

## PENURUNAN BOD (BIOCHEMICAL OXYGEN DEMAND) DAN TSS (TOTAL SUSPENDED SOLIDS) PADA PENGOLAHAN LIMBAH CAIR DOMESTIK DENGAN PROSES ANAEROBIK BIOFILTER

<b>Title</b>	PENURUNAN BOD (BIOCHEMICAL OXYGEN DEMAND) DAN TSS (TOTAL SUSPENDED SOLIDS) PADA PENGOLAHAN LIMBAH CAIR DOMESTIK DENGAN PROSES ANAEROBIK BIOFILTER
<b>Author Order</b>	of
<b>Accreditation</b>	3
<b>Abstract</b>	<p>Domestic wastewater in the culinary area is waste water produced from several restaurants. The problem of liquid waste needs to get serious attention, because it has complex characteristics and the remaining results of these activities can cause the volume of wastewater with a high contaminant load that flows continuously over a long period of time. One way to manage the environment is through physical processing, namely by pre-treatment of sedimentation and biological treatment by biofilter anaerobic processes. Anaerobic biofilter is a biological treatment, which uses media as a place to grow and develop microorganisms, with no oxygen in the reactor. The parameters in liquid waste processing consist of three, namely physical parameters, chemical parameters and biological parameters. In the method of combating liquid waste here uses chemical parameters, namely BOD and TSS. Where BOD (Biochemical Oxygen Demand) is the number of milligrams of oxygen needed by aerobic microbes to decompose karon organic matter in 1 L of water for 5 days at a temperature of 20<math>\text{^\circ}</math>C <math>\pm</math> 1<math>\text{^\circ}</math>C. Whereas for TSS (Total Suspended Solid) as the residue from total solids held by a filter with a particle size of maximum 2<math>\frac{1}{4}</math>m or greater than the size of colloidal particles, which include TSS are mud, clay, metal oxides, sulfides, algae, bacteria, and fungi . The aim of this research is that the liquid waste from the activity can be reused as clean water by anaerobic biofilter method using BOD and TSS parameters. The variables used are operational time. Reactor I and reactor II contain media arranged from the bottom up, namely rock fragments, gravel, shells and gauze. The operational time variations used are 0 hours as t0 or the first time the waste exits the reactor, and the time is 2 hours, 4 hours, 6 hours, and 8 hours is a periodic observation of operational time. The results showed that anaerobic biofilter has the ability to reduce the concentration of BOD (Biological Oxygen Demand) and TSS (Total Suspended Solid). Based on the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number P.68 / Menlhk / Setjen / Kum.1 / 8/2016 concerning Domestic Waste Water Quality Standards, the characteristics of wastewater are obtained before treatment (pre treatment) which is 28- 31 <math>\text{^\circ}</math>C; pH 9,3-10; BOD 30 mg / L; and TSS 29 mg / L. Decreasing the initial state in reactor I for BOD is 25 mg / L. Whereas for the decrease in TSS is 16 mg / L. The results showed that anaerobic biofilter with pumice, gravel and clam shell media had the ability to reduce BOD and TSS concentrations significantly. The percentage decrease in concentration in reactor I was greater than that of reactor II, with an operational time of 6 hours for BOD allowance of 73,54%. While the operational time of 8 hours for TSS is 81,39%.</p>
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