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Application of constructed wetland using eichhornia crassipes for sewage treatment (Article)

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Abstract

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India is facing acute shortage of clean water for drinking and other purposes. Most of the water resources are polluted by discharge of domestic sewage. The municipal sewage systems used in developed countries are often too expensive to build and operate thus low-cost; low-tech alternatives for treating wastes are needed. An alternative is to use natural or artificial wetlands to dispose of wastes. In this research constructed wetland with water hyacinth plant has been tried to reduce the pollutant load of sewage. It is found that the system is capable of removing pollutants and the hydrophyte has shown its ability to survive in high concentration of nutrients with significant nutrient removal. In all the sets of dilution of wastewater, DO (dissolved oxygen) levels increased after treatment. In 100% sewage dilution BOD (biological oxygen demand) was observed to be 230 mg/L which decreased to 120 mg/L. Reduction of metals was noticed in all treatments with reduction in Co, Cu and Fe were found to be 78.78%, 28.90% and 23.42% respectively. The results obtained from analysis of treated wastewater indicated that the treated water can be useful for agriculture, washing, gardening, planting or any other purposes.

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