

Investigation on the effect of some botanical and chemical insecticides on the predatory bug *Macrolophus caliginosus* (Heteroptera:Miridae) the predator of greenhouse whitefly

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Abstract

One of the common methods for controlling of greenhouse whitefly *Trialeurodes vaporariorum* in tomato greenhouses is use of chemical and botanical insecticides. To evaluate the effects of these insecticides on adult female of predatory bug *Macrolophus caliginosus* these research was carried out using botanical insecticides (Sirinol, Palizin and Tondexir) and chemical insecticide (Imidacloprid) in 0, 0.5, 0.9, 1/8 and 3 ml/l in three methods; glassy tubes in laboratory, pot and greenhouse experiments on tomato plant. There were significant differences between treatments, doses and interaction of doses and treatments. The mortality was increased with increasing the doses. 48 hours after spraying, highest and the least mortality was caused by Imidichloprid (3 ml/l.) with 100% and Palizin (0.5 ml/l.) with 23.8 % mortality, respectively. In pot method, the highest mortality of predatory bug was caused by Imidichloprid (3, 1.8 ml/l.) with 97.23 and 94.34%, and the least mortality was caused by Palizin (0.5 and 0.9 ml/l.) with 20.17 and 21.14 %. Imidichloprid (3, 1.8 ml/l.) had the highest mortality with 94.46 and 92.66 % and Palizin (0.5 and 0.9 ml/l.) had the least mortality with 17.5 and 18 % on predatory bugs in greenhouse condition. In all three methods, there were significant difference between Imidichloprid (all doses) and the other botanical insecticides. These results show that the botanical insecticides could be used as natural products in IPM programs to protect the natural enemies.

Keywords: Greenhouse whitefly, *Macrolophus caliginosus*, Sirinol, Palizin, Tondexir and Imidichlopride

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Received: 28 Jan. 2015 – Accepted: 14 May 2016

