

'Characteristics of natural, semi-natural and controlled habitats (orchard) and cultural practices affecting the parasitism of *Anastrepha fraterculus* (fruit fly) in apple orchards in the Parana region. Basis for biological control.'

'Identifying reservoirs of the fruit fly *Anastrepha fraterculus* and of its parasitoids in semi-natural habitats surrounding apple orchards.'

ACTIONS

'Trapping of flies and parasitoids in orchards that are located either near or not near remaining Atlantic forest with / without spontaneous hosts of the fly (3 traps x 98 parcels in 3 areas) by the Brazilian partner;

- ▶ Exchanges of skills on the establishment of observation designs, morphological and molecular identification of flies and their parasitoids and statistical analysis of landscape data.
- ▶ Hosting of young Brazilian scientists in PSH for medium term stays and of confirmed scientists for short stays; short missions of French scientists at the University of Parana.'

RESULTATS

'98 parcels of apple orchard were selected and characterized for their landscape and practices; Insect trapping lasted for three years every week or every second week; Data were kept for 66 parcels monitored for at least 3 years.

- ▶ Molecular characterization of 15 *A. fraterculus* by COI gene sequencing showed uncertainties in morphological identification..
- ▶ The statistical models show that in general there is no effect of the native forest on the abundance of fruit flies except in the specific case of the presence of loquat which seems to increase the amount of flies in the nearby plot. This could be explained by the fact that the loquat sets fruit just before the apple and also harbors *A. fraterculus*.
- ▶ Short missions in Brazil for two scientists and hosting of a Brazilian doctoral student (12 months) a master student (3 months) and two visits of two Brazilian professors.'

PERSPECTIVES

'Publication of the results obtained.

- ▶ Post-doc project to analyze the parasitism of fruit flies in the same experimental set-up (101 plots).'

Responsable :

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