

Title Evaluation of pesticide residues in fruits and vegetables from Xiamen, China
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Abstract

In the present study an effort has been made to evaluate the residues of selected insecticides (organophosphorous and pyrethroid) and fungicides (triazoles and chloronitriles) in fruits and vegetables collected from Xiamen, China, during the October 2006 to March 2009 monitoring campaign. Gas chromatography with electron capture detector (GC-ECD) was used to determine the concentrations of 22 pesticide residues among those recommended for pest treatment. Of 1135 samples (37.7%) that contained pesticide residues, pakchoi cabbage, legumes, and leaf mustard were the commodities in which pesticide residues were most frequently detected, with 17.2%, 18.9% and 17.2% of the samples exceeding the maximum residue limits (MRLs), respectively. Concerning the most frequently detected pesticide residues, cypermethrin was found in 18.7% of the samples analyzed. Data obtained were then used for estimating the potential health risks associated with the exposures to these pesticides. The estimated daily intakes (EDIs) range from 0.1% of the ADI for cyfluthrin to 2.61% of the ADI for omethoate and 0.1% of the ADI for omethoate. The most critical commodity is legumes, contributing 2.61% to the hazard index (HI). The results show that despite a high occurrence of pesticide residues in fruits and vegetables from this region, it could not be considered a serious public health problem. Nevertheless, an investigation into continuous monitoring and tighter regulation of pesticide residues in fruits and vegetables is recommended.