"An alternative source of food and protein: the domestication of a wild *Borocera cajani* (Vinson, 1863) insect in Madagascar."

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**BACKGROUND**

- **Food habit**
  - Malagasy farmers have a less varied diet.
  - 42% of households consume a poor or limited diet (cereals, tubers, vegetables a few days a week).
  - Rarely eat foods rich in protein (meat, fish and dairy products).
- **Amoron’i Mania region and Entomophagy**
  - The Amoron’i Mania Region is the Central Highlands of Madagascar,
  - The rate of food insecurity is 30%.
  - Insect consumption has been practiced a long time.
  - The population collects insects in the forest.
- **Nutrition projects in the Amoron’i Mania region in Madagascar**
  - Plan National d’Action pour la Nutrition-III (PNAN III) 2017-2021 with ONN “Améliorer l’état nutritionnel de la population Malagasy, en particulier les plus vulnérables”
  - PROCINUT 2019-2021 “Production and Processing of Edible Insects for Improved Nutrition”
- **Wild species**
  - *Uapaca bojeri* (Euphorbiaceae), commonly known as Tapia, plant endemic to this region, forming the wild forest of Tapia
  - Tapia is the natural habitat of the *B. cajani* (Lasiocampidae, LEPIDOPTERA)
  - Other host plant*B. cajani*: Psidium guyava
  - *B. cajani* a bivoltine species with 2 generations per year (January-March, and April-November)
  - Chrysalis of this insect are eaten by people.
  - Bush fire perpetually threatens the *U. bojeri* forest and the massive gathering of pupae can lead to the disappearance of this species.

**OBJECTIVES**

- Domesticate *B. cajani* to easily obtain pupae as an alternative source of protein and food.
- Reduce the pressure on this wild species to preserve it.

**METHODOLOGIES**

- **Study site**
  - Laboratory Entomology FOIFFA MADAGASCAR
  - Rearing room equipped with a radiator and a humidifier to have a T° 24°C H.R 70% at all times.
- **Experimental design**
  - 4 prefabricated white tulle cages (40 cm x 40 cm x 40 cm)
  - Each cage contains 50 L1 larvae, fed with young twigs of *Psidium guyava*, replaced every 2 days.

**RESULTS**

- Obtained a complete life cycle of *B. cajani* with a duration of 102 days.
- The time from 1st instar to pupae (the stage to eat) is 51 days.
- Initially, 200 stage 1 larvae arrived in 140 pupae on average.
- The average weight of a chrysalis is 1.68 grams.

**CONCLUSION**

- Replacing the leaves of Tapia by the leaves of *P.guyava, B.cajani* develops well through the different stages (eggs, larvae, chrysalis, adult).
- Possible to domesticate this wild species to reduce threats.
- Obtaining pupae at the end of rearing is a source of food and protein.
- The analysis of the nutritional value of chrysalis raised with *P. guyava* leaves is an open line of research.

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