

SINGLE DOCUMENT

Council Regulation (EC) No 510/2006 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs

'ΚΑΛΑΜΑΤΑ' (KALAMATA)

EC No: EL-PDO-0117-0037-21.12.2009

PGI () PDO (X)

1. NAME

'Καλαμάτα' (Kalamata)

2. MEMBER STATE OR THIRD COUNTRY

Greece

3. DESCRIPTION OF THE AGRICULTURAL PRODUCT OR FOODSTUFF

3.1. Type of product

Class 1.5. Oils and fats (butter, margarine, oil, etc.)

3.2. Description of the product to which the name in (1) applies

The name denotes the extra virgin olive oil produced from olives of the Koroneiki and Mastoeidis varieties. Kalamata PDO olive oil comes mainly from olives of the Koroneiki variety with a maximum of 5% from olives of the Mastoeidis variety. It has the following characteristics:

The total maximum acidity expressed by weight as oleic acid does not exceed 0.50 g per 100 g of oil.

The indicators for the presence of oxidised substances in the olive oil should have the following values when the oil is presented for sale in standard form:

K₂₃₂: maximum 2.20

K₂₇₀: maximum 0.20

Peroxide value: ≤ 14 MeqO₂/kg

Total sterols: > 1 100mg/kg

Fatty acids content (%):

Oleic acid: 70-80

Linoleic acid: 4.0-11.0

Stearic acid: 2.0-4.0

Palmitoleic acid: 0.6-1.2

Palmitic acid: 10.0-15.0

Organoleptic characteristics:

Description	Average value
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Olive fruitiness	3-5
Bitterness	2-3
Pungency	2-4
Defects	0

Kalamata PDO olive oil has medium fruitiness, with an aroma of green fruit, light bitterness and light to medium pungency.

Colour: green to yellowish-green

3.3. Raw materials (for processed products only)

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3.4. Feed (for products of animal origin only)

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3.5. Specific steps in production that must take place in the defined geographical area

Cultivation, production and milling must take place solely within the geographical area defined in point 4. The olive oil must be produced and initially stored in factories located within the defined geographical area which comply with all the EU and national food production rules in force and are equipped with stainless steel machinery and stainless steel storage tanks.

HARVESTING, TRANSPORT AND STORAGE OF THE OLIVES

In most areas the olives are harvested by being shaken down, by hand or with combs, or by machines (shakers) when the fruit turns from green to yellowish-green and until 50% has turned an inky colour, from the end of October for around 4-6 weeks, depending on the prevailing weather conditions. Harvesting is always done using olive nets, which are spread out below the trees. Fruit that has fallen to the ground (windfalls) must never be harvested for milling.

The olives are transported to the olive mills in rigid, ventilated, plastic crates or in sacks made solely from plant material, with a capacity of 30-50 kg. They must be transported to the mills and milled within 24 hours under the best possible conditions (storage away from the light and on pallets so that the air can circulate and there is no direct contact with the ground), in order to prevent any deterioration. Until they are milled the olives must be kept cool. No more than 24 hours may elapse between the harvesting of the fruit and the production of the extra virgin Kalamata PDO olive oil. It is forbidden to store the olives in the olive groves, where they are exposed to various natural and microbiological hazards.

PROCESSING OF THE OLIVES

The olives are processed in traditional or centrifugal oil mills, where the temperature of the olive paste is kept below 27° C during malaxation and all the other stages of processing. In the mill the fruit is separated from the leaves and the twigs, washed and sent to the crusher. The olive paste then undergoes malaxation for 20-30 minutes and the oil is extracted either by pressure or centrifugation, with minimal water added in cases where the olives do not contain sufficient plant fluids.

The olive mills must be located within the boundaries of Messinia.

3.6. Specific rules concerning slicing, grating, packaging, etc.

PDO Kalamata olive oil must be stored in stainless steel tanks located in suitable storage facilities, at a temperature not exceeding 24° C. The facilities where the olive oil is stored at first may be located in the mills where it is produced.

The olive oil may be transported from the mill to the storage facilities at the bottling plants only in special stainless steel tanks that have been meticulously cleaned.

