

Landfill leachate treatment using SSF-FWS constructed wetland planted with *Limnocharis flava* and *Eihhornia crassipes* under different hydraulic loading rate

Abstract

A laboratory-scale study was conducted using a combination of SSF and FWS constructed wetland planted with *Limnocharis flava* and *Eichhornia crassipes* to treat landfill leachate. The effects of hydraulic loading rate (HLR) on pollutant removal in landfill leachate as well as the difference in performance between the planted and control system were investigated. The HLR in the system was varied at 0.39 m/d and 0.55 m/d. The results showed that the SSF-FWS constructed wetland was successful in reducing the pH value, TSS and turbidity. The removal efficiency of TSS and turbidity were achieved 98.32% and 97.43%, respectively at 0.39 m/d HLR. The study concluded that different HLR and the presence of wetland plants have given significant effects on the constructed wetland performance.

Keywords; Hydraulic Loading Rate, Landfill Leachate, SSF-FWS Constructed Wetland