



Diversity of Stingless Bees in Malaysia

Mohd Fahimee Jaapar and Rosliza Jajuli
Agro biodiversity and Environment Research Centre, MARDI

Malaysia is known as one of the world's mega biodiversity countries. One of the indicators of the high biodiversity in Malaysia is the pollinator species. Previous reports showed that a total of 29 stingless bee species was recorded in Peninsula Malaysia and out of this, 17 species were known to inhabit the virgin forest. Since 2012, stingless bees have become popular to bee keepers for their honey and as a prolific pollinator species in agroecosystems. MARDI promoted two species of stingless bees *Heterotrigona itama* and *Geniotrigona thoracica*, as pollinating agents for many important crops in Malaysia and also for meliponiculture (bee-keeping for honey).

However, there are some drawbacks in the hype of meliponiculture to biodiversity in Malaysia. The popularity of meliponiculture has sky-rocketed the demand for stingless bee colonies. Reaping of stingless bee colonies in large numbers from their natural habitat such as the forest area resulted in changes in the ecosystem. Not all stingless bee species can be domesticated. Some forest species need resin to survive which is plenty on the forest. Removal of these species from their habitat may collapse and kill the colonies when there are no more resources for their food and hives.

To overcome this problem of over extracting natural colonies from the habitat and other problems related to disrupting the equilibrium of forest biodiversity, MARDI started the stingless queen bee rearing project. The objective of the project is to develop a technique for rearing the queen with high fertility in the laboratory. *Heterotrigona itama* was selected as the candidate due to its abundance and high demand in meliponiculture. This will hopefully stop the practice of extracting feral colonies from forest for a more sustainable approach in meliponiculture.

MARDI is also currently reviewing the status of stingless bee diversity in Malaysia. A series of expeditions have been carried out throughout Malaysia. Some of the species (*Tetragonula* and *Tetragonula*) collected could not be identified because some of their morphological characters did not appear in the past taxonomic review and they might be new species. However, to confirm a new species, an extensive taxonomic study must be carried out and we believe that there are more than 50 stingless bee species in Malaysia. New species will continue to be discovered.

Date submitted: Nov. 16, 2016

Reviewed, edited and uploaded: Nov. 17, 2016