Fungi important in epidemiology noted in drinking water

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Water constitutes a natural reservoir of fungi. Drinking water should be free of any contaminants, including pathogenic microorganisms that pose a direct or indirect threat to human health. The present study evaluates the mycological purity of drinking water with regard to the epidemiology of mycoses.

Monitoring studies of tap waters in the cities of north-eastern Poland have revealed the periodical appearance of microfungi. Mycological analyses were conducted for four years in samples of tap water collected from private apartments. After transportation to the Department of Mycology, the samples underwent complete species identification based on routine hydromycological diagnostics.

The majority of identified microfungi included yeast and yeast-like fungi from three metabolic groups: white yeasts, red yeasts and black yeasts. Although fungi were not detected in every sample or in high counts, the fact of their presence in drinking water itself may pose a serious epidemiological risk. This fact is of particular concern for those predisposed to fungal colonization, which can lead to infection and disease development in particular cases.

Other than saprophytes, the samples contained the following genera which are rarely noted in water: *Candida*, *Debaryomyces*, *Exophiala*, *Hansenula*, *Rhodosporidium*, and *Rhodotorula*. Around 40% of the isolated species were potential pathogens from the BSL-2 group. The appearance of microfungi at a temperature of 37°C as early as the second day of incubation confirms the presence of real epidemiological threat to man. An extension of the list of indicators/ biomarkers of purity and sanitary evaluation of drinking waters is therefore required.