

## ***History and Expansion***

The Olive tree is considered among the most representative and well-known members of the Mediterranean flora. Its history is a mixture of myth and reality, traditions and beliefs. This has undoubtedly transformed it to an integral symbol of the Mediterranean culture Worldwide, the Olive tree is a symbol of peace, harmony, wisdom and prosperity.

Greek mythology claims that the Goddess Athena was the one who first introduced the Olive tree in front of God Poseidon. The Olive tree was the gift that she offered to the Athenians and that offer actually convinced them to name their city after her name.

Furthermore, historical references, describe the fruit of the olive tree as a major component of the human diet. In addition, the Bible stresses the role of the Olive tree as a symbol of peace and as a blessing to humanity.

Another indication of the Olive tree's paramount importance and prestigious symbolism in the ancient world is manifested by the fact that the vast majority of ancient Greek and Roman sculptures have Olive branches as their main decorative detail, while a crown made of Olive branches (kotinos) was the awarded prize for the winners of the ancient Olympic Games.

Between 500 BC & 140 BC the Olive oil cultivation was already known & famous to Greece, Syria, Palestine, and Egypt as well.

According to historical references around 500 BC, the Greeks, traded the first Olive trees to Sicilia & Sardinia of Italy. From there, they reached Rome in a very short time.

Since then, Olive tree cultivation expanded rapidly and became most popular across the whole Mediterranean basin and elsewhere around the world (e.g. North and South America). Nowadays, millions of tons of Olive oil are produced annually striving to meet a rapidly increasing demand. Globally, the ranking of countries which produce the larger quantities of Olive oil is as follows-on average-:

1. Spain (1.500.000 tons approximately)
2. Italy (500.000 tons approximately)
3. Greece(300.000 tons approximately)
4. Syria (198.000 tons approximately)
5. Turkey(191.000 tons approximately)
6. Tunisia(180.000 tons approximately)
7. Morocco(120.000 tons approximately)

However, the global ranking of countries which produce the larger quantities of Extra Virgin Olive Oil is as follows:

1. Greece
2. Italy
3. Spain

Olive trees are not only great in number and importance worldwide, but also extremely diverse in their traits. It is estimated that more than 1.300 varieties of Olive trees exist globally, of which at least 80 are considered to be genuinely Greek.

In Greece, 7.500.000 of acres are being cultivated with Olive trees. Around 600.000 of these acres are devoted to organic Olive tree farming. The main areas with Olive tree cultivation in Greece are:

- ❖ the Peloponnese Region
- ❖ the Mitilini Island
- ❖ the Corfu Island
- ❖ the Amfissa Region
- ❖ the Lamia Region
- ❖ the Ionian Islands
- ❖ the Magnesia Region
- ❖ the Evvoia Island
- ❖ the Attica Region

Moreover, Olive trees are being cultivated in Greece, and worldwide, for producing edible / table Olives as well. The most known Greek edible Olive varieties are Kalamon, Amfissis and Thasou. Among the most known and the most common Greek Olive tree varieties for Olive oil production are Ladolia, Manaki, Koroneiki and Athinolia.

### ***Olive Oil Production Determinants***

During the ripening process, the Olive tree's fruits gradually change color from green to purple and finally they all turn black. The flavor characteristics of the Olive oil mainly depend on the maturity stage and the variety of the collected Olive fruits. The color of the olive fruit, as stated above, is indicative of its maturity level. The Olive oil that is derived from green and purple olives contains a significant amount of aromatic ingredients resulting in a strong fruity flavor. The Koroneiki and Athinolia varieties strengthen these characteristics.

Conversely, as the olive fruit ripens, the amount of aromatic components is declining. The Olive oil produced from violet and black olives has a smoother taste and aroma resembling the smell of fruits like apple and sometimes almond for example. The Ladolia and Manaki varieties amplify the aforementioned characteristics.

