

MENURUNKAN KADAR BOD PADA LIMBAH CAIR TAHU

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ABSTRAK

Indonesia adalah produsen tahu yang sangat produktif, baik di rumah tangga maupun di unit industri. Membuang limbah ke lingkungan tanpa pengolahan akan mengurangi kualitas lingkungan yang ada. Limbah tahu memiliki kandungan bahan organik yang tinggi, termasuk kandungan BOD (*Biological Oxygen Demand*). Salah satu solusinya adalah pengolahan limbah tahu secara biologis, yang melibatkan penggunaan mikroorganisme, Mikroorganisme yang mampu mengolah limbah cair tahu adalah yang terdapat pada *Effective Microorganism-4* (EM₄). Tujuan penelitian ini mengetahui kadar BOD sebelum dan sesudah diberi perlakuan aerasi 72 jam dan penambahan EM₄.

Penelitian ini merupakan penelitian *Quasi-Experimental*. Subjek dari penelitian ini adalah kadar BOD limbah cair tahu dengan menggunakan aerasi 72 jam dan EM₄. Penelitian ini menggunakan variasi kontrol, aerasi 72 jam, aerasi 72 jam dan EM₄ 1 ppm, aerasi 72 jam dan EM₄ 2 ppm dengan replikasi sebanyak 3 dan volume air limbah 10 liter.

Hasil penelitian yaitu kadar BOD sebelum perlakuan 227 mg/l. penurunan kadar BOD limbah cair tahu pada perlakuan kontrol sebesar 3,5%, pada aerasi 72 jam sebesar 15%, pada aerasi 72 jam dan EM₄ 1 ppm sebesar 20,2% dan aerasi 72 jam dan EM₄ 2 ppm sebesar 27,3%. Pada penelitian ini dikatakan tidak Efektif dikarenakan penurunan kadar BOD yang didapatkan masih belum memenuhi standar baku mutu sesuai PERGUB JATIM No.72 Tahun 2013 Tentang Baku Mutu Air Limbah Bagi Industri dan/Atau Kegiatan Usaha Lainnya.

Kata Kunci: Limbah cair, Industri tahu, Kadar BOD, Aerasi, EM₄

EFFECTIVENESS OF AERATION AND VARIATIONS IN ADDITION OF EM4 IN REDUCING BOD LEVELS IN LIQUID TOFU WASTE

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ABSTRAK

Indonesia is a very productive tofu producer, both in households and in industrial units. Disposing of waste into the environment without processing will reduce the quality of the existing environment. Tofu waste has a high organic material content, including BOD (Biological Oxygen Demand) content. One solution is biological processing of tofu waste, which involves the use of microorganisms. Microorganisms that are capable of processing liquid tofu waste are those found in Effective Microorganism-4 (EM₄). The aim of this research was to determine BOD levels before and after being treated with 72 hours of aeration and the addition of EM₄.

This research is a descriptive research. The subject of this research was the BOD content of tofu liquid waste using 72 hour aeration and EM₄. This research used control variations, 72 hour aeration, 72 hour aeration and EM₄ 1 ppm, 72 hour aeration and EM₄ 2 ppm with 3 replications and a wastewater volume of 10 liters.

The results of the research were that the BOD level before treatment was 227 mg/l. The reduction in BOD levels of tofu liquid waste in the control treatment was 3.5%, at 72 hours aeration was 15%, at 72 hours aeration and 1 ppm EM₄ was 20.2% and 72 hours aeration and 2 ppm EM₄ was 27.3%. In this study, it was said to be ineffective because the reduction in BOD levels obtained still did not meet the quality standards in accordance with East Java Governor Regulation No. 72 of 2013 concerning Waste Water Quality Standards for Industry and/or Other Business Activities.

Keywords: Liquid waste, Tofu industry, BOD levels, Aeration, EM₄