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Hazard Index, a Tool for a Long Term Risk Assessment of Pesticide Residues in Some Commodities, a Pilot Study

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Abstract:

Samples of some vegetables were analysed for pesticides residues using the accredited (QuEChERS) method. The method allowed the determination of 215 compounds of different pesticide chemical groups. LC-MS/MS and GC-MS/MS were used for residues quantification. In a total number of 116 samples, no pesticides residues were detected in 34 samples (29.3%), while 82 samples (70.7%) had detectable pesticide residues, with some samples exceeding the MRLs levels established by the Codex Alimentarius Commission. The hazard index (HI %), representing the long – term risk assessment was in the range of 0.01% - 15.04% of the ADI's. The highest exposure was observed for ethion, followed by chlorpyifos, both of them are organophosphates, at15.04% and 2.45% of ADI respectively. The acute (short-term) exposure was also estimated. Results showed a potential risk for children posed by 3 pesticides, meanwhile, residues of one pesticides showed potential risk to adults (>100% of ARfD). The present work is an attempt to