The taste, the quality and the quantities of the produced Olive oil also depend upon:

- The climate conditions
- The soil ingredients

- The cultivation techniques such as:
  - the pruning technique and the extent of the pruning process
  - the tith of the soil
  - the frequency of the irrigation
  - the use of fertilizers

By further analyzing the aforementioned cultivation techniques, the following justifications for their necessity are derived:

1. *The pruning*: its main scope is the removal of the weak, the diseased, the aged or / and the dead branches which absorb vital sap of the olive tree. These branches cannot use the sap they absorb to produce fruit while they deprive these valuable ingredients from younger branches which can use them efficiently and more productively. The pruning process takes place usually once or twice in a year, mainly after the olive fruit harvesting and also in spring. The age, the variety, the location and the specific peculiarity of each Olive tree dictates the frequency and the extent of the pruning. Another purpose of the pruning process, is to allow to vital climate conditions such as
  - a. the Air
  - b. the Sun

to reach freely every inch of the Olive tree. In this way, the tree's hygiene and productivity greatly improves.

2. *The tith of the soil*: it is needed for mixing the components of the soil across the whole area occupied by the root system of the Olive tree. It is also ensuring that the proper oxygen and moisture will be given to every single tree root. The tith is usually applicable once in a year, while fertilizers might simultaneously be sown to supplement ingredients of paramount importance for the prosperity and productivity of the Olive tree such as Potassium, Magnesium, Nitrogen and Boron.
3. *The watering for the Olive trees* becomes more vital before spring, when the flowering process is about to start. Some watering during the blistering hot Mediterranean summer months may prove to be highly beneficial as well.

An interesting and unique phenomenon related with the productivity of the Olive tree is the Alternate Bearing. The Alternate Bearing, also known as Biennial Bearing, means that every olive tree has a cycle of a high production year followed by a year of reduced production. This phenomenon is probably due to the competition between the urge of the tree for branch growth and for the production of the highest possible number of fruits in the year of high fruiting. The intensity can be mitigated by:

- pruning the tree in the year when the high fruition is expected
- using fertilizers (mainly Potassium, Magnesium, and Nitrogen which spur new vegetation)

- irrigating frequently.

Olive trees are able to give olive fruits regardless of their age and throughout their entire age long life. The olive harvesting is being accomplished from early November till January, depending on the variety of the olive tree, its age and the climate conditions of the area.

The olives are harvested either by hand or by mechanical means. Harvesting by hand is mostly applied to table olives. Hand harvesting is more time consuming and has increased cost compared to the mechanical means but it helps avoiding the crushing of small olive branches, that would be next year's fruit bearers, and the scratching of the collected olives resulting in higher quality products (edible olives and olive oil).

### ***Olive Oil Nutrition Facts and Health Benefits***

Olive oil demand is rapidly and continuously increasing the last few decades as a result of its recognition as the key component of the Mediterranean diet, a diet associated with high quality and longevity of life. These unique and desirable characteristics actually stem from the following facts concerning Olive oil:

- ✓ Olive oil is the best edible oil in terms of palatability, stability, lipid profile, and safety profiles.
- ✓ It is rich in energy and its high ratio of mono-unsaturated fatty acids to saturated fatty acids qualifies it as one of the healthiest oil for consumption.
- ✓ Extra virgin oil has high smoke point, 450 °F (210 °C). This property of olive is crucial while employing in high-temperature cooking, as in deep-frying of certain food items.
- ✓ Olive oil has an excellent lipid profile. Saturated, mono-unsaturated and polyunsaturated (SFA: MUFA: PUFA= 14: 77: 9) fats in it are distributed at healthy proportions.
- ✓ Natively cold-pressed oil is one of the stable cooking oils featuring a very long shelf life.

and specific health benefits obtained from its regular consumption:

- ❖ Olive oil has distinct flavor and taste. Unlike many other oils, which are extracted from nuts and seeds (e.g. sunflower, pumpkin, palm or soya oil), the olive oil is obtained from the olive berries and hence, carries large amounts of plant-derived anti-oxidants, phyto-sterols, and vitamins.
- ❖ Olive oil is recognized as one of the healthiest edible oils since it contains less saturated fats. Additionally, it composes linoleic (omega-6) and linolenic acid (omega-3) essential fatty acids at recommended 8:1 ratio.
- ❖ It is especially rich in mono-unsaturated fatty acids (MUFA) like oleic acid (18:1) and palmitoleic acid (16:1) that help in lowering LDL or "bad cholesterol" and to increase HDL or "good cholesterol" in the blood. Research studies suggest that

Mediterranean diet, which is rich in monounsaturated fatty acids help to prevent coronary artery disease and strokes by favoring healthy blood lipid profile.

