A study on parasitoids of the hoverflies (Dipt.: Syrphidae) and their natural effects on them in organic aphid infested lettuce farms of Yazd Province, Iran

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With 1 figure and 1 table

Abstract: The hoverflies (Dipt.: Syrphidae) are known as important biological control agents of hemipterans in agricultural ecosystems. The study was conducted to evaluate the parasitism of larvae of hoverflies on organic aphid infested lettuce farms in Yazd province, Iran during 2011. Five heads of lettuce were sampled and inspected in three times from late winter to the harvesting time. A total of 258 syrphid larvae were collected and reared under room temperature. Two species of Syrphidae, Eupeodes corolla Fabricius, and Scaeva albomaculata Macquart, and three species of parasitoids, Diplazon laetatorius Fabricius, Enizemum ornatum Gravenhorst (Hym.: Ichneumonidae, Diplazontinae) and Pachyneuron formosum Walker (Hym.: Pteromalidae) were identified. Rearings revealed a relatively high parasitism of the larvae of syrphid flies as E. ornatum, D. laetatorius and P. formosum were respectively parasitized 45%, 14.02% and 1.83% of the larvae of their host. It can be concluded that the Diplazontinae wasps are the main parasitoid biotic factors decreasing the population and abundance of the syrphid flies under the study conditions. New management practice in the augmentative programs of syrphids in Iran’s lettuce farms need to be developed by releasing larvae of syrphids from the third instar.

Keywords: Diplazontinae; Ichneumonidae; Pteromalidae; parasitism; Iran; biological control