

ANALYSIS OF HYDROGEN SULPHIDE (H₂S) AND RESPIRATORY SYMPTOMS IN SCAVENGERS AT GANET LANDFILL, TANJUNGPINANG, RIAU

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ABSTRACT

Background: The process of waste decomposition can cause air pollution, one of which is Hydrogen Sulfide (H₂S) gas pollution. Airborne contaminants can spoil ambient air quality and cause respiratory diseases. This study aimed to determine the association between H₂S level and respiratory symptoms in scavengers at Ganet landfill, Tanjungpinang City, Riau, Indonesia.

Subjects and Method: This was an analytic study with a cross-sectional design. The study was conducted at Ganet landfill, Tanjungpinang City, Riau, Indonesia. A sample of 30 scavengers who worked for 3 years was selected for this study. The dependent variable was respiratory symptoms. The independent variables were H₂S level, working period, and exposure duration. The H₂S level was measured by Aero Quol tools. Decree of the Minister of Environment No. 50 of 1996 set the standard of H₂S= 0.02 ppm. Other variables were collected by questionnaire. The data were analyzed by chi-square test.

Results: Hydrogen sulfide (H₂S) level was 0.10 ppm which exceeded the standard of 0.02 ppm. H₂S exposure time 3-7 hours caused a cough (10%), fever (16.7%), cold (20%), and shortness of breath (6.7%). H₂S exposure time 7-10 hours caused a cough (26.7%), sore throat 3.3%, fever 16.7%, headache (3.3%), and fever (16.7%). Working period <8 years experienced cough (13.3%), fever (20%), headache (3.3%), fever (20%), and shortness of breath (3.3%). Working period ≥8 years experienced a cough (23.3%), sore throat (3.3%), fever (13.3%), cold (16.7%), and shortness of breath (3.3%).

Conclusion: Hydrogen sulfide (H₂S) level in the air exceeding the quality standard, prolonged exposure, and working period cause respiratory symptoms.

Keywords: respiratory symptoms, Hydrogen sulfide, scavengers, landfill

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