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Man-Made Lake of Taman Pertanian, Kuantan: The Valuation of Water Quality and Nutrient Removal by Using Hydrilla Verticillata Sp. and Myriophyllum Aquaticum Sp. as Submerged Plant Species

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Abstract

Polluted water caused by the impact of eutrophication process known as essential negative impacts by the impedance of cyanobacterial species towards the spread of biomass in a freshwater biological system. Phytoremediation is a built utilization of green plants in order the evacuate natural contaminants. The goal of study was to assess the chosen submerged plant species towards supplement expulsion coming from treated lake water in execution light and capacities. The types of submerged plant species used includes Hydrilla Verticillata Sp. (Esthwaite Waterweed) and Myriophyllum Aquaticum Sp. (Parrot's Feathers) which is to evacuate contaminants in water utilizing phytoremediation process. The study was conducted seven times whereby time gap for every study was seven days. A total of 7 parameters includes Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Dissolved Oxygen (DO), Suspended Solid (SS), turbidity, pH, and Nitrite as for water quality evaluation. The comparison on the effectiveness of submerged plant species to evacuate and remediate contaminant substances shown Hydrilla Verticillata Sp. as the best plant in removing the contaminant based on the percentage of contaminant removal BOD = 66.72%; COD = 77.78%; TSS = 55.55% and Turbidity = 0.57%. In conclusion, there are significant changes before and after treatment from both plants.

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Keywords: artificial lake, phytoremediation, nutrient removal, water resources, cleaner production, bio-research technology

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