

Growing and Processing



Extra Virgin: from the tree to the table

A large part of the population in Mediterranean countries is familiar with the term or concept "virgin olive oil" and closely relates it to their diet, but unfortunately, due to a lack of necessary information, most do not ascertain the real meaning of all that is represented by these words. They are not actually aware of things like what products are used, how they are produced, what differences exist between them, what features should be assessed, how and where to use the products, and how important they can be in their diet, and, as an immediate consequence, their health.

The causes behind this situation are complex, involving multiple factors, of which we should highlight the lack of importance of nutrition in education, the lack interest in maintaining the food culture of these countries, and the minimum information offered by sector producers to consumers.

It seems logical to begin by pointing out that olive oil is virgin olive oil juice, properly separated from the other components of this fruit. Therefore, it is necessary emphasize its character, fundamentally, as a natural juice, as its own Arabic root "az-zeit " states, translating as olive juice.

As in all natural juices, the processing or extraction system can only use mechanical or physical means to extract and retain the characteristics of the constituents the juice, in a similar manner as is done with fruits.

This peculiarity in elaboration is what gives olive juice its character as natural or virgin. Therefore, all the oil obtained from olives, at any stage, by these means, is call virgin.

However, when you use olives with optimal ripening stages, freshly picked, of good quality, without defects or alterations, and the adequate systems a appropriate processing conditions are employed, then olive oil possesses exceptional characteristics of appearance, fragrance and flavor, making it unique among vegetable oils. It can be consumed directly, raw, retaining virtually full vitamin and antioxidant content, essential fatty acids, and many other natural products of dietary substance. Or, thanks to these high quality properties, when used with other foods it will significantly improve the resulting ensemble regarding aromas, flavor, appearance, swallowing, and nutrition.

Unfortunately, all of the virgin olive oil that is produced does not meet the above-mentioned conditions and characteristics, so there are oils with a certain degree deterioration, significantly affecting the quality, under the criteria of composition and organoleptic and nutritional characteristics.

Experience shows that the deterioration and lack of quality in oil typically occurs as a result of defective fruit handling and the inadequate use of processing systems, because, while it is true that the different existing varieties of olives will produce oils of different characteristics under optimum conditions, none of them will produce genetically defective oil. Only fruits that have been attacked by pests and diseases, that have suffered adverse weather conditions, or have fallen to the ground before harvesting, produce inevitably altered oil. The remaining production of defective virgin olive oil is the result of untimely collection, of prolonged a improper storage of fruits, of defective processing conditions, and incorrect classification and storage of the oil. Understandably, the defective or damaged virgin o called "lampante" or refinable, are not directly suitable for consumption, mainly for their unpleasant organoleptic characteristics and the altering of certain components.

In order to use these oils as food, it is necessary to eliminate the detected defects, through refining, which should more correctly be named "rectification". Oils process in this way are usually odorless and tasteless and, to improve their organoleptic quality, they are mixed with certain amounts of virgin oil, creating a new ensemble, call olive oil. The process of oil formation or, more correctly, lipid synthesis, is effected by a sequence of biochemical processes that usually begins during development the olives, approximately in the hardening period of the endocarp. In a first stage, the saturated fat chain is formed, which in successive steps is elongated and desaturat in order to provide the full range of fatty acids, saturated and unsaturated, necessary in the functioning of living organisms.

This oil formation process usually reaches its maximum when the olives are in a state of maturation called "envero", a moment when most of the fruits present a changing color (yellow-green- violet-lightly blackish).

OPTIMAL HARVEST TIME

The most appropriate way to determine when the olives are at their peak of ripeness is by analytical observation of the total oil content with reference to dry matter, the degree of extractability, and the quality, about a month before the start of the harvest.

Once we know the evolution and the time of maximum quality and quantity, we proceed to perform the collection, without ever forgetting that quality fruits are collected avoiding, as far as possible, damage to plant integrity or mixing with other, lower quality fruit.

The collection process is one of the most expensive activities in olive growing and also a point where you can start to deteriorate the quality of the oil with the use of inadequate criteria.

At present, in Spain, the most widely used harvest methods are vareo (or handpole-beating) or the mechanized vibration of branches and trunks, the latter being adapted at a rapid pace, especially in large and new plantations.



Essentially, the collection systems for olives coming down from the trees as a result of the aforementioned equipment are the main cause in the incorporation of impurities such as leaves, branches, earth and stones, which must be removed to provide adequate elaboration.

During harvest, the olives are separated according to their variety and quality and are transported to the mill either in suitable containers to prevent spoilage, or in bulk, on trailers.



THE OIL MILL OR FACTORY

The mill is the factory that performs the set of processes that constitute the development of virgin olive oil, and it has four basic areas: In the first, called the reception area, commonly known as "patio", is where the entry tasks are performed: identification and classification of the fruit depending on the characteristics of the olives, and the removal of impurities with cleaning systems using vibration and air to eliminate the leaves, stems and soil that come with the olives. Heavier impurities such as stones, metals, etc., are separated in a washing machine by means of a stream of water in closed circuit.

From this point there is a weight control of the lots, and a representative sample is taken for lab testing, in order to control and assess the oil content and quality.

The lots of olives that share similar characteristics are stored in large surge bins to wait before entering the manufacturing area.

The second area is called the elaboration, manufacturing or machinery unit. It holds the elaboration system of the facility. As stated above, to maintain the characteristics of a fruit juice, only mechanical or physical means can be used and, so far, the only oil methods known to the oil sector for solid-liquid separation are the effects of pressure, supplied by the hydraulic press, and the effect of centrifugation, provided by a horizontal centrifuge decanter, commonly known in Spanish as a decanter.

The elaboration method, either by pressure or by centrifugation, consists of a series of processes that begin with preparation of the paste or batter.

Most of the oil in the olive is found in the vacuoles of the mesocarp parenchyma cells. To bring this oil out it is necessary to break the cell structure of the olive. For this purpose, mills use stone or metal grinders that grind the fruit entirely. In present day, although it is still uncommon, there are facilities that perform deboning of the olive to obtain olive oil with milder organoleptic characteristics, since there is an absence of interactions with certain components of the seed of the bone during processing.

The ground paste holds a given degree of oil droplets that are dispersed and emulsified and must be collected by means of coalescence, forming larger volume droplets and, if possible, a continuous oil phase overlying the paste. This initial separation effect is performed in a process called thermo-mixing, whose mission is to provide a slow kneading of the paste. This operation is carried out in vertical or horizontal, cylindrical or semi-cylindrical containers, holding a bladed shaft in the interior and surrounded by a heating chamber on the exterior.

The paste, shifted in the interior of the mixers by the effect of the slow movement of the blades (18-20 rpm), together with mild heating (25-30 ° C) and the time of permanence (60-90 min.), changes its rheology, transforms its aspect in proportion to the degree of separation of the oil, and facilitates its extraction.

Next, the paste is subjected to solid-liquid separation, which is the process that most notably sets the difference between the press system and centrifugation. Reproduced below is the flow chart of the different processing systems. Next, the paste is subjected to solid-liquid separation, which is the process that most notably sets the difference between the press system and centrifugation. Reproduced below is the flow chart of the different processing systems.

There are currently approximately 1,750 mills in Spain, of which about 0.5% use a press system, and the rest uses centrifugation. The most notable differences in the latter system are that the processing is performed continuously, has more processing capacity, solid-liquid separation is performed in a short period of time with better performance, and it is generally easier and cheaper to obtain quality oil.

The centrifuge system, first used in Spain in the early 70's, is called three-phase or three-output because it

performs three independent separations: oil, pomace, and alpechín, or vegetable water. Pomace is the solid phase which occurs in the solid-liquid separation and is formed by fractions of the endocarp, exocarp and mesocarp of the olive and certain percentages of oil and vegetable water, due to the impossibility of completely removing the liquid phase using mechanical methods.

Pomace, due to its high production and to the residual oil it contains, is considered as a byproduct of particular industrial interest, both for its oil content and the energy content in its biomass.

Another component, alpechín, is the aqueous phase of the solid-liquid separation. It consists mainly of much of the vegetable water in olives, plus the fluidization water used in the decanter. Because of the organic components of the vegetable water, it has a high organic load that makes it a liquid contaminant, so it is not allowed to discharge it into public waterways.

The fact that the system of three-phase centrifugation produces about 1.3 liters of vegetable water per kilogram of olives caused decanter technology to be modified in the early 90's, to eliminate the requirement for the addition of virtually any fluidization water and, what is more, to eliminate the output for the aqueous phase. Therefore, this decanter has only two outputs, one for oil and one for the solids, which includes the vegetable water. It is called a two-phase or two-output decanter.



Currently, in Spain, about 98% of the mills use two-phase centrifugation, and 2% use three-phase.

The oil produced in the three or two-phase decanters is usually accompanied by a small percentage of solid and liquid impurities, so it has to be subjected to a cleaning or purification process. This operation is normally carried out by means of liquid-liquid centrifuge, using the vertical centrifugal separator with conical plates and a rotation speed of approximately 6,500 rpm.



The oil from the decanter is introduced in this machine with a water flow rate of approximately 35% and a temperature of 25-35 ° C, serving as purifying element. The result is a cleaner oil, substantially free from impurities, and a washing water flow containing almost all of these impurities. This resulting liquid therefore has a determined polluting power, depending on the type of decanter (three or two outputs) and the degree of separation efficiency.



In recent years, by minimizing the added water consumption, heating energy, volume and pollution of oil washing, the cost and maintenance of the machine, and power consumption, some manufacturers have seen fit to use only the decanter for the purification of the oil. For this operation, conical bottom, high capacity metal decanters were designed, where oil is deposited so that a relation of time and gravity will remove the highest percentage of impurities.



Unfortunately, this system makes the separation of impurities much slower, so the impurities stay in contact with the oil longer, which ultimately deteriorates their good organoleptic characteristics. Therefore, it is reasonable to question whatever the degree of economic savings and reduction of water pollutants, since, in order to achieve a lower interference of the oil with impurities, it is necessary to maintain a good interior cleaning of the decanters, and all at the expense in the quality of the oil.

To partially offset the effects that negatively affect the quality of the oil and certain impacts affecting the environment, olive oil makers have begun using a new centrifuge system without added water, which eliminates or drastically reduces pollutant wash water, eliminates impurities almost instantly, preserves the antioxidant compounds, and maintains the sensory characteristics of the oil.



