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THE RELATIONSHIP BETWEEN INDIVIDUAL FACTORS AND PESTICIDE EXPOSURE FACTORS ON CHOLINESTERASE ENZYME LEVELS AMONG CORN FARMERS IN BAUH GUNUNG SARI VILLAGE SUBDISTRICT SEKAMPUNG UDIK DISTRICT REGENCY LAMPUNG TIMUR LAMPUNG

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Background: Indonesia is one of the largest corn-producing countries in the world, and the majority of its population works in the agricultural sector, which carries a high risk of continuous pesticide exposure that may inhibit cholinesterase enzyme activity. This study aimed to determine the association between individual factors and pesticide exposure factors with cholinesterase enzyme levels among corn farmers in Bauh Gunung Sari Village.

Methods: This study employed an observational analytic design with a cross-sectional approach and consecutive sampling technique. The research was conducted in Bauh Gunung Sari Village, Sekampung Udik Subdistrict, East Lampung Regency, Lampung Province. The variables studied included age, education level, personal hygiene, use of personal protective equipment (PPE), length of employment, duration of spraying, spraying method, and spraying frequency. Data were obtained from 56 corn farmers through questionnaires and cholinesterase enzyme examinations. Data analysis was performed using the Chi-square test.

Results: A total of 44.6% of corn farmers experienced decreased cholinesterase enzyme levels. Significant associations were found between personal hygiene ($p = 0.028$), age ($p = 0.020$), use of PPE ($p = 0.015$), spraying frequency ($p = 0.008$), and length of employment ($p = 0.010$) with cholinesterase enzyme levels. Education level ($p = 0.160$), spraying method ($p = 0.571$), and duration of spraying ($p = 0.984$) were not significantly associated with cholinesterase enzyme levels.

Conclusion: Personal hygiene behavior, age, use of personal protective equipment, spraying frequency, and length of employment were significantly associated with cholinesterase enzyme levels. Education level, spraying method, and duration of spraying were not associated with cholinesterase enzyme levels.

Keywords: Cholinesterase levels, Corn farmers, Individual factors, Pesticide exposure factors

ABSTRAK

HUBUNGAN FAKTOR INDIVIDU DAN FAKTOR PAPARAN PESTISIDA TERHADAP KADAR ENZIM *CHOLINESTERASE* PADA PETANI JAGUNG DESA BAUH GUNUNG SARI KECAMATAN SEKAMPUNG UDIK KABUPATEN LAMPUNG TIMUR LAMPUNG

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Latar Belakang: Indonesia sebagai salah satu negara produsen jagung terbesar di dunia dan mayoritas penduduknya bekerja di sektor pertanian dengan risiko tinggi terpapar pestisida terus menerus yang dapat menghambat aktivitas enzim *cholinesterase*. Penelitian ini bertujuan untuk mengetahui hubungan antara faktor individu dan faktor paparan pestisida terhadap kadar enzim *cholinesterase* pada petani jagung Desa Bauh Gunung Sari.

Metode: Penelitian ini menggunakan desain analitik observasional dan memakai pendekatan *cross sectional* dengan teknik *consecutive sampling*, dilakukan di Desa Bauh Gunung Sari, Kecamatan Sekampung Udik, Kabupaten Lampung Timur - Lampung. Variabel yang diteliti meliputi umur, tingkat pendidikan, *personal hygiene*, penggunaan alat pelindung diri (APD), masa kerja, lama penyemprotan, cara penyemprotan dan frekuensi penyemprotan. Data diambil dari 56 sampel petani dikumpulkan melalui kuesioner dan pemeriksaan enzim *cholinesterase* dan dianalisis menggunakan uji *chi-square*.

Hasil: Sebanyak 44,6% petani jagung mengalami penurunan kadar *cholinesterase*. Terdapat hubungan bermakna antara *personal hygiene* ($p=0,028$); umur ($p=0,020$); penggunaan Alat pelindung diri ($p=0,015$); frekuensi penyemprotan ($p=0,008$); masa kerja ($p=0,010$) dengan enzim *cholinesterase*. Tingkat pendidikan ($p=0,160$); cara penyemprotan ($p=0,571$); dan lama penyemprotan ($p=0,984$) tidak berhubungan dengan enzim *cholinesterase*.

Simpulan: Perilaku *personal hygiene*, umur, penggunaan alat pelindung diri, frekuensi penyemprotan, dan masa kerja menunjukkan hubungan yang signifikan. Tingkat Pendidikan, cara penyemprotan, dan lama penyemprotan, tidak berhubungan dengan enzim *cholinesterase*.

Kata Kunci: faktor individu, faktor paparan pestisida, kadar *cholinesterase*, petani jagung