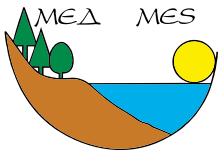

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ABSTRACT BOOK

Ohrid, Macedonia 19th - 22nd October 2016

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others the pollution level is still to be of concern. The treated wastewater quality is improved but the impact of some other factors that are not directly connected to the wastewater treatment plant operation has to be considered further on. Finally, in order to improve the water quality in the polluted sites some recommendations are presented as well.

Keywords: Ohrid Lake, coliform pollution, wastewater treatment plant, wastewater quality, DBO5.

Assessment of the faecal contamination along the Sava River and identification of pollution sources

Stoimir Kolarević[1], Margareta Kračun-Kolarević[2], Jovana Kostić[3], Zoran Gačić[3], Mustafa Aborgiba[1], Andreas Farnleitner[4], Georg Reischer[4], Rita Linke[4], Momir Paunović[2], Branka Vuković-Gačić[1]

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The contamination of water by faecal pollution leads to exposure to pathogens via drinking water production, recreation or irrigation. However, monitoring of microbiological quality of surface waters is quite neglected despite its importance for human health. In the case of Sava River Basin, many of the settlements situated on the river banks discharge high quantities of untreated or improperly treated wastewaters directly into surface waters. Due to usage of water for irrigation, the evaluation of microbiological quality of the Sava River becomes essential for further river management.

Water samples were collected during September 2014 on 17 sites and during September 2015 on 15 sites situated along the Sava River. In 2015, additional samples were collected from 4 wastewater outlets detected onsite. Microbiological analyses comprised monitoring the standard indicators of faecal pollution within the surveys and long term monitoring data (obtained within 5 years of routine monitoring at 4 stations). For detection of total coliforms, *Escherichia coli* and enterococci, Defined Substrate Technology (DST) was used with quantification performed by Colilert Quanti-Tray 2000 system, which provides a Most Probable Number result. Detection of presumptive *Clostridium perfringens* was performed by membrane filtration method according to ISO 14189:2013.

To identify the origin of pollution, microbial source tracking (MST) analyses were employed based on the human-associated BacHum and HF183II, the ruminant-associated BacR and the pig-associated Pig2Bac genetic *Bacteroidetes* faecal markers.

Microbiological indicators showed the existence of hotsposts of faecal pollution in the Sava River. MST confirmed that the pollution is human associated. Long term data at selected sites indicated persistent faecal contamination which leads to conclusion that the sites are under the impact of continuous discharge of wastewaters.

Keywords: coliforms, E. coli, microbial source tracking, surface water contamination