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Comparison Study of Waste Water Generated from Manufacturing of Cardiovascular and Anti-Epileptic Bulk Drugs with ASP and MBBR Treatment

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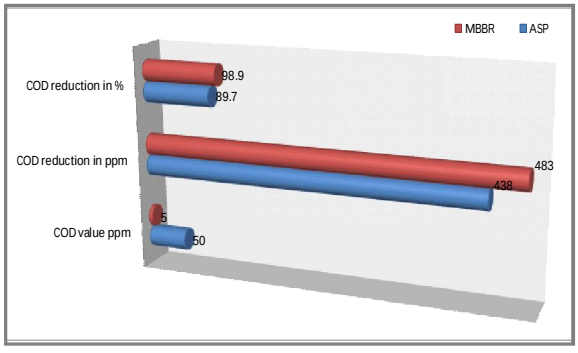
ABSTRACT

Bulk drug industry is one of the major industries causing water pollution. Poorly treated wastewater with high level of pollutants caused by poor design, operation or treatment systems creates major environmental problems when discharged to surface water or land. Considering the above stated implications an attempt has been made in the present work for Cardiovascular and anti-epileptic bulk drugs industry. After primary treatment, bio degradation in Moving Bed Bio Reactor is more effective treatment than Activated Sludge Process. Adjustment of pH by sodium hydroxide, coagulation process, evaporation process, bio degradation by mixed bio-culture mainly pseudomonas and activated carbon adsorption applied, which is treatment process to degrade organics (In Cardiovascular dilute effluent degradation in MBBR COD :3.1 %, BOD: 3.0% TDS: 0.3 % more than ASP. In concentration effluent degradation in MBBR COD: 0.05%, BOD: 0.07% TDS: 0.06 % more than ASP. In Anti- epileptic dilute effluent degradation in MBBR COD: 3.69 %, BOD: 2.76% TDS: 5.95 % more than ASP. In concentration effluent degradation in MBBR COD: 0.38%, BOD: 6.01% TDS:0.2 % more than ASP) present in waste water of Cardiovascular and Anti- epileptic therapeutic bulk drug manufacturing process. The experiments were carried out at lab scale. Obtained result shows as maximum degradation of compound and volatile organic presents. The results revealed that pH, addition of coagulant agents, evaporation % age and bio degradation retention time affects the extent of degradation of compound.

Graphical Abstract



Comparison of COD reduction in Cardiovascular concentrate effluent stream in Activated Sludge Process & Moving Bed Bio Reactor Treatment.

Keywords: Activated sludge process, Bio degradation, Coagulation, Evaporation, Moving bed bio reactor, Waste water