Given the situation of these purification procedures, which is necessarily and primarily related to the quality of the oil, the mills can decide what should be installed according to the oil they wish to produce.

The oil obtained from the output of any of the above processes has a cloudy aspect, as do all freshly obtained fruit juices, often due to its composition and the small percentage of residual moisture. This authentic olive oil juice is called newly produced virgin olive oil.

In order for the oil being produced continuously to constitute a defined and homogeneous lot, to eliminate the air entrapped in centrifugation, and to decant the small proportion of impurities which it still possesses, it then passes through what are called pre-cellar deposits, where it remains for a period of 24-48 hours with programmed purges to remove decanted impurities.



From this period of time, expert personnel must conduct a sampling to assess the quality and make the initial classification of the lot. This assessment is often carried on the basis of acidity and organoleptic characteristics under the criteria of production.

Once the quality of the lot is assessed, the oil is transferred to the appropriate deposit, which has previously been differentiated in order to separate different qualities within the cellar, where the oil will remain until its commercialization.

A GOOD CONSERVATION IN THE CELLAR

The mill's cellar is the third structural zone. It is usually independent of the areas described earlier and meets a number of requirements, such as thermal insulation, temperature control, artificial lighting, non-absorbent walls and floors, with easy hygiene, etc.. It holds, in an orderly disposition, a series of deposits depending on the level of production. The most widespread type of deposit is usually cylindrical and constructed with inert materials (epoxy resin coated steel, polyester and fiberglass or stainless steel), while the most representative unit capacity in mills of medium and high production is 50 tons.

Normally, the group of deposits held in the cellar is divided into groups according to different categories of the oil obtained, in order to thoroughly carry out the classification of production. The main factors that cause spoilage and deterioration of the oil are oxygen from air, light, heat, organic matter waste from processing and time, all of which are minimized as far as possible.

The current trend in mills that produce high quality oils is to have tanks with nitrogen inerting in order to prevent contact with atmospheric oxygen during storage.

As can be deduced from all that has been stated, olives allow us to obtain different olive oil types in accordance with the quality of the product of origin. The designation of oils is regulated by a number of analytical determinations contained in EU Regulations which are constantly updated.

Therefore, quality virgin olive oil depends on the goodness of the fruits, on the good practices of the elaboration processes, on a correct classification of the oil and an adequate storage and preservation.

A MINORITY CONSUMES EXTRA VIRGIN OLIVE OIL

According to data from the Spanish Ministry of Agriculture, Food and Environment (MAGRAMA), the average oil consumption in Spain in the period between June 2012 and May 2013 was 12.8 liters per person per year, of which olive oil was 5.25 liters (41.02%), virgin olive oil, 3.69 liters (28.83%), sunflower oil, 3.45 liters (26.95%) and olive pomace oil, 0.41 liters (3.20%).

It is certainly surprising that in Spain, the world's largest producer, the "olive oil" category is the most consumed. Such a circumstance highlights the lack of knowledge regarding the sensory characteristics of virgin oils and also its enormous potential for use in the national cuisine.

The sector producing virgin olive oil sold approximately 92% of the bulk production, eminently to bottling companies and refineries, and the rest goes to the bottled oil.

Presently, there is an increasing number of mills or mill associations that market their oil in bottled formats. In these cases, the mill is equipped with a fourth space, the bottling area, dedicated to this function.

Bottled oil is usually filtered for the market. It was already mentioned that newly produced virgin oil is cloudy and has a suspension of a small percentage of impurities that reduce their concentration during decanting and storage, but can hardly be entirely removed, especially in early season oils, which are usually the highest quality. Due to this, when bottled oil is unfiltered and consumption does not take place within a reasonable time period, it may show small dark-colored decantations that can cause a bad impression, especially if the consumer does not know of these peculiarities. To avoid this situation, virgin oil undergoes a filtration process that is usually

carried out by adding filtering earth, usually from natural materials such as diatomaceous earth and cellulose, which have a high absorption capacity due to their high surface area and porosity, whose mission is to retain solid particles and remove excess moisture.

The combination of oil and filtering earth is passed through a filter with plates or paper cartridge that will retain the solids and make the oil clean and bright.

The filtered oil then goes on to a storage tank, which then can be the mother that feeds the bottling plant.

In practice, most of the bottling companies run continuously and include systems for variable dosage volume, according to the container in use. High-capacity bottlers feature automatic positioning of containers, dispensing, labeling, capping, boxing, sealing and palletizing.

The types and volumes of containers are usually used depending on the category of oil to be bottled, demanding containers that will not change shape for the higher classes, impermeable to oil and gas, resistant, offering a good appearance, and endowing the content with class. Normally, virgin and extra virgin olive oils employ glass and tin. For extra virgin, the usual volumes are 0.5 and 0.75 l. and for virgin, volumes exceeding one liter; containers such as tetrabrik are still scarce for this category of oils.

The remaining categories of oil are usually bottled in PET, typically in volume of 1 l. This packaging offers good performance and a good value as a container for oils.

The Spanish oil consumer likes a transparent container offering an adequate view of the color and transparency of the oil. There tends to be little taste for the green or yellowish green oils coming out early in the campaign - which are typically the highest-quality. This circumstance is the product of a general lack of information and a familiarity with other types of oil, and likewise, the average consumer does not adequately assess the organoleptic characteristics of quality oils which, in most cases, will be unfamiliar.

As inhabitants of the world's largest producing country of olive oil, and given the ease with which this range of high quality products is readily available, it makes sense to develop and transmit the culture of olive oil in general, and to view this as a problem and responsibility of all of us, as it will help to maintain production and consumption of this delicious food product as a social, nutritional and healthy value to our society.

José Alba Mendoza.-Doctor in Chemistry. Olive Oil Production Expert

False Myths

Traditions, uses... and some false myths about olive oil

The uses, not only for olive oil, but also of the olive fruit, and even olive wood, either as medicine, cosmetics, hygiene, or decoration, are innumerable.

Virgin olive oil has long played a vital role in the care of the body, either to cure its disease, or to embellish it, from the time of the Phoenicians, through civilizations as important as the Persian, Egyptian, Greek, and Roman, to the Middle Ages, and even in modern day, when traditions are preserved in rural areas throughout the Mediterranean basin. The versatility of olive oil has made it favorable, through the ages, for direct consumption and in the form of ointments or poultices, alone or mixed with other natural products. It has also been given the most common of uses, as its wood is used for the manufacture of furniture of any kind, and it is well known that olive oil soap has been manufactured in many homes until recent times



Surely, its nutritional, medicinal and therapeutic properties are what made it an essential part of the worship of the gods in the classical civilizations and even in Christianity. For these reasons, both olive oil and the olive branch have become symbols of immortality, peace, reconciliation, wisdom, virginity, intelligence, eternity, fertility, and victory, among others.

Today, the great versatility of extra virgin olive oil has been recovered in a wide range of products, making it possible to find all kinds of marketed creams, sunscreens, shampoos, gels and body soaps made with olive oil as a base. It is also available in the form of convenient capsules and chewing gum. And its good qualities are even being taken advantage of in the making cookies, potato chips, ice cream, butter, margarine, and olive sorbets or pâtés. The importance of olive oil also extends to popular culture, as an essential part of festivals, traditions, stories and poetry.

From 0.4° to cold pressed: some misconceptions that should be clarified

But there is another part, not so positive, within consumer understanding, which refers to some of the myths that surround olive juice in present day. One of the most common errors today, when are talking about olive oil, is the predominant idea existing in the mind of the consumer that 0.4° olive oil is ideal for cooking, while 1° is better for raw consumption. This assessment is not entirely correct. The best known and more widely used olive oil is, indeed, refined olive oil, containing a small percentage of virgin olive oil.



The brands traditionally selling these oils have very effectively positioned their use, either for 0.4° or 1°. But it is important to note that olive oil, virgin olive oil, and extra virgin olive oil are all ideal for cooking, each contributing more or less mildness, or better or worse flavor to dishes, depending to their characteristics and taste.

However, we should also keep in mind that there is great a difference between the virgin and refined oils. Virgin oils are the juice of the olive fruit, obtained by methods that do not alter the oil composition, while what is called *olive oil* (refined olive oil with an added part of virgin) has undergone a refining process, which involves factors such neutralization, bleaching or deodorization. Moreover, extra virgin olive oil also offers a myriad of hues that serve to enrich foods, both raw and cooked.

It is important to clarify that acidity is not the only characteristic that determines the quality of an oil, since other chemical and organoleptic factors also come into play when classifying oil. Low acidity is highly valued in an oil, but as long as the officially allowed 0.8% is not surpassed, there is subjectivity in this sense, in the consumer's palate.

In cooking, virgin olive oil goes further than other vegetable oils because it resists more frying without losing its beneficial health qualities, so ultimately, it is less expensive.

¿Pure olive oil?

Another myth is the traditional use of the term "pure olive oil" to refer to olive oil, because of the connotations that this word has. Conventionally, and for some years, this name responded to what is now defined as *olive oil*. Officially, it was decided to discard this expression, thereby eliminating the mistake of linking the adjective "pure" with an oil that was actually a blend of refined and virgin, fit for consumption.



Finally, let us do away with doubts regarding the issue of "cold pressed", so reassuring a term for some consumers to read the labels. Before the appearance of the continuous elaboration systems currently used in the majority of mills, the only extraction system was the olive oil press. The first juice extracted directly from olives in a "cold" atmosphere (first press), was of higher quality than those obtained in subsequent pressings. But it was not necessarily extra virgin quality, because achieving this feature depends not only on the extraction, but on many other factors, such as the health status of the olive, the practices in cultivation, the harvesting, climate, the washing of the fruit, preservation of olives, etc..

However, given the justified lack of consumer knowledge, confusing the term "cold pressed" with "extra virgin", many manufacturers are forced to continue to include this phrase on their labels, to the detriment of the designation which should actually allude to the oil of the highest quality.

In all Spanish households, olive oil has always presided dishes in the kitchen and at the table, but it is consumed in a traditional, everyday manner, without knowing the full extent of its value and properties. The olive sector of our country itself has also failed to pass its knowledge on properly. Fortunately, in recent years, everything is changing in this regard and we do hope that gradually we will be able to incur a basic wisdom of this product so dear.