- ❖ Olive oil, *especially extra virgin*, contains tyrosol phenolic compounds such as oleuropein and oleocanthal. These compounds are responsible for its bitter, and pungent taste. Oleocanthal, oleuropein, and its derivative hydroxytyrosol are nature's most powerful anti-oxidants. Together with vitamin E and carotenoids, they play a vital role fighting against cancer, inflammation, coronary artery disease, degenerative nerve diseases, diabetes and many other disorders.
- ❖ Studies suggest that oleocanthal has ibuprofen (NSAID) like anti-inflammatory activities. Mediterranean diet that uses olive oil may be responsible in part for the low incidence of coronary artery disease in the regions of the Mediterranean basin.
- ❖ Being a vegetable source, it has very high levels of plant sterols, especially  $\beta$ -sitosterol. The FDA (USA's, and world's most credible, Food Association) has approved the following claim for phytosterols: "Foods containing at least 0.4 gram per serving of plant sterols, eaten twice a day with meals for a daily total intake of at least 0.8 gram, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease". Phyto-sterols competitively inhibit cholesterol absorption in the gut, and thereby can reduce total cholesterol levels by 10% to 15%.
- ❖ Olive oil is rich in vitamin E. 100 g fresh extra-virgin oil contains 14.39 mcg (about 96% of RDA) of alpha-tocopherol. Vitamin E is a powerful lipid soluble antioxidant, required for maintaining the integrity of cell membrane of mucus membranes and skin by protecting it from harmful oxygen-free radicals.
- ❖ In addition, extra-virgin oil is also a very good source of vitamin K; 100 g provides about 50% of DRI. Vitamin K has a potential role in the increase of bone mass by promoting osteotrophic activity in the bone. It also has established role in Alzheimer's disease patients by limiting neuronal damage in the brain.

### ***Our Olive Estate***

Evoolution Factory is being located 150 kilometers away from Athens. It is an olive estate situated in a historic olive triangle. All our olive oils come from the Greek Peloponnese region, famous since antiquity for the quality of its olives and olive oil. We do have our family-owned olive groves on a fertile, triangular-shaped plateau, around 500 meters above sea level, situated between ancient Trizina, Kranidi and Epidaurus.

This historic olive triangle is part of a larger area in the Eastern Peloponnese, a spectacular volcanic peninsula which includes the Municipalities of Trizina, Methana and Poros Island. It is richly carpeted with forests of yew, lemon groves and wild olive trees, carnations, gladiolas and even rare orchids, all contributing unique nuances to our olive oil's aroma and taste.

The geology and microclimate are ideally suited for olive tree growing:

- mountainous, sloping ground with good drainage
- slate soil with neutral or alkaline pH and a good concentration of trace minerals such as phosphorus, potassium and boron,
- mild winters, hot dry summers with medium northerly winds and average annual rainfall.

These factors contribute to the health and resilience of the olive trees, without the need for chemical fertilizers or pesticides. Our olive groves have always been cultivated with natural, environmentally-friendly methods, whether or not officially organically-certified. The resulting olive oil is of superior quality with a naturally clear green-golden color, highly and richly aromatic and with high nutritional values.

Apart from its distinction as an area of outstanding natural beauty, the historic olive triangle where our estate is located, is also home to many Unesco World Heritage sites. Here, history fascinatingly mingles with mythology:

- *Ancient Mycenae*, the capital of King Agamemnon, a major hero-warrior in Trojan War, was one of the major centers of Greek civilization in 2000 years BC.
- *Epidaurus* is reputed to be the birthplace of Apollo and Asclepius the Healer.
- *The Asclepeion Sanctuary* adjoining the Epidaurus Theatre was the most celebrated healing center of the Classical world, in effect one of the world's first hospitals. Olive oil was almost certainly imbibed or applied in the form of soothing balms, as part of different cures.
- The earliest human settlements, dating back to the Bronze Age and beyond show evidence of olive cultivation. Findings in a cave in Fracht, nearby Ermioni date back to the Stone Age, 6000 years ago.
- *At Methana*, a primitive olive press, one of the world's earliest, is estimated at 4000 years old.

Our working procedures from grove till the bottling are being ISO 22000 certified.

The harvesting and extraction methods used by our company, Evoolution, are the following ones:

- i. nets are being laid upon the ground, for collecting the olive fruit as clean and as efficient as possible,
- ii. scallops are used (mechanically animated by electricity or compressed air),
- iii. vibrator machines are used which shake gently the olive branches full of olive fruits allowing them to fall on the nets
- iv. specialized harvesting machines are used especially when intense planting is being observed on the olive orchard.
- v. The collected olives are transferred to the oil press factory without any delay. Once olives are collected, because of their exposure to air and light, they quickly begin to deteriorate in quality due to a process known as oxidation.

