

IMANYATI DYAH CAHYANING TRI BUANA NPM 18.03.5.1.1.000.48.
Kemampuan Fitoremediasi Eceng Gondok (*Eichhornia crassipes*) Sebagai
Penurun Kadar BOD dan TSS Limbah Cair Tahu dibawah Bimbingan **Dr. Haryo
Triajie, S.Pi., M.Si**

ABSTRAK

Industri tahu menghasilkan limbah cair yang cukup besar dengan efisiensi pengolahan relatif rendah. Limbah tersebut mengandung zat organik dan zat tersuspensi yang mempengaruhi tingginya kadar BOD dan TSS sehingga diperlukan metode pengolahan air limbah. Penelitian ini menggunakan metode fitoremediasi eceng gondok dengan Rancangan Acak Lengkap (RAL) 5 variasi bobot tanaman air yang berbeda yaitu 0 gram, 50 gram, 100 gram, 50 gram dan 200 gram dengan 3 pengulangan. Lokasi pengambilan sampel di Industri Tahu Kamal, Bangkalan dan pengujian di Laboratorium Universitas Trunojoyo Madura. Penelitian diawali dengan aklimatisasi 5 hari dilanjutkan fitoremediasi 20 hari, pengukuran pada hari ke-0, 5, 10, 15 dan 20. Hasil pengujian tanaman eceng gondok mampu menurunkan kadar BOD hingga 93,33 mg/L dan TSS hingga 130,66 mg/L pada perlakuan dengan bobot terbesar yaitu B4 (200 gram). Presentase penurunan paling tinggi terjadi pada hari ke-20 untuk kadar BOD 70,42% dan TSS 95,48%. Nilai korelasi yang didapatkan cukup kuat untuk parameter BOD TSS dengan nilai korelasi hari ke-20 sebesar $R^2 = 0,6649$ dan $R^2 = 0,8675$.

Kata Kunci : Limbah cair industri tahu, Fitoremediasi, Eceng Gondok (*Eichhornia crassipes*), *Biological Oxygen Demand* (BOD), *Total Suspended Solid* (TSS)

IMANYATI DYAH CAHYANING TRI BUANA NPM 18.03.5.1.1.000.48.
Phytoremediation Ability of Water Hyacinth (*Eichhornia crassipes*) to Reduce
BOD and TSS Levels of Tofu Waste under the Guidance of **Dr. Haryo Triajie,**
S.Pi., M.Si

ABSTRACT

The tofu industry produces a large amount of liquid waste with relatively low processing efficiency. The waste contains organic substances and suspended substances that affect the levels of BOD and TSS so that a wastewater treatment method is needed. This study used the phytoremediation method e goiter with a completely randomized design (CRD) with 5 different air weight variations, namely 0 grams, 50 grams, 100 grams, 50 grams, and 200 grams with 3 cloves of plants. The sampling location was in the Kamal Tofu Industry, Bangkalan and the testing was at the Trunojoyo University Madura Laboratory. The study started with 5 days of acclimatization followed by 20 days of phytoremediation, measurements on days 0, 5, 10, 15 and 20. The results of the water hyacinth plant test were able to reduce BOD levels up to 93.33 mg/L and TSS up to 130.66 mg/L in the treatment with the largest weight, namely B4 (200 grams). The highest percentage decrease occurred on day 20 for BOD levels of 70.42% and TSS 95.48%. The correlation value obtained is quite strong for the BOD TSS parameter with the correlation value of the 20th day of $R^2 = 0.6649$ and $R^2 = 0.8675$.

Keywords: Tofu industrial wastewater, Phytoremediation, Water hyacinth (*Eichhornia crassipes*), Biological Oxygen Demand (BOD), Total Suspended Solid (TSS)