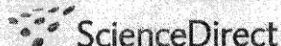
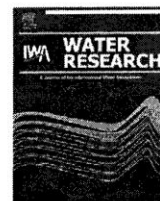


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Occurrence of filamentous fungi and yeasts in three different drinking water sources

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ABSTRACT

In order to determine the occurrence of fungi in different drinking water sources and capture variability in terms of matrix composition and seasonal effects, surface water, spring water, and groundwater samples were collected in numerous sampling events. The occurrence and significance of fungi detected in the different water sources are reported and discussed in terms of colony-forming units per millilitre and by the identification of the most frequently detected isolates, at the species level, based on morphology and other phenotypic characters. All the samples were also analyzed in terms of total coliforms and *Escherichia coli* that are widely monitored bacteria considered as microbiology indicators of water quality. All the groundwater samples showed significantly lower levels of total coliforms, *E. coli*, and fungi compared to the surface and spring water samples. No significant correlations were found between the levels of fungi detected in all the matrices and the physico-chemical parameters and bacteria regularly monitored by drinking water utilities. Fifty-two fungi isolates were identified in this study, most of which have never been described to occur in water sources. The results obtained show that fungi occur widely in drinking water sources and that further studies should be conducted to address their biodegradation potential as well as if the drinking water treatment processes currently used are effective in removing these organisms and the potential secondary metabolites produced.

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