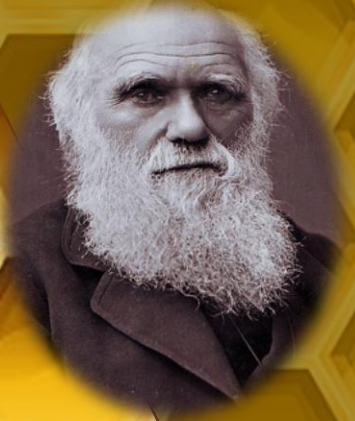
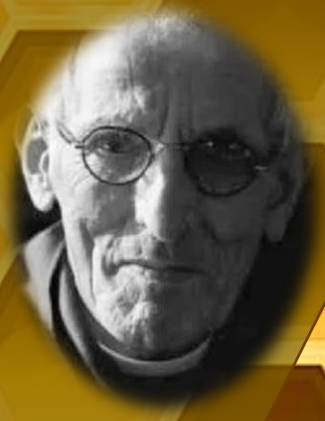


# 10th Caribbean Beekeeping Congress From Darwin to Brother ADAM



Mr. Benjamin POIROT

Beekeeping in French west indies and Guyana





**Benjamin POIROT, PhD**

- Beekeeper
- Researcher
- Consultant



**APINOV**

SCIENTIFIC BEEKEEPING  
& TRAINING CENTER



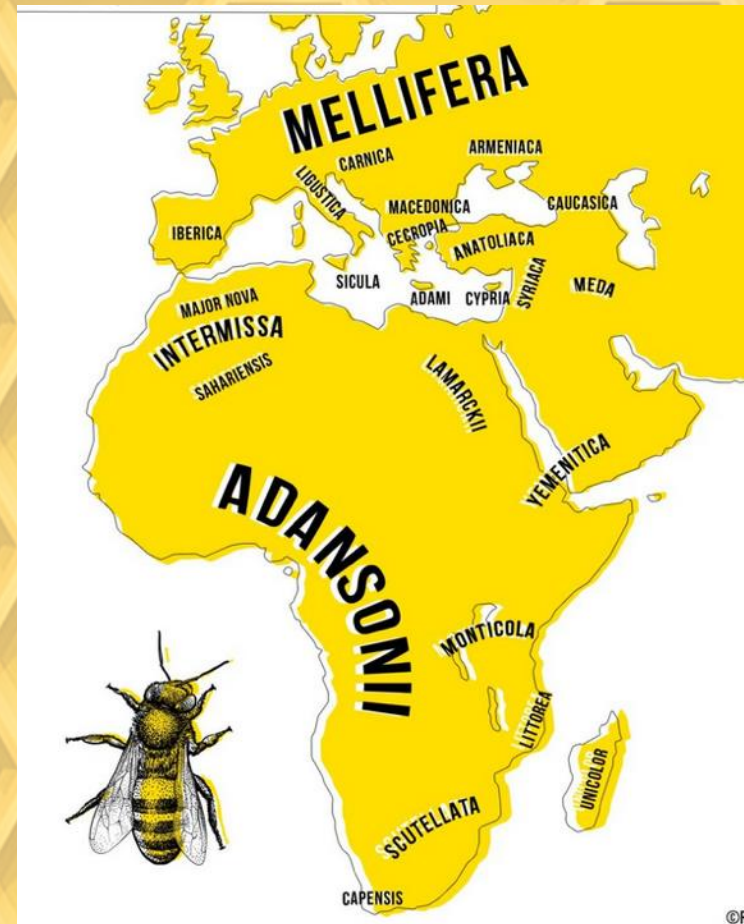


# History of the honeybees



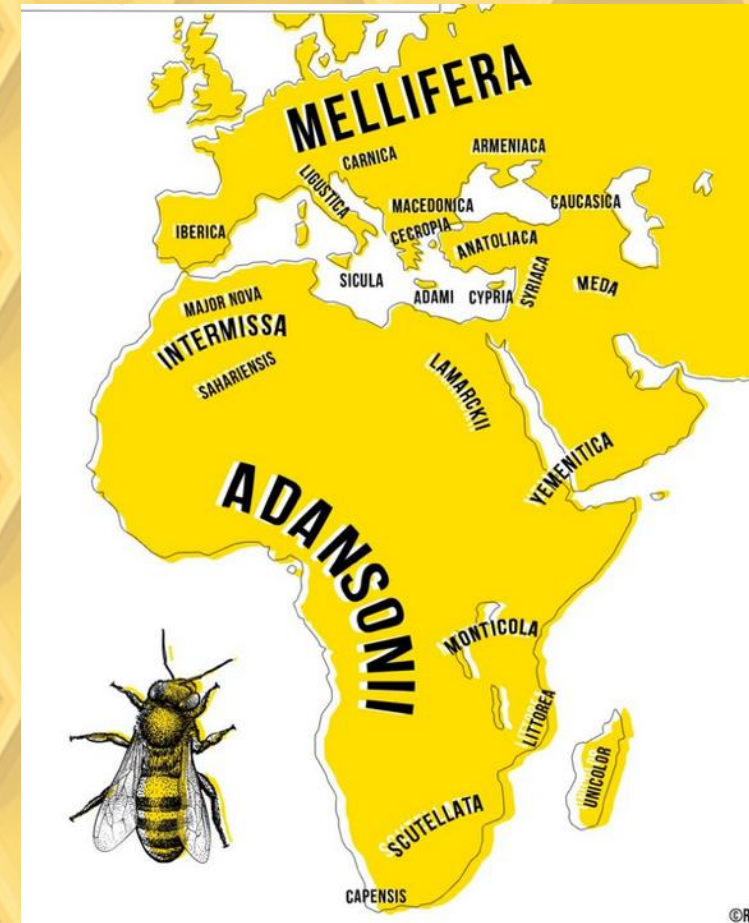
- All the honeybees come from Europe and Africa

- Sapiens has moved honeybees over the last centuries..





