

Evaluation of fungal potentiality for bioconversion of domestic wastewater sludge.

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This study was undertaken to screen the filamentous fungi isolated from its relevant habitats(wastewater, sewage sludge and sludge cake) for the bioconversion of domestic wastewater sludge. A total of 35 fungal strains were tested against wastewater sludge (total suspended solids, TSS 1%-5% w/w) to evaluate its potentiality for enhancing the biodegradability and dewaterability using liquid state bioconversion(LSB) process. The strains were divided into five groups i.e. Penicillium, Aspergillus, Trichoderma, Basidiomycete and Miscellaneous, respectively. The strains WWZP1003, SCahmA103, SCahmT105 and PC-9 among their respective groups of Penicillium, Aspergillus, Trichoderma and Basidiomycete played potential roles in terms of separation (formation of pellets/flocs/filaments), biodegradation(removal of COD) and filtration (filterability) of treated domestic wastewater sludge. The Miscellaneous group was not considered due to its unsatisfactory results as compared to the other groups. The pH value was also influenced by the microbial treatment during fermentation process. The filterability of treated sludge was improved by fungal treatment, and lowest filtration time was recorded for the strain WWZP1003 and SCahmA103 of Penicillium and Aspergillus groups respectively compared with other strains.