

## Remediation of municipal solid waste landfill leachate by using subsurface flow constructed wetland with low permeable reactive media

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20409578&lokasi=lokal>

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### Abstrak

This research was carried out to investigate the efficiencies of leachate treatment by using subsurface flow constructed wetland (CW) with low permeable reactive media and guinea grass (*Panicum maximum* TD 58). Pilot scale CW was examined at hydraulic loading rate (HLR) of 0.028 m/d and hydraulic retention time (HRT) of 10 d. Two different types of media in CW were used i.e. system 1: clay and sand mixture at ratio of 40:60 (%w/W) and system 2: clay, iron sludge and sand mixture at ratio of 30: 10:60 (%w/w). The results showed that the performance of system 2 was better in terms of pollutant removal efficiencies. Average BOD, COD and TKN removals were 76.1, 68.5 and 73.5% respectively. Methane, carbon dioxide and nitrous oxide emissions during the treatment of CW were 23.2-52.1, 69.1-601.8 and 0.04-0.99 mg/m<sup>2</sup>/d respectively. The use of CW with reactive media in system 2 and vegetation resulted in lower GHG emissions. The results show that CW with low permeable reactive media could be effectively used to remediate leachate from the landfill site.