- The first strain in America was the black bee (*mellifera*), the yellow bee (*ligustica*) and others...
  - North America in 1622
  - Cuba in 1763
  - Brazil in 1839
  - Chili in 1857
- 
- Until an experimentation in Brazil in 1956 with *Scutellata*...





- Africanized honeybee is perfectly adapted to the environment...

- ...But not to the beekeepers !

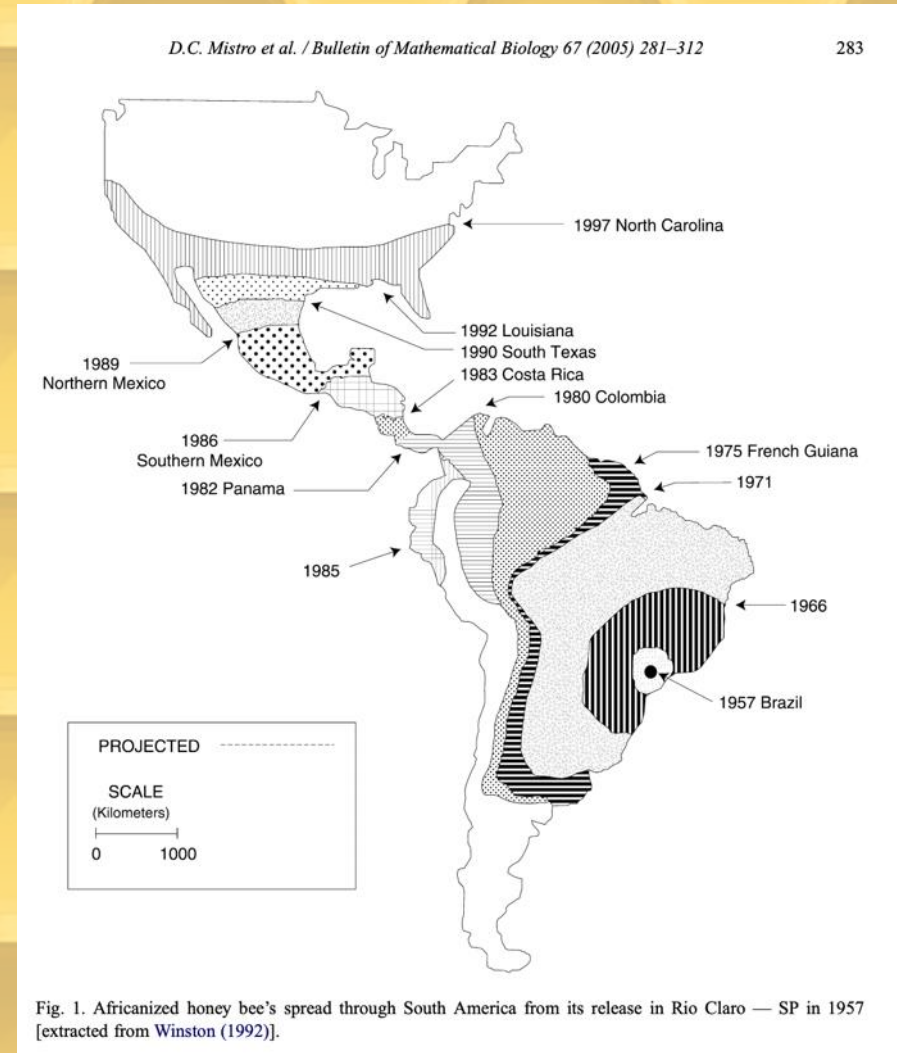


Fig. 1. Africanized honey bee's spread through South America from its release in Rio Claro — SP in 1957 [extracted from Winston (1992)].



