

ABSTRAK

Krusitasari, Iip 2023, **Komparasi Penurunan Kadar Amoniak, BOD dan COD pada Limbah Cair Domestik Industri Makanan Ringan Menggunakan Bioseptictank Fiber Pabrikasi dengan Bioreaktor Anaerob Serta Aerob Bermedia Honeycomb**, Fakultas Teknik Universitas PGRI Adi Buana Surabaya.

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Air limbah domestic di suatu industry merupakan sisa air pembuangan yang berasal dari kantin, pantry, toilet, mushollah dan wastafel yang apabila langsung dibuang ke saluran umum atau diresapkan ke tanah akan menimbulkan pencemaran lingkungan. Demi tercapainya air limbah domestic yang layak dibuang ke lingkungan sesuai regulasi pemerintah yang berlaku, maka dilakukanlah penelitian dalam upaya memperoleh suatu sistem pengolahan yang efektif. Penelitian dilaksanakan dengan melakukan analisa kinerja pengolahan limbah cair domestic menggunakan Bioseptictank dan pengolahan limbah cair domestic menggunakan Biotank Anaerob serta Aerob bermedia honeycomb. Efisiensi terbaik dalam menurunkan kadar Amonia, COD dan BOD adalah penggunaan Bioreaktor anaerob-aerob media sarang tawon dengan penurunan kadar Amonia penurunan rata-rata sebesar 85% kadar, COD penurunan rata-rata sebesar 93% dan kadar BOD penurunan rata-rata sebesar 94%. Sedangkan Pada variasi Bioseptictank kadar Amonia penurunan rata-rata sebesar 74% kadar, COD penurunan rata-rata sebesar 31% dan kadar BOD penurunan rata-rata sebesar 32%. Bioreaktor Anaerob serta Aerob bermedia honeycomb terbukti efektif diterapkan pada pengolahan limbah cair domestic suatu industry. Untuk hasil pengolahan yang optimal perlu dilakukan perawatan rutin pada masing-masing Bioseptictank dan Bioreaktor untuk menjaga kinerja proses pengolahan limbah.

Kata kunci: Bioseptictank, Biotank Anaerob dan Aerob, Media honeycomb.

ABSTRACT

Krusitasari, Iip 2023, **Comparison of Reducing Ammonia, BOD and COD Levels in Domestic Liquid Waste from the Snack Food Industry Using Manufactured Fiber Bioseptictanks with Anaerobic and Aerobic Bioreactors with Honeycomb Media**, Faculty of Engineering, PGRI Adi Buana University, Surabaya.

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Domestic wastewater in an industry is residual wastewater originating from canteens, pantries, toilets, prayer rooms and sinks which, if directly discharged into public channels or absorbed into the ground, will cause environmental pollution. In order to achieve domestic wastewater that is suitable for disposal into the environment in accordance with applicable government regulations, research is carried out in an effort to obtain an effective treatment system. The research was carried out by analyzing the performance of domestic liquid waste processing using a Bioseptictank and domestic liquid waste processing using an Anaerobic Biotank and an Aerobic with honeycomb media. The best efficiency in reducing Ammonia, COD and BOD levels is the use of an anaerobic-aerobic bioreactor with honeycomb media with an average reduction in Ammonia levels of 85%, an average reduction in COD levels of 93% and an average reduction in BOD levels of 94%. . Meanwhile, in the Bioseptictank variation, Ammonia levels decreased by an average of 74%, COD levels decreased by an average of 31% and BOD levels decreased by an average of 32%. Anaerobic and aerobic bioreactors with honeycomb media have proven to be effective in processing industrial domestic liquid waste. For optimal processing results, routine maintenance needs to be carried out on each Bioseptictank and Bioreactor to maintain the performance of the waste processing process.

Key words: Bioseptic tank, Anaerobic and Aerobic Biotank, Honeycomb media.