

First Results on Inducing Quiescence in *Trichogramma chilonis* Development

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Since 2000, a collaborative project between INRA, CIRAD and FDGDON has successfully developed a program for biocontrol of the sugarcane stem borer using *Trichogramma chilonis* on Reunion Island. Previous research has demonstrated interest in biological control as a control strategy in sugarcane. However, to implement this strategy on a large scale, some important technical problems needed addressing, mainly how to lower the overall costs associated with the program. To develop a cold storage technology will bring us a step closer to reaching that goal. This objective corresponds to the current demand by the industry community involved in the promotion and trading of agricultural products. Since 2008 a new research program has been initiated to study the induction of diapause or quiescence in *T. chilonis* development. The resulting knowledge is expected to greatly improve both mass rearing and releasing labour. This project is supported for three years by the French Ministry of Agriculture (CASDAR fund) (from mid 2008 to mid 2011). Optimal conditions (temperature, photoperiod and stage) to induce and maintain diapause or quiescence are being studied on the strain of *T. chilonis* currently used. The following parameters will be recorded: emergence rate, fecundity, sex-ratio and development time. A range of temperature lower than 18°C will be tested. The effects of storage at low temperature on the physiology of *T. chilonis* will be monitored. Initial results have already defined biotic and abiotic parameters required for successful storage for up to 2 months and these findings allow us to be optimistic for the future.