# How to select a honeybee for beekeeping ?



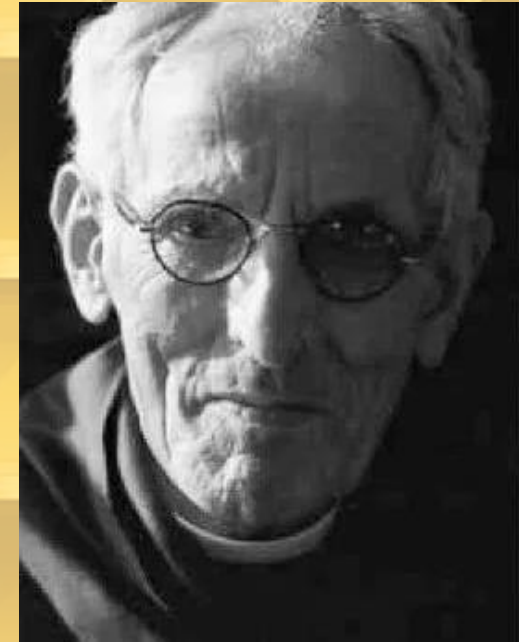
French Guyana 2019



Martinique 2016



- **We use the Brother ADAM method**
  - => Breeding queens based on**
    - ✓ careful observation,
    - ✓ controlled mating,
    - ✓ and ruthless selection.





# Successes and Challenges over the last 10 years



# FEEDBACK in French Guyana

**APIGUY association**

**President : Mr Olivier BELLONY**

- **70 beekeepers (3 to 5 full-time professionals)**
- **About 800 beehives**
- **Average honey production : 50 to 100 Kg/y**





# FEEDBACK in French Guyana

- <https://www.apinov.com/wp-content/uploads/2020/02/How-to-move-on-to-a-competitive-beekeeping-Situation-in-French-Guyana.pdf>

## Introduction

On the American continent, honeybees (*Apis mellifera* sp.) are not native. They were introduced during the European colonization of the continent. Thereby, most of the honeybees came from Europe and descended from the sub-species *Apis mellifera mellifera* and *Apis mellifera ligustica*. In French Guyana, honeybees found an environment with important resources. In 1971, Africanized bee came from Brazil and replaced *Apis mellifera* sp. which were present. The Africanized bee is characterized by a strong aggressiveness, a strong tendency to swarm and an amassing instinct almost nonexistent. A honeybee perfectly adapted to this climate and tropical environment but not to beekeeping. The aim of the project of the association of beekeepers APIGUY (French GUYANA) was to improve beekeeping.

## Objectives

In 2016, the APIGUY association implemented a sector development plan for all the stakeholders. This plan is composed of three main goals:

- **Create new vocations of beekeepers :** Trainings from the first hive opening to the production processed products, going through the manufacture of hives with local wood.
- **Improve the skills of the professional beekeepers :** Advanced and technical trainings to artificial insemination, swarms production, queens rearing and bee health management.
- **Improve the livestock with the introduction of selected queens :** genetic selection plan in order to have a tropical climate adapted honeybees (from a Buckfast selection of APINOV).



## Results

From the beginning of the program, the Guyanese honeybee livestock has moved to a more competitive bee. **The aggressiveness of bees has significantly decreased** (picture 1, it is now possible to work without protections). **Swarming also decreased** (from 4 swarms per year in average to 1, data not shown) and bees have an **amassing instinct more developed** (it is not necessary to feed colonies during the rainy season). These two characteristics allow beekeepers to make more honey with the same number of hives. Since 2015, the Guyanese's honey production has grown from 9 tons to 17.5 tons (Fig.1), due to a **better production per hive (~x3)**. In the same time, APIGUY's membership went from 25 to 46 (Fig.2). Today, some professional beekeepers rear their own queen from selected genetics and the first inseminated queens and moon shine meeting queens were produced.

