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EXPANDING MOROCCO'S OLIVE OIL MARKET THE ROLE OF CONSUMERS AND INDUSTRY RESPONSE



Hannah Fried, Luis Dias Pereira, Nuno Santos

The olive sector continues to be a fundamental component of Moroccan agriculture. Its strategic nature – economic, social and environmental – was underscored during the implementation of a major support programme within the agricultural strategy of the Green Morocco Plan (PMV). Supported by complementary policies, the public and private investments that were made have helped highlight the sector's importance in the eyes of domestic and international players.

Since 2008, there have been many instances of progress, in terms of increasing the cultivated area and modernizing the sector. Nonetheless, many opportunities have yet to be seized, particularly in terms of marketing: improving consumer knowledge and, consequently, consolidating price differentiation as key strategic pillars to support formalization of the domestic market and stimulate exports.

This brief was produced by the Investment Centre of the Food and Agriculture Organization of the United Nations (FAO), based on observations made during various activities implemented by FAO and the European Bank for Reconstruction and Development (EBRD), in collaboration with local partners. These included the Moroccan Ministry of Agriculture, Maritime Fishing, Rural Development and Water and Forests (MAPMDREF) and the industry federation, Interprolive, in the framework of the project to support the development of the Moroccan olive sector. These activities include multiple training sessions on good production practices and tasting, as well as five nationwide studies on marketing commercialization and consumption. This document provides a status report on the sector in relation to the strategic objectives set by the PMV, and it highlights the main opportunities for realizing the sector's full potential.

The brief also puts forward alternatives for supporting the sector's inclusive and sustainable development, such as the establishment of a voluntary system of certification and traceability of bottled olive oil, supported by consumer awareness campaigns, the creation of a "gourmet" category

for Moroccan olive oil, and capacity building to enable operators to adopt good production practices throughout the value chain. These pathways may also be of interest to other olive-producing countries in the region.

A strategic sector for Moroccan agriculture

The olive sector has a key place in Moroccan agriculture, contributing 5 percent of agricultural gross domestic product (GDP) and demanding more than 51 million workdays per year, or 13 percent of all workdays in agriculture (MAPMDREF, 2021). Morocco ranks among the top ten producers of olive oil and accounted for about 5 percent of global production in 2021 (IOC, 2021).

A major support programme has been put in place to create a dynamic, open market, while prioritizing value-added throughout the value chain. The objectives of increasing production, consumption and exports and modernizing the sector have been supported by numerous investments and complementary policies, including the following:

- a land policy that has helped increase planted areas while also encouraging direct investment from abroad and fostering the expansion of large olive farm operations;
- subsidies for new plantations, the acquisition of modern crushing equipment (continuous two or three phase systems) and the installation of efficient irrigation systems through the Agricultural Development Fund, as well as specific investments targeting small-scale producers;
- a flat-rate export subsidy for bulk and packaged olive oil;
- a 10 percent value-added tax on sales of sealed bottled olive oil;

- investments have been supported by major institutional developments, including the creation of an inter-branch federation for the olive sector: Interprolive, the organization by MAPMDREF of national olive oil quality contests, and the creation of five panel groups recognized by the International Olive Council (IOC).

Thanks to the combined action of policies and the private sector, the area planted with olive trees expanded by about 40 percent between 2009 and 2020 (MAPMDREF, 2020), mainly with the Moroccan Picholine variety, to account for 17 percent of the total cultivated area in the country. This made olives the leading fruit species cultivated in Morocco. The average annual production of olives roughly doubled between 2007 and 2019 and oil production has increased by 60 percent to an average of 160 000 tonnes in recent years. Over the reporting period, exports of virgin olive oil increased by 8000 tonnes. Significant progress has also been made towards the development of a modern and internationally competitive sector. In terms of processing units, 211 new oil mills with continuous systems were created, bringing the total number of industrial or semi-industrial crushing units to 1000, with a positive impact on installed capacity and the potential to produce extra virgin olive oil.¹ Investments in laboratory capacity-building and in operator training have also enabled the country to start producing high-quality oil, as evidenced by recent successes in international competitions, as well as the development of exports to the United States of America and elsewhere.

¹ The IOC definitions of extra virgin olive oil and common virgin oil are provided in the glossary.

