

Abstract

The objective of study on research and development of beekeeping for pollination and income of the people on highland area is ๑) to evaluate and select the potential honey for tree fruit pollination ๒) to study the improvement of high-quality honey production ๓) to study the efficiency stingless bee management. The study found the introduced that had Western honey bees (*Apis mellifera*) and Asian honey bee (*Apis cerana*) into the field treatment was able to gain a significant higher estimate fruiting rate of peach and avocado by LSD test at .๐๕ signification. The introduced *A. mellifera* into the field treatment had the averaged of peach fruition at ๑๑.๖ fruits/tree. While the introduced *A. cerana* into the field treatment had the averaged of peach fruition at ๗ fruits/tree. The research area is in Royal Project Center Khun Wang. The result found that introduced Asian honey bee to avocado field had more fruition than introduced Western honey bee treatment. The induced Asian honey bee treatment had highest average fruition of in avocado, ๑๗๓.๓๓ fruit per tree, for induced Western honey bee treatment had ๑๖๑ fruit per tree by average. The avocado without introduced the bees got less average fruition, ๘๗.๖๗ fruit per tree. Thus, inducing Asian and Western honey bee treatments had more efficacy than without inducing bee treatment in avocado variety Hass at .๐๕ significant. Moreover, the fruition of avocado were not significant difference when using Asian and Western honey bees as pollinators. According to Royal Project Center Thung Ruang, The result found that introduced Asian honey bee to avocado verity *Buccania* had the most average of fruition rate at ๑๗๔.๖๖ fruit per tree, introduced Western honey bees had average of fruition rate at ๑๒๑ fruit per tree. On the other hand, without introduced honey bee had average of fruition rate at ๒๖.๓๓ fruit per tree. When consider within group by LSP test, the fruition of avocado were not significant difference when using Asian and Western honey bees as pollinators. According to the study of fruition in coffee trees, at Royal Project Center Teen Tok, Baan Pok village, the result found introduced Asian honey bee to coffee field had the highest average percentage of fruition at ๕๕.๐๓%, for induced Western honey bee treatment had ๔๑.๓๒% by average. The coffee trees without introduced the bees got less average percentage of fruition at ๓๓.๑๖%. At Royal Project Center Teen Tok, Baan Pa Miang village, the result found introduced Asian honey bee to coffee field had the highest average percentage of fruition at ๘๐.๓๒%, without introduced the bees had ๗๒.๓๘% by average. Coffee trees that induced Western honey bee treatment got less average percentage of fruition at ๖๔.๘๔%. The research of the improvement of high-quality *A. mellifera* honey production by studying

hive architecture found the new applied hive pattern (has bigger ๒.๕ centimeter than of the original wood hive thickness) earned more honey and make the bee colonies stronger than the original hive. According to the improvement of high-quality *A. cerana* honey production, *A. cerana* were difficult to swarm by the beekeeper attraction bee technique. Otherwise, the modify hive is suitable for harvesting honey bee products. The survey of suitable stingless bee species in test highland area found two species that able to breed and harvest honey in standard hive: *Tetragonula laeviceps* and *Lepidotrigona doipaensis*. The old hive style of stingless beekeeping found it is difficult for harvesting stingless bee product and management. For the new hive style of stingless beekeeping, after dissection ๕ weeks, population and food of stingless bee colonies were decreased. The average of width, length, and hight of *T. laeviceps* colonies were ๓๓.๐๓, ๒๒.๔๐, and ๑๕.๒๐ cm respectively. The average of width, length, and hight of *L. doipaensis* colonies were ๑๘.๓๓, ๒๕.๕ and ๑๔.๘ cm respectively.

