

## COMPARISON OF YEAST EXTRACT AGAR AND R2A AGAR FOR ENUMERATION OF HETEROTROPHIC BACTERIA FROM TWO CROATIAN RIVERS

Kapetanović D.<sup>1</sup>, Dragun Z.<sup>2</sup>, Valić D.<sup>1</sup>, Teskeredžić Z.<sup>1</sup> and Teskeredžić E.<sup>1</sup>

*Ruđer Bošković Institute, Division for Marine and Environmental Research: <sup>1</sup>Laboratory for Research and Development of Aquaculture; <sup>2</sup>Laboratory for Biological Effects of Metals, Zagreb, Croatia*

Microbial community represents a fundamental part in an aquatic ecosystem. Heterotrophic bacteria play an important role in the process of organic matter decomposition in river ecosystems. This parameter is closely related to the degree of eutrophication. The ability of two media, Yeast extract agar according to EN ISO 6222:1999 and R2A agar (Merck), for reliable enumeration of heterotrophic bacteria from river water was compared. A total of 56 water samples were collected from two different streams in Croatia. Krka River is representative of an aquatic ecosystem for the Adriatic river basin, whereas Sava River belongs to the Black Sea river basin. The water samples were collected into sterilized 500 ml plastic bottles, and delivered to the laboratory in cooled insulated containers. To ensure countable levels of microorganisms, all samples were taken before any disinfection step. Within 9 h of collection, samples were analyzed by spread plate method for heterotrophic counts. The samples were serially diluted with Ringer solution pH 6.0 (Pliva). Heterotrophic counts were determined on YEA and R2A agar in parallel, prepared according to manufacturer instructions. Each sample was plated in duplicate onto both media types. The plates were incubated at 35 °C for 24 h and 22 °C for 3-5 days. For each medium, counts on different media were statistically analyzed using software package Sigma Stat. Results from this study indicate that R2A agar gave somewhat higher counts than YEA agar by spread plate method. Both media were found to be in strong positive correlation, not statistically different.

The present work was funded by the Public Institution Krka National Park and EU Framework 6 project: Sava River Basin: Sustainable Use, Management and Protection of Resources (contract no. INCO-CT-2004-509160).