

**MICROSCOPIC AND CHEMICAL ANALYSIS
OF HONEY AND BEE BREAD AT CERTAIN
APIARIES IN QALYUBIA GOVERNORATE
AND AVAILABLE HONEY IN
THE LOCAL MARKET,
EGYPT**

By

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B.Sc. Agric. Sc. (Economic Entomology), Ain Shams University, 2007

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ABSTRACT

Mai Mostafa El-Sayed Hassanien: Microscopic and chemical analysis of honey and bee bread at certain apiaries in Qalyubia Governorate and available honey in the local market, Egypt. Unpublished M.Sc. Thesis, Department of Plant Protection, Faculty of Agriculture, Ain Shams University, 2017.

This work was conducted at the Bee Research Unit, Dept. of Plant Protection, Faculty of Agriculture, Ain Shams University, Shoubra El-kheimah, Al Qalyubia Governorate, and Bee Research Branch in Kanater, Bee Research Division, Institute of Plant Protection, Ministry of Agriculture, Giza, Egypt, during the period from 2013 to 2016. It aims to to: 1) do qualitative pollen analysis from the flowering plants around the year in the study area in Kanater, Qalyubia Governorate, 2) do quantitative and qualitative analysis of the pollen in the honey of Qalyubia Governorate and local market in Egypt, 3) determine certain chemical properties (diastase activity, ash content, pH, acidity, sugars, water content, and HMF) of honeys collected from certain apiaries of Qalyubia Governorate and honeys collected from local market, and 4) study the effect of storage at 5°, 22° and 32°C for 1 year and 2 years on chemical properties of this honeys and their effects on the quality of honey samples in Egypt.

The obtained results revealed that: 1) the bee workers have a preference selection for the flowers from which pollen grains are collected as they do not accept to collect pollen grains from all the flowers located around their colonies, 2) quantitative and qualitative analyses of the pollen grains in the honey are good indicators to the quality of honeys and their plant sources; where the quality of honey will raise when the number of pollen grains in honey increases. Its plant source is determined according to the majority of the % of pollen predominant and then attributed to the plant species, and 3) honey keeps its natural and chemical properties when stored at refrigerator temp. (5° c)

for up to two years, followed by room temp. (22 ° c) in the medium of mild humidity, while it loses many of its properties when stored at colony temp. (32°C) for 1 or 2 years.

Key words: Bee honey, Bee bread, Pollen analysis of honey, Quantitative pollen analysis, Qualitative pollen analysis, Chemical analyses, Diastase activity, Ash content, pH, free acidity, lactone content, total acidity, Sugars, water content, Hydroxymethyl furfural (HMF) and Storage effects on honey properties.

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