

Following Walnut Footprints in Greece

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Historical background:

The cultivation of the walnut tree is a traditional practice that dates back more than 2.5 thousand years BC in Greece. According to legends, in the Gold Age of Greece, when people used to live on oak trees, Gods lived on walnut trees and from this the walnut tree got its name *Juglans* meaning the Jovis Glans.

The Greek word for walnut is “karydi”, which is indicative of the link to the goddess Caryae. Dionysus, the god of fertility, wine, music and poetry, fell madly in love with Caryae, the Titanus of Wisdom. When she died, the distraught god transformed her into a walnut tree. The goddess Artemis brought the news of Caryae’s death to the Laconians, who built a temple dedicated to Artemis-Caryatis. Caryae’s nymphs, the caryatids, were represented in architectural form as carved stone pillars in the shape of women supporting the entablature. The carved stone pillars can be seen by tourists in the Acropolis.

Country introduction

The total cultivated area in Greece is 1.014.199 ha and main fruit crops are olives (79%), oranges (4%) and peaches (4%), while walnuts correspond to 0.9% of total cultivated area (General Secretariat of the National Statistical Service of Greece, 2008). Greece has a considerable walnut production and is sorted 11th largest producer in the world after China, the USA, Iran, Turkey, Ukraine, Mexico, India, Rumania, France and Chile, with a production of 22.000 tonnes, and 3rd in EU after Rumania and France (FAO stats for 2010). The epicenters of walnut cultivation are in Peloponnesus (26.7%) (mostly in Achaia and Arkadia), Thessaly (20.9%) (mostly in Trikala and Larissa), Macedonia (20.9%), Epirus (7.9%) and Crete (7.7%) (Fig. 1).

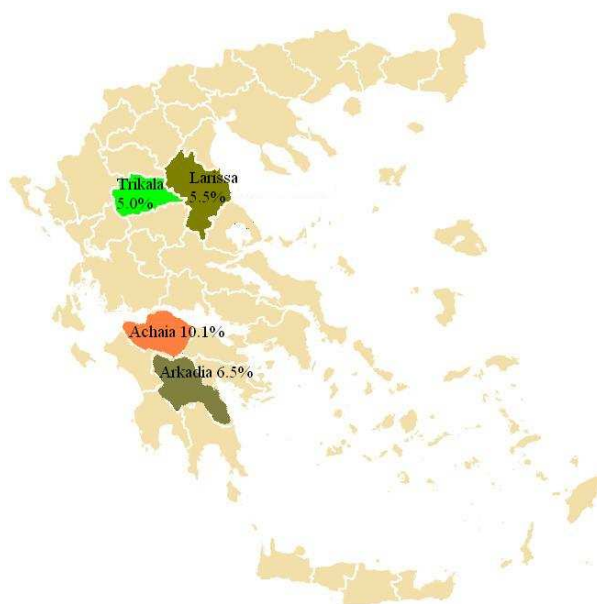
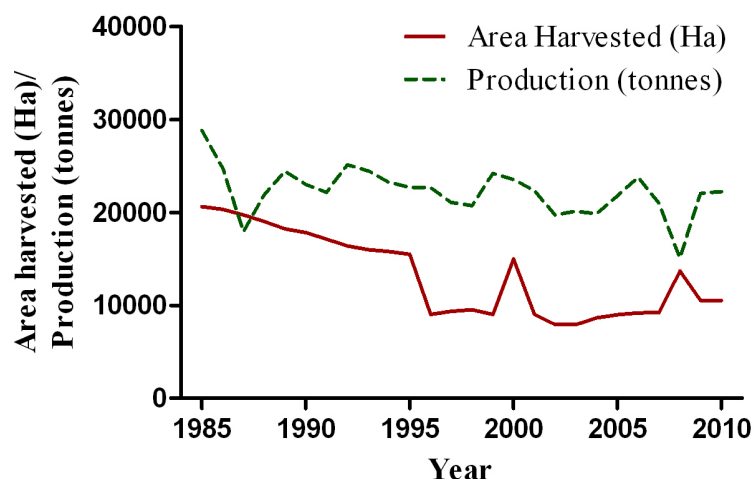


Figure 1. Major walnut growing municipalities and percentage (%) of walnut production.

Economical and Technical data

The walnut production is not enough to cover the domestic needs, which are high considering that Greeks rank third after Libanon and Malvides in nut consumption (11.1 Kg/capita/ year). It is estimated that about 150 Mt of shelled walnut is imported every year in Greece. Walnuts from the Greek production get better prices compared to imported walnuts.

In 2010, the cultivated walnut orchards covered an area of 10.500 ha and the production was 22.200 tonnes, showing a good ratio of 2.1 tonnes/ ha (Fig. 2). Cultivated areas of walnuts are by 63% in mountainous (altitude >500m), 18% in semi-mountainous (500m> altitude >200m) and 19% in lowland areas (General Secretariat of



(General Secretariat of the National Statistical Service of Greece, 2008). Recently a considerable number of new plantations are being made mainly in lowland areas.

