

No. TA 1136/S1-TL/0824-P

**ANALISIS RISIKO KESEHATAN LINGKUNGAN  
PAJANAN *PARTICULATE MATTER* 2,5 TERHADAP PEKERJA  
*PACKING PLANT* PT. SEMEN PADANG**

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2024**

## ABSTRAK

PT. Semen Padang memiliki beberapa unit proses yang mendukung proses produksi. Salah satunya unit packing plant. Kegiatan yang dilakukan pada packing plant merupakan pembongkaran, penyimpanan, dan pengantongan dari semen yang telah selesai diproduksi. Penelitian ini bertujuan untuk menganalisis hasil pengukuran konsentrasi  $PM_{2,5}$ , lalu menganalisis risiko kesehatan lingkungan akibat pajanan  $PM_{2,5}$  terhadap packing plant Teluk Bayur PT. Semen Padang. Sampling udara sesuai dengan SNI 16-7058-2004 dilakukan pada tiga titik sampling. Sampling kualitas udara dilakukan menggunakan alat Low Volume Air Sampler (LVAS) selama 8 jam dan pengukuran kondisi meteorologi menggunakan environment meter dilakukan setiap 10 menit. Sampel  $PM_{2,5}$  dianalisis di laboratorium dengan metode gravimetri. Penelitian ini mengambil data kuesioner pada 67 responden dilakukan untuk studi Analisis Risiko Kesehatan Lingkungan (ARKL) untuk mengetahui risiko kesehatan terhadap pekerja. Hasil penelitian konsentrasi  $PM_{2,5}$  pada area kantor  $0,96 \text{ mg/m}^3$ , area unloading  $1,84 \text{ mg/m}^3$ , dan area packer  $1,52 \text{ mg/m}^3$ . Konsentrasi  $PM_{2,5}$  pada ketiga area tersebut tidak melebihi baku mutu Permenkes No.70 Tahun 2016 yaitu  $3 \text{ mg/m}^3$ . Pajanan  $PM_{2,5}$  secara inhalasi pada perkerja Packing Plant Teluk Bayur PT. Semen Padang dengan berat badan rentang 71-80 kg, dikategorikan tidak aman karena memiliki nilai RQ rata-rata sebesar 41,3 sehingga dibutuhkan pengelolaan risiko. Pengelolaan risiko didapatkan bahwa konsentrasi aman yang diterima berkisar  $0,1769\text{-}1,6080 \text{ mg/m}^3$ , waktu pajanan aman berkisar 1,5-13,4 jam/hari, dan frekuensi pajanan aman 42-436 hari.

**Kata Kunci :** Analisis Risiko Kesehatan Lingkungan (ARKL), Packing Plant, Pekerja,  $PM_{2,5}$ , PT. Semen Padang.



## **ABSTRACT**

*PT Semen Padang has several process units that support the production process. One of them is the packing plant unit. Activities carried out at the packing plant are unloading, storing, and bagging of cement that has been produced. This study aims to analyze the measurement results of PM<sub>2.5</sub> concentrations, and then analyze the environmental health risks due to PM<sub>2.5</sub> exposure to the Teluk Bayur packing plant of PT Semen Padang. Air sampling following SNI 16-7058-2004 was carried out at three sampling points. Air quality sampling was carried out using the Low Volume Air Sampler (LVAS) tool for 8 hours and measuring meteorological conditions using an environment meter every 10 minutes. PM<sub>2.5</sub> samples were analyzed in the laboratory using the gravimetric method. This study took questionnaire data from 67 respondents conducted for the Environmental Health Risk Analysis (EHRA) study to determine the health risks to workers. The results showed PM<sub>2.5</sub> concentrations in the office area was 0.96 mg/m<sup>3</sup>, the unloading area was 1.84 mg/m<sup>3</sup>, and the packer area was 1.52 mg/m<sup>3</sup>. The concentration of PM<sub>2.5</sub> in these areas did not exceed the quality standard of Permenkes No.70 of 2016, which is 3 mg/m<sup>3</sup>. Inhalation exposure to PM<sub>2.5</sub> in the Teluk Bayur Packing Plant workers of PT Semen Padang with a body weight range of 71-80 kg, was categorized as unsafe because it has an average RQ value of 41.3, so risk management is needed. Risk management found that the safe concentration received ranged from 0.1769-1.6080 mg/m<sup>3</sup>, safe exposure time ranged from 1.5-13.4 hours/day, and safe exposure frequency was 42-436 days.*

**Keywords:** *Environmental Health Risk Analysis (EHRA), Packing Plant, PM<sub>2.5</sub>, PT. Semen Padang, Worker.*