The oil may be bottled either within or outside the defined geographical area, provided that there is a reliable traceability system and that it is properly labelled.

For wholesale trade the product may be transported in stainless steel tanks, which are sealed as soon as they are filled and are properly labelled, provided a reliable traceability system is in place. For retail sale, all packaging holding up to 5 litres is allowed provided that it complies with the rules laid down in both EU and Greek legislation.

3.7. Specific rules on labelling

The labelling must include a code made up of letters and figures indicating the serial number of the label and the last two figure of the year of production, set out as follows:

KA / label serial number / last two figures of the year of production.

4. CONCISE DEFINITION OF THE GEOGRAPHICAL AREA

Kalamata olive oil is produced within the administrative boundaries of the Regional Unit of Messinia, which is a subdivision of the Region of the Peloponnese. The area is bordered to the north by the river Neda and the mountains of Arcadia, to the east by the Taïgetos, to the south by the Gulf of Messinia and to the west by the Ionian Sea.

The olive groves cover an area of approximately a million *stremmata* (100 000 hectares).

5. LINK WITH THE GEOGRAPHICAL AREA

5.1. Specificity of the geographical area

The defined geographical area lies at the south-western end of the Peloponnese and covers an area of 2 991 square kilometres. The eastern part of Messinia is dominated by the Taïgetos mountain range, which also forms the natural boundary with the Prefecture of Laconia. The Taïgetos extends for 115 kilometres, with the highest peak rising to 2 400 metres, and creates the area's microclimate. The largest and most fertile plain is the Messinian plain, followed by other smaller ones such as the plains of Kiparissia, Gargaliani, Pylos, Methoni, Koroni, Longa and Petalidi.

The climate and soil in the defined geographical area have specific characteristics that are very good for olive growing, so the only tasks that must be carried out during the growing season are those that are essential for the normal development of the trees. The area's microclimate is mild Mediterranean (xerothermic - temperate) to subtropical. The winters are mild and the summers long and hot. The cool season lasts from November to April and the hot season from May to October. Average annual rainfall is around 750-800 mm, with most rain falling in the winter (around 330 mm). There is around 250 mm in autumn, 146 mm in spring and 23 mm in summer. The driest month is July (5.2 mm) and the wettest is November (138.2 mm).

Average annual relative humidity is 67.7%. July is the driest month (58%) and November the most humid (74%).

Regarding average monthly temperatures during the year, the lowest temperatures are in December and January (10° C) and the highest in July and August (28° C). The area has over 3 000 hours of sunshine a year.

This microclimate is ideal for olive growing. There are no sharp fluctuations in temperature and the level and distribution of rainfall is good. The olive tree's annual cycle can thus progress in optimal conditions.

The soil is clayey-sandy, with a neutral to alkaline pH. The land in the defined geographical area is mostly hilly. It is moderately permeable, with sufficient drainage and easy flow of water and soil solutions; so that it does not retain water or crack. The soil contains sufficient amounts of phosphorus, boron, manganese and magnesium but is slightly deficient in nitrogen and potassium, so the appropriate quantities of mineral fertilisers are applied. The soils are of light to medium mechanical composition. The olive groves are mainly planted on sloping, hilly land so the trees are well aired, which contributes to the high quality of the product.

5.2. Specificity of the product

Kalamata olive oil is produced from select varieties of Koroneiki and Mastoeidis olives and all the oil produced is classed as extra virgin olive oil, as the acidity is well below the maximum permitted limit, and the other parameters (peroxide value and extinction coefficient K232) are below the highest permitted levels laid down in the European Union Regulation. It also has a very specific fatty acid profile, which is a characteristic of Kalamata PDO olive oil. The percentage of oleic acid is very high, while the linoleic, stearic, palmitoleic and palmitic acid values are very specific and so is the ratio between them, which distinguishes the oil from other olive oils. This specific fatty acid profile together with the medium fruitiness and the aroma of green fruit, the light bitterness and mild pungency give PDO Kalamata olive oil its specific, unique character.

