Distribusi residu insektisida organoklor dan organofosfat pada tanah sawah, air sawah, dan beras karawang, serta produk olahan beras karawang, Jakarta dan Bogor

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Abstrak

Residu insektisida organoklor (lindan, aldrin, dieldrin, heptaklor dan endosulfan) dan organofosfat (klorpirifos, propenofos, diazinon dan malation) telah diteliti terhadap sampel tanah, air, beras darl enam desa di Karawang dan produk olahan beras darl dua belas pasar tradisional di Karawang, Jakarta dan Bogor. Metode analisis residu insektisida berdasarkan pada kromatografi gas-cair dengan' detektor penangkap eiektron. Dari total sembilan jenis insektisida yang diuji, seluruhnya terdeteksi pada sampel dengan konsentrasi berkisat dari tak terdeteksi sampai 101,2 ng/g. Frekuensi deteksi residu berkisar dari 3,1% (3 sampel) sampai 86 % (84 sampel). Lindan merupakan yang paling banyak terdeteksi diikuti klorpirifos (52,0 %; 51 sampel) dan aldrin (51,0 %; 50 sampel). Sebanyak 15,71 % (11 sampel) produk beras yang berasal dari Bogor yaitu jenis nasi (2 sampel), bubur (1 sampel) buras (2 sampel), lemper (2 sampel), ketupat (1 sampel) dan lontong (3 sampel) tercemar aldrin melebihi batas maksimum residu yang dihitung dari AD! {Acceptable Daily Intake). Nilai ED! {Estimated Daily Intake) buras, lemper dan lontong berturut-turut 23,52 xlO"^; 12,44x10"^; dan 15,35x10"^ mg/kg berat badan per hari dengan pencapaian AD I berturut-turut 235,2; 124,4 dan 153,5 % sehingga beresiko terhadap kesehatan konsumen. Konsumsi maksimal produk beras ini yang masih aman adalah 2 buras, 4 lemper dan 192,99 miligram lontong. Sedangkan sampel tanah, air, beras dan produk beras lainnya masih aman

.....The residue levels of organochiorine insecticides (iindane, aldrin, dieldrin, heptachlor and endosulfan) and organophosphorus insecticides (chlorpyriphos, propenofos, diazinon and malathion) were determined in soil, water and rice from six villages in Karawang and rice products from twelve traditional markets around Karawang, Jakarta and Bogor. The method for monitoring these residues based on gas-liquid chromatography with electron capture detector. All of the nine organochiorine and organophosphorus insecticides investigated, were detected at concentration ranging from nondetectable to 101,2 nanogram/gram. Frequencies of detection of insecticides residues ranged from 3,1 % (3 samples) to 86 %(84 samples). Lindane was the most frequently detected followed by chlorpyriphos (52,0 %; 51 samples) and aldrin (51,0 %, 50 samples). A total of 15,71 % (11 samples) rice products from Bogor such as rice (2 samples), bubur (1 sample), buras (2

samples), lemper (2 samples), ketupat (1 sample) and lontong (3 samples) contained aldrin exceeded Maximum Residue Limits (MRLs) determined from Acceptable Daily Intake. The EDIs (Estimated Daily Intakes) of aldrin for buras, lemper, and lontong were 23, 52x10"®; 12,44x10"®; 15,35x10"® mg/kg body weight/day, respectively. These EDIs have exceeded ADI, were 235,2 % (buras), 124,4 % (lemper); 153,5 % (lontong). Therefore, consumption of these foods poses a risk to consumer health. Based on ADI achieved, maximum rice products consumption that will not pose a risk to consumer health for buras, lemper and lontong are 2, 4 and 192,99 miligram, respectively. The rest samples such as water, soil, rice and other rice products were in safe level.