M^a Dolores Peñafiel Fernández Founder of Mercacei



¿Mild or Intense?

These terms are often seen by the industry as informal and malicious designations.

As noted above, the reality is that there are three - officially and regulated - commercial grades of olive oils recognized by the European Union (EU) and the International Olive Council (IOC): Olive Oil, Virgin Olive Oil, and Extra Virgin Olive Oil. As it is, however, in recent times, various commercial brands have begun to label their oils using terms such as "mild" and "intense" within the Olive Oil category (refined with some virgin). This new name is not contained in any legislation and tends to create confusion for the consumer, since it somehow tries to cover the entire range on demand, based primarily on refined olive oil.

The varying organoleptic intensity of oils is strongly associated with virgin and extra virgin oils because it is these oil types that contain the trace elements that are eliminated in the subsequent refining chemical process.

If we want a strong oil in scent and flavor, then we will pick an extra virgin from organoleptically more potent varieties, such as Picual or Hojiblanca, among others. And if what we want is something milder, we should turn to an Arbequina or Empeltre extra virgin, for example.

All olive oils have the same healthy qualities

This is not so. Virgin olive oils, olive juice, are comprised approximately of 97-98% triglycerides (fatty acids) and 2-3% minor elements or unsaponifiable fraction. Well, this last percentage - only present in virgin and extra virgin -, despite being small in volume, consists of over 250 compounds, among which are antioxidants, vitamins, chlorophylls, carotenoids, glycosides, etc.. These compounds are the ones responsible for giving oils their color, scent, and flavor. In the refining process, these minor elements are eliminated.



With this background we can distinguish two types of healthy qualities in olive oils:

Those that protect against coronary disease (blood pressure, heart, diabetes, cholesterol), thanks to the high percentage of oleic acid, monounsaturated in olive oil. These benefits are attributable to the three commercial categories, whether virgin or refined.

The remaining healthy properties attributed to olive juice in recent times, which are many. Powerful cellular antioxidant effect against various types of cancers (breast, colon, etc..), effects against cognitive diseases (Alzheimer's disease, senile dementia, etc..), positive effects on erection, anti-aging, vasodilatory effects, etc.. This set of health benefits is in fact due to the minor elements mentioned earlier, and therefore, only attributable to virgin and extra virgin olive oils.

In other words, olive oil (refined) is good, but virgin oils are exceptional, and they are the only ones that make it possible to enjoy all of the health benefits that are discovered day by day by the international scientific community.



Bitterness and pungency are defects in an olive oil

Despite being completely false, this is a widespread belief among the Spanish people.

The bitterness in olive oils comes from *oleuropein*, a powerful antioxidant found in healthy and well developed olives. The pungency, which is actually is a tactile sensation, comes from *oleocanthal*, an ester with anti-inflammatory properties.

Bitterness and pungency, provided they are moderate and balanced, show that oils have a higher proportion of minor elements and the olives were milled at their best. They can also usually be associated with highly positive organoleptic aromas and flavors, for the culinary uses of the oil.

Some defects in oils related with... those oils “we’ve known forever”

There is widespread confusion, especially in oil-producing areas, that certain defects are actually positive qualities because consumers are reminded of the oils "they've known forever". This applies especially to the defect known as “*atrojado*”, or fusty.

Fustiness comes from an anaerobic fermentation, a decay that occurs when olives, once collected, await grinding for more than 24 hours. Therefore, the fusty attribute in an oil is undoubtedly a defect and never a positive quality. In fact, if it appears in the official tasting, the oil cannot be qualified as extra virgin, and if its intensity is large (greater than 3.5 over 10), then the oil will be classified as *lampante* and should be refined.

It may remind us of romantic old mills, or even recall childhood memories, because most oils were previously fusty ... but this is, in fact, a defect.



Olive oil tasting is subjective because it is performed by people

False. The official tasting of olive oil is a formal science, perfectly standardized, and it is performed by professionals who are trained and officially certified. When the same oil is officially tasted by two expert panels, the differences in the final organoleptic assessment are non-existent or very small.

Therefore, tasting must endure as a required parameter for the official classification of olive oil, because this is the only way to offer the world a unique, fruity product, devoid of defects. The opposite scenario is to certify the death of the healthiest of known foods, extra virgin olive oil.

José María Penco Valenzuela Project Director AEMO

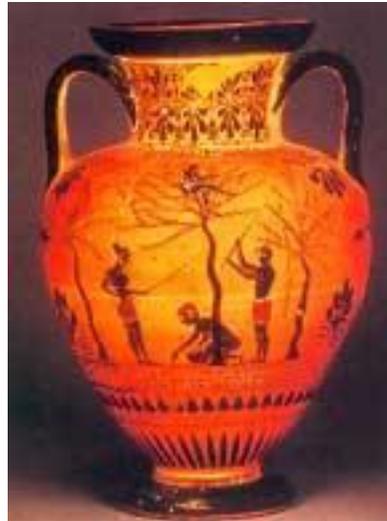
History and Culture

History & Culture

THE OLIVE TREE

Legend has it that, once Adam knew he was going to die, he asked the Lord for forgiveness, as originally promised. Then, an angel placed three seeds in his mouth; after his burial, the place where his remains lay resting took life in the form of a cedar, a cypress and an olive tree.

According to existing studies, the ancestor of the olive tree is the acebuche, or wild olive tree, (*Olea Europea Sylvestris*), from which the olive tree (*Olea Europea Sativa*) originated.



As for the origin of both, it is not particularly clear, but the oldest remains belonging to a wild olive tree were found in Israel, in the Negev Desert, and its age could be traced back to 43,000 years ago. Concerning the olive tree, though there is a certain ambiguity in regard to its beginnings, it appears to have emerged with man's transformation of the wild olive tree, which improved the species as a result of competitiveness between trees.

This would all occur in the Neolithic period, and the evolution and subsequent distribution occurred from east to west, always first in nearby areas, and then towards the western Mediterranean, extending to the rest of the world from East to West as a result of the wider dissemination of culture, commerce, conquest, religion and legend. After initially being located in Greece and Italy, cultivation subsequently scattered throughout the Mediterranean (Israel, Lebanon, Egypt, Libya, Tunisia,

Algeria, Morocco, Turkey, Spain, Portugal, and France) by way of civilizations such as the Phoenicians, Romans, Carthaginians, and Arabics, settling in the area of Al-Andalus, which would lead our country to becoming the world's largest producer of both olives and olive oil..



The discovery of America led to the expansion of this tree towards the new continent, beginning cultivation in Arauco, a small town of La Rioja in Argentina. On one of the ships leaving for the New World from Seville, sailed an olive tree, which served to spread this cultivation, first in Argentina, and gradually extending to other countries like Peru, Chile, Mexico, United States, Brazil, and Uruguay. The original tree was declared a general interest site in Argentina, and continues to be productive today after more than 500 years, reaching a crown diameter of 10 x 12 meters



The olive tree is surely one of the most iconic trees in history, as well as the oldest, alongside the vine, the fig tree, the palm and the date. A symbol of peace, victory, power, intelligence, fertility, immortality, wisdom, and prosperity, among others, it is the most cultivated fruit tree in the world.

It is part of the Holy Scriptures (both Christian-The Bible- and Muslim -The Koran) and is closely related to literature, with cites appearing in essential works such as The Divine Comedy, The Iliad, The Odyssey, The Song of Petrarch, etc..

Today, over 11 million hectares are populated by about 1,400 million olive trees in both the Southern Hemisphere and in the North, giving rise to two completely different and distinct campaigns, one from October to March and another from March to June. Each year, between 35 and 45 million olive trees are planted in the world, which indicates an annual increase of between 150,000 and 300,000 ha.

THE OIL

If we look between the years 6,000 and 4,000 a. C., man - who back then was nomadic by nature – comes into contact with olive oil through consumption of the fruit, well preserved in saltwater, by drying or direct consumption, as the ripening season is between October and March, depending on both the geographical location and the variety. This time interval is characterized by little or no maturation in other types of fruit. Once ripe, olives lose the acidity characterizing the unripe fruit, making them edible in times of scarcity and lack of supplies.

Later, possibly helped by sun drying systems or through fire, begins the extraction of water from the fruit, obtaining a higher quality food product, and thus humans incorporate this vegetable fat to their diet as a key element.

In one of the moments when the olive is drying by fire, and in a merely accidental way, there is a rupture in the skin of some fruits, generating a flame fueled by the olive's contribution in oil: this precise moment entails the discovery of olive oil by man, not as food, but as fuel, and at the same time, as protective fat, observing the oil's dermal benefits through manipulation and contact of hands with the oil.



Once oil was discovered for various uses, different from food, due to its extreme acidity and very poor quality, it is destined for mass generalized use as a liniment and cream, as well as fuel for lanterns, lamps, and torches, thereby initiating mass olive harvest and subsequent oil extraction for storage.



The initial extraction system consisted in crushing olives through oppression exerted by a smaller stone on another, larger one, thereby creating a pulp of paste, from which the oil is separated by sieving through a bag or canvas basket or loom. This eventually led to an olive oil of higher organoleptic quality and therefore a directly consumable one.

From then on, and gradually, olive oil goes from being used mainly as fuel, to a second place as protector or liniment, and thirdly as food. Subsequently, new uses emerged: as a drug, lotion, aphrodisiac, etc..

Currently there is olive oil production in 45 countries, of the 55 where it is possible by geographical location. It is a prolific industry whose turnover ranges between 8,500 and 11,000 million Euros, with 30 million people directly making a living from it, integrated within seven million families.

The overall average annual production of vegetable oils and animal fats reaches 140 million tons, of which olive oil is 2.07% of this amount, while the annual per capita consumption of olive oil is 420 grams. Juan Vilar Hernández Chairman, CEO and President of GEA Westfalia Separator Ibérica. Permanent Professor on leave from the University of Jaén

Tasting

Describing aromas and flavors: The Tasting of Extra Virgin Olive Oils



Although for many consumers the tasting of virgin olive oils may be an original and innovative activity, both olive oil tasting and the tasters have existed for a very long time. In fact, it all began practically as far back as when this extraordinary product became the object of trade between the ancient Mediterranean peoples, several millennia ago.

The ability to distinguish and describe the different qualities, a fresh and fragrant oil from a less attractive one, tasteless or even defective, has held great economic significance since antiquity, because the best oils have always obtained a higher price in the markets. Virgin olive oil now has an official method for evaluation and

organoleptic analysis. This method was developed by the International Olive Council (IOC) and is an integral part of the rules governing the classification of virgin oils in the European Union.