5.3. Causal link between the geographical area and the quality or characteristics of the product (for PDO) or a specific quality, the reputation or other characteristic of the product (for PGI)

Historical link

The beginnings of olive growing in the defined geographical area are lost in the mists of time. This can be seen from archaeological finds and written records that have been preserved and attest to the fact the olives and olive oil were consumed as food, used as a basis for perfume and were a subject for art. Excavations at the Palace of Nestor near Chora uncovered 1 200 clay tablets inscribed in the Linear B script, which provide valuable information on the role of the olive tree and how it shaped the lives of the local people in the 14th -13th centuries BC.

Olive stones dating back to 1900 BC have been found in the Karpofora area. Using the pollen diagram method, based on radiochronology, estimates have been made regarding olive growing in the Pylos area. It was found that olives were being grown as far back as 1100 BC and they were mainly the cultivated variety.

The Koroneiki variety is native to Messinia, as shown by its name, which means that it came from Koroni, a small coastal town in the south-eastern part of the defined geographical area.

Olive oil was traded from the ports of Methoni and Navarino (the modern town of Pylos). Greek traders supplemented their cargo with oil from the area around Kiparissia.

The olive groves on public land were planted on Turkish properties that had fallen into the hands of the Venetian conquerors and were rented to farmers. To meet the demand, some olive oil also came from outside the Koroni area, and from Mani and more generally from all over Messinia.

Natural link

The factors that give the raw material its specific characteristics, which are imparted to Kalamata olive oil are:

- The area's excellent climate: a combination of long hours of sunshine, optimal rainfall (around 750-800 mm), mild winters and long, hot, dry summers
- The moderately strong winds and the hilly terrain in combination with the cup-shaped form created by the farmers' pruning (3-4 main branches per tree and removal of part of the foliage from within), which mean that the olive groves have optimal exposure to light and are well aired, so the fruit ripens properly, factors that determine the specific characteristics of the oil produced, which is rich in pigments, with an intense colour and a pleasant taste. Messinia's hilly terrain does not always allow olive growing to be mechanised or the fruit to be harvested by machine, so traditional methods are still used (pruning, rotivation, harvesting).
- The light, calcareous soils with neutral to alkaline pH. The calcareous soil, which prevents the trees absorbing iron more effectively than other soils and can retain water much better, which in turn means that olive trees grown in this type of soil do not dry out so easily in times of drought. The organoleptic characteristics of Kalamata PDO olive oil are largely due to the aromatic substances that are formed because of the specific characteristics of the soil (light, calcareous soils) and the fact that the trees have a reduced water intake, because rainfall is low when the fruit is ripening and the olive trees grown for olive oil production in the defined geographical area receive limited irrigation.
- Sufficient concentrations of phosphorus, magnesium, manganese, boron, etc. In particular the presence of manganese (an element which is a catalyst for many enzymatic and biochemical processes and also plays a decisive role in the formation of chlorophyll) and magnesium (an element which plays a decisive role in the formation of the chlorophyll molecule) is crucial in producing an oil that has the characteristic yellowish-green colour and is rich in aromatic substances.
- The producers' experience in deciding on the best period for harvesting the olives. Unripe olives produce olive oil with an intense green colour and bitterish taste with few aromatic constituents. On the other hand, if the olives are harvested when they are past the physiological stage of ripening the level of aromatic constituents diminishes, acidity increases and there is a change in colour.
- Optimal processing conditions, which help produce an extra virgin olive oil with a fruity aroma of medium intensity, a light bitterness and light to medium pungency with high amounts of total sterols. Malaxation of the olive paste takes place at temperatures lower than 27° C, for a short period of time and with limited use of water, so as to prevent the incorporation of air, oxidation and the loss of aromatic constituents. The result is a high quality olive oil that is resistant to oxidation.

- The small size of the parcels allows the Messinian olive farmers to take great care of their trees and produce a high quality olive oil.

PUBLICATION REFERENCE OF THE SPECIFICATION

http://www.minagric.gr/greek/data/prod_elaioladou_kalamata_291211.pdf