INFLUENCE OF TWO DIFFERENT FLOW RATE ON POLLUTANT REMOVAL CAPACITY OF AQUATIC PLANTS FOR TREATING THE SEWAGE EFFLUENT THROUGH CONSTRUCTED WETLAND TECHNOLOGY

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ABSTRACT

A lab-scale model constructed wetland designed with horizontal flow system with 45×21.5×30 cm (L×B×H) for treating the primary sewage effluent. Three efficient aquatic plants viz., Canna indica, Xanthosoma sagittifolium, and Typha angustifolia were selected and utilized for the lab-scale study. Seven different retentiontime 1st, 2nd, 3rd, 4th, 5th, 6th and 7th day after the beginning of the experiment with two average flow of 5 ml/min and 10 ml/min maintained. The results of the experiment state that pollutants and a salt load including was significantly reduced at the 7th day of retention time. Canna indica and Xanthosoma sagittifolium performed better in a model constructed wetland for treating sewage effluent with the flow rate of 5 ml/min at the retention time of the 7th day compared to the flow rate of 10 ml/min.

KEYWORDS: *Flow Rate, Aquatic Plants, Pollutant, Constructed Wetland*