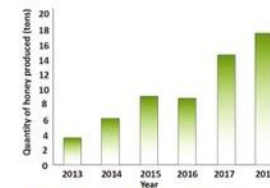


Figure 1 : Evolution of the production of honey per year in French Guyana

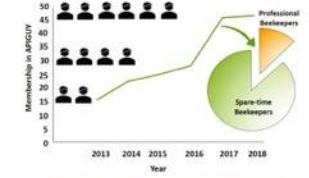
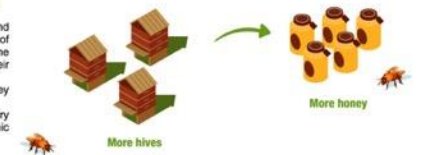


Figure 2 : Evolution of the number of beekeepers in the association APIGUY

## Perspectives

The **adaptation of the livestock** (by introduction of tropical Buckfast queens and genetic selection plan) to beekeeping gave very good results. The reduction of the aggressivity allow to increase the number of beekeepers. In the same time, professional beekeepers who changed their genetics increased their production (X3). In parallel, **improvement of beekeepers' skills** will allow to increase their honey production and then their profits. Otherwise, others development will be initiate: the creation of a training apiary and a shared honey house, and of course, the development organic beekeeping.





# FEEDBACK in French Guyana

- Low density of honeybees
- Resources
- European training and advice project since 2016
- 1 mating station for production of “tropicalized Buckfast queens”. Contact : Mr. Olivier BELLONY [obellony@gmail.com](mailto:obellony@gmail.com)  
=> Local honeybee breeding is forbidden !

