

ABSTRACT

M. Sc. Thesis

**IDENTIFICATION OF VOLATILE COMPOUNDS IN HONEY SAMPLES BY
GAS CHROMATOGRAPHY-MASS SPECTROMETRY**

Mert SOYSAL

Adnan Menderes University
Graduate School of Natural and Applied Sciences
Department of Chemistry

Supervisor: Prof. Dr. A. Ersin KARAGÖZLER

Honey is a widely appreciated food. Additionally, it has found intense medicinal use due to its antiseptic/antimicrobial activities since ancient times. Although honey is essentially a concentrated mixture of two monosaccharides it also includes vitamins, enzymes, mineral salts and compounds from various organic classes with volatile properties that largely determines the taste, color and aroma of honeys.

Honey is also an economical commodity. In today's world, as standardization is a common practice for every production/products, there are standards for the honey production as well. These standards mainly regulate physicochemical properties/measures. However in recent years, determination of botanical and geographic origin of honey is strongly recommended by European Union Commission.

The aim of this work was to identify the "markers" that characterize the botanical origin of honey and differentiate honey samples by analyzing the volatile compounds from various origins. In this study, volatile components of honey samples from nine different plant origins were extracted by ultrasound assisted organic solvent extraction and analyzed using gas chromatography-mass spectrometry technique.

By the help of Kovat's indexes calculated from chromatographic retention times and spectral data bank of mass spectrometer, the structure of these volatile components were elucidated, although tentatively. Compounds that characterize the origin of honey samples are discussed using various visual methods.

2007, 72 pages**Key Words:**

Ultrason assisted extraction, chromatogram, spectrum