

Pongsak Jinarite 2006: Biodiversity and Mass Rearing of Stingless Bees (*Trigona* spp.) for Lychee Pollination in Golden Jubilee Thong Pha Phum Project, Thong Pha Phum District, Kanchanaburi Province. Master of Science (Agriculture), Major Field: Entomology, Department of Entomology. Thesis Advisor: Associate Professor Savitree Malaipan, Ph.D. 108 pages.  
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The diversity study to of the stingless bees, resulted in 2 genera and 125 nests found in the forest area of Huai Khayeng Subdistrict, Thong Pha Phum District , Kanchanaburi Province. and 11 species of this bees were identified as follows *Trigona apicalis* Smith, *T. melanoleuca* Cockerell, *T. collina* Smith, *T. terminata* Smith, *T. ventralis* Smith, *T. iridipennis* Smith, *T. thoracica* Smith, *T. pagdeni* Smith, *Hypotrigona scintillans* Cockerell, *H. scintillans* var.2 and *H. scintillans* var.3. Four species namely *Trigona apicalis*, *T. collina*, *T. terminata*, and *T. pagdeni* were observed to be suitable for colonization with high efficiency in lychee pollination. Summer was the right season for colonization with the optimum ranges of temperature for those four species between 28 - 32°C. The suitable material used in building the nest of *T. collina* was the earthen pots. As for the other 3 species, the other suitable materials with good heat and humidity ventilation e.g. cherawood and wood were used to build the nest.

Lychee pollination study in February revealed the stingless bees to prefer visiting lychee inflorescences on the east side of 4 years old of lychee tree from morning till noon, followed by the south side and the west side, the lowest foraging was found on the north side. From the afternoon to evening, the bees of nearly equal numbers dispersed to visit the inflorescences in all directions. This might be due to the influence of the sun pathway which tilted to the south in this season, thus affecting the bee behavior. Placing one nest in each corner of 400 x 500 squarmeter plot was found to give the most efficiency in pollination of the stingless bees as well as increasing yields of lychee. The next best thing was to place 4 nests in the same long row in the middle of the plot. Arranging 4 nests in group in the middle of the plot gave the least result. When the 4 nests of each *T. apicalis* and *T. collina* were placed close to lychee plot and most bees (110 bees per tree) foraged away from the nests at the distance of 5 meters in lychee plantation was found to give the greatest yield percentage of 82, followed by foragers (54, 25, 13 and 5 bees per each tree) at the distances of 10, 15, 20 and 25 meters to give yields of 45, 25, 17 and 5 percents respectively. However, at the distance over 50 meters of bee foraging, no yield was observed.

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