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Implementation of new concentration technologies for microbiological recoveries in a drinking water system from Aquavalens project

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A new concentration method for microbiological analysis has been implemented in a routine sampling and event or emergency situation in a Drinking Water System (DWS), including Drinking Water Treatment Plant (DWTP) and Distribution Network (DN). This concentration method has been developed during European Aquavalens Project (an EU funded -7th Framework Programme- that aims to protect the health of Europeans by improving methods for the detection of pathogens in drinking water and water used in food preparation). This new protocol is based on a hemodialyzer membrane filter, able to concentrate high water volumes and recover three different kingdoms (viruses, bacteria and protozoa). Field samples were taken from DWTP and DN on a monthly period during one year. Parametres such as E. coli, Campylobacter spp, Legionella spp and Legionella pneumophila, Norovirus GI/GII, Hepatitis A virus, Giardia spp and Cryptosporidium were tested by using molecular methods (qPCR and FISH). Obtained results from these new methodologies were compared to standarized and/or validated methods, showing better sensibility and recoveries in most cases. Data is used to calculate treatment efficiency at DWTP (logarithmic reduction of the microbiological load at different treatment steps), to assess DN quality water through Water Safety Plans (WPS) and improving Standard Operational Protocols (SOPs). It is also a less time- consuming (sampling and analyzing) method, saving money and human resources. Acknowledgments: This study has been funded by the European Union through the project AQUAVALENS (EU grant number 311846 www.aquavalens.org).

Biography

G Saucedo completed her Biology degree at the age of 24 at University of Barcelona and at Institute of Molecular Biology at Vienna Biocenter (University of Vienna). She is working in Aigües de Barcelona since 22 years ago, including 8 years at the Drinking Water Treatment Plant at Sant Joan Despí. She is now responsible for molecular biology at Microbiology Laboratory. She has published some papers related to drinking water treatment and distribution and she has participated in several European projects during these years.

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