

FILAMENTOUS FUNGI IN DRINKING WATER TANKS OF A WATER SUPPLY SYSTEM IN RECIFE-PE, BRAZIL

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Drinking water reservoirs are widely used in various building constructions in Brazil for as a source of potable water for users. However, they are susceptible to the growth of microorganisms such as fungi. From these, several negative factors may ensue, namely, unpleasant odors and flavours, pigments, biofilm formation and mycotoxins. This is caused fungal resistance to treatment and disinfection. Brazilian law and those of other countries offer no encouragement for the research of the species of fungi that cause these problems. There are no legal limits as to the presence in drinking water. This study assesses the occurrence of filamentous fungi in drinking water reservoirs connected to the Alto do Céu distribution system located in Recife, Pernambuco, Brazil. Four monthly collections were carried out, in triplicate, at two fixed points in the network, at the same treatment area, and another 2.0 km away from this site. For water physicochemical characterization at the time of collection, pH, temperature and free residual chlorine were analyzed. Filamentous fungi were quantified by filtration through cellulose nitrate membrane with a 0.45 µm porosity. All strains were grown in Petri dishes containing Peptone Glucose, Rose Bengal Agar (PGRBA) and were incubated at 30°C for 48h. Fungal occurrence was quantified as colony forming units (CFU) per litre. Twenty-four samples were analyzed, and these accounted for 807 CFU. Considering the potential for water spreading diseases, and the high toxicity of fungi into account it is intended that this work may prompt the creation of acceptable parameters as to the presence of fungi in drinking water networks.

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