

ABSTRAK

Anggita Salsabilla Santoso

PENGARUH GAS AMONIA (NH_3) DAN HIDROGEN SULFIDA (H_2S) TERHADAP KELUHAN SUBJEKTIF GANGGUAN KESEHATAN PADA PEKERJA DI PETERNAKAN AYAM SDA FARM BLITAR TAHUN 2025

xvii + 81 Halaman + 12 Tabel + 10 Lampiran

Keberadaan residu peternakan ayam berpotensi menghasilkan emisi gas amonia (NH_3) serta hidrogen sulfida (H_2S) yang dapat memengaruhi kondisi kesehatan tenaga kerja. Meskipun konsentrasi NH_3 (0,047 ppm) dan H_2S (0,045 ppm) masih berada di bawah ambang batas yang ditetapkan, paparan berkepanjangan tetap berpotensi memicu keluhan subjektif terkait kesehatan. Oleh karena itu, penelitian ini bertujuan untuk mengkaji sejauh mana paparan gas NH_3 dan H_2S berkontribusi terhadap gejala gangguan kesehatan yang dirasakan oleh pekerja di peternakan ayam SDA Farm.

Kajian ini tergolong dalam riset observasional analitik yang mengadopsi pendekatan potong lintang (cross-sectional) dengan metode berbasis kuantitatif. Partisipan penelitian meliputi 36 individu yang bekerja di sektor peternakan ayam dan ditentukan melalui teknik acak sederhana (simple random sampling). Proses analisis data dilaksanakan menggunakan uji Rank Spearman guna mengevaluasi hubungan antara paparan gas amonia (NH_3) dan hidrogen sulfida (H_2S) terhadap keluhan subjektif terkait gangguan kesehatan.

Penelitian di SDA Farm menunjukkan bahwa rata-rata kadar NH_3 dan H_2S masih berada dalam ambang batas aman. Suhu tertinggi tercatat $34,7^\circ\text{C}$ pada siang hari, dengan kelembapan 61% dan kecepatan angin 1,3 m/s. Mayoritas pekerja mengeluhkan batuk, iritasi mata, serta sakit kepala. Uji Korelasi Rank Spearman menunjukkan adanya hubungan signifikan antara paparan gas NH_3 dan H_2S dengan keluhan kesehatan subjektif ($p\text{-value} = 0,008$).

Hasil penelitian menunjukkan adanya korelasi antara paparan gas NH_3 dan H_2S dengan keluhan subjektif gangguan kesehatan pada pekerja. Oleh sebab itu, pekerja disarankan untuk selalu memakai APD secara lengkap, menjalani pola hidup sehat, serta melakukan pemeriksaan kesehatan rutin guna meminimalkan risiko kesehatan.

Kata kunci : Limbah Peternakan Ayam, Gas Amonia (NH_3), Gas Hidrogen Sulfida (H_2S), Keluhan Subjektif Gangguan Kesehatan

Daftar bacaan : 3 buku (2005-2023), 46 jurnal/artikel ilmiah (1999-2024)

ABSTRACT

Anggita Salsabilla Santoso

THE EFFECT OF AMMONIA GAS (NH₃) AND HYDROGEN SULFIDE (H₂S)
ON SUBJECTIVE HEALTH COMPLAINTS AMONG WORKERS AT THE SDA
FARM BLITAR CHICKEN FARM YEAR 2025

xvii + 81 *Pages* + 12 *Tables* + 10 *Appendices*

The existence of poultry farm by-products has the propensity to emit ammonia (NH₃) and hydrogen sulfide (H₂S) gases, which may adversely influence workers' well-being. Although the concentrations of NH₃ (0.047 ppm) and H₂S (0.045 ppm) remain beneath established safety thresholds, prolonged exposure may still provoke health-related subjective discomfort. This investigation aimed to examine the relationship between NH₃ and H₂S exposure and the manifestation of self-reported health disturbances among personnel employed at the SDA Farm poultry facility.

This inquiry employs an observational-analytical design utilizing a cross-sectional framework combined with quantitative methodology. A total of 36 poultry industry laborers were recruited through a simple random sampling technique. The dataset was processed using the Spearman Rank Correlation analysis to examine the relationship between NH₃ and H₂S gaseous exposure and the emergence of self-reported health-related discomforts.

Findings from the analysis of NH₃ and H₂S concentrations at SDA Farm indicate that average gas levels remain within acceptable safety limits. Peak daytime temperature reached 34.7°C, accompanied by 61% relative humidity and a wind velocity of 1.3 m/s. Most laborers reported experiencing discomforts such as coughing, ocular irritation, and sensations of dizziness or cephalalgia. Statistical evaluation via Spearman's Rank Correlation test revealed a significant association between NH₃ and H₂S exposure and reported health complaints, with a p-value of 0.008.

Drawing from the findings obtained in this research, it is inferred that exposure to NH₃ and H₂S gases bears a consequential effect on workers' perceived health complaints. In light of this, it is advisable for personnel to consistently utilize complete personal protective equipment (PPE), adopt a health-conscious way of life, and participate in routine medical evaluations to help mitigate potential health-related risks.

Keywords : Chicken Farm Waste, Ammonia Gas (NH₃), Hydrogen Sulfide Gas (H₂S), Subjective Health Complaints

References : 3 books (2005-2023), 46 scientific journals/articles (1999-2024)