

Determination of residue and pre-harvest interval of Imidacloprid insecticide on greenhouse cucumber in Varamin region

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Abstract

Extensive use of chemical pesticides to control pests in developed and developing countries has led to the increase in crop production and decrease in post-harvest losses, which has caused harmful effects on human health. When the amount of pesticides exceeds permissible limits, some measures should be undertaken to reduce their application. In order to control cucumber pests in greenhouse, farmers use pesticides extensively, which their residues threaten human health in the society. Due to the importance of this problem, the residue and pre-harvest period of the Imidacloprid insecticide in some of the greenhouses of Varamin region, Tehran province, Iran was measured. In order to determine the pre-harvest period, spraying of Imidacloprid pesticide was done in a completely randomized block design with three replications, and two treatments of Imidacloprid and control (no insecticide). Sampling was done 1, 2, 3, 5, 7, 10 and 14 days after spraying. Samples were then transferred to the laboratory and preserved in freezer until the extraction and purification were performed and the amount of pesticide residues was measured. Based on the results, Imidacloprid residue reached below the maximum residue level (MRL) of 1 mg/kg two days after spraying. But for more confidence, the third day after spraying was considered as the pre-harvest period. Sampling for determination of Imidacloprid residue was performed in four greenhouses of Varamin region. The results showed that mean Imidacloprid residue levels were above the MRL value in these greenhouses.

Keywords: Pesticide, Permissible limit, Damage control.

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