Opportunities for future development of the sector

Implementation of the agriculture strategy has enabled the sector to move forward on multiple fronts; and there are many opportunities to strengthen the competitiveness of the Moroccan olive sector and realize its commercial potential.

The domestic market remains largely informal and dominated by bulk. Data provided by the consulting firm Nielsen for the period 2014–2017 show that direct sales of bulk oil to consumers remain stable at around 90 percent of the total volume of oil available, despite consumer awareness campaigns on labelled bottled oil launched by Interprolive in 2016. The packaged market is highly concentrated, despite the availability of a multitude of brands. Although 94 brands are present on the market, just two of them account for more than 80 percent of bottled oil sales over the time period considered.

The quality of the packaged oil available remains poor; ordinary virgin oil accounts for an average of 88 percent of total sales, while extra virgin oil represents just 2 percent of sales. The bulk of extra-virgin oil sales are made exclusively in urban areas through hyper/super/mini markets. The small number of sales outlets and market concentration, combined with the small share of extra-virgin oil in total sales, penalize the development of small and medium-sized enterprises (SMEs) producing quality oil, as it is difficult for them to become established on the formal market.

In the case of bulk oil, direct marketing makes it difficult to establish quality and traceability controls and offers no guarantee to the consumer. Organoleptic and chemical analyses conducted on samples taken directly from oil mills in the framework of one of the studies reveal that a large proportion of the oil produced does not meet international

standards. The organoleptic analysis reveals the presence of major defects that cause the oils to be classified as “ordinary virgin” or “lampante”. It is important to remember that, according to international standards established by the IOC, the lampante and ordinary virgin categories are considered unfit for human consumption; and their sale for this purpose, without prior refining, is prohibited in most markets, including the European Union and Morocco.

Exports of virgin olive oil increased by an average of 8000 tonnes between 2007 and 2019, generating an average annual income of USD 50 million in recent years, a 60 percent rise. Despite this robust growth, the contribution of Moroccan exports to international markets remains small, at around 1 percent of total exports. Current trade policies also limit export incentives, as domestic prices, protected by a 40 percent import duty, are often higher than international ones, including for extra-virgin oil. Moreover, the relatively low quality of most Moroccan olive oil hampers export development. An international comparison of import parity prices, for the same product categories, shows that other producing countries, such as Spain, are more competitive than Morocco.

The domestic consumption of olive oil has increased significantly over the past ten years, with average per capita consumption rising from 2.6 kg/year to 3.2 kg/year between 2007 and 2018. However, olive oil consumption is competing with other vegetable oils, of which per capita consumption has almost doubled over the last 30 years, from about 10 kg/year to 18 kg/year in 2018. This trend is also observed in other Mediterranean countries that consume olive oil, gradually bringing about a change in traditional diets.

