

PEMANTAUAN KUALITAS LIMBAH CAIR INDUSTRI TEMPE X DI DUSUN KRAGILAN, SINDUADI, MLATI, SLEMAN, YOGYAKARTA

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INTISARI

Latar belakang: Industri tempe menghasilkan limbah cair yang sering dibuang langsung tanpa pengolahan, menyebabkan pencemaran lingkungan dan masalah kesehatan. Limbah ini mengandung bahan organik tinggi, seperti yang ditunjukkan oleh studi pendahuluan dengan kadar BOD 17000 mg/L dan COD 36000 mg/L, jauh melebihi standar Peraturan Daerah Istimewa Yogyakarta (Perda DIY) Nomor 7 Tahun 2016.

Tujuan: Penelitian ini bertujuan untuk mengetahui kualitas limbah cair Industri Tempe X di Dusun Kragilan, Sinduadi, Mlati, Sleman, Yogyakarta, berdasarkan parameter BOD, COD, TSS, TDS, suhu, dan pH, serta membandingkannya dengan Perda DIY Nomor 7 Tahun 2016.

Metode: Penelitian ini menggunakan survei deskriptif dengan pendekatan observasional. Pengambilan sampel limbah cair dilakukan secara *composite sampling* sebanyak 4 kali pengulangan di outlet Industri Tempe X. Sampel diuji di Balai Besar Laboratorium Kesehatan Masyarakat Yogyakarta untuk parameter BOD, COD, TSS, TDS, suhu, dan pH. Hasil dianalisis secara deskriptif dan dibandingkan dengan baku mutu yang ditetapkan dalam Perda DIY Nomor 7 Tahun 2016.

Hasil: Debit limbah cair rata-rata adalah 4,2 m³/hari (14 m³/ton), melebihi baku mutu (10 m³/ton). Hasil rata-rata parameter kualitas limbah cair menunjukkan: BOD 7352,5 mg/L (baku mutu 150 mg/L), COD 23312,5 mg/L (baku mutu 300 mg/L), TSS 1146 mg/L (baku mutu 100 mg/L), TDS 2582,25 mg/L (baku mutu 2000 mg/L), suhu 27,9°C (baku mutu $\pm 3^{\circ}\text{C}$ dari suhu udara), dan pH 4,9 (baku mutu 6,0-9,0). Seluruh parameter tidak memenuhi ambang batas baku mutu.

Kesimpulan: Kualitas limbah cair Industri Tempe X tidak memenuhi standar baku mutu Perda DIY Nomor 7 Tahun 2016, sehingga tidak layak dibuang langsung ke badan air.

Kata Kunci: Limbah Cair, Industri Tempe, Kualitas Limbah

***Monitoring of Wastewater Quality from Tempe X Industry in Kragilan,
Sinduadi, Mlati, Sleman, Yogyakarta***

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ABSTRACT

Background: The tempe industry generates wastewater that is often discharged directly without prior treatment, leading to environmental pollution and health issues. This wastewater contains high levels of organic matter, as shown by a preliminary study with BOD levels of 17,000 mg/L and COD levels of 36,000 mg/L, far exceeding the standards set by the Regional Regulation of Yogyakarta (Perda DIY) No. 7 of 2016.

Objective: This study aims to determine the quality of the wastewater from Tempe Industry X in Kragilan, Sinduadi, Mlati, Sleman, Yogyakarta, based on the parameters of BOD, COD, TSS, TDS, temperature, and pH, and to compare these results with Perda DIY No. 7 of 2016.

Method: This research used a descriptive survey with an observational approach. Wastewater samples were taken by composite sampling with four repetitions at the outlet of Tempe Industry X. The samples were tested at the Balai Besar Laboratorium Kesehatan Masyarakat Yogyakarta for BOD, COD, TSS, TDS, temperature, and pH parameters. The results were analyzed descriptively and compared with the quality standards stipulated in Perda DIY No. 7 of 2016.

Results: The average wastewater discharge was 4.2 m³/day (14 m³/ton), exceeding the quality standard (10 m³/ton). The average results for wastewater quality parameters were BOD 7352.5 mg/L (standard 150 mg/L), COD 23312.5 mg/L (standard 300 mg/L), TSS 1146 mg/L (standard 100 mg/L), TDS 2582.25 mg/L (standard 2000 mg/L), temperature 27.9°C (standard $\pm 3^{\circ}\text{C}$ from air temperature), and pH 4.9 (standard 6.0-9.0). All parameters did not meet the quality standards.

Conclusion: The wastewater quality of Tempe Industry X does not meet the quality standards of Perda DIY No. 7 of 2016, making it unsuitable for direct discharge into water bodies.

Keywords: wastewater, tempe industry, wastewater quality