Press Kit

ORIVA | INTERPROFESIONAL DEL ACEITE DE ORUJO DE OLIVA

Índex

1.

ORIVA, the Interprofessional Olive Pomace Oil Association

1.1 VALUE CHAIN

The Interprofesional del Aceite de Orujo de Oliva, represented by the brand ORIVA, was created on May 7, 2015, and constituted on January 7, 2016, through the publication in the Official State Bulletin (BOE) of Order AAA/2894/2015, of December 21.

It comprises five associations involved in the Olive Pomace Oil value chain, which see it as a necessary platform to promote knowledge of this food product and encourage its consumption.

Through a Rule Extension, the Spanish Ministry of Agriculture, Fisheries and Food recognizes the agreement adopted by Interprofesional del Aceite de Orujo de Oliva the objective of which is to carry out actions that benefit the whole olive pomace industry.

Industrywide compliance with the obligatory economic contribution to promote Olive Pomace Oil, improve information and knowledge about the markets and carry out research, development, technological innovation and study programs is required.

This is the second Rule Extension - Order APA/930/2021, of August 31 - effective for the 2021/2022, 2022/2023 and 2023/2024 seasons.

WHAT IS AN AGRI-FOOD ORGANIZATION?

Agri-food interprofessional organizations

For the purposes of Law 38/1994, an Interprofessional Agri-food Organization is defined as a body comprising organizations representing the production, processing and, where appropriate, marketing and distribution of an agri-food sector or product included in the agri-food system.

They fulfill various functions such as ensuring the proper functioning of the food chain, improving knowledge, efficiency and transparency of markets, improving coordination among operators, improving the quality of products at all stages, fostering research and development and promoting food production.

1.2 PROMOTION AND COMMUNICATION

ORIVA seeks to promote knowledge and consumption of Olive Pomace Oil. As Spain is the world's leading producer and 85% of sales are in the foreign market, its main focus is to boost the domestic market.

This applies to professionals from the HORECA channel (Hotel, Restaurant and Catering) and the food industry (canneries, bagged snacks, etc.) and to consumers. In pursuit of this goal, it works on two strategic lines, Communication and Research, implementing promotion and dissemination actions, as well as supporting studies that provide the industry with a solid scientific bibliography.

1.3 UNITING THE INDUSTRY

ORIVA encompasses the areas of Olive Pomace Oil production (extractors), transformation (refiners) and commercialization in Spain. It comprises five associations covering production and industrial branches.

PRODUCTION AREA:

INFAOLIVA (Federación Española de Industriales, Fabricantes de Aceite de Oliva/Spanish Federation of Olive Oil Industrialists and Manufacturers): Representing olive mills and suppliers of the raw material alperujo (two-phase olive mill waste).

Agri-food cooperatives in Spain: They also supply the raw material alperujo to the olive pomace extractors.

INDUSTRIAL AREA:

ANEO Asociación Nacional de Empresas de Aceite de Orujo de Oliva/ Spanish Association of Olive Pomace Oil Companies): Representing 71% of centers for the production/ extraction phase and 92% of centers for crude olive pomace oil production. It also represents 100% of refining companies and 100% of refined Olive Pomace Oil.

ANIERAC (Asociación Nacional de Industriales Envasadores y Refinadores de Aceites Comestibles/ Spanish Association of Industrial Packagers and Refiners of Food Oils): Main sellers of olive pomace oil packaged for the domestic market.

ASOLIVA (Asociación Española de la Industria y el Comercio Exportador de Aceite de Oliva y Aceite de Orujo de Oliva/ Spanish Association of Olive Oil and Olive Pomace Oil Export Trade and Industry): In charge of the export phase. 22 of its associated companies focus on foreign markets for Olive Pomace Oil.

The governing and administrative bodies of ORIVA, the General Assembly and the Board of Directors, are the result of the union of these organizations. The Board comprises 14 members who represent and manage the Interprofessional, together with the Managing Director.

