

Melissopalynology Analysis of Malaysian Tualang Honey

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Structured Abstract

Background: Commercially available Tualang honey has the risk of being adulterated with water and sugar solution in efforts to meet growing demands. This can negatively affect the honey. The data obtained from this study can serve as guidelines about Tualang honey, especially in relation to melissopalynology analysis that aligns with a national agenda that focuses on medical and health policies of Malaysian Tualang honey.

Methods: In this study, Tualang honey samples were collected from Quadmed Sdn. Bhd. and stored in sterilized amber glass bottles at 4°C until analysis. The process of acetolysis was carried out to prepare the honey samples for pollen analysis. This involved diluting the honey with distilled water, adding glacial acetic acid and potassium hydroxide, boiling the mixture, and viewing the pollen under a microscope. Pollen grains were quantified and classified into different frequency classes. The honey sample was heated and filtered for colour determination, and its absorbance was measured at a wavelength of 560nm using a spectrophotometer. The pH of the honey was determined using a digital pH meter after dissolving the honey in distilled water. The moisture content of the honey was estimated by measuring its refractive index using a tri-scale digital refractometer.

Results: The results showed that the Tualang honey sample had an average pH value of 3.61 ± 0.44 . Tualang honey was dark amber colour with average absorbance value of 3.487 ± 0.79 . The moisture content was reported to be 23.5%. The pollen analysis revealed 16 different species of pollen with varying shapes and sizes, exhibiting both bilateral and radial symmetries. The honey was classified as multifloral, containing no predominant pollen species, and instead, it showed a diverse mix of pollen types with important minor contributions from various sources.

Conclusion: The study demonstrated that the Tualang honey samples were not adulterated in terms of pH and colour, while also revealing a diverse mix of pollen types, indicating its multifloral nature, which can provide valuable insights for beekeepers regarding attractive plant species and efficient pollination practices.

Keywords: Tualang Honey, Melissopalynology, pH, Colour, Moisture Content.

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