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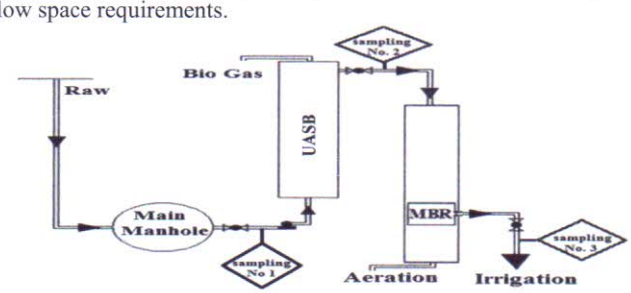
Waste Utlilization

Great environmental concern is due to disposal of pharmaceutical wastewater without adequate treatment. The present study deals with treatment of industrial pharmaceutical wastewater for an effective removal of pharmaceutical active compounds (PhACs). This wastewater was previously treated by activated sludge through two stage successive treatment process that was inadequate for the removal of the PhACs. The inefficient treated water is used for landscape irrigation that would threat the environment, public health and groundwater. The aim of the present study is employing an adequate treatment system for complete removal of the pharmaceutical residues (PhR's), efficient wastewater handling and safe water reuse. For this purpose an integration of UASB reactor followed by MBR was studied. The examined system proved high efficiency in treating the given wastewater, removal of the PhR's and safe quality for water reuse. The pharmaceuticals were removed from raw wastewater at a rate ranging from 94 to 99.2%. The overall results revealed that employing the integration of UASB followed by MBR is efficient for the treatment of the studied raw mixed wastewater in terms of the pollution parameters as well as eliminating the PhR's. Meanwhile, the examined integrated process is considered a compact system with low space requirements.



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