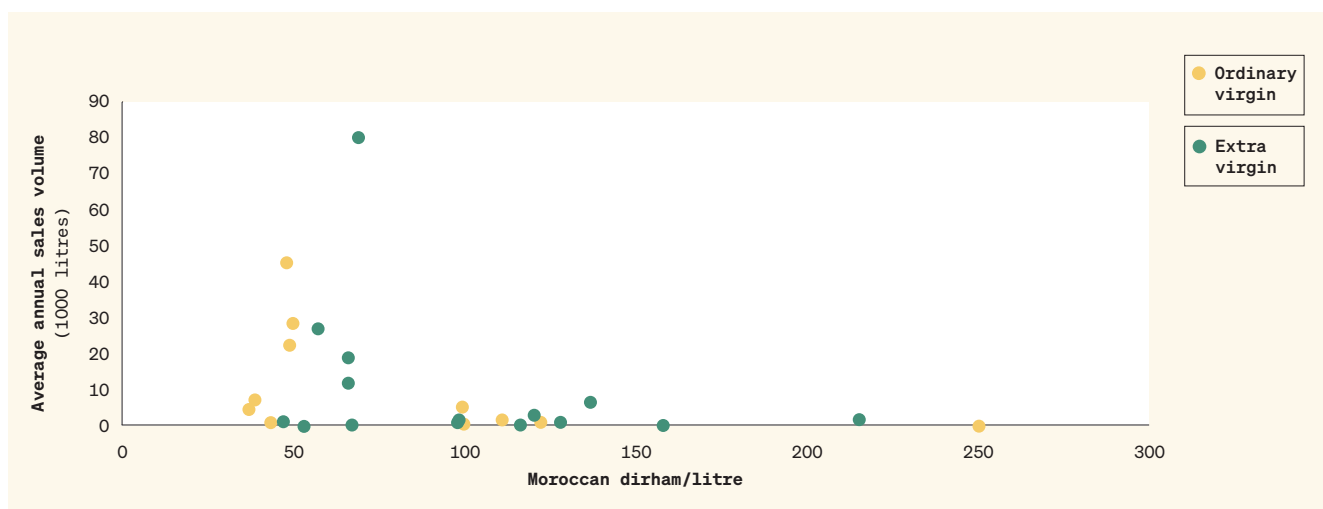


Figure 1
Prices and sales volumes for different brands on the Moroccan market for different quality categories (Nielsen, 2018)

NOTE: for reasons of scale, sales of ordinary virgin oil from the two largest producers have not been included.

On the formal market, price differentiation is a poor signal of oil quality and does not actually result in higher prices for extra virgin oil. The figure below reports sales volumes and prices by oil category for different brands present on the Moroccan market: ordinary virgin olive oil, which is of much lower quality, is sold at relatively similar prices to extra-virgin oil. It should be noted that ordinary virgin oil is not available for consumption in most countries.

This lack of price differentiation has profound implications for the entire value chain, as producers lack incentives to enhance the quality of the oil produced and to organize the

upstream chain accordingly. In practice, SMEs are more seriously affected because it is harder for them to place their products on the domestic market. This is caused by the market shares available, which are too small to generate sufficient margins to make producing extra virgin oil economically attractive. This situation is compounded by consumers' lack of knowledge of the positive attributes of olive oil and their lack of confidence in packaged oil, which put additional dampers on exploiting the potential of the Moroccan product.





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The sector's transition: consumers at the heart of the debate

Through food education, consumers have a key role to play in establishing market mechanisms that reward quality. The results of the analyses conducted in the different studies, reported in box 1, give an idea of the level of consumer knowledge of olive oil and the perceptions surrounding it. The aim is to facilitate thematic discussions on issues such

as: “Are Moroccan consumers capable of identifying quality?” or “What are consumers’ taste preferences?”² Outside of the consumer domain, these results can also be used as an information tool to support industry players, especially SMEs, through enhanced coordination of existing sectoral policies.

² Aside from chemical parameters, olive-oil quality is also defined by organoleptic properties: positive attributes (fruity, bitter, pungent) are characteristic of a better-quality oil, while the presence of negative attributes (flavours present in the oil that are not included in the positive attributes listed) downgrades the quality of the oil.

Moroccans consume olive oil on a daily basis, mainly in the morning for its recognized health benefits, and with bread owing to its flavour.

Focus group results show that urban consumers have a clear preference for oils with organoleptic defects.⁴ These preferences are confirmed by the results of blind olive oil tasting experiments: about 70 percent of the urban consumers surveyed appreciate oils with strong negative attributes. They also have difficulty recognizing negative properties: more than 80 percent of them do not identify the fermentation taste in the tested “lampante oil”. It is important to note that the limited supply of extra virgin oil on the domestic market restricts consumers’ access to oils that are free from organoleptic defects. As consumers generally prefer products and flavours to which they are accustomed, it can be hard to identify a familiar taste as a defect.

Professionals in the sector recognize quality: blind tastings were repeated with oil mill technicians, who are presumably in regular contact with the product and are therefore more knowledgeable. This time, the test results showed that most of them were able to correctly identify the presence of negative properties in the oils tested, and also to detect the presence of positive attributes – and this in the first round of tasting. Moreover, it would appear that a short awareness-raising session can significantly increase subjects’ ability to identify quality: the results of the second tasting show that extra-virgin oils were liked by 88 percent of the participants (compared to 54 percent before the awareness-raising session) and lampante oils were rejected by 81 percent (compared to 79 percent before). These results suggest that consumers can identify quality if they have sufficient information and knowledge.⁵

Other data suggest that urban consumers lack knowledge of international designations such as “ordinary virgin” or “extra virgin”, which only 4 and 6 percent, respectively, of the consumers surveyed said they knew, as well as about the factors that guarantee quality. In fact, 89 percent of consumers surveyed claimed to be able to judge the quality of the oil by its colour. They also have little knowledge of the elements of labelling, which makes it difficult to communicate quality through standard systems, such as labels or certifications. Only just over 10 percent of respondents consider these important. Consumers are also wary of packaged oil, which they tend to suspect of mixing; and there is also a lack of recognition of the institutional structures responsible for controls. This leads them to rely on alternative strategies, such as buying oil in bulk, which is considered pure or natural, from someone they trust, or else judging the oil by its colour, density or fragrance. The combination of these factors has a negative impact on the development of the packaged market in Morocco.

