

## ABSTRAK

### HUBUNGAN ANTARA PAPARAN DEBU PM<sub>10</sub> DENGAN GEJALA KONJUNGTIVITIS IRITATIF PADA PEKERJA BAGIAN PRODUKSI PENGOLAHAN MINYAK KELAPA SAWIT DI CV. BUMI WARAS WAY LUNIK BANDAR LAMPUNG

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**Latar Belakang:** Konjungtivitis iritatif merupakan salah satu gangguan kesehatan mata yang umum ditemukan pada lingkungan kerja berdebu. Pekerja di industri pengolahan minyak kelapa sawit memiliki risiko tinggi terpapar partikulat halus, seperti PM<sub>10</sub>, yang berpotensi mengiritasi konjungtiva dan memicu gejala konjungtivitis iritatif. Penelitian ini bertujuan untuk mengetahui hubungan antara paparan debu PM<sub>10</sub> dengan gejala konjungtivitis iritatif pada pekerja bagian produksi di CV. Bumi Waras Bandar Lampung.

**Metode:** Penelitian ini menggunakan desain *cross-sectional* dengan pendekatan kuantitatif. Populasi penelitian adalah seluruh pekerja bagian produksi di CV. Bumi Waras sebanyak 70 orang, yang bekerja di gudang kernel, gudang *palm kernel oil*, dan gudang *palm kernel expeller*. Pengukuran konsentrasi PM<sub>10</sub> dilakukan menggunakan alat *Air Quality Index Monitor*, sedangkan data gejala konjungtivitis diperoleh melalui pengisian kuesioner. Analisis statistik menggunakan uji *chi-square* untuk mengetahui hubungan antara paparan PM<sub>10</sub> dan gejala konjungtivitis iritatif, dengan tingkat kemaknaan  $p < 0,05$ .

**Hasil:** Hasil pengukuran menunjukkan bahwa 66,7% area kerja memiliki konsentrasi PM<sub>10</sub>  $\geq 75 \mu\text{g}/\text{m}^3$ , sementara 33,3% berada di bawah baku mutu. Sebanyak 59,1% pekerja mengalami gejala konjungtivitis iritatif, dengan keluhan terbanyak berupa mata berpasir/mengganjal, mata merah, dan mata gatal. Hasil uji *chi-square* menunjukkan terdapat hubungan bermakna antara paparan PM<sub>10</sub> dengan gejala konjungtivitis iritatif ( $p = 0,008$ ), dengan nilai *Prevalence Ratio (PR)* sebesar 4,17 dan *Confidence Interval (CI)* 95% (1,41-12,3).

**Kesimpulan:** Terdapat hubungan signifikan antara paparan debu PM<sub>10</sub> dan gejala konjungtivitis iritatif pada pekerja bagian produksi di CV. Bumi Waras.

Kata Kunci: konjungtivitis iritatif, minyak kelapa sawit, pekerja, PM<sub>10</sub>.

## ABSTRACT

### THE RELATIONSHIP BETWEEN PM<sub>10</sub> DUST EXPOSURE AND IRRITATIVE CONJUNCTIVITIS SYMPTOMS AMONG PRODUCTION WORKERS IN PALM OIL PROCESSING AT CV. BUMI WARAS WAY LUNIK, BANDAR LAMPUNG

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**Background:** Irritative conjunctivitis is one of the most common eye disorders found in dusty work environments. Workers in the palm oil processing industry have a high risk of exposure to fine particulate matter such as PM<sub>10</sub>, which has the potential to irritate the conjunctiva and trigger symptoms of irritative conjunctivitis. This study aimed to determine the relationship between PM<sub>10</sub> dust exposure and irritative conjunctivitis symptoms among production workers at CV. Bumi Waras, Bandar Lampung.

**Methods:** This study employed a cross-sectional quantitative design. The study population consisted of all production workers at CV. Bumi Waras, totaling 70 workers employed in the kernel warehouse, palm kernel oil station, and palm kernel expeller warehouse. PM<sub>10</sub> concentrations were measured using an Air Quality Index Monitor, while data on conjunctivitis symptoms were collected using structured questionnaires. Statistical analysis was conducted using the chi-square test to determine the relationship between PM<sub>10</sub> exposure and irritative conjunctivitis symptoms, with a significance level of  $p < 0.05$ .

**Results:** The results showed that 66.7% of work areas had PM<sub>10</sub> concentrations  $\geq 75 \mu\text{g}/\text{m}^3$ , while 33.3% were below the threshold value. A total of 59.1% of workers experienced symptoms of irritative conjunctivitis, with the most common complaints being a gritty sensation, redness, and eye discomfort. The chi-square test indicated a significant association between PM<sub>10</sub> exposure and irritative conjunctivitis symptoms ( $p = 0.008$ ), with a Prevalence Ratio (PR) of 4,17 and a 95% Confidence Interval (CI) of 1,41-12,3.

**Conclusion:** There is a significant relationship between PM<sub>10</sub> dust exposure and irritative conjunctivitis symptoms among production workers at CV. Bumi Waras.

**Keywords:** irritative conjunctivitis, palm oil, Workers, PM<sub>10</sub>