Through a panel of professional tasters, there is a scientific and statistic assessment of the sensory attributes of virgin oils. Official panel results determine, together with other analytical parameters, the classification as extra virgin oil, lampante, or virgin, depending on the absence or presence of defects and their intensity.

The priority, from the regulatory point of view, is the identification of negative attributes or defects, since only the total absence of such attributes permits an oil to be classified as extra virgin, which is considered the highest of quality standards.



For consumers, oil tasting can be much more than a pleasant amusement; acquiring the basic knowledge to assess, albeit subjectively, the EVOOs we consume, allows us to choose more freely among the great diversity of styles, origins, qualities, and prices that are offered on the market today.

In this organoleptic analysis section, we will adhere to the criteria and vocabulary of the IOC. Consequently, we will deliberately avoid the description of color in the oils. The color of a quality extra virgin oil can vary from pale yellow to deep green, but this color, as an element in itself, tells us nothing about the characteristics of its aroma and flavor.

In an EVOO, the key attribute is its fruitiness, defined by the IOC as the set of olfactory sensations characteristic of oils from fresh and healthy fruits, perceived directly and/or through the back of the nose.

The fruitiness of an oil occasionally evokes the scent of the olives it was made from, but in other cases, depending on various factors such as the variety and degree of ripeness of the fruit, we discover notes that are reminiscent of many other fruits, green or ripe, of vegetables, of grass, leaves, spices, or various plants and herbs.



As to the sensations in the mouth, we can speak of the sweetness of the oils, understood not as a sugary flavor, but as a tactile sense of smoothness, very pleasant in the first third of the tongue. Bitterness, which is perceived in the back of the tongue, as well as a pungent sensation in the throat, are also positive attributes of EVOOs.

All of these attributes are presented in varying intensities and, when they are in proper harmony and proportion, represent the maximum delicacy which is typical of the best extra virgin olive oils.

Santiago BotasExpert

Olive Varieties



Variety is the spice of olives

The quality of virgin olive oils is based on different aspects, some referred to in the rules and regulations, both at national and European Union level, and others used by researchers and experts, which should have a significant influence in the consumer's assessment of the quality of this product.

Thus a virgin olive oil is classified according to the parameters set by what is called the *regulated quality*, or that which is collected in the rules and regulations currently in force, classifying virgin oils based on physicochemical and sensory indexes.

Extra virgin olive oil is considered the best of olive oils. It has physical and chemical indices expressing that it was elaborated in the best conditions, with an acidity of less than 0.8°, and with clean flavors, with no alterations.

It presents sensory characteristics that reproduce the scents and flavors of the fruit of origin, the olive. It is an olive juice, harvested at its optimum ripeness, healthy, and properly processed. As a result of its extraction method, it contains all the elements of nutritional interest.

The composition of the oil is closely related to the variety of olives from which it originates, although other factors such as the agrological environment or cultivation conditions may have a small influence.

The organoleptic quality is very important for the consumer, as this is what can be perceived, and establishes different types of oils. These oil types range from the intense greens - with more or less pronounced attributes of bitterness and pungency and nuances like fig or astringency that bestow a very marked character - to the sweet, almondy, and more herbaceous, much milder oils. Both ends of the spectrum are excellent in quality, yet their use must be differentiated by the consumer.

The variety has a great influence on sensory characteristics, providing oil with its own personality that can be detected by tasters or experienced users. Other factors, especially fruit maturity, among others, influence the intensity of the attributes, but always respecting the personality of the variety.

Another important aspect involving quality is the resistance of extra virgin olive oils to becoming rancid. This could also be a measure, in some way, of the commercial quality of the oil. Such resistance has a strong varietal component, with oils of enormous stability versus others that will be altered in little time. Conservation has a significant influence over this quality, bearing in mind that oil should be stored in a cool place, always sheltered from light. However, under the same storage conditions, some oils can triple their duration compared to others of a different variety.

Currently we find extra virgin oils called *monvarietal* in the market, i.e. coming from a single variety and having its representative characteristics. These are oils that generally possess a marked personality and are liked by consumers.

There is also another important range of extra virgin oils that are compositions or assemblages of different varieties, in various proportions (*coupages*), seeking to integrate the qualities of the different varieties they are made of. These oils have more sensorial complexity and complement the quality characteristics of the different varieties, seeking good compositions in the nutritional aspect. They boast high stabilities and sensory balances, with multiple nuances. Each brand tries to establish its representative type in striving for consumer loyalty.

These varieties can be classified as major varieties (those that dominate in an olive growing region and occupy more than 50% of its surface), secondary varieties (which are the regular plantation base in one or more regions, but fail to cover 50% of their surface), or local varieties (known only locally).

Following is a listing of the main Spanish varieties and some of the most representative varieties from the main olive-growing countries. A description is included, expressing their agronomic characteristics, growing area, state of expansion, composition in nutritional elements, and sensory characteristics. In addition, in order to facilitate the understanding of the parameters that accompany each variety, there is a description of their functions and the units in which they are expressed.

- **Total tocopherol content (Vitamin E):** It is expressed in parts per million (ppm) or mgr. / Kg. The major tocopherol in olive oil is *α-tocopherol*. It is vitamin E, an antioxidant compound that protects the body from cell aging and oxidative processes.
- **Total polyphenols:** Their content is expressed in ppm or mgr. / Kg. caffeic acid. They have strong antioxidant activity. They are responsible for sensory aspects of the oil.
- **Oxidative stability:** An analytical parameter that predicts the time it will take an extra virgin olive oil to become rancid. It is expressed in hours. An hour of stability may amount to approximately a week in appropriate storage conditions.
- **Fatty Acids:** Fatty acids are grouped as follows: a) saturated, when they lack double bonds; b) monounsaturated, with one double bond, mainly oleic, with high nutritional interest, major in olive oil, and c) polyunsaturated, with two or more double bonds, such as linoleic acid, an essential fatty acid that must be included in the diet but in moderate or low quantities. They are expressed in percentages.

Main olive varieties

Verdial or Morisca

The Verdial variety of Badajoz or Morisca. This variety is very resistant to drought, spans the province of Badajoz, in what is the Southwest of Extremadura, occupying 53% of the olive grove of land of Barros and plains of Olivenza. In Portugal occupies the area of Alentejo and Algarve.

The verdial or Morisca is used as olive table as in the olive mill, where they are prized for their high fat content around 22%. They are oils with a medium-high fruity flavor and is somewhat bitter and spicy. Aroma reminiscent of fresh, aromatic, natural olive palate with balanced bitterness and spicy.



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Picual

It is the most important variety in Spain, with a cultivated surface of over 700,000 ha. It is also known as 'Marteña' or 'Lopereña'. It is the predominant variety in the province of Jaen, extending to the border of Cordoba and Granada. Its cultivation is expanding, increasing its presence in other regions and olive-growing countries. It is a vigorous variety, with high production and good adaptation to mechanization. It has a high oil content. It is sensitive to drought and very sensitive to Verticillium. Picual is a fundamental reference for the Sierra de Segura, Sierra Mágina and Sierra de Cazorla Protected Designations of Origin. Its juice, with a strong personality, is fruity, fragrant and has positive attributes of bitterness, pungency and astringency that will become milder with time. As specific qualities there is a prevalence of fig and fresh wood, which provide great personality. Its composition presents a high oleic acid content, more than 75%, low content in linoleic acid (5.8%) and medium in palmitic acid (12.2%). Its vitamin E content is medium-high, 303 ppm. Also, its polyphenol content is high, 475 ppm. Due to its fatty acid composition and content of natural antioxidants, the oil obtained from this variety has a very high resistance to rancidity, over 120 hours.



Cornicabra

It occupies an area of about 300,000 ha., which makes it the second most important variety nationwide. It is the predominant variety in Castilla-La Mancha and a reference of the Protected Designation of Origin Montes de Toledo. It is also known as Cornezuelo de Mora de Toledo. This is a variety with little expansion. It coexists in its growing area with other varieties. Of medium vigor, it is delayed in the entry into production and reaches an average production. The adaptation to machining is not very high, due to the fruit's resistance on the branch. It has a high oil content. A rustic variety that adapts well to poor and limestone soils. Its oil is fruity and fragrant with mild overtones of bitterness and pungency. Slightly astringent and smooth on the palate, with a light almond flavor. It has a high oleic acid content, more than 75%, while it is low in linoleic acid (4.5%), and medium in palmitic (13.2%). Vitamin E content is medium, 250 ppm, and it is high in polyphenols, 593 ppm. It has a high resistance to rancidity, about 110 hours.



Hojiblanca

Also known as Lucentina, it occupies a surface of about 220,000 ha., making it the third in importance within the Spanish olive grove. It is predominant in the provinces of Cordoba and Malaga, extending to the border of Granada and Seville. A variety with some expansion, both in cultivation area and in other olive districts. Prized for its dual purpose, as an oil and a table olive. Very vigorous, it is late in the start of production, with pronounced alternate bearing and high productivity. Suitable for mechanized harvest. Resistant to limestone soils and drought, but very sensitive to "vivillo" ("soapy olive"). Its oil is fruity, with a light touch of apple flavor. Herbaceous green, lightly bitter but sometimes pungent and sweet. Very mild oil on the palate, with almond flavor. Its fatty acid composition has a high content of oleic acid (72.3%), and medium linoleic acid (10.3%) and palmitic (11.2%). High vitamin E content, 419 ppm, and medium in polyphenols, 271 ppm. Its resistance to rancidity can be considered average, at 51.8 hours.



Lechín de Sevilla

This is the fourth variety for its cultivation surface, close to the 190,000 ha. Known by the synonyms Ecijana or Zorzaleña, it is one of the important varieties in Andalusia, predominantly in the province of Seville, and cultivated in the bordering provinces of Cordoba, Cadiz, and Malaga. A variety on the decline, after suffering a serious decrease in its growing surface during the 70's. It is a vigorous variety, late in the start of production, with good productivity and alternate bearing. It shows early maturation and has a medium fat. This is a rustic variety that easily adapts to poor and limestone soils and is tolerant to drought and cold. Its oil has an intense fruitiness where the presence of green, bitter, and pungent attributes stands out for its balance. Lightly astringent and smooth on the palate. Light almond flavor. Its composition has an average content of oleic acid (67.7%), and high linoleic (13.9%) and palmitic (13.1%). Low in vitamin E, 180.2 ppm, and high in polyphenols, 438 ppm. Its resistance to rancidity is average, at about 54.9 hours.