Traditional walnut orchards used to be of own-rooted trees until 1980 and result was not always favorable due to the great genetical heterozygosity in walnut. However, the growers had not other choice because the grafting technique utilized was not appropriate (this was also the case in other countries). Since 1980 new walnut plantations were made using grafted trees of the classical tip-bearer cultivars such as Hartley and Franquette and the lateral-bearing cultivars Serr, Gustine, Amigo, Vina and Pedro, followed 15 years later by Chandler, Lara and Fernor. Nurseries use for rootstocks seedling from *Juglans regia* L. trees from the local germplasm with vigorous vegetation.

In Greece the mountainous and semi-mountainous areas have appropriate temperatures and light exposure that is a strong advantage for good yield and quality. The biological walnut production is also more feasible in mountainous areas due to easier control of *Laspeyresia pomonella* and less occurrence of attacks from other insects.

Species and Geographical distribution of walnut accessions

Several autochthonous walnut seedling populations have been found in Greece and a study on their morphological and genetical variation showed the existence of a substantial genetic variation. Moreover, walnut populations producing fruit in a botryoid inflorescence with up to 40 small walnuts was also be found in Greece (less than 1% of the total populations found).

In the Varvates Research Station a breeding program resulted in the new very promising walnut cultivars Big Top (, Ioli and Iliana (Photographs 1 and 2).



Uses and Traditions

In the older years due to the use of own-rooted trees there was a great variation in the walnuts produced from every tree. This gave inspiration to the use of the phrasal verb “every walnut tree, walnut” in the Greek

language, which is used when somebody wants to emphasize the great variation that something may have.

In the past in most Greek villages it was very common to see one walnut tree on each house yard. The reasons were not only the delicious walnuts and its thick shadow protecting from the sun, but also the many pharmaceutical uses of the tree. The walnut leaves were also used to make dyes for both the hair and textiles.

In traditional Greek confectionery sweet preserves are being made from almost all fruit and vegetables including the walnut (Photo 3). The preserve “Walnut spoon sweet” is produced when the fruit is green before the pericarp hardens. It time consuming to produce but has always been very much appreciated for its taste and aroma.



Photo 3. Walnut spoon sweet and walnut liqueur.

Liqueur “karydaki” is also being made using green tender walnuts and brandy (Fig. 4).

In confectionery, “karydopita” is another traditional highly appreciated sweet. It is a moist walnut cake that is flavored with cinnamon and bathed in sweet syrup.

Below traditional recipes for walnut spoon sweet and liqueur karydaki are described.

Green Walnut Spoon Sweet (Preserves)

Ingredients: 1 kg of green walnuts, 1 kg of sugar, 1 1/2 glass of water, juice from half lemon and cloves.

Method: Choose tender and small green walnuts. Wear gloves and with a vegetable peeler, remove the thin outer peel of the walnuts, transferring the walnuts immediately to a bowl of water to cover. If there is any bony material at the top and bottom of the walnuts, remove with a sharp knife. Add walnuts and enough water to cover to a pot and bring to a boil. Boil for 1 to 3 minutes. Discard the water and repeat with fresh cold water. Repeat one more time. Soak the walnuts for 2 days (48 hours), changing the water every 8 hours. Pierce the walnuts with a knitting needle or skewer all the way through, top to bottom (starting at the stem end). Press the walnut until they get drained and insert one clove on each walnut.

In a pot, stir the sugar into the water and bring to boil. Add the walnuts, skim off any foam that may rise to the top and boil for 15’-20’. Let it seat until it gets cool. Boil again until the

syrup has thickened enough. To test for the syrup thickness, drop a small amount of syrup on a plate. Touch it with the back of a metal spoon and lift the spoon. If "threads" appear, the syrup is ready. Add the lemon juice, remove from heat, and allow cooling to room temperature. When completely cooled, store in sterilized jars.

Walnut liqueur

Ingredients: 8-10 green walnuts (or more if we want to get a darker color), 1 L coniak of good quality, 700 g of sugar and 8 cloves.

Method: Rinse and pat dry the walnuts. Cut them into quarters with a sharp knife. Put walnuts, cloves, sugar, and brandy into a large glass container. The brandy should cover the walnuts. Cover and forget the mixture in a sun exposed place. Shake during the first two weeks so that the sugar is dissolved. Let the flavours blend for at least two months before opening. They can be kept up to three or four years. Once you've opened them, store them tightly corked in the refrigerator for up to a year. When you are ready to bottle, remove the walnuts and solids with a slotted metal spoon. Strain the liquid through several layers of cheesecloth into glass bottles.

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