

**UNIVERSITAS ANDALAS**

**ANALISIS RISIKO PAJANAN GAS AMONIAK (NH<sub>3</sub>) PADA  
MASYARAKAT DI SEKITAR TPA REGIONAL  
PAYAKUMBUH TAHUN 2019**



**Pembimbing I : Dr. Aria Gusti, SKM, M.Kes**

**Pembimbing II : Putri Nilam Sari, SKM, M.Kes**

**FAKULTAS KESEHATAN MASYARAKAT  
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**ARINI PUTRI, No.BP. 1511211029**

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xi + 70 halaman, 14 tabel, 4 gambar , 17 lampiran

**ABSTRAK**

**Tujuan Penelitian**

Gas amoniak merupakan salah satu gas pencemar udara yang dapat berasal dari penguraian protein makhluk hidup baik dari sampah tumbuhan maupun hewan. Gas amoniak dapat menyebabkan pencemaran lingkungan serta menyebabkan gangguan kesehatan pada pekerja dan masyarakat di sekitar TPA Regional Payakumbuh. Tujuan umum penelitian ini adalah menganalisis tingkat risiko kesehatan akibat pajanan gas amoniak pada pekerja dan masyarakat di sekitar TPA Regional Payakumbuh Tahun 2019.

**Metode**

Metode yang digunakan dalam penelitian ini adalah analisis risiko kesehatan lingkungan (ARKL). ARKL merupakan metode untuk menghitung tingkat risiko kesehatan akibat agen-agen pencemar lingkungan dalam suatu populasi. Populasi adalah pekerja dan masyarakat di sekitar TPA Regional Payakumbuh. Sampel diambil menggunakan teknik total sampling sebanyak 56 responden. Sampel udara ambien diambil sebanyak tiga titik di sekitar TPA menggunakan impinger (gas sampler).

**Hasil**

Kosentrasi rata-rata NH<sub>3</sub> di tiga titik sampling adalah 1,436 mg/m<sup>3</sup>. Nilai kosentrasi referensi (Rfc) NH<sub>3</sub> adalah 0,182 mg/kg/hari. Nilai intake realtime pada ketiga titik pengukuran memiliki nilai  $RQ \leq 1$ , namun terdapat 1 responden pada titik 80 m yang memiliki nilai  $RQ > 1$ . Nilai intake lifetime pada titik 0 dan 80 m serta 35 responden yang memiliki nilai  $RQ > 1$  yang artinya pajanan gas amoniak dapat menyebabkan gangguan kesehatan.

**Kesimpulan**

Hasil perhitungan lifetime menunjukkan bahwa masyarakat di sekitar TPA Regional Payakumbuh berisiko mengalami gangguan pernapasan pada 30 tahun mendatang akibat pajanan NH<sub>3</sub>. Diharapkan masyarakat dan pekerja TPA lebih memperhatikan *personal hygiene* dan memakai alat pelindung diri (APD) untuk meminimalisir dampak gas amoniak.

**References** : 49 (1996-2018)

**Keyword** : ARKL, Gas amoniak, TPA, Sampah

**FACULTY OF PUBLIC HEALTH  
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**ANALYSIS OF THE RISK OF EXPOSURE TO AMMONIA GAS IN  
COMMUNITIES AROUND PAYAKUMBUH'S REGIONAL LANDFILL IN 2019**

xi + 70 pages, 14 tables, 4 images, 17 attachments

**ABSTRACT**

**Objectives**

Ammonia gas is one of the air pollutant gases that comes from the decomposition of proteins of living things from plant and animal waste. Ammonia gas can cause environmental pollution and health problems for workers and the community around Payakumbuh Regional Landfill. The general objective of this study was to analyze the level of health risk due to exposure to ammonia gas to workers and communities around Payakumbuh Regional Landfill in 2019.

**Method**

The method used in this study was environmental health risk analysis (ERHA). ERHA is a method for calculating the level of health risk due to environmental pollutants in a population. The population is workers and the community around payakumbuh's Regional Landfill. Samples were taken using a total sampling technique of 56 respondents. The ambient air sample was taken as many as three points around the landfill using impinger (gas sampler)

**Result**

The average concentration of  $\text{NH}_3$  at three measurement points was  $1,436 \text{ mg/m}^3$ . The value of the reference concentration (Rfc)  $\text{NH}_3$  was  $0,182 \text{ mg/kg/day}$ . Intake realtime on the whole measurement point had a value of  $\text{RQ} \leq 1$ , but the were 1 respondent on point 80 m that had the value  $\text{RQ} > 1$ . The value of the intake lifetime at point 0 m, 80 m and 35 respondents have the value  $\text{RQ} > 1$  which means that due to  $\text{NH}_3$  exposure can cause health disorders.

**Conclusion**

The result of the lifetime showed that the community around Payakumbuh's Regional Landfill has risk of respiratory disorders in the next 30 years due to exposure of  $\text{NH}_3$ . It is expected that the community and workers pay more attention to personal hygiene and use personal protective equipment (PPE) to minimize the impact of ammonia gas.

**References** : 49 (1996-2018)

**Keyword** : ERHA, Ammonia gas, Landfill, Waste