

Ministry of health Polytechnic of Bandung

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Abstract

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**THE DIFFERENCES OF VARIATION OF ZEOLITE THICKNESS
TOWARDS REDUCTION OF OIL AND FAT LEVELS USING MODIFIED
GREASE TRAP IN CANTEEN WASTE OF PT. PUDAK SCIENTIFIC**

xi + 91 Pages + 12 Tables + 9 Appendices

Canteen activities at PT. Puduk Scientific includes daily processing of food for employees, washing of food ingredients, washing of cooking utensils, and washing of employees' tableware and does not yet have processing of canteen liquid waste. The results of laboratory tests carried out on the liquid waste of the canteen of PT. Puduk Scientific contains oil and fat content of 10 mg/L, so it does not meet the requirements because it is above the specified quality standard value, so processing is needed before being flowed into water bodies using grease trap with zeolite modified technology. The purpose of this study was to determine the difference in thickness of zeolite to the reduction of oil and fat content using a grease trap modified in the liquid waste of the canteen of PT. Puduk Scientific. In this study, zeolite thicknesses of 30 cm, 40 cm, and 50 cm were used. This research is an experimental study with a research design is pre-test post-test without control and the sampling technique used is composite sampling. Sample in this study was some of the canteen liquid waste at PT. Puduk Scientific given treatment The statistical test used is one way anova test. Based on the results of the examination, it is known that the percentage of reduction in oil and fat levels in the thickness of the zeolite 30 cm is 77.8%, the thickness of the zeolite 40 cm is 83.5%, and the thickness of the zeolite 50 cm is 92.9%, and based on statistical tests it is known that there is a difference variation of zeolite thickness to decrease in oil and fat content due to P-value of 0.0005 so that $\leq \alpha$ (0.05). Industry can apply canteen liquid waste treatment using grease trap modified and carry out regular maintenance of equipment.

REFERENCES : 32 (2003 – 2020)

KEYWORDS : Canteen, Grease Trap, Zeolite, Oils and Fats

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Abstrak

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**PERBEDAAN VARIASI KETEBALAN ZEOLIT TERHADAP
PENURUNAN KADAR MINYAK DAN LEMAK MENGGUNAKAN
GREASE TRAP TERMODIFIKASI PADA LIMBAH CAIR KANTIN PT.
PUDAK SCIENTIFIC**

xi + 91 Halaman + 12 Tabel + 9 Lampiran

Kegiatan industri setiap harinya tentu menghasilkan limbah, salah satunya yaitu limbah cair domestik kantin. Aktivitas kantin di PT. Puduk Scientific setiap harinya meliputi pengolahan makanan, pencucian bahan makanan, peralatan masak, hingga peralatan makan karyawan dan belum memiliki pengolahan terhadap limbah cair kantin. Hasil pemeriksaan laboratorium yang dilakukan pada limbah cair kantin PT. Puduk Scientific mengandung kadar minyak dan lemak sebesar 10 mg/L, sehingga tidak memenuhi syarat karena berada diatas nilai baku mutu yang ditetapkan dan diperlukan pengolahan sebelum dialirkan ke badan air dengan menggunakan teknologi *grease trap* termodifikasi zeolit. Tujuan penelitian ini yaitu mengetahui perbedaan ketebalan zeolit terhadap penurunan kadar minyak dan lemak menggunakan *grease trap* termodifikasi pada limbah cair kantin PT. Puduk Scientific dengan menggunakan ketebalan zeolit sebesar 30, 40, dan 50 cm. Penelitian ini merupakan penelitian eksperimental dengan desain *pre-test post-test without control* dengan teknik pengambilan sampel yang digunakan yaitu *composite sampling*. Sampel dalam penelitian ini adalah sebagian limbah cair kantin di PT. Puduk Scientific yang diberikan perlakuan. Uji statistik yang digunakan yaitu uji *one way anova*. Berdasarkan hasil pemeriksaan diketahui persentase penurunan kadar minyak dan lemak pada ketebalan zeolit 30 cm yaitu 77,8%, ketebalan zeolit 40 cm yaitu 83,5%, dan ketebalan zeolit 50 cm yaitu 92,9%, dan berdasarkan uji statistik diketahui bahwa terdapat perbedaan variasi ketebalan zeolit terhadap penurunan kadar minyak dan lemak karena P-value sebesar 0,0005 sehingga $\leq \alpha$ (0,05). Industri dapat menerapkan pengolahan limbah cair kantin dengan menggunakan *grease trap* termodifikasi serta melakukan pemeliharaan alat secara berkala.

DAFTAR PUSTAKA : 32 (2003 – 2020)

KATA KUNCI : Kantin, *Grease Trap*, Zeolit, Minyak dan Lema