

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

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Fungi cause detrimental organoleptic effects in water, and their presence may facilitate the occurrence of infections, allergic reactions and harmful effects from mycotoxins. Despite the lack of knowledge on the biological structure of filamentous fungi in biofilms, it is known that they can contribute with bacteria, yeasts, protozoa and viruses. Hence, this study analyzed, *in situ*, filamentous fungi in biofilms found in drinking water reservoirs of the distribution network in Alto do Céu, Recife, Pernambuco, Brazil. Biofilms were collected, in triplicate from samplers consisting of a polyethylene plate (4.0cm x 1.5cm) established in drinking water reservoirs. Four monthly collections were carried out between August and November 2011 at two fixed points. Polyethylene samplers were taken to the laboratory and washed with sterile water and transferred to Petri dishes containing medium Peptone, Glucose, Rose Bengal Agar (PGRBA). The plates were incubated at 30°C for 48h. The occurrence of fungi was reported as CFU/L. Fifty three colony forming units of fungi were quantified. For water physicochemical characterization at the time of collection, pH, temperature and free residual chlorine were analyzed. For detection of biofilms, a combination of two fluorescent techniques was used: (A) Fluorescent “*in situ*” hybridization (FISH) using a rDNA universal probe EUK516 (ACCAGACTTGCCCTCC 5'-3', MWG Biotech, Ebersberg, Germany) labeled with cyanine Cy3 at the 5' end and (B) Calcofluor White M2R (CW). After FISH and CW, the samples were observed under an epifluorescent microscope. Fungal filaments which formed biofilms in the distribution network were observed establishing biofilm formation. These results confirm the presence and relevance of filamentous fungi in structuring biofilms.

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