

PESTICIDES RESIDUE DETERMINATION IN VEGETABLES AND FRUITS COMMONLY USED IN REPUBLIC OF MOLDOVA AND ESTIMATION OF HUMAN INTAKE

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Abstract. The purpose of this research was to assess the residual concentrations of pesticides in fruits and vegetables and to estimate the health risk associated with the consumption of pesticide-contaminated vegetables and fruits. A total number of 5206 samples from twenty one different vegetables and fruits were collected during 2009-2017. Pesticides in concentrations exceeding the maximum residue levels were found in 1194 analysed samples (22.9% of total). Thirteen insecticides, four fungicides, two acaricides and one herbicide were detected in the analysed samples. The estimated daily intake (EDI) has been established between 0.000001 and 0.0002 mg/kg of body weight/day. Calculated values of EDIs are lower than the levels of acceptable daily intake. The calculated hazard indices ranged from 0.000004 up to 0.15 for the analysed pesticides and the highest value of hazard index was calculated for diazinon, being of 0.15. It might be concluded that the long-term consumption of vegetables and fruits could pose a health risk for the population of the Republic of Moldova, since the minimum norms used for risk estimation do not reflect real food consumption pattern in the Republic of Moldova.

Keywords: pesticide residue, fruit, vegetable, estimated daily intake, risk assessment.

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