

Tewee Maneerat 2014: Investigation on Utilization of *Cotesia flavipes* (Cameron) (Hymenoptera: Braconidae) for Biological Control of Sugarcane Moth Borer Complex in Thailand. Doctor of Philosophy (Entomology), Major Field: Entomology, Department of Entomology. Thesis Advisor: Associate Professor Wiwat Suasa-ard, Ph.D. 74 pages.

Sugarcane moth borers, as a complex, *Chilo infuscatellus* Snellen, *Chilo sacchariphagus* (Bojer), *Chilo tumidicostalis* (Hampson), *Scirpophaga excerptalis* (Walker), and *Sesamia inferens* (Walker) are destructive insect pests attacking sugarcane crop in central Thailand; however they are controlled by an effective larval endoparasitic wasp, *Cotesia flavipes* (Cameron) (Hymenoptera: Braconidae). Three objectives of this thesis are, firstly to explore the population trends of the sugarcane moth borers and their larval parasitoid, *C. flavipes*; secondly to investigate field augmentative biological control of the borers; and finally to access the yields of sugarcane gained from the augmentative release of *C. flavipes*. Experiments were conducted at four districts of Thailand in three successive years (2009-2011). In the population trends study, the incidence of the sugarcane moth borers was synchronized with their parasitoids throughout the end of the seasons at all planting locations. In the second experiment (augmentation), percentage of the borers infestation was significantly lower ($P < 0.05$) in parasitoid release plots than in non release plots. Percentage of parasitization of the release plots was significantly higher ($P < 0.05$) than in non release plots. Finally, average yields of sugarcane in release plots were significantly higher ($P < 0.05$) than those in non release plots.

Student's signature

Thesis Advisor's signature

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