Arbequina

This variety is also known as **Blancal**. It takes its name from its area of origin, **Arbeca**, in the region of **Les Garrigues, Lleida**. It occupies a surface of about **80,000 ha.**, making it the most cultivated variety in **Catalonia**, and among the ten most important, nationally. It is the basis for the Protected Designations of Origin **Siurana**, in **Tarragona**, and **Les Garrigues**, in **Lleida**. A variety that is expanding rapidly, within its own growing area and in other regions and olive counties, both Spanish and abroad. Medium in vigor, it is very early in the start of production, with high productivity and low alternate bearing. Early maturation. Not suitable for mechanization, because of its small size. Resistant to cold and drought and sensitive calcareous soils. High fat content. Its oil is very characteristic for its fluidity and extraordinary fragrance. This oil is very fruity, with overtones of herbaceous green, very little bitterness and pungency, and a sweet taste. Very mild and smooth on the palate, with specific attributes of green almond and the flavor of freshly cut grass. Its composition has a medium-low oleic acid content (63.3%), high palmitic (17%) and linoleic (13.9%). Average vitamin E content, 237 ppm, and low polyphenols, 218 ppm. Its stability can be considered medium-low, at about 41.6 hours.



Empeltre

It occupies an olive surface of about 70,000 ha., making it the largest in Aragon and the Balearic Islands, and extending to Catalonia, to the province of Tarragona, as well as Castellon and Navarre. It has also expanded in Argentina, particularly in the provinces of Mendoza and Cordoba. It is known by the synonyms Aragon, Negral and Verdiel. A variety with little expansion to date, but which, due to its resistance to *Verticillium*, is being considered as an alternative in many olive regions. Vigorous, with upright growth, very productive and with little alternation in bearing. Late in the entry into production and early maturing. Sensitive to frost and "leaf spot". It has a high fat content. Its oil is characterized by its fluidity and fragrance. The juice is very fruity, with hints of apple, and balanced bitterness and pungency. Smooth, sweet and clear mature almond flavor, which gives a very defined personality. It has an average composition of oleic acid (68%) and is high in palmitic (13.8%) and linoleic acid (12.7%). Vitamin E content is high, 363 ppm, as well as polyphenols, 376 ppm. Stability may be considered medium (50.2 hours).



Picudo

This variety, also known by the synonym Carrasqueña, is grown mainly in Andalusia, in the provinces of Cordoba, Granada, Malaga and Jaen, where it is the fourth ranking olive surface with an area of over 60,000 ha. It is one of the fundamental varieties supporting the Baena Protected Designation of Origin. A variety with little expansion even in its own cultivation area. It is vigorous and productive but with alternate bearing. Late in entering production and the ripening stage. Large sized fruit, resistant to detachment, making it difficult to harvest mechanically. It is tolerant to frost and calcareous soils. It has a medium-high fat content, but oil is extracted with difficulty. The oil is characterized by its fluidity, fruity fragrance and intense green. It has a slight taste of green apple, almond and fresh wood. Leaf-green flavors and balanced bitterness and pungency. Medium-low content in oleic acid (62.7%) and high in linoleic (15.6%) and palmitic (15.8%); good content in polyphenols, 419 ppm, and high in vitamin E, 339 ppm. Its stability is low, at about 37.3 hours.



Morrut

Also known by the synonyms Morruda and Regués, it is grown mainly in the regions Montsià-Baix-Ebre, in the province of Tarragona, and the north of Castellon, occupying about 30,000 ha. A variety with little expansion in its cultivation area and no spreading into other olive regions. Vigorous, very unproductive, late in the start of production and the maturation phase. Medium-high fat content. Sensitive to cold and drought. Its oil is fruity, slightly bitter and slightly pungent, with a specific green almond flavor. Its oleic acid content is medium-high (69.9%), medium in palmitic (11.8%) and high in linoleic (12.6%). Vitamin E content is medium, 242 ppm, as well as polyphenols, 304 ppm. Stability can also be considered average, at 61.1 hours.



Sevilenca

This variety, grown mainly in the south of the province of Tarragona and in Castellon, is also known by the synonym Serrana de Espada. This is a variety in regression, even in its own cultivation area, which occupies about 15,000 ha. Vigorous variety, very productive and regular in production. Early maturing and early in the start of production. It is rather rustic, and sensitive to drought. It has a good fat content. Its oil is fruity, slightly bitter and a bit more pungent, somewhat astringent but sweet and mild, and has connotations of almond, wood, and banana. Its fatty acid composition has a medium oleic acid content (66.4%) and high in both palmitic (13.7%) and linoleic acid (14.5%). Medium-high content in vitamin E, 301 ppm, and low in polyphenols, 234 ppm. Its resistance to rancidity is low, at 36.7 hours.



Blanqueta

This variety gets its name from its peculiar maturation, where the fruit skin adopts a pearly white color (blanco, in Spanish). It is also known by the synonyms Blanquilla and Blanc Roig. It occupies about 10,000 ha. and its location is centered in the Valencia region, mainly in the province of Alicante. A variety with virtually no expansion, except, to a limited extent, in its own cultivation area. Medium vigor, it is early in the start of production, presents little alternation in bearing, and average productivity. Pendulum in figure, with small fruit, making mechanized harvesting difficult. It has a medium oil yield. Its oil is fruity, herbaceous green, slightly bitter and pungent, with overtones of fig, almond, and wood. Very fluid in the mouth. Its acidic composition has a low oleic acid, about 55%, yet very high palmitic (20%) and linoleic (22.3%). Has an average vitamin E content, 299 ppm, and polyphenols, 302 ppm, with fairly low resistance to rancidity (31.7 hours).



Sikitita

'Sikitita'- chiquitita, (little one) in the U.S. - is the first olive variety selected for use in olive groves planted as hedges. The breeders of this variety are researchers at the University of Cordoba (UCO) and the Andalusian Institute of Agricultural Research and Training (IFAPA) as part of genetic improvement program for the olive tree that both institutions are conducting since 1991. This variety comes from a cross of Picual (female parent) and Arbequina (male parent), the two most widespread varieties in the Spanish olive grove. Its main feature is its very small vigor and compact and weeping figure, that keep its crown volume at around 70% compared to that of Arbequina. These characteristics make it particularly suitable for use in hedge plantations in high density, also called superintensive, where planting densities reach 2,000 olive trees / ha. In these plantations, the 'Sikitita' variety yields longer lasting hedges and provides significant savings in the costs of collection and pruning. To achieve the correct formation of the trees of this variety is very important to carry out, from the first year of planting, continuous guidance of the tree branches, removing all lower branches. It has a very early entry into production and high productivity, good oil yield and extractability. The olives show early maturing, and the oil exhibits very good organoleptic characteristics. Its main feature is its fruitiness and sweetness, with a fairly balanced bitterness and pungency. It is considered tolerant to winter cold.

FOREIGN VARIETIES

Following is a list of the foreign varieties whose oils stand out among those sold in Spain:



Koroneiki (Grecia)

It is the main variety in Greece, where it occupies about 60% of the country's olive grove surface. Variety of medium vigor, early in the start of production. Early maturation. High productivity and low alternation in bearing. Small fruit. High oil yield. Sensitive to cold and resistant to drought. Currently expanding both in its place of cultivation and in other regions of the world olive growing surface. Its oil, very fruity, transmits sensations of green apple, sour and more pungent, somewhat astringent, with overtones of green almond and figs. Its acidic composition presents a high content in oleic acid (77.7%), medium palmitic (11.38%) and low linoleic acid (5,01%). It is high in vitamin E, 376 ppm, and average in polyphenols, 291 ppm. Stability can be considered high, at 79.66 hours.



Frantoio (Italia)

Variety of great importance in Italy, especially in the center of the country and more specifically in Tuscany. It is a highly productive cultivation, early in the start of production. Early maturation. Sensitive to cold. Average fat content. Tolerant to Verticillium. A variety expanding rapidly across all of the olive grove geography, especially outside Italy. Its oil is fruity and has a great fragrance. Little bitterness and pungency. As a specific characteristic, it presents a taste of apple and green almonds. It is slightly astringent and provides a ripe fruit sensation in the mouth. It is complex on the nose and palate. Its acidic composition has a high content of oleic acid (71.5%), average linoleic (9.4%) and medium-high palmitic (13.66%). Its resistance to rancidity can be considered average, at about 58.17 hours.

Olive oil culture



I wanted these lines to show some of the varieties, the most significant, of the hundreds that exist in the olive oil world and allow us to contemplate an enormous range of types of oils. These oils provide a rich diversity of flavors for use in our cuisine, enormously prestigious in present day, which can encourage a differentiated use of these juices. In my opinion, it is necessary to create an oil culture, similar to that existing in wine, so that the consumers may acknowledge, appreciate and properly use each of the possibilities offered by the diversity and sheer quality of extra virgin olive oils.

Marino Uceda Ojeda PhD Agricultural Engineer Researcher and Olive Oil Specialist

Types of oil



Virgin olive oil:

Oils obtained from the fruit of the olive tree solely by mechanical or other physical means under conditions that do not alter the oil, and having undergone no treatment other than washing, decantation, centrifugation or filtration, to the exclusion of oils obtained using solvents, or adjuvant chemical or biochemical action, or re-esterification processes and of any mixture with oils of other kinds.

These oils will be the subject of a comprehensive classification and the following designations:

a) **Extra virgin olive oil:** Virgin olive oil which has a free acidity, expressed as oleic acid, of not more than 0.8° per 100 grams, and the other characteristics of which correspond to those fixed for this category.

b) **Virgin olive oil:** Virgin olive oil which has a free acidity, expressed as oleic acid, of not more than 2° per 100 g. and/or the other characteristics of which correspond to those fixed for this category.

c) **Lampante olive oil:** Virgin olive oil which has a free acidity, expressed as oleic acid, of not more than 2° per 100 grams and/or the other characteristics of which comply with those fixed for this category.

Refined Olive oil:

Olive oil obtained by refining virgin olive oil, having a free acidity content expressed as oleic acid, of not more than 0,3° per 100 g, and the other characteristics of which comply with those fixed for this category.