Nonetheless, there are significant differences between regions and socioeconomic groups: urban consumers in the Atlantic region, and/or those of high and upper-middle income groups who buy oil through formal marketing channels, have more developed notions of standard quality indicators.

Although still limited, these trends are positive and suggest that these consumer segments could be the target of awareness-raising campaigns on the quality of packaged oil.

The consumption of raw olive oil, sensitivity to the difference in taste compared to other oils, and the importance of consumption for its health benefits are important arguments to justify the differentiation of oils; but they require a demand shift. To achieve these objectives, sector initiatives will need to target both consumers and distributors. Initiatives to raise awareness of the quality of packaged oil, together with credible guarantees and information campaigns, will have to promote the implementation of quality-based price differentiation and incentives to produce extra virgin oil.

³ The surveys were conducted with industry professionals who participated in training and with urban consumers recruited by canvassing in the Casablanca area: (i) aged between 25 and 55; (ii) 49 percent male and 51 percent female; and (iii) 24 percent of high or upper-middle income, 29 percent of lower-middle income and 47 percent of low income. Of the urban consumers, 1250 participated in focus group discussions and 125 in blind oil tastings; 170 industry professionals also participated in oil tasting tests.

⁴ The presence of organoleptic defects downgrades the quality of the oil compared to the extra virgin grade which has the highest level of positive attributes (fruity, bitter, spicy).

⁵ These data were collected immediately after the awareness-raising session, and it was impossible to study the effect of awareness over the long term, which might prove unsustainable.



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Modern processing units, a still-underused tool

As a result of the investments made during the PMV, many “modern” units with continuous extraction systems have been created, bringing to 1000 the total number of this type of infrastructure present in Morocco, according to MADMDREF. It is important to note that the modernization of olive presses is essential for the production of extra virgin oil. Investments in areas planted with local varieties, in strengthening laboratory capacities and training operators have also helped to consolidate existing potential.

The study focused on 136 facilities equipped with modern continuous systems, traditional mechanical or animal-driven press systems (maâsras) throughout the country. Although the size of the sample of oil mills selected is too small to be considered representative, the analysis performed aims to give a general idea of the state of the production structures and the major problems affecting the sector’s organization.

Most of the oil mill operators interviewed stated that they work exclusively with local varieties, mainly Picholine. When properly crushed, this variety produces an oil with high levels of polyphenols and fruitiness, which is an important factor of differentiation for strategic development in international markets.

Although oil mills equipped with continuous systems are increasing in number, the data collected suggest that producers have little economic incentive to use them: the average crushing price is about 10 percent higher than in other types of oil mills, but the price paid for the olives is unchanged. Since oil mills with continuous systems need access to larger quantities of olives to be economically viable, together with better coordination in the supply chain, the higher operating cost, combined with the lack of financial benefit for extra virgin oil, may result in their underuse.

Chemical and organoleptic analyses were performed on 45 samples taken at random from the selected oil mills and on two popular brands of packaged oils purchased in supermarkets. The results suggest that most of the oils available on the market have organoleptic defects, and they highlight problems encountered during the field visits. As illustrated in figure 2, chemical analyses show that 29 percent of the samples chemically analysed are extra virgin, 36 percent are virgin, while the remainder are classified as ordinary virgin or lampante. However, chemical analysis alone is not sufficient to establish the market category of a given oil but must be complemented by organoleptic

analysis. Extra-virgin oils analyzed are characterized by clear organoleptic defects; and all of the oils classified chemically as extra-virgin are downgraded in the organoleptic analysis to lower categories, such as ordinary virgin or lampante. The results of these analyses highlight the problems encountered during the field visits, particularly in terms of the quality of the crushed olives, the transportation and storage of olives and oil, and problems related to workplace hygiene and equipment.

