

Biological Control

Codling Moth and *Trichogramma platneri*

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Keywords: codling moth, *Trichogramma platneri*

Our objective was to determine if *Trichogramma platneri* are capable of reproducing in all nonviable codling moth egg types resulting from the British Columbian sterile codling moth release program and if female *T. platneri* have a host egg preference. Recently mated (<12 hr) female *T. platneri*, reared from grain moth eggs, were exposed to eggs from one of the following codling moth crosses: fertile females x males; fertile females x sterile males; sterile females x males; or sterile females x fertile males; or from fertile female x male obliquebanded leafrollers. Parasitism and emergence were assessed.

T. platneri propagated on viable codling moth eggs were used in choice tests. Single, three or five freshly mated *T. platneri* female(s) enclosed in a petri dish was/were given a choice of an equal number of either viable or nonviable (sterile female x male) codling moth eggs; viable codling moth or viable three-lined leafroller eggs; or viable three-lined leafroller or nonviable (sterile female x male) codling moth eggs. Eggs were removed after 24 hr. Parasitism and emergence were assessed.

Trichogramma parasitized significantly ($P < 0.05$) more viable codling moth eggs than any of the other egg types and significantly ($P < 0.05$) more eggs of obliquebanded leafroller and fertile female x sterile male codling moth origin than of the remaining two nonviable codling moth egg types. The highest mean percentage *Trichogramma* emergence occurred from host eggs that were parasitized immediately after mating and the percentage emergence generally decreased as the parasitoid aged. The mean percent of the total parasitized eggs that were able to emerge from viable codling moth eggs was significantly ($P < 0.05$) higher than from any of the nonviable codling moth crosses. When eggs were held under drier conditions, *Trichogramma* emergence decreased over all codling moth egg types.

When given a choice between viable and nonviable codling moth eggs, one, three, and five *T. platneri* females consistently chose to parasitize more viable than nonviable eggs. When the number of females increased from one to three, more of each egg type were parasitized. When a single female *Trichogramma* was given a choice between viable leafroller or codling moth eggs, a similar number of eggs of each species was parasitized. As the number of *T. platneri* females increased, more codling moth eggs were parasitized. A single parasitoid female parasitized more leafroller than nonviable codling moth eggs. As the number of females increased, higher numbers of both leafroller and nonviable codling moth eggs were parasitized with a continued predominant parasitism of the leafroller eggs. More *T. platneri* adults were able to successfully emerge from the leafroller parasitized eggs than from the nonviable codling moth eggs.