

APICULTURE & MELIPONICULTURE PRACTICES

A Story from Malaysia

Wan Iryani Wan Ismail^{1,2,3,4}
Muhammad Faiz Zulkifli¹

HIGH POTENTIAL OF THE BEEKEEPING INDUSTRY

Rising Industry
≥ 60,000 hives throughout Malaysia

Boosted Income
Especially from a low-income background (ie. single mother)

High Revenue
Total honey revenue ≥ USD 5m (2024)

Trehalulose & antioxidant
Honey, propolis & bee bread with high in Trehalulose & nutrients antioxidants

Therapeutic Applications
Potential therapeutic role in treatment of many disease

High Commercial Value



Honey
Premium pharmaceutical, nutraceutical & cosmetic applications



Beebread
Niche nutraceutical, sport nutrition & animal feed additive



Propolis
High-value pharmaceutical & cosmetic applications

¹ Cell Signalling and Biotechnology Research Group (CeSBTech),
² Biological Security and Sustainability Research Group (BIOSES),
Faculty of Science and Marine Environment, Universiti Malaysia Terengganu, 21030, Kuala Nerus, Terengganu, Malaysia
³ Head of 10-year Strategic Plan Committee for Malaysian Beekeeping Industry, Ministry of Agriculture and Food Security, Malaysia
⁴ Head of Working Group for Malaysian Honey Bee Honey and Stingless Bee Honey, Department of Standards, Malaysia

Beekeeping in Malaysia has a long history. Department of Agricultural Malaysia recorded that modern beekeeping with honey bees started in the 1980s. In 2016, stingless bee farming began to support honey bee farming. Both practices benefit many people involved.

1980 - 1990



National apiary & modern beekeeping establishment

2008 - 2016



Rising trend of stingless beekeeping and research

1st National Kelulut Honey Standard & 10 years Industry Development Plan



2025 onwards

2017 - 2020

CHALLENGES



OPPORTUNITIES

More specific and strategic plan to combat several issues:

- Food Security
- Climate Change
- Socioeconomics
- Health challenges

“ Strengthening local beekeeping involves recognizing bee species diversity, enhancing activities and products, building beekeeper capacity, and aligning with global practices. ”



waniryani@umt.edu.my

Wan Iryani Wan Ismail

Cell Signalling and Biotechnology Research Group (CeSBTech), Faculty of Science and Marine Environment, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia, Biological Security and Sustainability Research Group (BIOSES), Faculty of Science and Marine Environment, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia, Head of 10-year Strategic Plan Committee for Malaysian Beekeeping Industry, Ministry of Agriculture and Food Security, Malaysia, Head of Working Group for Malaysian Honey Bee Honey and Stingless

BACKGROUND: Beekeeping in Malaysia has a long history as a traditional trading and economic activity. The first modern beekeeping activity (Apiculture) using honey bee *Apis mellifera* was officially documented by the Department of Agriculture Malaysia in the 1980s. After almost 40 years, in 2016, stingless bee rearing (Meliponiculture) was introduced to complement honey bee rearing. Both beekeeping practices brought various benefits to many stakeholders. **METHODOLOGY:** We would like to share our experience in apiculture and meliponiculture practices in Malaysia. **RESULTS:** The beekeeping practices significantly boosted the income of local beekeepers, providing them with substantial financial gain, particularly for those from low-income backgrounds. In addition, the primary motivation for local honey consumption is its health benefits. In 2024, the value of honey harvested from honey bees and stingless bees gained up to RM30 million, with more than 60,000 hives throughout Malaysia, indicating the industry's bright future. However, both apiculture and meliponiculture in Malaysia have their challenges, e.g., pests, natural disasters, black soldier fly attacks, floods, log theft, etc. The high potential of the beekeeping industry requires strategic plans to address several issues, e.g., food security, climate change, and socioeconomic and health challenges. **CONCLUSION:** Local beekeeping practice can be strengthened by appreciating and recognizing bee species diversity, reinforcing the beekeeping activities and bee products, proper capacity building of beekeepers, and aligning to world beekeeping practices. **Implications:** We hope this presentation will enhance mutual sharing sessions and collaboration in practicing the best approach to beekeeping for the benefit of all.