Olive oil:

Contains only refined olive oils and virgin olive oils.

Olive oil consisting of a blend of refined olive oil and virgin olive oil other than lampante oil, having a free acidity, expressed as oleic acid, that may not exceed 1° per 100 g. and whose other characteristics correspond to those fixed for this category.

Crude olive-pomace oil:

Oil obtained from olive pomace by treatment with solvents or by physical means or oil corresponding to lampante olive oil, except for certain specified characteristics, excluding oil obtained by means of re-esterification and mixtures with other types of oils, and the other characteristics of which comply with those fixed for this category.

Refined olive-pomace oil:

Oil obtained by refining crude olive-pomace oil, having a free acidity content expressed as oleic acid, of not more than 0,3° per 100 g, and the other characteristics of which comply with those fixed for this category.

Olive-pomace oil:

Oil obtained by blending refined olive-pomace oil and virgin olive oil other than lampante oil, having a free acidity content expressed as oleic acid, of not more than 1° per 100 g, and the other characteristics of which comply with those fixed for this category.

Benefits and Uses of Extra Virgin

Benefits of Extra Virgin Olive Oil

The Extra Virgin Olive Oil provides many health benefits for its high level of monounsaturated fatty acids (oleic acid) and natural antioxidants, essential for our body. The presence of oleic acid in olive oil can regulate blood cholesterol levels, decreasing the bad cholesterol, low quality lipoprotein (LDL) without damaging the cholesterol known as good, high-density lipoprotein (HDL), therefore improves blood circulation.

Polyphenols, natural antioxidant that contains olive oil, destroys substances that produce cancer cells proliferation. Olive oil is a great source of vitamin E. Two tablespoons of olive oil per day contributing half of recommended daily vitamin E. The presence of unsaturated fatty acids favors the metabolic functions and the brain development because they help the formation of cell membranes and brain tissues

For people with diabetes the benefits of Extra Virgin Olive Oil favor lower blood sugar levels, thus requiring lower doses of insulin. One of the many virtues that the olive oil provides is to improve the functioning of the digestive system, regarded as a stomach protector and stimulates the absorption of calcium.

What for the Extra Virgin Olive oil

Olive oil should be used every day to have a healthy and beneficial to health because it contains vitamins essential for the body and has an exquisite taste and texture to enjoy good cuisine. If we ask what we should use the olive oil, the main reason is for the benefits it generates for health.

Because the Olive oil contains vitamin E and antioxidant produces beneficial effects to the skin. The Extra Virgin Olive Oil is a completely natural olive juice so it keeps all its properties and contains no additives or preservatives.

To have Olive Oil

Olive oil is usually taken regularly to prepare tasty and nutritious salads, being used as a dressing. In preparing fried, because it is an oil that can withstand temperatures up to 180 degrees, can also be taken through meals cooked and roasted.

Olive Oil in fasting

Take Extra Virgin olive oil in fasting favors digestive function, helps you lose weight and quit smoking.

- **Functioning of the digestive system:** Take olive oil in fasting helps the functioning of the digestive system, eating a spoonful of olive oil before ingesting any food helps improve intestinal transit.
- **Stop smoking:** According to traditional remedies eating five drops of extra virgin olive oil every morning before breakfast helps to combat the effects of nicotine in the body.
- **Olive oil ingested raw and in fasting helps you lose weight:** this occurs because it facilitates the process of food processing, preventing the absorption of fats and harmful sugars.

Olive oil and lemon

Lemon juice mixed with olive oil and taken orally in fasting, helps dissolve gallstones. Also in the liver flush using olive oil and lemon juice. The combination of both substances stimulates gallbladder causing emptying. After releasing the bile, helps remove existing stones in the gallbladder.

Olive Oil to lose weight

Olive oil helps you lose weight because it calms the appetite and reduces hunger. This is the quintessential fat of the Mediterranean diet.

Olive oil for its high oleic acid content (body-healthy fat), goes directly to the small intestine where it becomes OAS hormone (oleoylethanolamide) which in turn produces a feeling of satiety in the brain, reducing hunger and empty feeling in the stomach. This causes an improvement in body weight while adjusting the levels of cholesterol and triglycerides.

The Mediterranean diet consists in the daily use of olive oil as a dressing for salads, cooked vegetables, sauces and sprinkled on bread instead of using butter. Olive oil is the key ingredient of the Mediterranean diet because it reduces cholesterol and other oxidative diseases. Olive oil is a food necessary to have a full and healthy diet.

Olive Oil uses outside the kitchen

Olive oil, besides the use of the kitchen, can be used for many household and medical uses:

- Olive oil can be used as a laxative, emollient and protective intestinal tract inflammations
- When cleaning the skin to facilitate the healing action of ointments
- For wound healing
- In burns can relieve pain and prevent blistering
- Relieve pain:

Ears: olive oil is useful to soften the earwax and facilitate subsequent extraction

Painful gums: to calm nervousness and pain in children produced by gums when teething

- To prevent snoring: take a sip of Extra Virgin Olive Oil before bed can lubricate the throat muscles and prevent snoring
- To relieve tired feet, make an olive oil massage

Production Process of Olive Oil



https://www.youtube.com/channel/UCbiF3N89b-J2_M0nRqhvFCw/videos

Harvest

Manual: It is hit the olive branches with a stick called "rod" what produces the fruit drop on a synthetic fabric known as *Faldo*, which covers the entire area occupied by the olive tree and allows farmers to harvest the olives without it touches the ground directly. There are also "mechanical vibrators" to replace the rod.

Mechanical: Modern machines also facilitate the work of the harvest, they protect the fruit against impact and dirt. However, due to the difficulty of access to mountain farms, the farmer is required to dispense with the use of some machines, being in this case mostly manually collecting and therefore more costly.



Transport and Receiving

Transportation to the oil mill is done in a few hours, in individual boxes or baskets to avoid the beating or damage of the fruit. It downloads the fruit in different bins according to quality and variety for weighing.



Cleaning and Washing

The olive is deposited on a conveyor belt for further cleaning and dust removal of branches and leaves of the fruit. Washing is performed to remove traces of dirt and dust adhering. Potable water is used.



Milling

The ground breaks the structure of the olive, without scrapping, to release the liquid. Hammers rotate on a screen and beat the olives to turn it into a dough. Once milled, the mass obtained is deposited in a blender machine that homogenizes it.



Churning and Extraction

Here begins an important stage that will determine the final quality of the product:

- 1) **Solid Phase - Liquid:** Consist in introducing the resulting mass of the milling in an empty horizontal cylinder that rotates at high speed. In this way separation is obtained by difference in density, the various components that form the olive paste. This cold working process are kept intact all the organoleptic and nutritional properties of olive juice. For quality oils, the temperature of the beaten mass must not exceed 27-29 ° C, and the mixing time does not exceed 90 minutes.
- 2) **Liquid Phase - Liquid:** It separates the vegetation water oil in a machine called "Centrifuge Vertical". Although the liquid material goes profiling, still contains a small amount of solids which, obviously, must be eliminated. This new separation can be done by decantation, centrifugation or through a mixed system that combines both..



Obtainment

Olive oil is obtained from the olive (Oliva), who is referred. Depending on the care and attention used in the process, from the Olive tree to the storage, we obtain a current olive oil, which must be refined to be consumed, or a great extra virgin worthy of awards and honors.



Analysis

Through the analysis that olive oils are submitted it is possible to differentiate distinct types and qualities, as we have noted in the previous paragraph.



Olive Oil Production

Countries with higher production of olive oil are Spain, Italy and Greece. Spain is the largest olive oil producer in the world. Its production is mainly in the south due to its Mediterranean climate favors the cultivation of olive trees. In Spain there are 32 denomination of origin of Virgin Olive Oil and Extra Virgin. In all denominations predominates the final quality of the product because of the rigorous controls. More and more countries are engaged in the cultivation of the Olive trees because the valuation and appreciation of Extra Virgin Olive Oil has increased in recent years.



Storage and Packaging

The storage is done in stainless steel tanks, some of which incorporate nitrogen to prevent oxidation of olive oil.

Gastronomy

Frying with extra virgin olive oil

The uses of extra virgin olive oil are various, from medicinal to cosmetic or hygienic, however its most frequent use is in food. Virgin olive oil can be used in gastronomy in different ways: as a condiment, in sauces (alioli, mayonnaise...), in sautéing, in roasting, in frying... The latter is one of the most popular uses in Spain and in other Mediterranean countries that produce olive oil.

The frying process consists in inserting a food into a recipient with oil at temperatures above 130 °C until cooked, acquiring a golden and crisp finish. Traditionally fried foods were associated with vegetable oils such as sunflower oil, whereas olive oil was reserved for raw consumption. However, at present the use of extra virgin olive oil in cooking of fried foods is becoming increasingly common, as people opt for the healthier option. Also olive oil is more aromatic and flavoursome than other vegetable oils.



Frying with extra virgin olive oil is associated with healthy eating.

Advantages of the culinary use of olive oil in fried foods:

- When olive oil is subjected to high temperatures (160 - 200 ° C) it keeps all of its dietary and nutritional properties. This is due to its composition rich in oleic acid and antioxidants such as vitamin E, which makes this product the healthiest oil on the market, compared with others such as corn or sunflowers (whose boiling points are reached at lower temperatures, breaking down the nutritional properties in these oils more quickly).
- Extra virgin olive oil coagulates when used for frying foods at high temperatures, i.e. forms a layer around the food que prevents the oil from getting inside. Thanks to this "coating", the food manages better to conserve its nutrients. The food adopts a golden and crunchy texture and in turn maintains its properties and reduces the overall amount of fat by not absorbing as much as with other oils.
- A good fried food in virgin olive oil will not be heavy or aggressive to the stomach.
- Another advantage, contrary to popular belief, is the economic factor, since olive oil spreads more than other oils. Try it yourself, simply pour a teaspoon in to the frying pan and watch how it expands.



The extra virgin olive oil, also called "liquid gold", is perfect to make chips.

Advice for cooking with extra virgin olive oil

Utensils:

The recipient you use for frying must be a suitable size for the amount of food to cook, always choosing the smaller diameter so as to ensure the greatest amount of olive oil in a lesser surface area. This allows that a smaller amount of virgin olive oil is in contact with air. Also, the recipient should deep with high sides allowing food the food to be completely submerged in the oil.

