# EC NUTRITION SPECIAL ISSUE - 2017

# Honey Eating Habits in Greece: From Ancient Times to Present

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#### Received: November 13, 2017; Published: November 14, 2017

Reading the classical texts of Aristotle (384 - 322 B.C.) we can conclude that ancient Greeks were experts in beekeeping. Aristotle was the first scientist in the world who wrote about bee's life and behavior. He discovered and stated that there were three unique species in the hive: the workers, the drones, and the "rulers", as he called the queen, not knowing her gender. Most of the scientific information about bees and their biology comes from Aristotle in his scientific paper "History of Animals". Later his work was continued by his student Theophrastus [1].

In the later years the frequent use of honey was considered necessary for man's "welfare" and "longevity". Hippocrates, the father of modern medicine, reported that honey makes man's color more vivid, while Pythagoras stated that honey eliminates fatigue. Democritus, who lived for about 90 years (~ 460 - 370 B.C.), attributed his longevity to honey mentioning that: "this product helps the middle-aged man maintain youthful vigor".

In everyday life and diet of Ancient Greeks honey was consumed as the basic material in different ways: in cooking or in preparations of sweets and numerous delicacies or even soft drinks. In the Greek history, there is information for a) Milled Parsley: Apples preserved in honey throughout the year and honey possessed the distinctive odour of apples, b) Melikrato: Honey with milk, for the feeding of children, c) Oxymelo: Honey with vinegar, for the treatment of fever, d) Watermelon: Liqueur resulting from the alcoholic fermentation of honey, e) Oinomelo: Honey with wine. It is traditionally reported in the Greek history that Democritus lived until the old age because he was drinking wine with honey.

In the recent years, Greece along with Spain and France are the countries with the largest number of bees in Europe and the only self-sufficient countries in the European Union in honey. In fact, Greece has the highest density of bees per unit of land surface throughout Europe. Greek apiculture currently numbers around 1,300,000 beehives. Beekeeping involves about 23,500 people in Greece, of which 80% are farmers and the rest are "hobby professionals" who practice beekeeping as a secondary job. Of the farmers, only the 6% of the total are engaged in beekeeping, while the rest assure an additional income. Greece holds a leading position internationally in hives and honey production, regarding its population and area. The last twenty years in Greece the quantity of colonies have increased for about 2.2 colonies per area km. Greece has the highest density of bee colonies compared to other countries; it has three times higher the number of bees in each square kilometer compared to the average of bees in Europe; 128 times higher bee density than Australia and 33 times higher bee density than United States [2].

In terms of geographic distribution, beekeeping is carried out throughout the country. Some distinctive areas include: Halkidiki, Kavala, Fthiotida, Evia, Attica, Arkadia, Irakleio, Hania, etc. Macedonia possesses the highest number of beekeeping units and number of bees, the largest amount of honey production and numerous professional beekeepers, as shown by the relevant statistics. Peloponnese, Crete, Central Greece and Evia are also areas with a high number of bees and beekeepers [3].

Despite the continuous financial crisis in Greece for ca. 10 years now, honey holds a special position in the market and heart of Greek people. Its price has been stable and as a matter of fact has arisen, indicating that is a highly appreciated product by the consumers [4].

Today, honey has been established along with olive oil and a number of other fruit products in the Mediterranean diet, which is internationally recognized as a health and longevity factor. Its magical composition enumerates: a) simple sugars such as fructose and glucose and much lesser amounts of sucrose, b) a lower glycemic index compared to sugar of about 30-85, c) macro–minerals such as P, K, Na, Mg and numerous trace elements such as Al, Ni, Fe, Ar, Se, Si, Co, V, etc. which play a significant role in numerous biochemical reactions occurring in a living body [5]. Finally, honey is a good source of numerous phytochemicals including polyphenols and carotenoids which have a significant effect in the treatment of specific cancers [6]. All the aforementioned indicative chemical compounds are well combined in equilibrium within a hydroscopic matrix.

Therefore, there is a great tendency to investigate and well exploit all the prospective beneficial health effects of Greek honey in new, unprocessed and of traditional knowledge "honey functional" products.

### **Conflicts of Interest**

The authors need funding to develop and carry out the research program entitled: "*Iso-tonic snacks and beverages prepared from honey*".

#### **Bibliography**

- 1. Aristotle, History of Animals, Book V, Chapters 17&18, ISBN13 9789604633050, ZITROS, www.zitros.gr (2017).
- 2. Apiculture in Greece with numbers, Honey Fasilis (2011).
- 3. Federation of Greek Beekeepers' Associations (2011).
- 4. Nousias P., *et al.* "Characterization and differentiation of Greek commercial thyme honeys according to geographical origin based on quality and some bioactivity parameters using chemometrics". *Journal of Food Processing and Preservation* 41.4 (2017): e13061.
- 5. Louppis AP., *et al.* "Botanical discrimination of Greek unifloral honeys based on mineral content in combination with physicochemical parameter analysis, using a validated chemometric approach". *Microchemical Journal* 135 (2017): 180-189.
- Tsiapara AV., et al. "Bioactivity of Greek honey extracts on breast cancer (MCF-7), prostate cancer (PC-3) and endometrial cancer (Ishikawa) cells: Profile analysis of extracts". Food Chemistry 116.3 (2009): 702-708.

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