ABSTRAK

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Karya Tulis Ilmiah, 6 Juni 2024

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"PENURUNAN PARAMETER AMONIA (NH_3-N) PADA LIMBAH CAIR RUMAH SAKIT MENGGUNAKAN PENAMBAHAN BAKTERI BIOINAKULAN DI IPAL RSUD DR. SAYIDIMAN KABUPATEN MAGETAN"

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Tingginya kadar amonia pada limbah cair menggakibatkan pencemaran lingkungan. Untuk mengurangi pencemaran maka dilakukan pengolanan air limbah. Pengolahan limbah cair memerlukan adanya penambahan bakteri dengan harapan mempercepat proses penguraian ammonia pada limbah cair. Tujuan penelitian ini mengetahui berapa persen penurunan amonia dengan perlakuan penambahan bioinokulan.

Jenis penelitian ini *pra eksperimental* dengan desain *one grub pretest* dan *post tes*t. Populasi penelitian ini limbah cair rumah sakit. Analisis data yang digunakan analisis deskripif kuantitatif. Pengambilan tanpa perlakuan dan dengan perlakuan pada titik inlet dan outlet. Besaran sampel 30 sampel dengan metode pengambilan *grab sampling*.

Hasil penelitian kapasitas IPAL 325 bed dengan debit 29,2 m^3/hari tanpa perlakuan bioinokulan mampu menurunkan amonia sebesar 11,9% dengan penambahan bioinokulan 0,6 ppm mampu menurunkan kadar amonia 17,3%. Terjadinya penurunan di sebakan oleh bakteri *Nitrobacter sp dan Nitrosomonas sp* melakukan perombakan menjadi senyawa yang lebih sederhana. Kecilnya penurunan ini dipengaruhi oleh meningkatnya debit limbah yang dihasilkan, meningkatnya debit karena adanya KLB demam berdarah, selain debit pH yang tidak sesuai dapat menghambat proses penguraian amonia.

Dengan perlakuan penambahan bioinokulan 0,6 ppm efektivitas paling tinggi pada hari ke-3 28,2%. penambahan bioinokulan memiliki manfaat 5,3% dalam menurunkan amonia. Untuk mendapatkan hasil yang sesuai dapat melakukan penambahan bioinokulan lebih dari 30 liter atau 0,6 ppm serta mempertimbangkan debit air limbah yang akan diolah dengan harapan hasil memenuhi baku mutu.

Kata kunci: Amonia, Limbah Cair Rumah Sakit, Bioinokulan

ABSTRACT

Ministry of Health RI
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Scientific Paper, June 6, 2024

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"REDUCING AMMONIA PARAMETERS (NH3-N) IN HOSPITAL WASTEWATER USING THE ADDITION OF BIOINACCULANT BACTERIA IN WWTP OF HOSPITAL DR. SAYIDIMAN MAGETAN DISTRICT"
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High ammonia levels in wastewater result in environmental pollution. To reduce pollution, wastewater treatment is carried out. Wastewater treatment requires the addition of bacteria in the hope of accelerating the process of decomposing ammonia in wastewater. The purpose of this study was to determine the percentage of ammonia reduction with the addition of bioinoculants.

This type of research is pre-experimental with a one-grub pretest and post-test design. The population of this study was hospital liquid waste. Data analysis used quantitative descriptive analysis. Taking without treatment and with treatment at the inlet and outlet points. Sample size 30 samples with grab sampling method.

The results of the study of WWTP capacity of 325 beds with a discharge of 29.2 m3 / day without bioinoculant treatment was able to reduce ammonia by 11.9% with the addition of 0.6 ppm bioinoculant was able to reduce ammonia levels by 17.3%. The decrease is caused by the bacteria Nitrobacter sp and Nitrosomonas sp which break down into simpler compounds. The small decline is influenced by the increase in the discharge of waste produced, the increase in discharge due to dengue fever outbreaks, in addition to the discharge of inappropriate pH can inhibit the process of decomposing ammonia.

With the treatment of adding 0.6 ppm bioinoculant, the highest effectiveness on day 3 was 28.2%. the addition of bioinoculants has a benefit of 5.3% in reducing ammonia. To get the appropriate results, you can add more than 30 liters of bioinoculant or 0.6 ppm and consider the wastewater discharge to be treated in the hope that the results meet quality standards.

***Keywords**: Ammonia, Hospital Liquid Waste, Bioinoculant*