The qualitative and quantitative data collected from the oil mills indicate that the practices adopted could be improved to obtain higher-quality oil. Follow-up investments to enhance operators' technical and managerial capacities, such as advance planning of the crop season, as well as in the modernization of storage and transport structures, could help reduce losses in oil quality. These investments will need to be supported by the implementation of a set of complementary policies to make the market more transparent, particularly on quality issues, and encourage price differentiation, for example through quality controls throughout the chain.

In terms of marketing, survey data show that service provision accounts for about 60 percent of crushed volumes. The remaining volume of oil produced by the mills (40 percent of the total) is sold to intermediaries and/or directly to consumers. Among other issues, the current organization of marketing channels poses a challenge in terms of establishing upstream controls and product traceability.

	2 OR 3 PHASE CONTINUOUS SYSTEM (18 SAMPLES)		TRADITIONAL SYSTEM WITH MECHANICAL PRESS (22 SAMPLES)		TRADITIONAL SYSTEM WITH ANIMAL-DRIVEN PRESS (5 SAMPLES)		
	Organoleptic analysis	Chemical analysis	Organoleptic analysis	Chemical analysis	Organoleptic analysis	Chemical analysis	
	Extra virgin	Virgin	Ordinary virgin	Lampante	Extra virgin	Virgin	Ordinary virgin
Extra virgin	0	7	0	4	0	2	
Virgin	10	4	2	10	1	2	
Ordinary virgin	3	2	4	1	0	0	
Lampante	5	5	16	7	4	1	

Figure 2
Results of chemical and organoleptic analyses

SOURCE: Oil samples collected in the field in 2018 and analysed in Italy by the Chemiservice laboratory.



Four alternatives to boost the Moroccan olive sector and support sector development

The combination of existing policies has helped create a dynamic sector with high potential for growth and value-added, and potential to be competitive in international markets. In addition, the exploitation of local varieties, which have high levels of polyphenols and fruitiness, represents an important strategic factor of differentiation for the olive sector's development in international markets. There are also many opportunities to consolidate ongoing initiatives: the results of this work show that the sector would benefit from the implementation of initiatives to support price differentiation by quality (a prerequisite for the development of export markets in the long term), supported by consumer-awareness campaigns, which would enable the domestic market to formalize and attain a higher level of quality. The four proposals detailed below suggest ways to adjust existing policies to achieve the sector's short, medium, and long-term objectives.

It is also important to adopt good practices as from the olive production stage, including agronomic practices aimed at limiting diseases and the alternation of olive tree production. It is essential to address these issues in order to guarantee the quality of the oils produced and realize their commercial potential.

To ensure an effective transition of the sector, these alternatives should be implemented with collaboration among the key actors: operators could be provided training by MAPMDREF and Interprolive, with institutions such as the National Food Safety Office (ONSSA) and Morocco Foodex helping to develop a certification and traceability system. Private-sector involvement in all initiatives is also essential to ensure the fine-tuning of policies and balanced sector growth.

1

Implementation of a voluntary quality and traceability certification system to provide quality assurance to consumers

In order to respond to growing consumer demand for assurance of product origin and quality, in an increasingly competitive market, new approaches to product differentiation and the communication of information have been created. Internationally, there are many examples of public or private initiatives that have developed the use of labels and/or symbols to communicate different concepts to consumers, such as guaranteeing production standards, product origin and/or nutritional value.

To guarantee quality to consumers, support price differentiation and consolidate Morocco's image as a high-quality olive oil producer, it is proposed to establish a voluntary system of certification and quality identification, backed up by consumer-awareness campaigns. The certification/labelling system could be based on international initiatives; it is proposed to use a simple and recognized rating system, such as stars, to identify the different product

categories. This system should remain voluntary, so as to keep the market accessible to smaller producers and traditional crushing units. From the consumer's perspective, the system should provide full product information. It is also possible to use recognition by some existing institutions, such as the ONSSA,⁶ to support the credibility of these initiatives. It would also be advisable to bring the rating system into line with current Moroccan quality standards.

Simulations conducted during the studies show that the financial break-even point for this type of system would be equivalent to a small share of the volumes of packaged oil currently sold in Morocco and the relatively low associated cost. However, a temporary incentive could be provided to cover the additional costs of participating in the system, to encourage SME participation and/or include support for improved production practices (see proposal 4).