- vi. After they arrive to the factory, any leaves and small branches that were accidentally collected because of the mechanical means are meticulously removed. Then the olives are washed and immediately cold-pressed.
- vii. When the olives arrive at the press, they are processed in small batches for better quality control. Each batch produced is recorded with its own Lot number and samples are tested in our on-site laboratory.
- viii. Olives are sensitive to heat and many older-technology presses are unable to prevent temperatures rising during all production stages. This affects not only the aroma and taste, but also the beneficial polyphenol content of olive oil. Any modern professional method should guarantee that its olives are cold-extracted at a steady temperature of below 27°C throughout.
- ix. The olive press process has to be a two-phase one as it is called; resulting in producing a fresh olive fruit juice, the olive oil, that has never come into contact with water. This is important, since the vitamins and natural antioxidants of olive oil, known as polyphenols, are water-soluble.
- x. Once extracted, the olive oil is stored in airtight stainless steel drums, where it remains under ideal climate-controlled and dark conditions, until it is needed for bottling.
- xi. Our state-of-the-art olive press at Agia Eleni Estate in Trizinia is environmentally-friendly and has been constructed in full accordance with international standards and certifications. It may come as a surprise to know that there are numerous different types of olive presses available, both traditional and modern. Each of them might exert significant or minor effects on the quality of the produced olive oil.
- xii. Since our olive press was completed in early 2011, our experts were able to take full note of the latest advances in olive production and select the most efficient installations.
- xiii. Since it is vital to collect olives at just the right time and process them immediately to avoid oxidation, at Evoolution, we combine technology with methodology and guarantee consistently high quality results.

We have our own truck (with a stainless steel container) for carrying our Extra Virgin Olive Oil, suitable for foods & ISO certified.

Outside the factory there is a special facility which distributes the extra virgin olive oil from the truck to the deposits inside the factory. For every –stainless steel- tank there is a specific tube for carrying the extra virgin olive oil. After that, the quantity received for each tank, the supplier of the extra virgin olive oil, the ingredients of it and the date that this happened are noted down and officially recorded.

Our extra virgin olive oil is stored with complete lack of oxygen inside the tank, by filling the void with nitrogen instead, for avoiding the time decay and oxidation of the olive oil.

When one order has to be fulfilled, we prepare the needed olive oil quantity by taking it at a tank that it is called “preparation tank”. The olive oil has to reach and stay steady at a temperature of 21 before its bottling.

The “preparation tanks” have double walls in which water is being circulated. Through this process, the necessary steady temperature of 21 °C is achieved.

That stage of preparation is of great importance, due to the chemical synthesis of olive oil. If the olive oil is cooler or hotter than 21 degrees, it cannot be filtered properly while it creates problems to the procedure.

Once the critical value of 21 °C is achieved, the olive oil is transferred through a paper filter to the bottling machine. The use of a paper filter is necessary since it withholds the Olive oil’s moisture and remnants from the olive fruit’s core which deteriorate its quality and minimize its shelf life duration.

The paper filter might process 2 tons of extra virgin olive oil per hour. However, if the extra virgin olive oil has been very recently extracted, then diatomaceous earth filter is totally necessary before bottling. This filter incorporates a stainless steel mechanism which contains 7 layers that comprise of sand. When the Olive oil passes all these layers, all its unwanted and quality compromising substances are being efficiently omitted.

After these filters, 2 production lines exist. The former one is dedicated to tin packages and concerns the codes of 5 liter, 750 ml, 500 ml, 250 ml while the latter one is specialized to the glass packages of 750 ml, 500 ml, 250 ml.

The production line for the glass packages has the following steps:

- i. the bottles are filled with extra virgin olive oil,
- ii. the caps are placed,
- iii. the label is attached to the bottle
- iv. the date and other information are added to the bottle for traceability purposes.

Our factory has 120.000 tons of olive oil capacity and production capability of bottling 4 tons of olive oil every 8 hours.

*Our Evoolution Success Cycle is your guarantee that each bottle leaving our premises contains richly aromatic, just-pressed Greek olive oil with the highest possible nutritional values.*