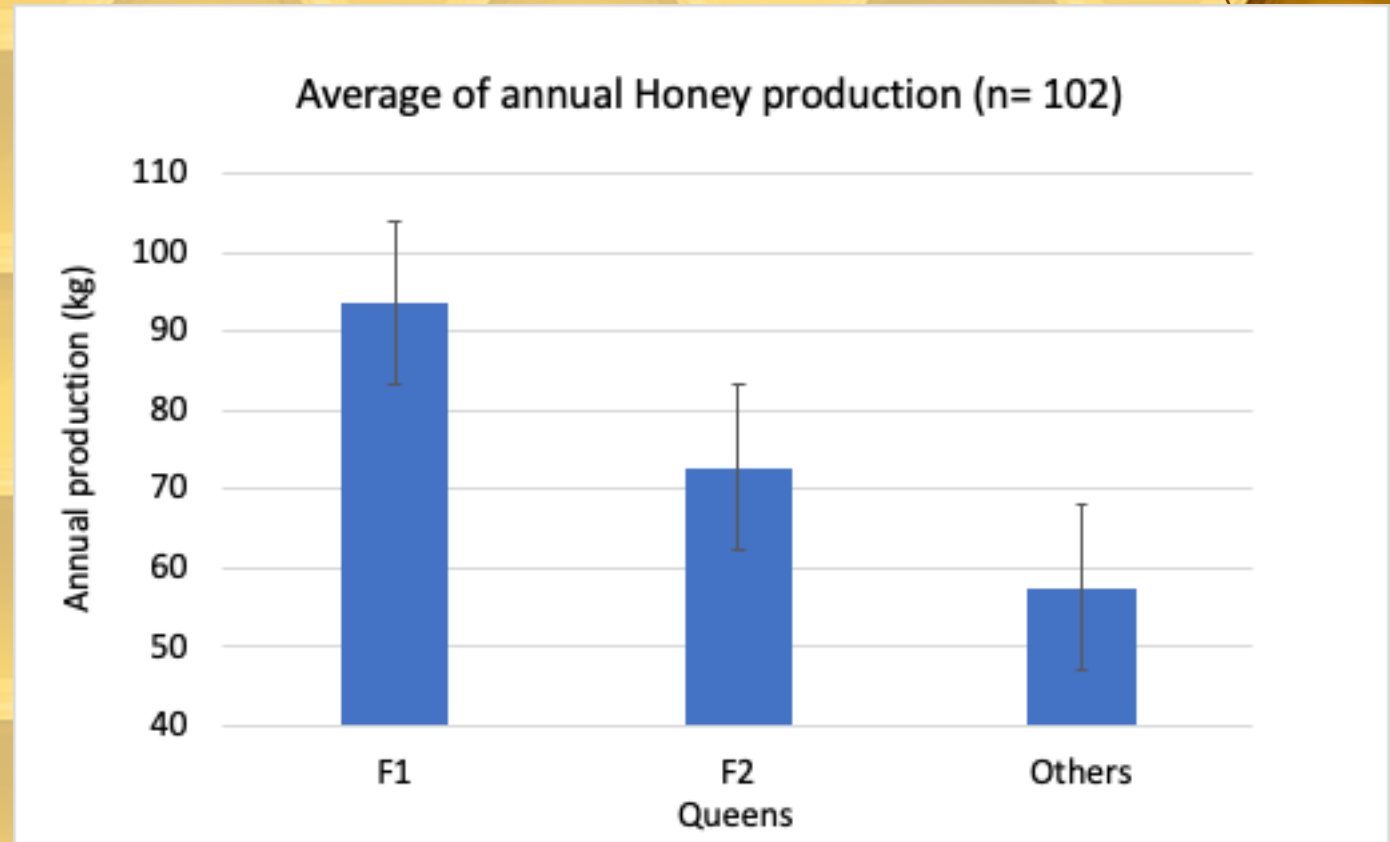




# FEEDBACK in French Guyana



- Example of Bruno GAUCHER on 102 beehives in 2018.
- F1 produce on average **62% more** than local honey bees





# FEEDBACK in French Guyana



- Study of the varroa sensitivity to acaricides  
(in collaboration with VITA BEEHEALTH, Almecija 2020)

=> Promote a sustainable varroa control strategy

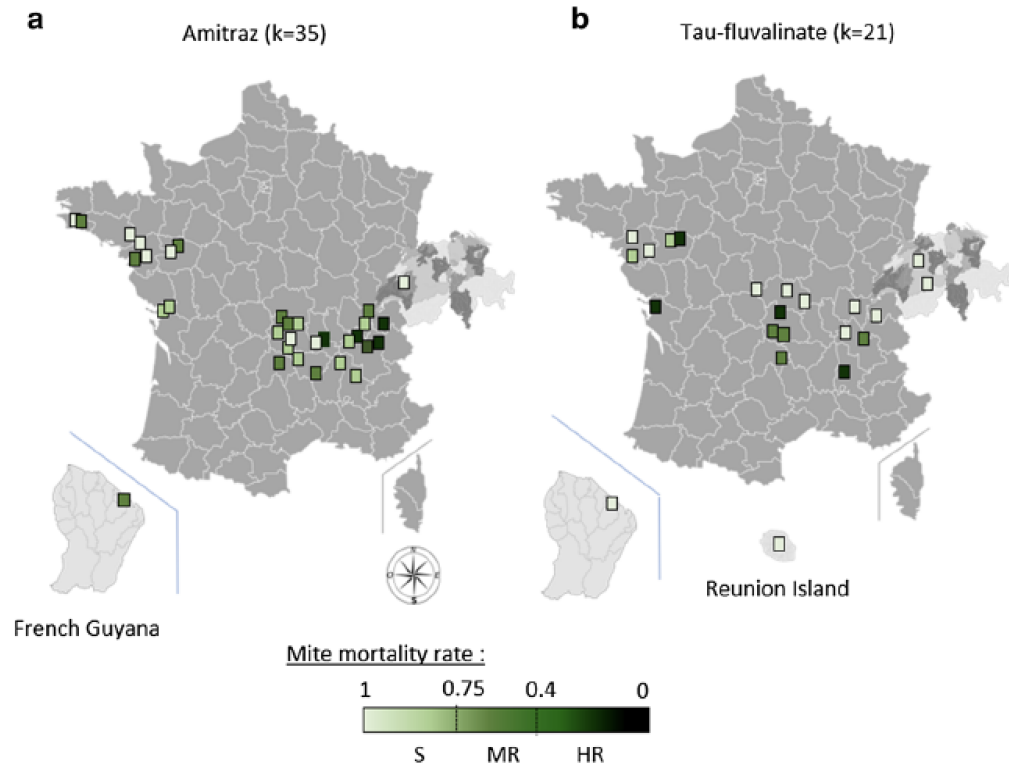


Fig. 2 Mapping of the mite susceptibility to **a** amitraz ( $k=35$ ) and **b** tau-fluvalinate ( $k=21$ ) from mites sampled in France and Switzerland. The gradient of the mite mortality rate indicates mite susceptibility to amitraz or tau-fluvalinate. Susceptible mites (S) had a mortality rate of 0.75–1, moderately resistant mites (MR) had a mortality rate of 0.4–0.75, and highly resistant mites (HR) had a mortality rate of 0–0.4 (see Table 5)



# FEEDBACK

**Mr. Alain LOF in Martinique**  
**Mr. Benoit FOUCAN in Guadeloupe**



# Future Projects



- Create in tropical America a network of Honey bee selection centers
- Promote the “Buckfast tropicalized queens” and advanced technics of beehives management
- Promote advanced beekeeping technics and tools



Introduction of a tropicalized buckfast queen from Martinique in Thailand



**Contact :**

- **Benjamin POIROT**
- **+33 6 70 75 41 23**
- **[benjamin.poirot@apinov.com](mailto:benjamin.poirot@apinov.com)**

