

عنوان مقاله:

Host plant effect on functional response and consumption rate of *Episyrphus balteatus* (Diptera: Syrphidae) feeding (on different densities of *Aphis gossypii* (Hemiptera: Aphididae) of *Aphis gossypii* (Hemiptera: Aphididae)

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خلاصه مقاله:

One of the most important predator-prey interactions is functional response which its type and parameters are affected by different factors including host plant characteristics. In this research, the influence of leaf surface on functional response and prey consumption rate of third instar larvae of the *Episyrphus balteatus* (De Geer, 1776) (Diptera: Syrphidae) to third instar nymphs of *Aphis gossypii* Glover (Hemiptera: Aphididae) were studied on sweet pepper and cucumber leaves. The results demonstrated that leaf surface of host plants; different prey densities and their interaction had significant effects on the numbers of prey killed by a predator. Logistic regression indicated type III functional response on both host plant leaves. The values of b constant were 0.00231 and 0.00351h⁻¹ while handling time (Th) estimates were 0.14 h and 0.095 h on cucumber and sweet pepper leaves respectively. Moreover, plant leaves and different prey densities had significant effect on the prey consumption rate and voracity of predator. The maximum voracity values reached were 180.73 ± 7.71 and 282.25 ± 11.71 nymphs on cucumber and sweet pepper leaves respectively. These results emphasize on the importance of physical traits of host plant surface on the performance and searching efficiency of natural enemies that should be considered for optimizing their application in aphid biological control.

کلمات کلیدی:

trichomes, Physical traits, predation rate, handling time, syrphids

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