



Influence of the receiving of leachate from sanitary landfill on the sewage treatment in process of activated sludge with mobile biomedica

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Received 11 April 2016; Accepted 21 August 2016

ABSTRACT

In this research was investigated the performance of a hybrid system of the type integrated fixed-film activated sludge (IFAS), here called “activated sludge with mobile biomedica”, in combined treatment of leachate from sanitary landfill and domestic sewage aiming at removing of organic substance and nitrogen. In order to assess the possible impact on treatment had been developed three experimental phases with contributions of leachate in the composition of the affluent: 5%, 10% and 20% of the total load of BOD. A system was used on a pilot scale, which useful volume of the bioreactor is equal to 1.0 m³. Overall, the results showed that, even at the highest contribution of leachate, there were no significant changes in the behavior of the biological process, and were usually obtained efficiencies of BOD removal above 85% and TKN near 90%. Nevertheless, there was a small reduction in the specific growth rates of both autotrophic bacteria as in heterotrophic, increased with leachate load. In general, the process showed a good performance and operational stability throughout its operation, indicating that, from the point of view of removal of organic matter and nitrogen, the leachate contributions used in this study can be admitted to treatment plants sewer of this category.

Keywords: Leachate from sanitary landfill; Combined treatment of leachate and domestic sewage; Hybrid system; Removal of organic matter and nitrogen

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