Evaluation of entrapment potentiality and turbidity removal efficiency of fungi


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Abstract

Turbidity and suspended solids concentration promotes a number of negative effects on freshwater ecosystems. Conventionally, suspended solids and turbidity are removed from raw water by various chemical coagulants but most of them are costly and non-environment-friendly. Whereas, the bioflocculants are environment-friendly and could be used as coagulants. Extracellular polymeric substances (EPS) produced by microorganisms play a definite role to reduce the turbidity of river water which can enhance the aesthetics of river water and other water uses. In this study, pellets-foams were observed from five filamentous fungi isolated from Pusu river water. The strains RWF-01, RWF-02, RWF-03, RWF-04 and RWF-05 showed a good entrainment capability and flocculating rate of 97.69%, 93.42%, 99.18%, 91.34% and 90.21% to kaolin suspension and 44.54%, 99.27%, 98.59%, 20.57% & 68.43% to river water respectively at 6h of culture time. The result showed the clay particles of river water and kaolin has entrapped by the microbial growth and, as a result, they reduced the turbidity of river water. © 2015 Penatar Utm Press. All rights reserved.

Author keywords

Filamentous fungi; Flocculation; Kaolin clay; River water; Turbidity

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