

ABSTRAK

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“FITOREMEDIASI BAMBU AIR (*Equisetum hyemale*) DALAM PENURUNAN BOD LIMBAH CAIR LAUNDRY”

ix Halaman Permulaan + 84 Halaman Isi + 8 Tabel + 19 Gambar + 3 Lampiran

Limbah cair laundry mengandung kadar BOD (*Biological Oxygen Demand*) tinggi dapat dilakukan pengolahan dengan metode fitoremediasi. Proses fitoremediasi diperlukan proses tambahan yang dapat membantu proses pengendapan partikel tersuspensi. Tujuan penelitian adalah untuk mengukur kadar BOD sebelum dan setelah perlakuan bambu air (*Equisetum hyemale*) dengan waktu 6 hari, 9 hari, 12 hari, dan variasi berat 1 kg dan 2 kg serta efektifitas penurunan kadar BOD.

Penelitian ini pra eksperimen *nonrandomized control group pretest-posttest design*. Sampel air limbah cair laundry didapatkan dari jasa laundry milik ibu dewi variasi waktu dan variasi berat menggunakan bambu air (*Equisetum hyemale*). Variabel bebas ialah variasi waktu dan variasi berat bambu air (*Equisetum hyemale*). Variabel terikat ialah penurunan kadar BOD pada air limbah jasa laundry. Terdapat 4 kelompok variasi waktu yakni sebelum perlakuan, 6 hari, 9 hari, dan 12 hari, dan variasi berat 1 kg dan 2 kg masing-masing kelompok dilakukan pengulangan sebanyak 3 kali. Analisis data yang digunakan deskriptif.

Hasil penelitian didapatkan perbedaan sebelum perlakuan sebesar 110 mg/L serta penurunan kadar BOD setelah perlakuan dengan waktu 6 hari 1 kg sebesar 24 mg/L, 6 hari 2 kg sebesar 31 mg/L, 9 hari 1 kg sebesar 33 mg/L, 9 hari 2 kg sebesar 39 mg/L, 12 hari 1 kg sebesar 44 mg/L, dan 12 hari 2 kg sebesar 48 mg/L. Berdasarkan analisis deskriptif di dapatkan hasil ada penurunan kadar BOD. Penurunan paling efektif terjadi pada hari ke 12 dengan berat 2kg. Saran bagi peneliti yang akan melanjutkan ialah perlunya menambah varian waktu serta varian berat untuk memperoleh penurunan kadar BOD yang lebih efektif.

Kata Kunci: Limbah Cair, Jasa Laundry, BOD, Fitoremediasi, Bambu Air (*Equisetum hyemale*)

ABSTRACT

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“PHYTOREMEDIATION OF WATER BAMBOO (*Equisetum hyemale*) IN REDUCING BDOD OF LAUNDRY OF LIQUID WASTE”

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Laundry liquid waste containing high levels of BOD (Biological Oxygen Demand) can be processed by the phytoremediation method. The phytoremediation process requires additional processes that can help the suspended particle deposition process. Acclimatization is an effort to adjust or adapt an organism to a new environment. Acclimatization is carried out by adjusting the environmental transition from good heterotrophic conditions to new autotrophic conditions for plants. The purpose of the study was to measure the BOD level before the treatment of water bamboo (*Equisetum hyemale*) with a time of 6 days, 9 days, 12 days, and weight variations of 1 kg and 2 kg.

This study was a pre-experimental nonrandomized control group pretest-posttest design. Samples of laundry liquid wastewater were obtained from a laundry service owned by Mrs. Dewi with variations in time and weight variations using water bamboo (*Equisetum hyemale*). The independent variables are the variation in time and the variation in the weight of water bamboo (*Equisetum hyemale*). The bound variable is the decrease in BOD levels in laundry service wastewater. There were 4 groups of time variations, namely before treatment, 6 days, 9 days, and 12 days, and weight variations of 1 kg and 2 kg each group were repeated 3 times. The data analysis used is descriptive.

The results of the study showed a difference before treatment of 110 mg/L and a decrease in BOD levels after treatment with 6 days 1 kg of 24 mg/L, 6 days 2 kg of 31 mg/L, 9 days of 1 kg of 33 mg/L, 9 days of 2 kg of 39 mg/L, 12 days of 1 kg of 44 mg/L, and 12 days 2 kg of 48 mg/L. Based on descriptive analysis, the results showed a decrease in BOD levels. The most effective loss occurred on day 12 with a weight of 2kg. Suggestions for researchers who will continue are the need to add time variants and weight variants to obtain a more effective reduction in BOD levels.

Keywords: Liquid Waste, Laundry Services, BOD, Phytoremediation, Bamboo Water (*Equisetum hyemale*)