If the frying pan used is made of iron, its recommendable not to wash it with chemical products that could damage the surface of the pan otherwise the food will end up sticking to it. To clean it, its best to use absorbant kitchen towel. Another trick to stop the pan sticking is to put it on the hob with some pinches of coarse salt and then when it goes dark in colour and starts to spit, take it out with kitchen towel or cloth.

The use of automatic friers with thermostats and basket to fully submerge the food has the advantage that the temperature of the extra virgin olive oil is kept constant. It's recommended that the temperature of the machine doesn't go over 180°C. It is also advisable to turn the fryer on and off adjusting the times as much as possible to avoid overheating the oil in excess.



In the process of frying with virgin olive oil it is essential to use good cookware

If you are going to use nonstick pans it is best to use wooden utensils to remove food, as other metal tools can damage the bottom of the pans. On the other hand, once the food is cooked it is very useful to use a slotted spoon to remove it from the pan, as it allows you to remove even the smallest foods whilst draining them into the pan before placing on a rack or plate with a paper towel to remove excess oil. It is advisable to wet the slotted spoon before you put it into the pan to prevent breaking the thermal balance of olive oil.

Foods:

The food you're going to fry should preferably be dry so as to prevent the moisture from the food evaporating all at once and to avoid the water expelled from food from splashing and coming in to contact with olive oil. Many methods can be used to dry the food such as using absorbant paper or a cloth, or flouring the food or coating it with breadcrumbs. In the case of these two latter options its advisable to sprinkle the coating lightly on to the food so as to avoid an excess of flour or bread which could burn in the pan and float around.

It is also desirable that food is not cold, best at room temperature, so that they don't drastically reduce the temperature of the oil, and so the food does not suffer.



Each food requires a concrete "frying point", ie, that virgin olive oil acquires this temperature

Correct frying point:

The so-called "frying point" is the precise temperature at which each food is fried, so, depending on the type of product to be cooked it will need one temperature or another . The frying points are classified as follows:

- **Medium Temperature (130 – 145 °C):** Suitable for foods that contain large amounts of water such as potatoes or vegetables. The heat penetrates the food slowly until it is cooked. A recommended trick, to know when the olive oil has this temperature, is to put a piece of bread in the oil and wait until it bubbles.
- **Hot Temperature (155 – 170 °C):** This temperature is suitable for frying foods that need to be cooked on the inside and golden and crispy on the outside, ie. when it forms a layer or "crust" as we have discussed above. The trick to know when the oil is at the proper temperature is similar to above but this time the piece of

bread in the olive oil should release a "cry", if the sound is low, you need to wait a bit longer.

- **Very Hot Temperature (175 – 190°C):** This is hot oil used to cook food in small portions in need of a quick frying, i.e. they are only submerged in the oil for few seconds and then they are ready. These types of food are things such as small fish, fried eggs... To know when the oil has reached the desired temperature its necessary to wait until the oil starts to smoke i.e. that it is boiling. For this process the only oil to use is extra virgin olive oil given that it's the only oil that withstands the higher temperatures without suffering alterations.



The best oil for frying food at high temperatures is extra virgin olive oil

If for whatever reason the oil sets alight, NEVER under any circumstances try to put it out using water. The best thing to do is cover the frying pan or recipient with a tight fitting lid.

Used virgin olive oil:

Extra virgin olive oil can be used many times for frying, as long as it has not been damaged. When emptying out the oil, for reuse in the future, it is necessary to strain it through a paper or gauze to remove debris. The proper place to store it can be a glazed ceramic pot or a stainless steel oil can.



Making homemade soap is a good way to make use of used olive oil

How do you know when you can no longer reuse the oil anymore? The answer is very simple: if you observe that the oil gives off too much smoke in being heated, or it has acquired a dark colour and a bad odour. Then you must get rid of the oil but do not dispose of it by pouring it down the sink, but by storing and carrying the container to the nearest oil collection. Another way is to use the used oil in the manufacture of homemade soaps. On this topic you can find information on our website, or [click here](#).

Cooking recipe

Extra virgin olive oil crackers and dips



EXTRA VIRGIN OLIVE OIL CRACKERS AND DIPS

Freshly baked olive oil crackers are fast and easy. These are served with Tomato Salsa, Guacamole and Smoked Salmon Delice. Great, too with cheese.

Serves 4

Ingredients:

For the crackers:

- 100g/4oz plain flour
- good pinch sea salt
- 2 tbsp extra virgin olive oil
- 3 tbsp cold water

For the dips:

TOMATO SALSA

- 6 small red tomatoes and 2 yellow (or 8 red), chopped
- 1/2 red onion, peeled and finely chopped
- 1 clove garlic, peeled and crushed
- salt and freshly ground black pepper
- extra virgin olive oil for dressing
- squeeze lemon juice

GUACAMOLE

- 2 large ripe avocados
- 1/2 red onion, finely chopped
- small red chilli, seeded and finely chopped
- 2 small tomatoes, finely chopped
- juice of a lime

- salt and freshly ground black pepper
- handful fresh coriander, finely chopped

SMOKED SALMON DELICE

- 225g/8oz smoked salmon, finely chopped
- 1 tbsp grated onion
- juice of half a lemon
- freshly ground white pepper
- 2-3 tbsp soured cream

Method:

- To make the crackers, sift flour into a bowl and crumble in sea salt.
- Place the extra virgin olive oil and water into a small jug and whisk.
- Mix in the flour to make a dough.
- Remove from the bowl and knead lightly until smooth.
- Divide into 8 pieces and roll into balls.
- Roll out balls on a floured surface VERY thin.
- Place on a baking sheet.
- Bake in a hot oven (200°C) for around 3 minutes or until they begin to puff up.
- Turn over and cook for a couple of minutes more, keeping your eye on them.
- Transfer to a wire rack to cool.

Alternative:

- After rolling out, cut into eighths to make bite-sized crackers - and bake as before. TOMATO SALSA

Place tomatoes, red onion and garlic in a bowl. Season. Dress with extra virgin olive oil and a squeeze of lemon juice **GUACAMOLE**

Mash avocados in a bowl. Add red onion, chilli and tomatoes. Stir in lime juice and season. Finish with finely chopped coriander. **SMOKED SALMON DELICE**

Place smoked salmon in a bowl and add grated onion. Add lemon juice and season with white pepper. Stir in soured cream.

Extra virgin olive oil chicken



EXTRA VIRGIN OLIVE OIL CHICKEN

This is utterly delicious - a definite plus for the repertoire. Chicken breasts are cooked in stock and white wine with green peppers and olives for a stunningly scrumptious olive sauce.

Serves 4

Ingredients:

- 4 tbsp extra virgin olive oil
- 4 part-boned chicken breasts
- 1 large onion, peeled and roughly chopped
- 3 green peppers, seeded and in large chunks
- 300ml/1/2pt chicken stock
- 300ml/1/2pt dry white wine
- 1 tbsp chopped tarragon
- 16 green olives stuffed with anchovies
- 1 tbsp tarragon leaves, chopped
- extra tarragon leaves for decoration

Method:

- Place 2 tbsp extra virgin olive oil in a heavy bottomed shallow pan. Add chicken breasts, skin-side down and fry until browned. Turn over and brown other side. Remove from pan. Add remaining extra virgin olive oil, and cook onion and green peppers to soften slightly. Return chicken to pan.
- Pour over chicken stock and white wine. Bring to bubbling, then turn down to simmer. Cover and cook for around 30 minutes, or until chicken is tender. Add chopped tarragon and olives. Bring back to bubbling. Sprinkle with extra tarragon leaves and serve.

Chunky white fish with garlic, lemon and extra virgin olive oil



CHUNKY WHITE FISH WITH GARLIC, LEMON AND EXTRA VIRGIN OLIVE OIL

Serves 4

Ingredients:

- 225g/8oz baby new potatoes
- Handful flat leaf parsley
- 2 fat cloves garlic, peeled and sliced

- Zest and juice of a lemon
- 7 tbsp extra virgin olive oil
- Salt and freshly ground white pepper
- 4 x175g/6oz hake - or other white fish steaks

Method:

- Cook potatoes in lightly salted boiling water until just tender. Drain, and when cool enough to handle, peel off skins with your fingers. Reserve potatoes in the pan with a clean t-towel tucked over to keep them warm.
- At the same time, make the extra virgin olive oil dressing for the fish. Chop parsley, garlic and lemon zest together. Transfer to a small bowl and stir in 3 tbsp extra virgin olive oil and lemon juice. Reserve.
- Add 2 tbs extra virgin olive oil to a hot pan. Season fish on both sides, then fry fish steaks skin side down until you can see the fish is cooked half way up the side of the flesh. Turn over and cook the other side - so cooked levels just meet.
- Transfer to serving plates flesh side up. Spoon parsley and extra virgin olive oil dressing along the length of each steak. Add a few new potatoes lightly trickled with 1 tbsp extra virgin olive oil and a mixed frilly leaf salad, also lightly dressed with remaining extra virgin olive oil and lemon juice.

Warm salmon and spinach salad with extra virgin olive oil



WARM SALMON AND SPINACH SALAD WITH EXTRA VIRGIN OLIVE OIL

Beautiful warm simple salad of pan fried salmon tossed with lightly wilted spinach and finished with toasted pine nuts.

Serves 4

Ingredients:

- 4 tbsp extra virgin olive oil
- salt and freshly ground black pepper
- 350g/12oz salmon fillet
- 450g/1lb fresh spinach, washed
- 2 tbsp toasted pine nuts
- Extra virgin olive oil for drizzling

Method:

- Heat 2 tbsp extra virgin olive oil in a pan and fry seasoned salmon fillet skin side down to begin.
- Watch carefully and when the fish has cooked up to almost halfway up the side edge, turn over and cook the other side for around 2 minutes, depending on thickness.
- This ensures perfectly cooked, moist fish.
- Remove from pan and keep warm. · Add remaining oil to another pan and add spinach.
- Lightly wilt, then season and add toasted pine nuts.
- Place in a large shallow bowl.
- Peel the skin away from the salmon fillet and break the flesh into large chunks.
- Add to spinach and gently toss.
- Drizzle with extra virgin olive oil.

