

HOST SEARCH BEHAVIOUR OF *TRICHOGRAMMA CHILONIS*, AN EGG PARASITOID OF CABBAGE SEMILOOPER, *TRICHOPLUSIA NI*

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Trichogramma chilonis (Ishii.) is a potential biocontrol agent to manage *T. ni* (Hübner) through augmentation and field release. The objective of this study was to assess the host finding behavior of *T. chilonis* to confirm its ability to parasitize *T. ni* eggs. Effect of substrate where eggs were laid on host finding behavior was assessed by measuring the time taken for host finding when the eggs were on cabbage, croton and filter paper under different egg densities (1, 3, 5 and 7) using eggs of *Corcyra cephalonica* and of *T. ni*. Ability of *T. chilonis* in searching host eggs within cabbage plants was assessed using three layers (upper, middle, lower) and two sides of the leaf. Time taken for maximum parasitism was examined when hosts were in ample supply. The relationship between host densities and parasitism was also examined. There was a significant difference among time durations ($F = 8.043$; $df = 2, 228$; $p < 0.05$) taken by *T. chilonis*, to locate host on different substrates, the lowest time (328.2 sec.) was taken when eggs were on filter paper indicating that cabbage substrate has no positive impact on host search. Parasitoid took significantly less time ($F = 7.471$ $df = 3, 228$; $p < 0.05$) to find eggs when eggs were at higher densities indicating that *T. chlonis* may take cues from eggs in host location. The highest time duration (679.87 sec.) was taken when eggs were placed as single eggs, while they took 170.55 sec. to find eggs when eggs were at 7 eggs /place density. The parasitoids perceived eggs in all three layers of plants and both sides of the leaves equally well, as there was no significant difference in parasitism of eggs placed among layers and between the sides of the leaf. This indicates that *T. chilonis* is very efficient in searching the plant which is an excellent character for a biocontrol agent. Further, *T. chilonis* showed density independent parasitism between the densities 15, 25 and 50. Finally, *T. chilonis* is capable of laying its entire egg load within first three hours when eggs are in ample supply. The relationship can be explained by $Y/(1-Y) = \exp (x1.090-1.563)$ equation ($n = 15$ $p < 0.001$). It can be concluded that *T. chilonis* is an efficient parasitoid that can be easily used in augmentation and field release programs in managing *T. ni* and other susceptible cabbage pest caterpillars.