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Comparative effectiveness of two release rates of the egg parasitoid *Trichogramma chilonis* Ishii (Hymenoptera: Trichogrammatidae) to control a sugarcane borer in Reunion.

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Introduction: *Trichogramma chilonis* Ishii (Hymenoptera: Trichogrammatidae) is an egg parasitoid of *Chilo sacchariphagus* Bojer (Lepidoptera: Crambidae), a stem borer attacking sugarcane stalks during the growth period. This research aimed at improving the cost / benefit ratio of a release method established in 2002 and 2004 trials. We evaluated two strategies with either reduced a) release points or b) release rate.

Methods: *T. chilonis* was released at two rates in nine sugarcane plots in Reunion. Response to release rate was measured by the percentage of stem attacked 2, 4 and 6 month after the first release. Releases were made with a density of 100 release points in six plots, three plots with a release rate of 16/ 7d and three with 10 /10d. Three more plots were tested with 50 release point at 16/7d release rate.

Results: All nine release sites had significantly lower level of damage, on average half that of the control plots. The damage reduction was not significantly different in fields with 50 and 100 release points. Likewise the release rate did not affect damage reduction.

Conclusion: These results help define augmentative release parameters for successful and cost effective use of *T. chilonis* as a biological control agent of sugarcane stem borer in field conditions. Combining both optimizations will bring a sustainable control strategy to Reunion sugarcane growers.