

Efektivitas Biji Trembesi (*Samanea Saman*) Terhadap Penurunan Kadar COD dan TSS Air Limbah Laundry

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ABSTRAK

Air limbah laundry menghasilkan limbah dalam setiap barinya. Tidak adanya pengolahan limbah cair, limbah dibuang secara langsung ke selokan. Sehingga mengakibatkan pencemaran pada lingkungan. Menimbulkan kadar COD dan TSS tinggi. Maka diperlukan pengolahan untuk mengurangi kadar COD dan TSS dengan penambahan biji trembesi. Penelitian ini bertujuan untuk mengetahui efektivitas biji trembesi dalam penurunan kadar COD dan TSS pada air limbah laundry.

Jenis penelitian ini *quasi experiment* dengan desain penelitian nonequivalent control group. Penelitian ini menggunakan variabel bebas yaitu biji trembesi dan variabel terikat yaitu COD dan TSS. Penelitian ini menggunakan metode koagulasi – flokulasi. Perlakuan variasi dosis 1000 ppm, 3000 ppm, 5000 ppm. Analisis data dalam penelitian ini analisis uji statistic one way anova menggunakan aplikasi SPSS.

Hasil penelitian ini yang paling efektif dalam menurunkan kadar COD dan TSS yaitu kadar 5000 ppm. Efektivitas penurunan COD sebesar 12,71% dan TSS 23,39%. Dengan jumlah penurunan yang berbeda-beda. Semakin besar dosis biokoagulan maka efektivitas penambahan biji trembesi semakin besar. Maka, kandungan kadar BOD dan TSS semakin menurun.

Penelitian ini dapat disimpulkan bahwa kadar COD dan TSS sebelum diberi perlakuan tidak memenuhi syarat. Penambahan biji trembesi variasi dosis terbukti berpengaruh terhadap penurunan kadar COD dan kadar TSS. Hasil efektivitas penurunan kadar COD dan TSS maksimum pada perlakuan 5000 ppm. Sebaiknya peneliti lebih lanjut melakukan pemeriksaan pH dan suhu dan penambahan konsentrasi variasi dosis.

Kata kunci: *Air Limbah Laundry, COD, TSS, Biji Trembesi*

The Effectiveness of Trembesi Seeds (Saman Samanea) on Reducing COD and TSS Levels in Laundry Wastewater

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ABSTRACT

Laundry wastewater produces waste in every row. There is no liquid waste treatment, the waste is disposed of directly into the sewer. This results in pollution to the environment. Causes high levels of COD and TSS. So processing is needed to reduce COD and TSS levels by adding trembesi seeds. This research aims to determine the effectiveness of trembesi seeds in reducing COD and TSS levels in laundry wastewater.

This type of research is a quasi experiment with a nonequivalent control group research design. This research uses the independent variable, namely trembesi seeds and the dependent variable, namely COD and TSS. This research uses the coagulation - flocculation method. Treatment varied doses of 1000 ppm, 3000 ppm, 5000 ppm. Data analysis in this research was one way anova statistical test analysis using the SPSS application.

The results of this research are the most effective in reducing COD and TSS levels, namely levels of 5000 ppm. The effectiveness of reducing COD was 12.71% and TSS 23.39%. With varying amounts of decline. The greater the dose of biocoagulant, the greater the effectiveness of adding trembesi seeds. So, the COD and TSS levels continue to decrease.

This research can be concluded that the COD and TSS levels before treatment did not meet the requirements. The addition of various doses of trembesi seeds was proven to have an effect on reducing COD levels and TSS levels. Results of the effectiveness of reducing maximum COD and TSS levels in the 5000 ppm treatment. It would be better if further researchers carry out pH and temperature checks and increase the concentration and dose variations.

Key words: *Laundry Wastewater, COD, TSS, Trembesi Seeds*