

Phenols and Manganese Removal from Landfill Leachate and Municipal Waste Water Using the Constructed Wetland

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Abstract : Constructed wetland (CW) is a reasonable method to treat waste water. Current study was carried out to co-treat landfill leachate and domestic waste water using a CW system. *Typha domingensis* was transplanted to CW, which encloses two substrate layers of adsorbents named ZELIAC and zeolite. Response surface methodology and central composite design were employed to evaluate experimental data. Contact time (h) and leachate to waste water mixing ratio (%; v/v) were selected as independent factors. Phenols and manganese removal were selected as dependent responses. At optimum contact time (48.7 h) and leachate to waste water mixing ratio (20.0%), removal efficiencies of phenols and manganese removal efficiencies were 90.5%, and 89.4%, respectively.

Keywords : constructed wetland, Manganese, phenols, *Thypha domingensis*

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