

Efficiency of kaolin WP on the serpentine leafminer, *Liriomyza trifolii* (Dip.: Agromyzidae) in Semnan region

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The serpentine leaf miner, *Liriomyza trifolii* Burgess (Diptera: Agromyzidae), is one of the truly polyphagous agromyzids and is an economically important key pest of both vegetables and ornamental crops. Damage is caused by *L. trifolii* larvae mining into leaves and petiole. The photosynthetic ability of the plants is often greatly reduced as the chlorophyll-containing cells are destroyed. Severely infested leaves may fall, exposing plant stems to wind action, and flower buds and developing fruit to scald. Several different synthetic insecticides have been used to control leaf miner by farmers. One of the non-chemical methods is the usage of inorganic compounds of oviposition detergency and feeding inhibitory. To reduce the use of synthetic insecticides, application of inorganic compounds including kaolin clay (Sepidan[®] WP 95%, 50000 ppm), mixture of kaolin (50000 ppm) and sulfur (WDG 80%, 10000 ppm), mixture of kaolin (50000 ppm) and azadirachtin (Nimarin[®] EC 15%, 2500 ppm), were tested on the melon in Semnan region in 2014. Experiment was conducted in a randomized complete block design with 4 treatments and 4 replicates. The treatments, immediately, were sprayed, before the fly laying, three times from June to July. The oviposition deterrence was calculated by collecting infested leaves, in before spraying and 3, 7, 14 and 21 days after each spraying. Based on the field studies, kaolin (5%) and kaolin + sulfur (5%) application reduced deterred oviposition of *Liriomyza trifolii*. The percentage of oviposition deterrence was 70.5, 70.1 and 64.9% for kaolin + sulfur, kaolin, kaolin + azadirachtin treatments, respectively. Also, the least infested leaves were observed in kaolin + sulfur (20.8%), kaolin (21.1%), kaolin + azadirachtin (25.3%) and control treatments (73.3%). Therefore, kaolin (Sepidan[®] WP) and kaolin + sulfur spray could be used successfully to reduce flies oviposition and serpentine leaf miner damage.

Keywords: Control, kaolin, *Liriomyza trifolii*, oviposition deterrence, sulfur