



ISSN 1814 – 5868

Available online at <http://bjas.bajas.edu.iq>
<https://doi.org/10.37077/25200860.2023.36.2.17>
College of Agriculture, University of Basrah

Basrah Journal of
Agricultural
Sciences

E-ISSN: 2520-0860

Basrah J. Agric. Sci., 36(2), 226-234, 2023

Chemical Control of the Leaf Miner *Scaptomyza flava* Fallen (Diptera: Drosophilidae) and Determination of Acetamipride and Abamectin Residues on Radish Plant

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Received 8th.March 2023; Accepted 10th October 2023 Available online 30th December 2023.

Abstract: *Scaptomyza flava* (Diptera: Drosophilidae) is a serious pest that attacks Brassicaceae, causing significant production losses. The current study was carried out to evaluate the relative efficiency of deltamethrin 2.5 EC, abamectin 1.8 EC, and acetamiprid 20 SP insecticides. In addition to determining the acetamiprid 20 SP and abamectin 1.8 EC residues in the leaves and roots of radish. The mortality score revealed that acetamiprid 20 SP, and abamectin 1.8 EC achieved 87.3% and 72.8% respectively after 72 hours compared to deltamethrin 2.5 EC, which scored 54.42%. The chromatogram outcomes of acetamiprid 20 SP and Abamectin 1.8 EC demonstrated that the acetamiprid 20 SP residues sharply decreased. They reduced from 1856.8 and 25.9 to 0 mg.L⁻¹ in both leaves and roots respectively after ten days of application. While the Abamectin 1.8 EC residue was decreasing from 954.12 to 0 mg.L⁻¹ after ten days. Furthermore, abamectin 1.8 EC residues have not been detected in the radish roots. The overall consequence proposed that both acetamiprid 20 SP and abamectin 1.8 EC are highly efficient in the controlling of *Scaptomyza flava* larva and there are no harmful impacts for both on the edible vegetable.

Keywords: Abamectin 1.8 EC, Acetamiprid 2.5 SP, HPLC, Radish, *Scaptomyza flava*.

Introduction

Raphanus sativus is one of the Brassicaceae family that is also called the mustard family. They are an economic vegetable, involving cabbage, cauliflower, grown in Iraq and the world. The Cruciferae family includes an estimated 380 genera and 3000-3709 species cultivated around the world (Al-Masoudi, 2019).

Radish plants are infested by different insects belonging to the different orders, such as the Diptera, where this order involves a wide range of small flies (*Drosophila*). Their larvae

attack a wide range of plants, but a few of them make tumors. In the field, Seraj (2000) and Mehdi *et al.* (2019) reported that *Scaptomyza flava* caused great losses in the seedling stage in Khuzestan. The European leafminer *Scaptomyza flava* (Fallen 1823) were found the first time in New Zealand (Martin, 2004). However, it was recorded for the first time in Basrah, Iraq by (Mahdi *et al.*, 2020). Furthermore, insect damage involves its feeds on the mesophyll layer. This results in spots and translucent white lines (Seraj, 1994). It has previously been observed that many