



Initial Evaluation of the Efficiency of Constructed Wetlands in the Post-Treatment of UASB Reactor

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Abstract

This study aimed to implement and monitor 03 units of sewage treatment by constructed wetlands systems in the post-treatment of a UASB reactor. The deployment of the units occurred in the Sewage Treatment Station of School of Arts, Sciences and Humanities of University of São Paulo - EACH / USP, São Paulo, between September-October 2010. For system monitoring and tracking performance, were analyzed dissolved oxygen (DO), turbidity (qualitative per-view), NH₄ e PO₄. Two units of vertical flow wetlands and a horizontal flow have been deployed, both with emerging macrophytes (*Typha sp.*), rated for hydraulic loadings between 135 and 733 mm.day⁻¹. The vegetation of the three units showed good adaptation, with the presence of new seedlings and increased plant density. Furthermore, they showed high oxygen uptake capacity, increasing the concentration of DO in the effluent (2.76 to 3.46 mg.L⁻¹), with a good removal of suspended solids and turbidity. The vertical units showed removal of NH₄ ranged from 10 to 76%, indicating good nitrification. For PO₄, the vertical units presented, at the beginning, an increased concentration, and subsequently a removal between 34 and 44%, while the horizontal unit showed removal rates of 7 and 40% during the whole period. Thus, we conclude that the units presented satisfactory performance, resulting in promising systems for the post-treatment of effluents from UASB reactors.

Keywords: *constructed wetlands; post-treatment; UASB Reactor.*
