

BIOFILM FORMATION BY FILAMENTOUS FUNGI RECOVERED FROM A WATER SYSTEM

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Filamentous fungi have been consistently recovered from diverse aquatic environments including drinking water distribution systems. Although most of the work is focused on planktonic forms, recent research demonstrates unequivocally that fungi develop biofilms within these systems. In this study, individual strains of *Aspergillus* (section *Nigri*), *Aspergillus* (section *Flavi*), *Alternaria*, *Botrytis*, *Cladosporium* and *Penicillium*, recovered from water biofilms, were used to evaluate their capability to grow as biofilms *in vitro*. Morphological and physiological characteristics were analysed using image analysis, and biomass and cell activity estimations. All six isolates were able to form biofilms, although different patterns of development were observed. Only *Alternaria* sp. formed biofilms in water within 24 h. Malt extract broth (MEB) was the optimal culture medium for biofilm formation. A direct correlation between biomass and cell activity was not observed, but the quantity of biomass and morphological parameters, i.e. monolayer and exopolysaccharides (EPS) production, were directly correlated. Thus, fungi are capable of forming biofilms and there remains a necessity to standardize methods for further research in this area.