

**Politeknik Kesehatan Kemenkes Bandung
Program Sarjana Terapan Sanitasi
Lingkungan
Skripsi, Agustus 2021**

Abstrak

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VARIASI JUMLAH *PLATE SETTLER* PADA REAKTOR *GREASE TRAPE* TERHADAP PENURUNAN KADAR LEMAK LIMBAH CAIR DOMESTIK DI TEMPAT PENGOLAHAN MAKANAN PT. PINDAD (PERSERO)

xiv + 57 Halaman + 9 Tabel + 10 Lampiran

Proses penyediaan makanan di PT. Pindad (Persero) merupakan upaya pemenuhan kebutuhan makanan tenaga kerja, namun memiliki dampak buruk bagi lingkungan. Dimana tempat pengolahan makanan akan menghasilkan limbah domestik sehingga perlu dilakukan pengolahan. Limbah cair domestik mengandung kadar lemak yang tinggi sehingga berpotensi mencemari lingkungan. Salah satu metode reduksi kadar lemak limbah cair domestik adalah menggunakan reaktor *grease trape* dengan variasi *plate settler*. Tujuan untuk mengetahui penurunan kadar lemak limbah cair domestik di tempat pengolahan makanan PT. Pindad (Persero) dengan menggunakan reaktor *grease trape* dengan variasi jumlah *plate settler*. Jenis penelitian adalah *eksperimen* dengan *pretest posttest without control*. Populasinya adalah seluruh air limbah cair domestik di tempat pengolahan makanan PT. Pindad (Persero), Sampelnya adalah sebagian dari populasi, teknik pengambilan sampel secara *grab sampling*, besar sampel 24 sampel dengan 6 kali pengulangan. Alat pengumpul data *gravitimetri*. Teknik pengumpulan data dengan pemeriksaan laboratorium. Analisis data menggunakan uji *one way anova*. Penelitian ini menggunakan 3 alat reaktor *grease trape* dengan variasi jumlah *plate settler*. Hasil penelitian : Kadar lemak rata-rata sebelum perlakuan sebesar 97,95mg/l, setelah perlakuan dengan jumlah *plate settler* 10 buah sebesar 56,25mg/l (42,22%), dengan jumlah *plate settler* 12 buah sebesar 51,77mg/l (52,11%) dan dengan jumlah *plate settler* 14 buah sebesar 26,52mg/l (72,82%). Hasil uji anova menunjukkan nilai p value ($0,000 \leq 0,05$) dengan tingkat kemaknaan 95% dapat disimpulkan terdapat perbedaan antara variasi jumlah *plate settler* pada reaktor *grease trape* terhadap penurunan kadar lemak limbah cair domestik di tempat pengolahan makanan PT. Pindad (Persero). Saran untuk pihak industri sebaiknya melakukan pengolahan air limbah dengan *grease trape* sebelum ke IPAL dan dibuang ke badan air.

DAFTAR PUSTAKA : (2006-2019)

KATA KUNCI : Air limbah domestik, Lemak, Reaktor *grease trape*, Variasi jumlah *plate settler*

**Ministry of Health Polytechnic of Bandung
Environmental Sanitation Applied Bachelor Program
Thesis, August 2021**

Abstract

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VARIATIONS IN THE NUMBER OF PLATE SETTLERS IN THE GREASE TRAPE REACTOR TO THE REDUCTION OF FAT CONTENT IN DOMESTIC LIQUID WASTE AT THE FOOD PROCESSING PLANT OF PT.PINDAD (PERSERO)

xiv+ 57 Page + 9 Table + 10 Attachment

The process of providing food at PT.Pindad (Persero) is an effort to fulfill the food needs of the workforce, but has a bad impact on the environment. Where food processing places will produce domestic waste so it needs to be processed. Domestic liquid waste contains high levels of fat so that it has the potential to pollute the environment one method of reducing the fat content of domestic wastewater is to use a grease trape reactor with plate settler variations. The purpose of this study was to determine the decrease in the level of domestic liquid waste at the food processing facility of PT.Pindad (Persero) by using grease trape reactor with plate settler variation. The type of research is an experiment with the type of research is an experiment with a pretest posttest without control. The population is all domestic wastewater in the food processing area of PT.Pindad (Persero) the sample is part of the population sampling technique by grab sampling, sample size 24 samples with 6 repetitions. Data collection tool is gravimetric. Data collection techniques with laboratory examination. Data analysis using one way anova test. This study uses 3 grease trape reactors with variations in the number of plate settlers. The result of the study : the average fat content before treatment was 97,95 mg/l, after the treatment with the number of plate settlers 10 pieces of 56,25 mg/l (42,22%), with the number of plate settlers 12 pieces of 51,77mg/l (52,11%), and with a total of 14 plate settlers of 26,52mg/l (72,82%). Anova test results show the p value ($0,000 \leq 0,005$) with a significance level of 95% it can be concluded that there is a difference between the variation in the number of plate settler in the grease trape reactor and the reduction in the fat content of domestic liquid waste at the food processing plant of PT.Pindad (Persero). Advice for the industry is to treat wastewater with a grease trape before going to the WWTP and dumping it into water bodies.

REFERENCES : (2006-2019)

KEYWORDS : Domestic wastewater, Fat, Grease trape reactor, Variation in number of plate settlers