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ORGANOCHLORINE PESTICIDE RESIDUES IN SOIL AND EDIBLE VEGETABLE

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Abstract

Intensive vegetable crops are stressed by the influence of a large number of chemicals, applied to stimulate fructification, ripening, fertilization, pathogen, pest and weed control. The purpose of this study was to highlight the impact and risk on soil and vegetable plants and products during treatments application with organochlorine pesticides, on three cultivation systems: conventional, organic and in-conversion. The objective of this study was to monitor the content of organochlorine pesticide (OCPs) residues and their remanence in vegetable crops from certain farms located in the North-eastern area of Romania. During the year 2011, a number of 20 OCPs residues have been actively analyzed from soil and edible vegetable samples. Although the organic farm is converted to organic system from 2006, residues of Endrin aldehyde were detected in soil samples. Residues of Gamma chlordane, Endosulfan I, Endosulfan II, Endosulfan sulfate and Endrin aldehyde have been detected in soil samples collected from conventional farms, but their concentrations were below the maximum limits allowed by EU legislation and national regulations. In all vegetable samples, the OCPs residues have been found at acceptable limits, according to the EC Regulation 396/2005. However, a careful monitoring of conventional crops would be opportune to avoid the risks of exceeding the maximum allowed limit for the products sold by small farmers on domestic market consumer products.

Key words: OCPs, residues, soil, vegetable crop

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