President:
José Luis Maestro Sánchez-Cano

Vice-president:
Antonio Gallego Díaz

Vice-president:
Jaime Osta Gallego

Vice-president:
Francisco Serrano Osuna

Secretary:
Álvaro Espuny Rodríguez

Treasurer:
José Luis Sánchez-Migallón García

Members:
Francisco Faiges Borrás
Primitivo Fernández Andrés
Juan de Dios Gálvez Daza
Rafael Pico Lapuente
Cristóbal Gallego Martínez
Rafael Sánchez de Puerta Díaz
Gaspar Vañó Fernández
Manuel Villén Otero

Managing Director:
Alicia Vives Gutiérrez

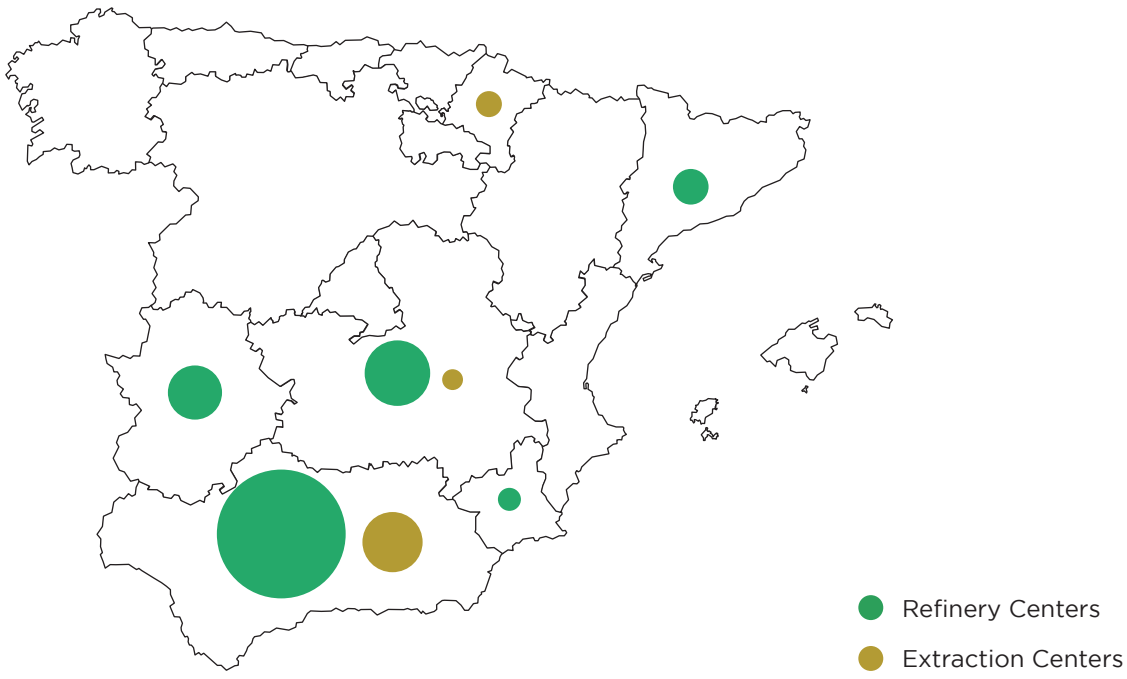
2.
The Olive Pomace Oil Industry

2.1 SOCIO-ECONOMIC VALUE

Spain is the world's leading producer of olive pomace oil, a food product that generates a high economic, social and environmental value.

It is a source of employment and wealth in the territories where it operates. With a turnover of 351.8 million euros in the 2021/2022 campaign, it generates 18,000 direct and indirect jobs.

The industry is made up of 52 oil mills/extraction centers and 9 refineries distributed across Andalusia, Castilla-La Mancha, Catalonia, Extremadura, Murcia and Navarra.



This industrial fabric allows Spain to offer a stable production that has averaged 130,000 tons per year in recent seasonal campaigns. In the 2021/2022 campaign, production reached 132,895 tons.

