Fungal contaminants – a paradoxal void in safety regulation of drinking water and recreational areas

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During the last 30 years European reports revealed fungal presence in fresh water used for human consumption, hygiene and leisure activities. In the same period also medical reports disclosed that approximately one quarter of the human population worldwide, and up to 50% of the elderly, are estimated to suffer from superficial fungal infections.

Although exposure to fungi and their metabolites, by inhalation, contact and ingestion has often been addressed, it rarely made way into safety regulation. The EU drinking water directive 98/83/EC and the national legislation in the European countries - with very few exceptions - fails to address fungi explicitly. The same is valid also for European regulatory Directive 2006/7/EC, currently undergoing its second revision with no plan to introduce fungi, yet again. Both Directives address microbiological safety of drinking and bathing / recreational waters by monitoring of bacterial parameters indicating faecal contamination, and correlating with gastro-intestinal illness but leaving behind other microbes and several emerging pathogens and other pathologies.

This study assesses the European drinking and bathing water regulations and sand; it evaluates background information, and underpinning missing fungal parameters that (may) affect human health.

Ecological and anthropogenic factors influencing presence of fungi in waters and sand, and their medical relevance

Drinking water

Bathing water & sand

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