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Application of Water Hyacinth in Phytoremediation of Wastewater

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Abstract

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Abstract

Wastewater is any water source that a human has used for domestic, agricultural, commercial, or industrial activity. Wastewater needs to be treated before being discharged into the environment to reduce contamination of water bodies. The wastewater treatment must follow the Environmental Quality (Sewage) Regulations, 2009. Rivers in Malaysia continue to suffer wastewater pollution from the inefficiency of treatment. Wastewater has been recognized as the significant cause of these issues. Many physical, chemical, and biological techniques have evolved for sewage treatment. It has been

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observed that biological procedures are advantageous, and one of these procedures that can be considered is phytoremediation. Thus, this study investigated the effectiveness of water hyacinths in treating wastewater, such as the effluent from the wastewater treatment plant, river, and pond in Pusat Asasi, UiTM Dengkil, Selangor, by phytoremediation. Different parameters of pH, suspended solids, phosphorus, ammonia-nitrogen, nitrite-nitrogen, nitrate-nitrogen, chemical oxygen demand and biological oxygen demand have been assessed. The research has been conducted with experimental works of 14 days. The laboratory works showed a significant reduction in most parameters after two weeks of phytoremediation. © 2023 Institute of Physics Publishing. All rights reserved.

Author keywords

Phytoremediation ; wastewater ; water hyacinth

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