

Microbial Regrowth Potential in Distribution Systems for Reclaimed-Greywater by Membrane Bioreactor (MBR)

One of the most distinctive characteristics of greywater reclamation and distribution is the microbial contaminants and microbial regrowth. In this study, the effluent without disinfection process from the pilot scale of membrane bioreactor (MBR) treating greywater from a household building in Srinakharinwirot University (Ongkaruk Campus) Nakorn-Nayok Thailand will be considered to be reused for toilet flushing and irrigation activities in the residential area of the university. Therefore, the aim of the present study will be to investigate the removal and regrowth of microorganisms in greywater reclamation using the next-generation sequencing (NGS) technology into the predominant microbial community. Some key parameters of treatment performance including BOD, Total Suspended Solid (TSS), Oil and Grease, TKN and total phosphorus (TP) will be monitored. Removal efficiencies of treatment plants also will be evaluated. This study will be provided our understanding of microbial removal and regrowth in reclaimed greywater treatment and distribution systems. Moreover, the results also recommended that more processes should be equipped to remove viable bacteria in water reclamation plants for the sake of inhibition of microbial regrowth during water distribution and usages.

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