

Phytoremediation of Ex Mining Lake Water in Constructed Wetland by Perennial Plants

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ABSTRACT

*Poor water quality due to heavy metal content in Tasik Puteri can harm people that directly get into contact with it for recreational activities. Thus, this study investigated the phytoremediation potential of locally aquatic plants to remediate the lake water. *Scirpus grosus* and *Eleocharis dulcis* were planted in constructed wetlands for 28 days. The water analysis was performed to measure turbidity, total iron (TI), total phosphorus (TP), chemical oxygen demand (COD) and electrical conductivity (EC). After 28 days, *S. grosus* was observed to be healthier. Fluctuation readings were recorded in turbidity value and considerable decrements in TI, TP, COD and EC. *S. grosus* exhibits higher removal of TI, EC and turbidity which 95.45%, 32.89% and 40.00% removal respectively, whilst *E. dulcis* removed 65.28% of COD. Both plants demonstrated comparable TP removal with 92.04% and 91.04% by *S. grosus* and *E. dulcis* respectively. In conclusion, *S. grosus* is proven as the more effective phytoremediator.*

Keywords: Bioremediation, Constructed wetland, Emergent plant, Mining lake water