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**ABSTRACT**

The green peach aphid, *Myzus persicae* (Sulzer) (Homoptera: Aphididae), is regarded as one of the major and most destructive pest of vegetable crops in Egypt. The current study carried out during three successive seasons (2014, 2015 and 2016) in Fakous district, Sharkia Governorate on potato and pepper fields. The main objectives and results are presented as follows: 1) Survey and seasonal abundance of aphid species infesting potato and pepper plants, and their aphidophagous insect predators. Pepper plants were severely infested with aphids compared to potato plants. Three aphid species of *Myzus persicae* (Sulzer), *Aphis gossypii* Glover, and *Aphis craccivora* (Koch) were found infesting potato plants, while only the first two species were recorded on pepper plants. Aphidophagous insect predators found to be associated with aphids infesting both potato and pepper plants were belonged to three insect orders of Coleoptera, Neuroptera and Diptera. Besides, the predators of order Hemiptera, found only associated with aphid-infested pepper plants. 2) Biological aspects and predation efficiency of the eleven-spotted ladybird beetle, *Coccinella undecimpunctata* L. (Coleoptera: Coccinellidae) fed on green peach aphid, *M. persicae* colonized on potato plants under laboratory conditions. The average durations of the 1$^{st}$, 2$^{nd}$, 3$^{rd}$ and 4$^{th}$ larval instars of *C. undecimpunctata* were 3.0, 3.07, 3.1 and 3.4 days, respectively. The mean consumption during larval stage was 254.03 aphids per larva. The 4$^{th}$ and 3$^{rd}$ larval instars of *C. undecimpunctata* were the most efficient as their respective consumption was 36.50 and 28.32% of the total consumed aphid preys during the whole larval duration. The adult female of *C. undecimpunctata* consumed about 2.7 times as much as consumed by its larva. 3) Efficacy of four biorational compounds (Skanmite, 73% EC, Spiner 10% SC, Agreflex 18.6% SC and Protecto 9.4% WP) against aphids infesting potato and pepper plants using three ascending application rates (half dose, full recommended dose, 1½ dose) under field conditions. All tested compounds at their different rates caused noticeably reduction in aphid population. Highest reduction was recorded in Agreflex using full dose at 84.18 and 86.29% in potato and pepper plants, respectively. Brotecto at full dose came second at 80.73 and 81.08% reduction on potato and pepper plants, respectively. Skanmite had moderate efficiency even with using half dose at 76.58% reduction in infestation on potato plants. The lowest reduction in aphid infestation was recorded in Spiner treatments. 4) Impact of certain biorational insecticides used to control aphid infestation on the aphidophagous predators (*Coccinella undecimpunctata* L. and *Chrysopa carnae*). Based on LC50, the descending order of toxicity was skanmite > agreflex > spiner. Therefore, spiner treatment was relatively safe for larvae and adults of *C. undecimpunctata* and larvae of *Ch. Carnea* than skanmite and agreflex.



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| **Keywords:** | *Myzus persicae*, *Coccinella undecimpunctata*, biorational insecticides, integrated management, predation efficiency, infestation reduction, toxicity |