

A Preliminary Study on the Thermal Performance of a Ventilated Honey Cassette for Stingless Bees

Firdaus Basrawi, A Rahman A Hamid, Rizduan Bahari, Mohd Najib Mohd

Noordin and Mohd Hazwan Yusof

MATEC Web of Conferences

2017, 131, 04001

Stingless bees are very sensitive to the changes of surrounding temperature. A report stated that fertility rate in broodcell is 0% when the broodcell temperature is higher than 34°C or lower than 26°C. In addition, propolis made honey pot in a honey cassette also could melt when temperature is high. Therefore, the objective of this research is to investigate the temperature profile of a ventilated honey cassette exposed to outdoor conditions, and to evaluate the temperature regulation in the hive using the ventilated honey cassette. To achieve these objectives, two hives with conventional and ventilated honey cassettes were exposed under sun light in cloudy and sunny day. Temperature inside each hive was measured at 3 points and was compared. It was found that there is no significant different between the hives when both hives were exposed under direct sunlight in a cloudy day. However, two significant improvements were found for ventilated hive in sunny day. It could help to reduce temperature at wall of honey cassette consistently below 33°C. This could avoid the melting of propolis around the ventilated wall area. Furthermore, it could facilitate in better temperature reduction as compared to the conventional honey cassette. However, further study when there is a colony inside the hives must also be conducted to validate the results.