World Academy of Science, Engineering and Technology
International Journal of Chemical and Materials Engineering
Vol:10, No:06, 2016

Single Species vs Mixed Microbial Culture Degradation of Pesticide in a Membrane Bioreactor

Authors : Karan R. Chavan, Srivats Gopalan, Kumudini V. Marathe

Abstract : In the current work, the comparison of degradation of malathion by single species, Pseudomonas Stutzeri, and Activated Sludge/Mixed Microbial Culture is studied in a Membrane Bioreactor. Various parameters were considered to study the effect of single species degradation compared to degradation by activated sludge. The experimental results revealed 85-90% reduction in the COD of the Malathion containing synthetic wastewater. Complete reduction of malathion was observed within 24 hours in both the cases. The critical flux was 10 LMH for both the systems. Fouling propensity, Cake and Membrane resistances were calculated thus giving an insight regarding the working of Membrane Bioreactor-based on single species and activated sludge.

Keywords : fouling, membrane bioreactor, mixed microbial culture, single species
Conference Title : ICCBE 2016 : International Conference on Chemical and Bioprocess Engineering
Conference Location : New York, United States
Conference Dates : June 06-07, 2016