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Research Paper

Effect of household processing treatments on malathion residues in cucumber

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ABSTRACT : Pesticides are widely used in vegetable production despite the fact that they have been associated with several health adversities. Malathion is an organophosphate which is used as a recommended pesticide on cucumbers. However, it is a parasympathomimetic which binds irreversibly to cholinesterase and impose neurotoxic effects on human body. Decontamination of vegetables at household level is the best strategy that can be adopted to reduce the intake of pesticide residues. The study was conducted to analyse the effect of common household methods on the reduction of malathion residues in cucumber. Recoveries were checked at 0.1 and 0.05 fortification levels and were found to be within the acceptable range *i.e.* 85- 115 per cent. Cucumber samples were spiked with recommended doses of malathion and were subjected different household processing treatments *viz.*, washing, dipping in chemical solutions and peeling. Analysis was done through QUEChERS and the residue content was analysed through Gas- Liquid chromatography. Least reduction was observed in simple washing with tap water. Peeling was found to be the most effective treatment with a reduction of 91.64 per cent. Reductions from dipping in chemical solutions ranged from 55.87 per cent by 10 per cent sodium chloride solution to 77.98 by 5 per cent sodium bicarbonate. Hence, it can be concluded that household processing can effectively reduce malathion residues in cucumber.

KEY WORDS : Pesticides, Cucumber, Malathion, Household processing

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