cells highly correlated with heavy metals in water which originate from the ash disposal field.

Conclusions: Flooding have the potential to modify water quality by remobilization of pollutants already present in the environment which is reflected on the microbiological water quality and genotoxic potential measured by DNA damage.