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FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU

2009

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Perpustakaan Sultanah Nur Zahiran
Universiti Malaysia Terengganu (UMT)

PERPUSTAKAAN SULTANAH NUR ZAHIRAH
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The purity of honey / Lee Shih-Quan.

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PERPUSTAKAAN SULTANAH NUR ZAHIRAH UMT

THE PURITY OF HONEY

By
LEE SHIH-QUAN

A thesis submitted in partial fulfilment of
the requirements for the award of the degree of
Bachelor of Applied Science (Physics, Electronics and Instrumentation)

DEPARTMENT OF PHYSICAL SCIENCES
FACULTY OF SCIENCE AND TECHNOLOGY
UNIVERSITY MALAYSIA TERENGGANU
2009

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **THE PURITY OF HONEY** oleh **LEE SHIH-QUAN**, no. matrik: **UK 13470** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Fizik sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains Gunaan (Fizik Elektronik & Instrumentasi), Fakulti Sains dan Teknologi, UMT.

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DECLARATION

I hereby declare that this thesis entitled **The Purity of Honey** is the result of my own research except as cited in the references.

Signature	:	
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THE PURITY OF HONEY

ABSTRACT

This study was carried out to identify, define, and determine the purity of honey which is one of the products that are consumed widely and whose purity is often questioned, using 6 parameters (viscosity, surface tension, total ash amount, pH, sugar content and colour intensity). Honeys are widely consumed because honeys are well-known for its nutritious and medicinal purposes. The six parameters were chosen because these are the several things that are being manipulated by manufacturers to increase profit margin. Some manufacturers will add water; colour, sugar and etc. to try to make their products look pure, real, and convincing. For this research, pure Tualang honeys from Cameron Highlands will be used. Therefore, after the research, it can be concluded that only the viscosity, pH, total ash amount, colour intensity, and sugar content can be used to identify the purity level of honey. On the other hand, the surface tension parameter is not suitable to be used to identify the purity of honey. In conclusion, pure honey has a viscosity of 4608 ± 10 cP (with a percentage of torque of 38.40 ± 0.10%), total ash amount of 0.2076 ± 0.1100 %, pH of 2.85 ± 0.02, colour intensity with a L^* value of 20.11 ± 0.7; a^* value of 12.61 ± 0.8, and b^* value of 16.40 ± 1.1, and sugar content (measured according to the colour intensity of the solution) of L^* value of 21.41 ± 0.9; a^* value of -0.12 ± 0.6, b^* value of 4.74 ± 0.6. Therefore, it is hoped that through this research, consumers' will be able to obtained honeys that are really pure.

KETULENAN MADU

ABSTRAK

Kajian ini dijalankan untuk mengenalpasti, mentakrif dan menentukan ketulenan madu yang buat masa ini telah menjadi produk yang dijual secara meluas dan di mana tahap ketulenannya kerap dipersoalkan oleh pengguna, dengan menggunakan enam parameter (kelikatan, ketegangan permukaan, kandungan abu, pH, kandungan gula dan keamatan warna). Madu diguna secara meluas kerana madu adalah terkenal dengan khasiat dan tujuan perubatannya. Enam parameter ini telah dipilih kerana ini adalah beberapa benda yang mungkin akan dimanipulasikan oleh pengeluar-pengeluar untuk mengaut keuntungan yang lebih tinggi. Sesetengah pengeluar akan menambah air; warna, gula dan sebagainya untuk cuba menjadikan produk mereka kelihatan lebih tulen dan lebih meyakinkan. Untuk penyelidikan ini, madu Tualang tulen dari Cameron Highlands akan digunakan. Oleh itu, selepas penyelidikan, ia dapat disimpulkan bahawa hanya kelikatan, pH, jumlah kandungan abu, keamatan warna, dan kandungan gula sahaja yang boleh digunakan untuk mengenal pasti tahap ketulenan madu. Sebaliknya, parameter tegangan permukaan adalah tidak sesuai digunakan untuk mengenal pasti tahap ketulenan madu. Secara kesimpulannya, tahap kelikatan madu tulen adalah sebanyak 4608 ± 10 cP (dengan peratusan tork sebanyak 38.40 ± 0.10%); dan di mana jumlah kandungan abu adalah sebanyak 0.2076 ± 0.1100 %. Selain itu, pH madu tulen adalah 2.85 ± 0.02 dan mempunyai keamatan warna yang mempunyai nilai L^* sebanyak 20.11 ± 0.7; nilai a^* sebanyak 12.61 ± 0.8, dan nilai b^* sebanyak 16.40 ± 1.1. Madu tulen juga mempunyai kandungan gula (diukur mengikut keamatan warna bagi setiap sample) yang mempunyai nilai L^* nilai 21.41 ± 0.9; nilai a^* sebanyak -0.12 ± 0.6, dan nilai b^* sebanyak 4.74 ± 0.6. Oleh itu, adalah diharapkan bahawa dengan penyelidikan ini, pengguna-pengguna akan dapat memperolehi madu yang adalah benar-benar tulen.