

# Chapter 5

## Brazil-Inspired Vertical Hive Technology for the Philippine Version

**Leo Grajo**  
*Grajo's Farm, Philippines*

### ABSTRACT

*The Bicol Region is the birthplace of meliponiculture in the Philippines using the native stingless bee species, *Tetragonula biroi* Friese. Mr. Rodolfo Palconitin of Guinobatan, Albay, started the traditional method of stingless beekeeping using indigenous material, the coconut shell, which he called bao tech or coconut shell technology. It is a form of natural hive duplication wherein coconut shell halves are gradually mounted on top of each other as the colony grows. In this technology, hive product harvesting and colony splitting are done when the stingless bees have filled up the coconut shell halves. Inspired by the visit to the University of Los Baños (UPLB) Bee Program in 2010, the Grajo's Farm started using bao technology with several experimental hives upon return to home.*

### INTRODUCTION

The Bicol Region is the birthplace of meliponiculture in the Philippines using the native stingless bee species, *Tetragonula biroi* Friese Belina-Aldemita et al. (2019) of Abante (2020), started the traditional method of stingless beekeeping using indigenous material – the coconut shell, which he called Bao Tech or Coconut shell technology (Fig. 1). It is a form of natural hive duplication wherein coconut shell halves are gradually mounted on top of each other as the colony grows. In this

DOI: 10.4018/978-1-6684-6265-2.ch005

technology, hive product harvesting and colony splitting are done when the stingless bees have filled up the coconut shell halves. Inspired by the visit to the University of Los Baños (Baroga-Barbecho & Cervancia, 2019), Grajo's Farm started using Bao Technology with several experimental hives upon return home. Cervancia (2018), former Director of the UPLB Bee.

The program encouraged them to raise stingless bees instead of *Apis mellifera*. At the beginning of their stingless beekeeping journey, it was very challenging due to a lack of technical knowledge, mentor, and dependence on bee hunters for feral colony supply. Some of the feral colonies bought were damaged, while others were drowned in honey, resulting in robbing and infestation. This incident has led to the colony collapse of their stingless bees. But these trials did not discourage them from continuing but motivated them more instead.

Three years later, they came across the name of Dr. Giorgio Venturieri while doing online research on meliponiculture, specifically hive design. Dr. Venturieri was a senior research scientist of Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA) or the Brazilian Agricultural Research Corporation who spent his sabbatical years in Australia (Fig. 3). He shared his expertise and greatly influenced Grajo's Farm to embrace the concept of vertical hive design. He later migrated to Australia and upgraded his design to suit Australian stingless bee species and is currently the business owner of Nativo Bees (Venturieri, 2008).

*Figure 1. Traditional method of stingless beekeeping using coconut shells.*  
*Source: The Colony by Grajo's Farm*



21 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/chapter/brazil-inspired-vertical-hive-technology-for-the-philippine-version/315992](http://www.igi-global.com/chapter/brazil-inspired-vertical-hive-technology-for-the-philippine-version/315992)

## Related Content

---

### Phenolic and Flavonoid Content of Propolis Extracts of *Heterotrigona itama* From Rubber Smallholding Area and Forestry Surrounding Area

Nora'aini Ali, Norafiza Awang, Norhafiza Ilyana Yatim, Norasikin Othman and Shamsul Bahri Abd Razak (2023). *Recent Advances in Global Meliponiculture* (pp. 174-189). [www.irma-international.org/chapter/phenolic-and-flavonoid-content-of-propolis-extracts-of-heterotrigona-itama-from-rubber-smallholding-area-and-forestry-surrounding-area/315998](http://www.irma-international.org/chapter/phenolic-and-flavonoid-content-of-propolis-extracts-of-heterotrigona-itama-from-rubber-smallholding-area-and-forestry-surrounding-area/315998)

### A Systematic Literature Enquiry of the South African Agricultural Marketing Environment Pre-1913 to the Present

Phineas Khazamula Chauke (2023). *Global Agricultural and Food Marketing in a Global Context: Advancing Policy, Management, and Innovation* (pp. 1-18). [www.irma-international.org/chapter/a-systematic-literature-enquiry-of-the-south-african-agricultural-marketing-environment-pre-1913-to-the-present/320560](http://www.irma-international.org/chapter/a-systematic-literature-enquiry-of-the-south-african-agricultural-marketing-environment-pre-1913-to-the-present/320560)

### Energy-Saving Technologies for Pre-Sowing Seed Treatment in a Magnetic Field

Volodymyr Kozyrskiy, Vitaliy Savchenko, Oleksandr Sinyavsky and Vasyl Bunko (2020). *Handbook of Research on Energy-Saving Technologies for Environmentally-Friendly Agricultural Development* (pp. 213-242). [www.irma-international.org/chapter/energy-saving-technologies-for-pre-sowing-seed-treatment-in-a-magnetic-field/232095](http://www.irma-international.org/chapter/energy-saving-technologies-for-pre-sowing-seed-treatment-in-a-magnetic-field/232095)

### Romanian Rural Tourism in the Context of Sustainable Development

Marian Zaharia, Rodica-Manuela Gogonea and Daniela Enachescu (2015). *Agricultural Management Strategies in a Changing Economy* (pp. 138-160). [www.irma-international.org/chapter/romanian-rural-tourism-in-the-context-of-sustainable-development/125989](http://www.irma-international.org/chapter/romanian-rural-tourism-in-the-context-of-sustainable-development/125989)

## Sustainability Assessment in a Geographical Region and of the Activities Performed

Berrin Kurunand Bhavik R. Bakshi (2020). *Environmental and Agricultural Informatics: Concepts, Methodologies, Tools, and Applications* (pp. 536-561).

[www.irma-international.org/chapter/sustainability-assessment-in-a-geographical-region-and-of-the-activities-performed/232979](http://www.irma-international.org/chapter/sustainability-assessment-in-a-geographical-region-and-of-the-activities-performed/232979)