2

Creation of a "gourmet" category to promote very high quality Moroccan oil

At the national level, a gourmet category would make it possible to promote very high quality extra virgin oils without consumers having to become familiar with a new rating system. In addition, gourmet oil certification could support the emergence of greater segmentation of the domestic market and be of interest to certain marketing networks (restaurants, hotels, downtown supermarkets, specialty stores, etc.). The possibility of developing a very high-end product could also benefit small and medium-sized local producers who already produce excellent quality oil and market small volumes at each point of sale.

Internationally, markets award premia to extra-virgin oils with median intense fruitiness. A "100 percent Moroccan gourmet oil" certification, with an innovative image, could help position high-quality Moroccan olive oil in international trade fairs and penetrate markets where Moroccan oils do not enjoy the same image and popularity as products from other Mediterranean countries.

This category's parameters and certification criteria should be aligned with the criteria of other internationally recognized differentiation systems (e.g. QVextra), in order to facilitate dual certification and communication with foreign consumers.

⁶ The survey results show that the ONSSA is still not widely known, so there is also a need to raise awareness in this area.

3

Inform, educate and guarantee the quality of bottled olive oil to consumers

Despite the many initiatives already developed, Moroccan consumers lack knowledge of quality and have little confidence in bottled oil. Accordingly, awareness campaigns should be implemented, considering the following dimensions: informing consumers about quality attributes, promoting the consumption of packaged oil, and, most importantly, guaranteeing the quality of bottled oil. In terms of confidence in packaged oil, it is essential that consumers have access to clear and transparent product information through a trustworthy labelling system (see details in recommendation 1); and that they are informed about the positive attributes of extra virgin oil through innovative awareness campaigns.

These campaigns could draw on international experience, with events such as conferences on the health benefits of olive oil, with presentations by medical specialists; oil tastings; or product promotion through hotel-restaurant-cafeteria (HoReCa) channels, social networks, Moroccan opinion makers such as gastronomy specialists, or agrotourism. Targeted campaigns in urban areas could also have major potential to increase consumer awareness of the benefits and reliability of certified virgin olive oil.

4

Support for the adoption of good practices in oil mills

The field experiment has shown that there is still a gap in the practices adopted – despite endeavours to improve operators' capacities. The training sessions in the oil mills highlighted the importance of developing operators' tasting skills, to enable them to associate the oil's flavour qualities with production practices. In a context of increasing olive production, if consumers' ability to differentiate olive oil quality is strengthened, there could be a growth in demand

for extra virgin olive oil. Moreover, recent spikes in international prices could provide an additional incentive to support the production of higher quality oil. The involvement of private actors, supported by Interprolive, could benefit the sector greatly and foster knowledge transfer between the different stakeholders. Initiatives such as these should be complemented by putting appropriate quality control systems in place and investing in institutional development.

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Abbreviations and acronyms

EBRD	European Bank for Reconstruction and Development	ONSSA	Office national de sécurité sanitaire des produits alimentaires [National Food Safety Office]
IOC	International Olive Council	SME	Small and medium-sized enterprise
FAO	Food and Agriculture Organization of the United Nations	PMV	Plan Maroc Vert [Green Morocco Plan]
MAPMDREF	Ministry of Agriculture, Maritime Fishing, Rural Development and Water and Forests		

Definitions

Bulk oil: oil sold directly to the consumer by the producer and/or through informal sales outlets. This oil is sold in unsealed bottles and without a label, unlike packaged oil. Packaged oil is generally referred to as “bottled” oil, as opposed to bulk oil.

Morocco Foodex: autonomous export control and coordination entity.

Olive oil quality: Virgin olive oils for human consumption are:

- **Extra virgin oil:** this is the highest quality classification for an olive oil and the most lucrative on the international market. This category of oil must also have free acidity of less than 0.8 percent and clear flavour characteristics that reflect the fruit from which it is made.
- **Ordinary virgin olive oil:** This is a virgin olive oil with a free acidity expressed in terms of oleic acid of not more than 3.3 g per 100 g. This category can only be sold retail to consumers if the legislation of the country permits. For example, it cannot be sold bottled in the European Union.

Lampante olive oil: unfit for human consumption. This is an oil with a median defect value above 6.0 or free acidity higher than 3.3 percent. It is unfit for human consumption and must be refined or used for purposes other than food. This type of oil comes from poor quality fruit or is the result of incorrect handling and processing.