

# **The Change In Mineral Content Of Teeth After Exposure To Different Types Of Bee Honey**

## **Thesis**

Submitted to the Faculty of Dentistry, Ain Shams  
University in partial fulfillment of the requirements  
for the master's degree in pediatric dentistry.

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B.D.S, 2004

Faculty of Dentistry, Ain Shams University

2012

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# التغيير في المحتوى المعدني للأسنان بعد التعرض لأنواع مختلفة من عسل النحل

رسالة مقدمة

لكلية طب اسنان – جامعة عين شمس

توطئه للحصول على درجة الماجستير فى طب اسنان الأطفال

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## **Summary**

This study was conducted to assess the change in the mineral content of enamel after the consumption of different types of bee honey that was collected directly from bee farms as well as commercially available types.

Clover and Citrus honey were gathered from 2 different bee farms and from a local store (commercially available: Imtenan®). All 4 types of honey were analyzed regarding their sugar content (by FTIR) and their pH detected (by pH-meter).

Each type of honey was then combined to a Ration (consisting of Poultry feed and Barley grains). The honey /Ration ratio was 1:1, as well as the Barley grains/Poultry Feed ratio was also 1:1

30 Sprague-Dawley rats, Helwan were used to conduct the experiment. The rats were just weaned (3 weeks old), weighing from 30-35 grams. They were grouped into 5 groups (6 rats per group), 4 of which were according to the type of honey introduced and the 5<sup>th</sup> was a control group. The food and water were supplied ad libitum for 6 weeks.

The rats were then sacrificed, the mandibles extracted then defleshed and hemisected. After that each mandible was sagittally sectioned. Deionized water was used as a transporting medium for all of the specimens to prevent them from dehydration and for standardization between them.

The specimens were then investigated by scanning electron microscope in conjunction with energy dispersive x-ray analysis system (SEM-EDX) for elemental analysis. In most of the specimens, the 1<sup>st</sup> fissure of the 2<sup>nd</sup> molar was chosen for mineral content analysis.

بسم الله الرحمن الرحيم

﴿قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا

إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ

الْعَلِيمُ الْحَكِيمُ﴾

صدق الله العظيم

سورة البقرة "آية 32"

*This work is dedicated to....*

*My beloved husband and beautiful children who  
went through a lot to help me overcome every  
hardship.*

*My parents, sister and brother, who have been a  
constant source of support; emotional, moral and  
in every aspect of life.*

*Dr. Osama I. El Shahawy, Assistant Professor,  
Pediatric and Dental Public Health Department,  
Cairo University, for teaching me the meaning of  
“Pediatric dentistry”.*

*And last but definitely not least, my professors,  
colleagues and friends at the Pediatric Dentistry  
Department, Ain Shams University. Thank you for  
your constant support and help whenever needed.*

## **Acknowledgement**

Praise be to **ALLAH**, with whose Grace good deeds are accomplished. **ALLAH**, whatever I or any of your creatures are blessed with is from You alone, as there is no associate with You. So all praises and thanks are due to You.

I would like to thank **Dr. Amr Abdel Aziz**, Professor and Head of the Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry Ain Shams University, for his advices, most valuable remarks, meticulous revision, and expert embellishing of this manuscript.

I would like also to thank **Dr. Hisham Imam** Assistant Professor, Laser Applications in Metrology, Photochemistry and Agriculture Department National Institute of Laser Enhanced Science (NILES), Cairo University.

My deepest gratitude to **Eng. Mohammed Zain**, National Institute of Laser Enhanced Science (NILES), Cairo University, for all his efforts and help with the measurements.

With heartfelt gratitude, I would like to sincerely thank **Dr. Monazah Gamal El Din Khafagi**, Assistant Professor, Spectroscopy Department, Physics Division, National Research Center, to whom I am indebted for her support and help with all the remarks, suggestions, measurements and results, whom without, this work would never have been accomplished.



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