

ABSTRACT

In the wake of water scarcity it becomes important to save water. In arid and semi-arid areas of Rajasthan particularly this becomes very essential to counter the problem of water scarcity. An important initiative in this matter is recycling of wastewater. In this study the recycling of greywater was sought because it is low in organics and nutrients as compared to black water and hence does not command very high level of treatment. Also a majority portion of the domestic waste water generated is greywater (about 75%). To further make the process low cost it was thought to use the locally available sand for the design of filter bed. If greywater is recycled on domestic level by much of the population it could reduce load on the centralized water supply systems and further reduce load on the waste water treatment facility.

In this study 4 column studies were performed: two studies with constant loading rates of 10 ml/min and 20 ml/min, other two studies with constant head of 3 cm and 5 cm. The greywater was collected from MNIT, Jaipur girls' hostel. It was characterized for pH, TKN, NH₄-N, NO₃-N and phosphates. The effluent concentration of these parameters after filtration were compared with the reuse guidelines as provided by the CPHEEO and hence the efficiency, effect of various process parameters on efficiency and suitability of the process was ascertained.