

Efficiency of Modified Grease Trap for Domestic Wastewater Treatment

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Abstract

The objective of study was to investigate the efficiency of modified grease trap for domestic wastewater treatment. The study was focused on a media arrangement (5 cm diameter of Mon brick: 1 cm diameter of gravel: 3 cm diameter of Mon brick) with the different media ratios (1:1:1, 1:1:2, 2:1:1, 1:2:1, 2:2:1, 2:1:2 and 1:2:2) in a modified grease trap. Also, it was focused on the optimal factors; flow rate (2-5 L/min) and hydraulic retention time (HRT) (4-10 hrs) on treatment efficiency of grease trap. The result revealed that modified grease trap (1:1:2) for domestic wastewater treatment was generated in the highest efficiency. Suspended solid (SS), fat oil and grease (FOG) and biochemical oxygen demand (BOD) removals were up to 80%. Moreover, it was found that the optimal flow rate and HRT for simple and modified grease (1:1:2) traps were at 2 L/min and 10 hrs. At the optimal condition; SS, BOD, and FOG removals were over 87, 70, and 87%, respectively. In a comparative study of treatment efficiency between simple and modified grease (1:1:2) traps, it showed that, under the same condition (2 L/min, HRT varied at 4, 6, 8 and 10 hrs), a modified grease trap generated the higher efficiency of SS, FOG and BOD removal than that of a simple grease trap.

Keywords : Modified grease trap, Media ratio, Flow rate, Hydraulic retention time

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