



## HIVING METHOD OF STINGLESS BEE DOMESTICATION FOR SUSTAINABLE MELIPONICULTURE

**Mohd Zulkifli Mustafa<sup>1</sup>**

<sup>1</sup>Department of Neuroscience, School of Medical Sciences,  
Universiti Sains Malaysia,

Muhammad Arjuna Mustafa

<sup>2</sup>Department of Chemical and Process Engineering,  
Faculty of Engineering and Built Environment,  
Universiti Kebangsaan Malaysia

Norizam Muhammad Yusof<sup>3</sup>

<sup>3</sup>School of Health Sciences,  
Universiti Sains Malaysia

And

Siti Amrah Sulaiman<sup>4</sup>

<sup>4</sup>Department of Pharmacology, School of Medical Sciences,  
Universiti Sains Malaysia,

The stingless bee rearing is emergent agriculture activity in Malaysia. The stingless bee products including honey and bee bread, which are stored in propolis-rich pots. The activities of stingless bee rearing are referred to as meliponiculture and it is a crucial activity that encourages the conservation of stingless bees and helping to reduce deforestation due to feral stingless bee colony hunting. Here, we studied direct and indirect hiving method of the feral stingless bee colony into a newly innovative hive called Mustafa-Hive. In the hive, the brood was placed into a split-able throne as a brood chamber and inserted into an air-jacketed palace as an insulation chamber. The honey cassette was used on the hive to induce a monolayer honey pot formation. Findings have shown that all broods in an indirect hiving module provide cleaner broods from the sawdust compared to the direct hiving process. Indirect hiving gave 100% colony viability and supported by noteworthy yield pot formations in the honey cassette. Findings also showed an average of 4.5ml honey were extracted from each pot to produce an average of 99ml and 256.5ml honey at week 2 and week 4 for every hive, respectively. As conclusion, the indirect hiving method and the use of Mustafa-hive ensures colony survival and induced formation of monolayer honey pots. Thus this hiving module encourage for sustainable meliponiculture, enables for absolute and hygienic honey extractions from honey cassette which could indirectly promote the development of the stingless bee industry.

**Key Words:** *Meliponiculture, Stingless bee domestication, Mustafa-hive, monolayer honey pots*