Spiced sauteed prawns with extra virgin olive oil



SPICED SAUTEED PRAWNS WITH EXTRA VIRGIN OLIVE OIL

Fragrant dish of large King Prawns sauteed in extra virgin olive oil with ginger, garlic, chilli and spring onion, finished with chopped coriander.

Serves 4

Ingredients:

- 12 large King Prawns
- 2 tbsp extra virgin olive oil
- 2 cloves garlic, peeled and thinly sliced
- 2cm/1 in ginger, peeled and in thin matchsticks
- 1 chilli, seeded and chopped
- 2 spring onions, rimmed and chopped
- Extra virgin olive oil for deglazing pan
- sea salt

Method:

- Peel prawns removing head, shell and vein, but leaving the tails on.
- Thread them onto kebab sticks. • Heat 2 tbsp extra virgin olive oil in a pan and gently fry garlic, ginger, chilli and spring onions to soften.

- Add prawn kebabs and toss around to cook and turn pink. ·

Transfer to a serving dish with the chopped vegetables.

- Add extra virgin olive oil to the pan and stir to catch all the flavours left in the pan.
- Pour over prawns and finish sprinkled with a little sea salt.

PRESERVATION OF OLIVE OIL

Olive oil is a living product, therefore we must take special care when it comes to storing it, if the oil is stored in poor conditions it can be subject to some altering changes (rancidity, etc) in order to avoid these changes the storage tanks in the olive oil mills must meet the following standards:

- To be made of waterproof material to allow for washing before filling new olive oil.
- To be made of a material that makes them incapable of reacting with the oil.
- They do not absorb odors.
- They don't contain materials that accelerate rancidity.
- They are impervious to light and moisture.

- That they maintain a constant temperature, ideally around 15 ° C. Since higher temperatures promote rancidity in olive oil. During the storage the oil can develop a layer of insoluble material that could ferment and give a bad smell to olive oil. To prevent this from happening the oil should be strained, and this treatment sometimes must be repeated several times before bottling. In these operations one must seek to expose the oil to the air for as short a time as possible, to prevent oxidation or rancidity.

Once bottled the oil is now ready for distribution, sale and subsequent consumption. Olive oil should be packaged in glass, plastic or brass to be as airtight as possible so as not to alter the great features of the product.

Olive oil so that it retains its excellent properties, should not be stored for long periods of time, if this happens it should always be kept in a place without excessive heat or humidity and away from sunlight and strong odors, since the oil has the unique property of quickly absorbing strong odors, and these can be very harmful to the characteristics of this so-called liquid gold

DICTIONARY OF OLIVE OIL

A

ACEBUCHE

From the Arabic language, means wild olive tree.

ACIDITY

Laboratory parameter that measures the percentage of free fatty acids contained in a determined sample of olive oil. This parameter is measured by degrees (one percent is a degree), and bears no direct relationship whatsoever with the sensory characteristics of the sample, i.e. it does not refer to acid flavors, nor does it correspond to more or less intensity in taste, as is erroneously associated.

ADJUVANT

Product that improves the production process and does not remain in the final product.

ALPECHÍN OR JAMILA

Aqueous liquid waste obtained from the processing of olive oil. Includes the water constituting the olive, the added and washing water, and a variable percentage of solids and small amounts of non- extracted virgin oil.

ALPERUJO (OR ALPEORUJO)

Residue from oil extraction in continuous two-phase systems, which has united the vegetable water and pomace. It can be used as biomass (alternative energy source), as composting, and as feedstock for the production of olive pomace oil

ASSEMBLAGE OR COMBINATION

Art used in the preparation of an extra virgin olive oil whose production has used different varieties of olives, according to determined criteria of the manufacturer, in order to obtain aromas, flavors and similar organoleptic qualities each campaign. Formerly called *coupage*, a term used in the wine industry.

B

BEATING, POLE HARVESTING

Traditional system of harvesting olives by means of long sticks used to strike the olive branches, trying not to damage the fruit. Action of detaching the olive and fruits of certain trees through striking and the movement of the pole.

BLENDER

Instrument used to beat the olive paste and free the virgin olive oil.

C

CLASSICAL SYSTEM

Discontinuous plant for the elaboration of virgin olive oil that uses the hydraulic press for the separation of solid and liquid components.

CONTINUOUS CENTRIFUGATION SYSTEM

System for the elaboration of virgin olive oil using a centrifugal separator with 2 or 3 outputs for the separation of solid and liquid components.

D

DECANT (DECANTATION)

Natural separation by differences in density, of the oil and *alpechín* (vegetable water) during the extraction process.

DECANTER

Horizontal centrifuge used in the mill to separate the olive paste in three phases: solid, water, and oil, or in two phases, oil and *alperujo*.

DIATOMACEOUS EARTH

Material consisting of organic remains with high siliceous constitution, which, suitably ground, is used industrially in filtration processes for its absorbent properties.

E

ENVERO

Maturation period of the olive during which it turns from green to black, going through various shades. Also applied to the color that olives and other fruits take on when they begin to mature.

F

FATTY ACIDS

Major constituents of oils and fats . They are grouped into several types: **Saturated**, when they lack double bonds; **monounsaturated**, with one double bond, mainly oleic, and of high nutritional interest, it is the main fatty in olive oil; and **polyunsaturated**, with two or more double bonds; these are linoleic or linolenic acids, essential fatty acids, and should be in a healthy diet, though in moderate or low quantities. They are expressed in percentages.

FILTERING

Operation that involves removing the solid waste that may remain in suspension in the oil.

FRUITINESS

Set of olfactory sensations characteristic of the oil that depends on the variety and comes from healthy, fresh olives, either ripe or unripe. It is perceived directly and/or through the back of the nose.

FUSTY/MUDDY SEDIMENT

Fustiness comes from an anaerobic fermentation, a decay that occurs when olives, once collected, await grinding for a certain time. It is an organoleptic defect characteristic of oil extracted from these olives.

H

HAND PICKING/MILKING

Action of picking the olives from the tree by hand, or using combs or other devices, surrounding the crown in a way that the fruit will come off.

|

INTEGRATED PRODUCTION

Agricultural system that fully utilizes the resources and mechanisms of natural production, minimizing the contributions of external elements to exploitation and ensuring long-term sustainable agriculture. It relies on a rigorous and balanced selection of chemical and biological methods and cultivation techniques to be employed.

INTERPROFESIONAL (FOR OLIVE OIL):

Professional Association of the olive oil sector (professional agricultural organizations, cooperatives, industrial mills, and bottlers and exporters associations) whose objective is to encourage the commercial promotion of this product, facilitate cooperation to control and stabilize the Spanish market, and increase the added value of exports.

L

LAMPANTE

Defective virgin olive oil, not intended for direct consumption, due to the intensity of its flaws.

LIPOGÉNESIS

Natural ripening process of the olive during which oil is generated in the fruit pulp.

M

MAQUILA (FORFAIT)

Amount of grain, flour or oil paid to the miller in return for grinding.

MILLING

Action or effect of milling, grinding grain or fruit. In virgin oil olive, the act of rupturing the olives to form the paste.

O

OIL MILL

Building or construction that holds all the machinery and equipment intended for the production of olive oil. The Spanish word *almazara* comes from the Arabic for *the place for grinding*: it is an oil mill.

OLEICULTURE

Set of techniques used in olive cultivation and the improvement of oil production.

OLEIN

In the fats and oils industry, said of the liquid fraction from a solid or semi-solid fat obtained by industrial fractionation.

ORGANIC FARMING

Agronomic techniques parallel to those of conventional agriculture, in which the only difference is the replacement of synthetic chemicals for natural or authorized products for use in this type of cultivation.

ORGANOLEPTIC CHARACTERISTICS

Properties of a product, which can be perceived, described and quantified by the sensory organs. In olive oil, a series of properties perceived through the senses in virgin oils.

P

PARTIAL EXTRACTION

Operation that consists in extracting, through a special stainless steel filter without mechanical stress, different amounts of virgin oil from the olive paste.

PEROXIDES INDEX

Parameter that measures the initial oxidation of the oil.

PROTECTED DESIGNATION OF ORIGIN

Official recognition by the European Commission of the existence of a group of products from a particular location, whose characteristics are due exclusively to that environment and the human factors that develop it. For a designation of origin to exist, the production, processing and transformation of these products must take place within the limited geographical area covering the PDO, and this area must be explicitly recognized at an official level.

PET

Plastic material used for packaging olive oil.

POMACE

Industrial residue of the olive paste from which virgin olive oil is extracted, that extracts a lower quality oil called pomace oil.

S

SEEDLING

New seedling or sapling to be transplanted.

SWEET

Classifies the taste produced by aqueous solutions of various substances, such as sucrose. In virgin oil, tactile sensation of smoothness perceived in the center of the front part of the tongue.

SHAKER

Machine that, by clamping the trunk or branches of olive trees, transmits vibrations, facilitating the falling of olives from them.

T

TASTER

A person who is sensitive, selected, trained, and qualified, and who perceives the organoleptic characteristics of a food product through their sensory organs.

TASTING

Operation that consists in perceiving, analyzing, and quantifying the organoleptic characteristics of a food product.

TASTING PANEL

Set of qualified tasters gathered in order to analyze and classify an oil in accordance with an International method, formalized by the International Olive Council (IOC) in June of 1987, and adopted by the EU in 1991.

TRUJAL

In Navarra and La Rioja, oil mill. In Andalusia, underground masonry tank, with a lined interior, which preserves oil at low temperature.

V

VECERO / ALTERNATE BEARING

A term applied to the olive trees that bear abundant fruit one year and little or none the following year. A late harvest and the damages caused to the tree, depending on the harvest procedure, can increase this tendency in olive trees.

VERTICILIUM

Disease caused by the fungus "*Dhاليا KLEB Verticillium*", known in Spanish by the common name of " Verticilosis " or " Verticilium ", which fundamentally affects the tree, causing vegetative decay and often death.

VIVILLO / SOAPY OLIVE

Common name, along with "soapy olive", for a disease that affects the fruit, caused by a fungus called "*Gloesporium olivarum* ALM" and produces the alteration of oils, primarily, elevation of acidity and deterioration of sensory characters, as well as reddish tones in the oil.

W

WINEY

Wine or vinegar odor present in some oils, caused by aerobic fermentation of olives in poor state or by fermentation of some materials in suspension within these oils.

Source of information:

http://www.internationaloliveoil.org/?lang=en_US