

## Occurrence of micro-fungi in recreational water reservoirs in the context of human health

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Micro-fungi occurring in surface waters are considered to be an important factor of health risk. The water found in recreational areas could serve as a vector in the transmission pathways of potentially pathogenic fungi. The aim of the study was to assess the mycobiota diversity in selected artificial bathing lakes in the context of biosafety for the human population. The studies were conducted in the city of Łódź during the summer of 2016 in three research seasons: June (I), July to August (II) and September (III), taking into account the various periods of recreational activities of people. The yeast and filamentous fungi were isolated from water samples collected at five different surface locations utilized for recreation. From 162 water samples, 18 yeast and 149 filamentous fungal taxonomic units were obtained. The most commonly isolated species among yeast was *Candida krusei* and among filamentous fungi – *Aspergillus fumigatus*. The highest yeast diversity was observed in season III – 15 species, and in seasons I and II – 5 species each. The highest filamentous species diversity occurred in season I with 93 taxonomic units, whereas season II – 68 and season III – 70. The highest yeast diversity and the lowest filamentous fungi diversity was found in pond subjected to eco-hydrological recultivation, whereas the highest filamentous fungi diversity was found in a water reservoir supplied by water from a polluted river. Of all the isolated species, 30 from the BSL-2 group and 112 from the BSL-1 group were potentially pathogenic, which indicates the necessity for introducing seasonal mycological monitoring of such reservoirs.

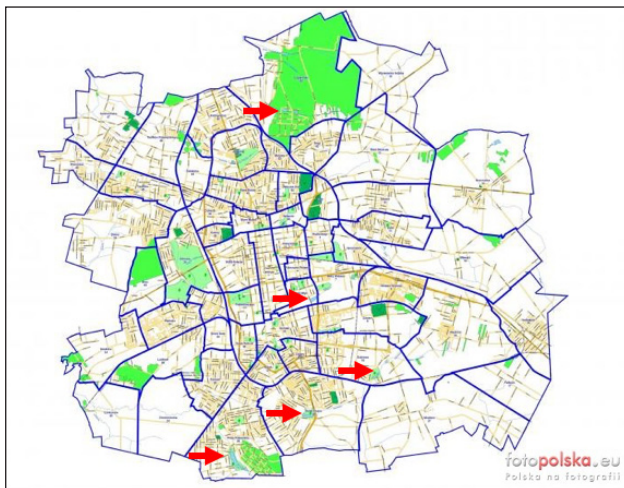


Figure 1. The research areas in the city of Łódź.

Photo 1. The Sampling location – Arturówek.

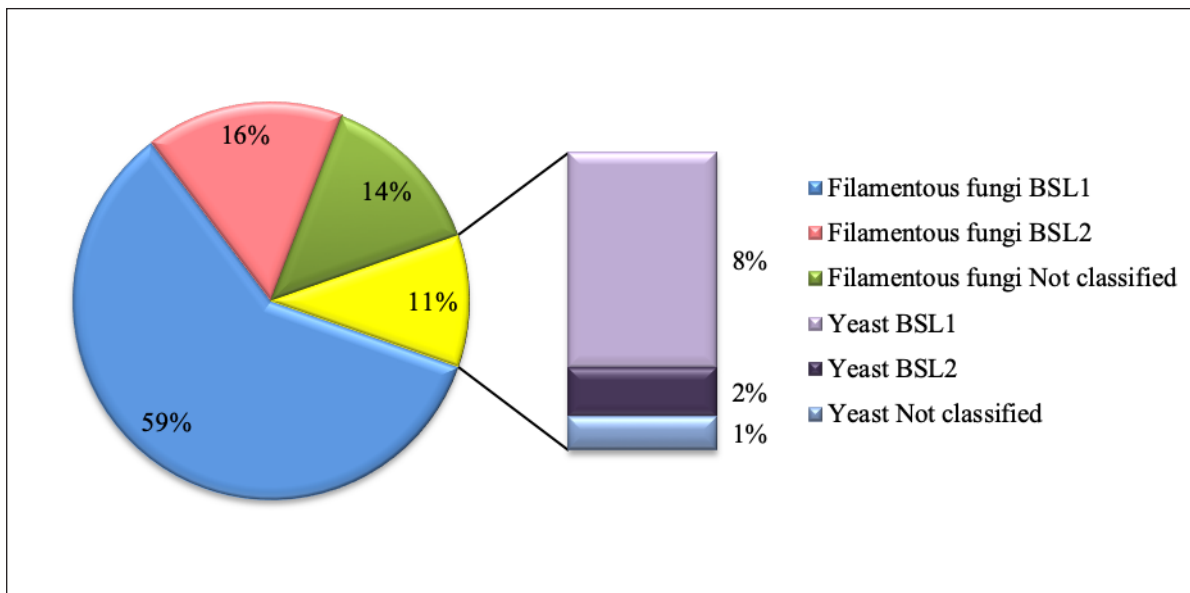


Figure 2. Prevalence of fungi with classified Biosafety Level (BSL) in water samples of examined bathing places.

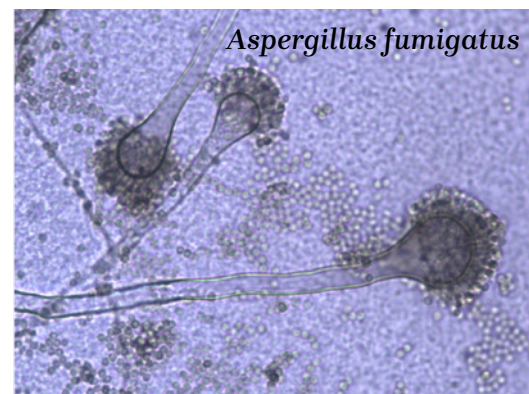


Photo 2. Strains of fungi isolated from water samples.