

Abstract

Information about pesticide residues in crops has an important role in safety standards of the society. A large quantity of pesticides is consumed due to inadequate information for farmers and lack of supervision. This causes environmental problems and much residue pesticide on crops. Cucumber is one of these crops which has high consumption and can have more contamination due to short period between spraying and harvest time. This experiments were carried out to investigate the residues of pymetrozine (WG 50%, Chess) in one cucumber cultivar (Royal 128) in both farm and greenhouse. Cucumber plants were sprayed at two different rates: 0.5 kg/ha and 1 kg/ha. Samples were collected 2 hours, 1, 2 and 3 days after treatment and pymetrozine residues analyzed using HPLC equipped with UV detector. In farm plots which received 0.5 kg/ha, the residues in peels, peeled and unpeeled cucumber were 0.1443, 0.3068 and 0.1072 $\mu\text{g/g}$, respectively. In plots sprayed at 1.0 kg/ha the residues were 0.1937, 0.3419 and 0.1131 $\mu\text{g/g}$ for the above samples, respectively. Pymetrozine residues in peels, peeled and unpeeled samples from greenhouse experiments which treated at 0.5 kg/ha were 0.1622, 0.4082 and 0.1118 $\mu\text{g/g}$ respectively while the figures for the above samples which treated at 1.0 kg/ha were 0.2288, 0.6396 and 0.1794 $\mu\text{g/g}$ respectively. This investigation revealed that residue decreased rapidly so that the level below MRL (0.1 $\mu\text{g/g}$) were detected 0 day. except for peeled cucumber from greenhouse which MRL was detected one day after application and no residues were detected on the day 3th. Furthermore, the residues which were measured in peeled and peels cucumber showed a nonsignificant difference with unpeeled samples in field and among samples from greenhouse.

Key words: Residues, Cucumber, Pymetrozine, Field, Greenhouse, HPLC



University of Zabol
Graduate school
Faculty of Agriculture
Department of Plant Protection
The Thesis Submitted for The Degree of Master of Science
(in the field of Agricultural Entomology)

Determination of Pymetrozine Residue and Preharvest Interval in Greenhouse and Field Cucumber in Jiroft Area

Supervisors:

Dr. S. Ravan

Dr. A.R. Bandani

Advisor:

Dr. Kh. Talebi Jahromi

By:

A.Moslemi Mehni

June 2010