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SPECIFICATION

Responsible Department in Turkey

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Applicant Group

NAME: MILAS CHAMBER OF COMMERCE AND INDUSTRY
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Milas Chamber of Commerce and Industry was established in 1923 and has 2400 members. It is an organisation established to facilitate occupational activities of its members and help them in terms of business development and target markets. Most members are engaged in processing and marketing of agricultural products.

1. Name of the product

MİLAS YAĞLI ZEYTİNİ

2. Product Description

Milas Yağlı Zeytini protected designation of origin covers table olives of the Memecik variety grown in Milas province, fermented in brine and preserved with olive oil obtained from Memecik variety olives and fresh lemon slices. Milas Yağlı Zeytini olives are fully ripened, black/purple colored, whole and split vertically. Milas Yağlı Zeytini has medium fruity flavour. Bitter orange, orange, mandarin and lemon aromas are dominant.

The product must present the following characteristics

Size	**:**170-200 fruit/kg
Fruit color	**:** purple/black
Free acidity (Oleic acid)	**:** ≤ 0,8%
Salt Content	**:** ≤ 4%
Total Phenolic Content	**:** ≥ 97 mgGAE/100g
Fat Content	**:** 27-33%
Moisture Content	**:** 54-62%

Organoleptic Characteristics (International Olive Council Method COI/OT/MO

(On a scale of min:1 max:11)	
Saltiness	Low or medium strength (3,5-5,5)
Bitterness	Low or medium strength (3,5-5,5)
Acidity	Low or medium strength (2,5-5,5)
Hardness	Medium strength (4-6,4)
Fibrousness	Medium or high strength (4,2-6,2)
Crunchiness	Medium or high strength (4-7)

Quality Characteristics	
Defect predominantly perceived median (Abnormal fermentation, musty, rancid, cooking effect, soapy, metallic, earthy, winey-vinegary) (International Olive Council Method COI/OT/MO)	< 3

3. Definition of the geographical area

The protected area refers to all the villages and towns under the municipality of Milas. They are all in the province of Muğla, located in southern Aegean region.

4. Proof of origin

“Milas Yağlı Zeytini” is produced exclusively from Memecik variety. Operations related to the production of the raw material and its processing must be undertaken within the defined geographical area. The controls regarding Milas Yağlı Zeytini is coordinated by Milas Chamber of Commerce and Industry. The coordinator will keep a list of the producers to ensure the traceability and origin of the product. The inspection body carries out the necessary audits on “Milas Yağlı Zeytini” including production area, characteristics of olive oil used for preserving, color, size, organoleptic qualities, and production method. The coordinator may take legal action against the unlawful and illegal users of the geographical indication, and the inspection body may carry out additional audits upon any complaints or suspicion.

5. Description of the method of obtaining the agricultural product or foodstuff

The olives start to mature in October. Maturity period is completed in the mid of November and in the mid of December. Memecik variety olives are harvested in December before they turn completely black. The olives are required to be picked without being bruised. Olives are picked without any harm and by harvesting by hand if possible.

Olives which are harvested are scored by two or three slices along the olive with a sharp knife within 24 hours. The knife is supposed to touch the kernel of the olive. Scored olives are put in glass jars, quality plastic or metal containers, which do not cause any foreign odor. The volumes of the jars and containers, in which olives are put, may be 1-20 liters. Containers are filled with potable water and the covers are closed. The water within the jars is emptied after 20 and 25 days and fresh potable water is filled. Changing of water is repeated for three times in 20–25-day periods. When the water of the olives is changed for the third and last time, 2% rock salt is added.

When the water of the olives is changed for third time the olives are checked after 20-25 days, if the olives are debittered, the olives within the jar are taken into a container and they are washed. After the olives are washed and thoroughly purified, the olives are returned to the containers. While the olives are put into the containers or jars, 3-4 circles of lemons with skin, which are cut in circles are put for each 1 kg olive. 30 g rock salt for 1 kg lemon is sprinkled on sliced lemons one day before they are added to the olives. The containers are then filled with olive oil.

Food additives and flavoring components are not used in preparation of Milas Yağlı Zeytini. Also, sterilization and pasteurization processes are not applied. Milas Yağlı Zeytini should be conserved within their containers, away from sunlight and in cool places.

6. Link

Specificity of the geographical area

Milas is located in Menteşe region in the northwestern part of Muğla province, and it is a mountainous region where there are narrow and deep valleys and calcareous lands, extending in the north-southeast direction of Bafa lake-Milas depression and Ilbıra Mountain in the west and Akçay depression in the east. Limited agricultural areas and the mountainous masses and slopes in the district have prepared a favorable environment for olive farming. In Milas, olive cultivation has become an agricultural activity that is completely forced by natural conditions.

