

INTISARI

Salah satu sumber limbah adalah berasal dari limbah domestic yang mengandung banyak komponen yang tidak diinginkan. Bila dibuang ke lingkungan beberapa diantaranya akan memunculkan masalah pencemaran. Reaktor Fluidized bed yang menggunakan media penumbuhan bakteri dengan kecepatan aliran keatas adalah suatu unit pengolahan air limbah yang dapat mengurangi beban organik dan pencemar lainnya. Penelitian ini bertujuan untuk Mengetahui tingkat efektifitas reaktor Fluidized bed bermedia styrofoam apabila digunakan atau dijalankan pada saat start up dalam menurunkan konsentrasi Total Disolved Solid (TDS)) dan Biochemical Oxygen Demand (BOD) pada limbah domestik (septictank). Serta untuk mengetahui kondisi reaktor aerobic Fluidized bed pada saat startup dengan mengamati nilai pH dan Suhu pada limbah domestik.

Penelitian dilakukan dengan reaktor aerobic Fluidized bed bermedia styrofoam berdiameter 5 mm sebanyak 15 % dari ketinggian. Diameter reaktor 25 cm, tinggi 100 cm, waktu detansi 18 jam dan debit 2,56 L/jam. Limbah melewati reaktor dengan aliran keatas melalui media yang ditumbuhkan mikroorganisme. Sampel diambil pada inlet dan outlet kemudian dianalisa. Analisa laboratorium untuk parameter BOD Metode yang digunakan untuk pemeriksaan BOD titrimetri menurut SNI M-69-1990-03 dan TDS yang mengacu pada SNI 03 - 1989 - F serta memperhatikan nilai pH dan Suhu.

Berdasarkan hasil analisa laboratorium, setelah dilakukan pengamatan selama 21 hari, menunjukkan adanya penurunan terhadap konsentrasi BOD namun penurunannya belum stabil dengan rata-rata persentase penurunan 0.0923 %. Dan untuk Total Dissolved Solid (TDS) terjadi penurunan dengan rata-rata persentase 19%. Rata-rata persentase perubahan pH sebesar 9.15% dan suhu 0.98%. Nilai pH dan suhu masih baik untuk keadaan start up.

Kata Kunci : Limbah Domestik, Fluidized Bed, Start Up, BOD dan TDS

ABSTRACT

One of the waste source is come from domestic waste that contains by unwanted of much the component. If some of the waste Water throws away to the circles will to appears of the pollutions problem. The aerobic Fluidized Bed Reactor that using by bacteri grow media, with up flow speed is a waste water treatment unit that can lower by organic loading and the other pollutants. The objective of this research is to know about degree from aerobic Fluidized Bed reactor efectifity with tyrofoam media if using it or running it at the start up into degrees for Total Dissolved Solid (TDS) and Biochemical Oxygen Demand (BOD) concentrations from the waste water (septic tank). Also to knowing condution about aerobic fluidized bed reactor at the start up with seeing of the pH value and temperature for the domestic waste.

The research to do with use aerobic Fluidized Bed Reactor with Syrofoam as a media with diameter 5 mm as much as 15 % from the high. The Diameter of the reactor is 25 cm, the high of reactor is 100 cm, detention time is 18 hours and the flowrate is 2.56 l/hour. The waste water passing by the reactor from inlet to outlet outlet with up plow velocity passing media which grow by microorganisms. The sample that taking from the inlet and outlet and then going to the analysis. The laboratory analysis for the Biochemical Oxygen Demand (BOD) with using the method for Tritrasi BOD analysis according to the SNI M-69-1990-03 and for the Total Dissolved Solid (TDS) that refer to the SNI - 03 - 1989 - F also have observation to the value of pI and temperatures.

According to the result of the laboratory analysis, after have does observations for 21 days, it's showing to the removal from the BOD concentration, but the removal doesn't have stable yet with the removal percentage average is 0.0923%. And for The Total Dissolved Solid (TDS) is going down with the percentage average is 19%. The percentage average changes of pH is 9.15% and the temperature is 0.98%. The value of pH and temperature have been well for The start up conditions.

Key Words : Domestic Waste, Fluidized Bed, Start Up, BOD and TDS.