

Utilization of constructed wetland post harvested biomass through fly ash bricks plant: A phytoremediation approach

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Abstract

Toxic metal-contaminated wastewater is a major environmental issue that requires a practical and cost-effective technological solution. Heavy metal phytoremediation by constructed wetland is becoming more common around the world. Plants are used in phytoremediation to degrade, stabilize, and remove contaminants from soils, water, and waste. The key issues with managing heavy metal phytoremediation plants in an environmentally appropriate manner. The design of CWs for successful phytoremediation in heavy metals contaminated wastewater should not affect the local environment. By-product generation is another crucial part of phytoremediation's success. Phyto-management has emerged as an alternative strategy in recent years. Phytoremediating plants (*C. indica* and *A. calamus*) biomass has been successfully used in the manufacture of 70 fly-ash bricks. High rate of Cu (96 %), Zn (95 %), (Fe 93), and Cr (91 %) removal from *Canna indica* and *Acorus calamus* were found in the present study as compared to the *Typha latifolia*, *Myriophyllum aquaticum*, *Ludwigia palustris*, *Eichhornia crassipes*, *Schoenoplectus californicus*, *Cyperus papyrus*, and *Phragmites australis* which indicates *C. indica* is the high potential for heavy metal removal and can be strongly used for industrial wastewater. In the way, the use of ornamental plants for phytoremediation of contaminated sewage wastewater would also change the landscape of the aquatic environment. This article summarises viable avenues in the method of using phytoremediating plant biomass for environmental protection.

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