The Memecik olive variety used in production is indigenous to the geographical area. Memecik variety has been cultivated in the Milas region for generations and greater percentage of olive trees in this region is of “Memecik” variety. A comparative study of bioactive constituents in Turkish olives (Hasim Kelebek, Songul Kesen & Serkan Selli (2015) Comparative Study of Bioactive Constituents in Turkish Olive Oils by LC-ESI/MS/MS, International Journal of Food Properties, 18:10, 2231-2245) shown that Memecik olive variety have high antioxidant activity and phenolic content compared to other olive cultivars grown in Turkey. The unique characteristics of the variety that originated from the specificity of the geographical area, contribute to the chemical composition of the product, in particular the phenolic content, which adds to the fruity flavor of the Milas Yağlı Zeytini.

The typical characteristics of the Mediterranean climate are seen in Milas district. Olive plants require average temperature conditions of 15-20°C during flowering period, 15-20°C during fruit ripening period and a minimum of 5°C from ripening to harvest period. In addition, it needs a certain cold period during the formation of the flower bud. Olives are very sensitive to low temperatures and will be damaged if the minimum daily temperature falls below -7°C. The average daily temperature in olive fields in Milas is minimum 9.9 °C in December, 8.9 °C in January and 9.5 °C in February which is very suitable for cooling period. The lowest average temperature is 19.4 °C in May, which is the flowering period, and the lowest average temperature is 17.4 °C in the fruit-ripening period. These temperature values are nearly optimum growing conditions for olive trees and gives high yield of olives. Alluvial soil as well as clay-sandy soil is seen in Milas. This type of soil retains water and makes it possible for olives trees to grow stronger roots to give higher yields. In addition, Milas province has a long-standing average precipitation record of 900-1000 mm, which is suitable for olive farming without any need for irrigation. Olives used for the production of Milas Yağlı Zeytini

are grown without irrigation as the mountainous relief of the region does not allow for the irrigation of the olive trees. Thus, during the hot summer months, olive trees are not irrigated. The absence of irrigation results in the formation of higher phenol content and the fruity flavor of the olives, which constitute the main specificity of Milas Yağlı Zeytini.

Specificity of the product

The distinctive character of the product is mainly due to the organoleptic characteristics of the olives grown in the area and its fruity aroma, which comes from being seasoned with olive oil and lemons. Because olives are not usually preserved with oil and lemons, the product is easily recognizable. The purple/black color of the olives are also very distinctive.

The fruity and bitterness characteristic of olives is due to the high polyphenol content of Memecik variety of olives. Furthermore, quality olive oil that is used for preserving the olives has similar characteristics as it is produced from the same variety olives which enhances the organoleptic qualities of the product.

The sliced lemons enhance the acidity and the desirable bitterness of the product. The use of olive oil for preservation cuts the contact of olives with air and the lemons increase acidity so less salt can be used during production. This method is also the reason why the product does not undergo pasteurization or sterilization process.

Human Factors

The town of Milas has been an ancient human settlement area of more than 5,000 years. The natural conditions have made olive farming and olive oil production to be the primary agricultural activity in the region since Caria Civilization. The know-how of local olive growers is essential to start harvest. Harvest starts around December before the olives becomes completely black. The specific knowledge of the local producers is essential to recognize when the olives are turning color from purple to black and start the harvest. This gives the products its distinctive purple/black color. Olives are harvested with care to prevent bruising and, if possible, by hand. As bruised or damaged olives are very prone to oxidation, care during harvest is essential to low level of defects and low free acidity.

Olives are prepared with a traditional method without additives or preservatives. The method involves olives being sliced and put in fresh water for debittering in the first 24 hours after harvest. The water is changed three times where 2% rock salt is added after third change. The level of debittering is checked by the operators to ensure required organoleptic characteristics. The expertise of the producers help determine when the olives are sufficiently debittered.

The flavoring method which uses olive oil and lemons comes from the producers' know-how. The lemons used for production are sliced and salted by the producers to prevent any undesirable microbial growth. The amount of salt and lemon slices are determined by the producers to ensure the fruity flavor.

Causal link

Milas Yağlı Zeytini is characterized by the presence of the Memecik variety, which is well established in the area and accounts for almost all its olive trees. The unique characteristics of the variety which originated from the specificity of the geographical area, contribute to the

chemical composition of the product, in particular the phenolic content which gives the fruity flavor of the Milas Yağlı Zeytini.

The specificity of the product is closely linked to pedo-climatic conditions of the geographical area and local know-how. The production method is closely monitored by the producers which ensures the quality. Olive oil and lemons which are used for preserving distinguishes the product and enhances its natural taste and aroma.

7. Name and address of the authorities or bodies verifying compliance with the provision of the specification [Article 11/*R.510*]

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