Politeknik Kesehatan Kemenkes Bandung
Program Sarjana Terapan Sanitasi Lingkungan
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Abstrak

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Perbedaan Waktu Kontak Karbon Aktif Dalam Menurunkan Kadar Amonia Pada Limbah Cair Penyamakan Kulit PT.Garut Makmur Perkasa

ix + 99 Halaman + 3 Bagan + 12 Tabel + 4 Gambar + 3 Lampiran

Limbah cair produksi penyamakan kulit memiliki bau yang sangat menyengat yang berasal dari kandungan amonia di dalamnya. Hasil Pemeriksaan laboratorium kualitas limbah cair produksi penyamakan kulit secara kimia didapatkan parameter amonia (NH_3-N) sebesar 7,72 mg/L,sehingga tidak memenuhi baku mutu sesuai dengan Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia No 21 Tahun 2018 Tentang Baku Mutu Air Limbah Bagi Usaha Dan / Atau Kegiatan Industri Penyamakan Kulit yaitu Amonia (NH_3-N) sebesar 2 mg/L. Penelitian ini bertujuan untuk mengetahui persentase rata – rata dan efisiensi penurunan kadar amonia menggunakan adsorben. Jenis Penelitian ini semi eksperimen dengan rancangan penelitian *Pretest – Posttest with Control*, dengan teknik pengambilan sampel menggunakan grab sampling. Populasi dalam penelitian ini adalah seluruh limbah cair produksi penyamakan kulit dan sampelnya adalah limbah cair produksi penyamakan kulit dari effluent. Terdapat 3 perlakuan perbedaan waktu kontak karbon aktif yaitu 20 menit, 30 menit dan 40 menit yang masing – masing sebanyak 30 sampel dengan 6 kali pengulangan. Alat pengumpul data penelitian diantaranya : spektrofotometer, pH meter,dan termometer air. Dari hasil penelitian didapatkan persentase rata – rata penurunan kadar amonia pada perlakuan waktu kontak 20 menit sebesar 30,44%, perlakuan 30 menit sebesar 61,73%, dan perlakuan 40 menit sebesar 85,98%. Sehingga dapat disimpulkan bahwa lama waktu kontak karbon aktif yang paling efektif dalam menurunkan limbah cair produksi penyamakan kulit yaitu lama kontak karbon aktif 40 menit dalam menurunkan kadar amonia limbah cair produksi penyamakan kulit menjadi 1,08 mg/L dan telah memenuhi baku mutu. Disarankan adanya penelitian lebih lanjut tentang titik jenuh karbon aktif pada reaktor filter.

KATA KUNCI : Limbah Cair, Produksi Penyamakan Kulit, Amonia, Karbon Aktif
DAFTAR PUSTAKA : 30

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Abstract

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The Differences of Activated Carbon Contact Time in Reducing Amonia Levels in Leather Tanning Liquid Waste at PT. Garut Makmur Perkasa

ix + 99 pages + 3 Chart + 12 Tables + 4 Pictures + 3 Appendices

The liquid waste produced by leather tanning has a very pungent odor that comes from the ammonia content in it. The results of the laboratory examination of the quality of liquid waste produced by chemical leather tanning gave 7.72 mg/L of ammonia. Those amount of ammonia did not meet the standard quality in accordance with the regulation on Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia No 21 Tahun 2018 about Water Quality Standard Waste for business and/or tanning industry activities, which regulate the amount of Ammonia (NH3-N) should be no more than 2 mg/L. This study aims to determine the average of percentage and efficiency of reducing ammonia levels using adsorbents. The research is using a quasi-experimental research design with Pretest – Posttest with Control, with a sampling technique using grab sampling. The population in this study are all liquid waste produced by tanning leather and the sample was liquid waste produced from tanning leather from effluent. There are 3 different treatments of activated carbon contact time, which are 20 minutes, 30 minutes and 40 minutes, and each contact time use 30 samples with 6 repetitions. The required data in the study are collected using some tools such as spectrophotometer, pH meter, and water thermometer. From the results of the study, it was found that the average percentage of reduction in ammonia levels by 20 minute contact time was 30.44%, by 30 minute contact time was 61.73%, andby 40 minute contact time was 85.98%. So it can be concluded that the most effective contact time to reduces the ammonia level on liquid waste of leather tanning production is 40 minutes contact time with activated carbon which reduces to the level of 1.08 mg/L amount of ammonia and has met the standard quality. More study is recommended for further examination on the saturation level of active carbonon the filter reactor in the future.

KEY WORDS : liquid waste, produced tanning industry, Amonia, Activated Carbon.
REFERENCES : 30