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Emerging contaminants in water sources - Should we be worried?

Jasminka Jaksic

National Measurement Institute, Australia

Emerging pollutants such as pharmaceuticals, endocrine disruptors, personal care products and pesticides are increasingly detected in aqueous environmental samples. Significant research is conducted worldwide in order to obtain information regarding their occurrence, fate and health effects. These emerging contaminants are usually detected in environmental waters at concentrations ranging from trace to ppb levels. Their presence in drinking and environmental waters, even at these very low concentrations, has raised concerns among drinking-water regulators, governments, water suppliers and the public, regarding the potential risks to human health. Most existing toxicity data are based on tests performed on single compounds and for short-term exposure. Therefore, the focus of current research has moved to understand the fate and effects of mixture of compounds, their metabolites and/or transformation by-products, as hydrolysis, photolysis and biotic transformations may lead to the formation of more toxic and persistent contaminants. The absence of data and monitoring has resulted in little to no regulation of emerging contaminants in surface waters and finished drinking water supplies. Monitoring data is essential to understand their occurrence levels and frequency. Appropriate regulations governing disposal practices, guidance and enhanced consumer education will support efforts in reducing the environmental impact of emerging contaminants entering the environment. In order to produce a reliable and consistent monitoring data, the development of standardised and sensitive multi-residue analytical methods for the generalised and non-targeted screening of trace organic contaminants in environmental waters is needed.

Biography

Jasminka Jaksic obtained PhD in Chemistry in 2007 at Macquarie University, Sydney, Australia. Subsequently, she worked as a Postdoctoral Research Fellow exploring the human body mechanisms and regulations, Technical Application Specialist for trace level analytical measurements in environmental, food and resources industries. Her last employment was at the National Measurement Institute in the role of Technical Development Manager. Her key objectives were to improve environmental, food, mining/resources and agricultural measurement capabilities through development, implementation and accreditation of new processes. She has recently moved to Dubai, UAE, to seek new challenges locally.

smallalchemist@hotmail.com

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