

**RESIDU INSEKTISIDA ORGANOFOSFAT PADA LAHAN PERTANIAN
DALAM KAITANNYA DENGAN PERILAKU PETANI KENTANG DI
DAS CITARUM HULU (Kecamatan Kertasari, Kabupaten Bandung)**

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INTISARI

Penggunaan insektisida secara tidak bijak dapat menimbulkan residu pada lingkungan. Komponen lingkungan yang berpotensi terdampak residu insektisida adalah tanah dan produk pertanian. Tujuan dari penelitian ini adalah 1) mengetahui kadar residu pestisida organofosfat di tanah dan sebarannya pada lahan pertanian di Kecamatan Kertasari; 2) mengkaji pengaruh penggunaan pestisida terhadap kualitas dan keamanan produk pertanian (Kentang) ditinjau dari kadar residu organofosfat; 3) mengkaji perilaku dan persepsi petani kentang di Kecamatan Kertasari dalam penggunaan pestisida; 4) menganalisis hubungan antara tingkat residu insektisida pada tanah dan produk pertanian dengan perilaku serta persepsi petani terhadap penggunaan pestisida.

Penelitian dilaksanakan di lahan kentang Kecamatan Kertasari khususnya Desa Cibeureum, Cikembang dan Tarumajayayang dilakukan menggunakan metode survey dengan pengambilan sampel tanah dan kentang, wawancara kepada petani serta analisis laboratorium. Pengambilan sampel tanah dan produk tanaman kentang ditentukan dengan metode *simple random sampling* pada lahan kentang siap panen. Pengujian residu insektisida dianalisis menggunakan alat Kromatografi Gas (GC) varian 450GC dengan detektor ECD. Kadar residu dibandingkan dengan batas maksimum residu (BMR). Penilaian persepsi dan perilaku petani terkait penggunaan pestisida diukur dengan pemberian skor pada setiap pilihan jawab pada pertanyaan dalam kuesioner perilaku dan persepsi yang masing-masing berjumlah 13 pertanyaan.

Hasil penelitian menunjukkan bahwa penggunaan insektisida organofosfat di Desa Cibeureum, Tarumajaya dan Cikembang menimbulkan residu di dalam tanah dengan kadar residu di bawah BMR pada tanah yang ditetapkan *European Commission* (BMR klorpirifos 0,3 mg/kg, profenofos 0,05 mg/kg). Penggunaan insektisida klorpirifos dan profenofos dapat menurunkan kualitas dan keamanan produk ditinjau dari kadar residu tertinggi masing-masing insektisida yang terdeteksi di dalam kentang melebihi BMR yang ditetapkan oleh *Agri food & Veterinary of Singapore* 2018 (BMR klorpirifos 0,05 mg/kg) dan standar nasional Indonesia 2008 (SNI) (BMR profenofos: 0,05 mg/kg). Rata-rata persepsi dan perilaku petani responden mengenai pestisida tergolong baik tetapi terdapat beberapa hal yang tergolong buruk seperti intensitas aplikasi dan dosis aplikasi. Perilaku petani memiliki korelasi negatif yang signifikan dengan kadar residu klorpirifos di tanah.

Kata kunci: residu insektisida organofosfat, tanah, produk, kentang, perilaku petani

ORGANOPHOPHAT PESTICIDE RESIDUES IN AGRICULTURE AND ITS CORELATION WITH POTATO FARMERS BEHAVIOR IN THE UPPER CITARUM WATERSHED (Kertasari Sub District, Bandung)

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ABSTRACT

Irresponsible use of insecticide could bring harm to the environment, especially to agricultural soils and products. This research aims to (1) investigate pesticide residue of organofosfat and its distribution on agricultural land at Kertasari sub district, West Java; (2) analyze the effect of organofosfat residue on quality and safety product of potatoes; (3) analyze the potatoes farmer's behavior and perception on pesticide use in Kertasari sub district; (4) analyze the relationship between insecticide residue in soils and farmers perceptions and behavior in using pesticides.

Research conducted at Cibeureum, Cikembang and Tarumjaya village of Kertasari sub-district through soils and potatoes sampling, farmers interview and laboratory analysis. Composites soil sampling and potatoes were determined with simple random sampling method. Insecticide residue analysis on organophosphate (Chlorpyrifos and profenofos) using *QuEChERS* method and Gas Chromatograph varian 450GC equipped with Electron Capture Detector (ECD). The pesticides residue found in soils and product will be compare to the maximum residual limit recommendation. Assessment of farmer's perceptions and behavior regarding pesticides use was done by questionnaire consist of 13 questions. Scoring was done to all of the answers after the farmers finished the questionnaire.

The result shows that there are residue accumulation in soils and potatoes found in Cibeureum, Tarumajaya and Cikembang district due to excessive klorpirifos and profenofos use. Concentration of chlorpyrifos and profenofos residue in soils were still below the maximum residual limit (MRL) by the European Commission (MRL of 0.3 mg/kg and 0.05 mg/kg). But the highest residue concentration of chlorpyrifos (0,055 mg/kg) and profenofos (0,123 mg/kg) was found in potatoes higher than the MRL of chlorpyrifos by *Agri food & Veterinary of Singapore* and MRL of profenofos by (0,05 mg/kg). This result shows that excessively use of insecticides profenofos could lead to a decreasing of potatoes quality and safety. Farmer's behavior and perception on pesticide use were in a good way, but there are few things need to be further eliminate i.e the intensity and level of applications are too excessive. Farmers behavior were found negatively correlated to Chlorpyrifos residue in soils.

Kata kunci : organofosfat residue, soils, potatoes, farmers behavior