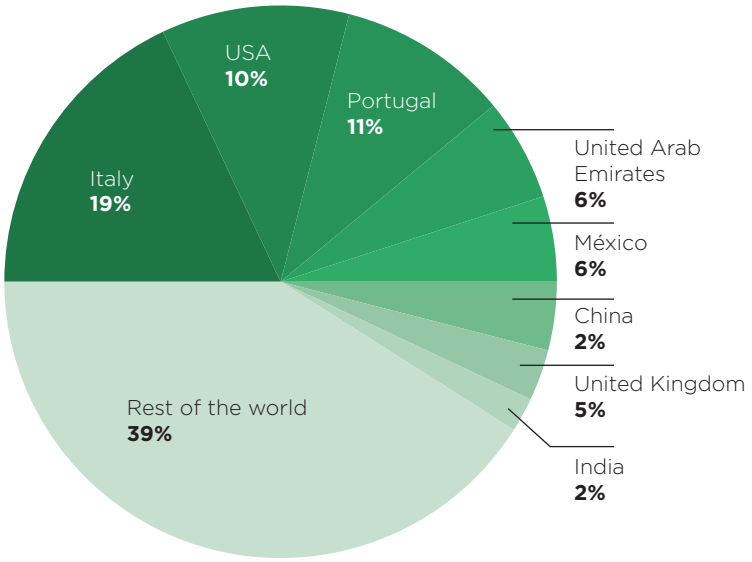
Campaign	2017/18	2018/19	2019/20	2020/21	2020/21
COPO production	117.302	131.070	128.111	131.478	**132.895**

Data in tons, COPO: Crude Olive Pomace Oil.
Source: AICA, Food Information and Control Agency.

Production mainly supplies the foreign market. 85% of olive pomace oil sales are for export. The strength of the foreign market has not only helped to maintain the olive pomace industry but has consolidated its key role as an ambassador to open new agri-food markets. The amount exported in the 2021 /2022 campaign rose to 132,895 tons, 0.3% higher than in the previous season and 13.2% higher than the average of the previous four seasons.

Main export destinations 2021/2022 season

Source: ANEO, Datacomex data.



In the domestic market, the context of the international crisis has influenced a 38.6% increase in sales of bottled pomace oil to reach 18,240 tons, a figure that only includes members of the National Association of Industrial Oil Bottlers and Refiners (ANIERAC), which represents 65% of the domestic market.

Campaign	2017/18	2018/19	2019/20	2020/21	2021/22
Total sales of packaged OPO	13.972	12.642	11.738	13.157	**18.240**

Data in tons, OPO: Olive Pomace Oil.

Source: Asociación Nacional de Industriales Envasadores y Refinadores de Aceite Comestible, ANIERAC and Asociación Nacional de Empresas del Aceite de Orujo, ANEO.

2.2 ENVIRONMENTAL VALUE

Olive pomace oil production makes the whole olive oil activity sustainable and is a pioneering example of circular economy and zero waste. Thanks to the olive pomace sector, full use is made of the alperujo (two-phase olive mill waste). This is the residue left after olive oil is extracted at the mills and accounts for 80% of the olive, a percentage that shows the scale of the environmental contribution made by the olive pomace industry. According to data from the Spanish Food Information and Control Agency (AICA), evaluated by the Spanish Association of Pomace Oil Companies (ANEO), in the 2021/2022 campaign the industry has made use of 6.3 million tons of alperujo in different applications and obtained 1.5 million tons of olive pomace and 416,000 tons of olive pits.

Using 100% of the olive

Thanks to sophisticated industrial processes of drying, extraction and refining, alperujo can be used in different ways. Most of it, 60%, is transformed into water vapor. 2% is converted into crude pomace oil, which will be transported to the refinery to be converted into olive pomace oil. And 38% produces biomass, a sustainable energy source used for self-consumption in the industry as well as for commercialization purposes.

Biomass is obtained mainly in the form of olive pomace and olive pits, both of which have a high energy content and are sources of both thermal and electrical energy.

The technologies currently used in the industry to obtain them are direct combustion, steam cycles and cogeneration.

Another key product is **compost**, a rational, cost-effective and safe way of obtaining fertilizer from the organic residues from the extraction process. Refinery fats and pastes are also used in animal feed and the cosmetics industry.

The industry also extracts other high value-added compounds with nutritional and cosmetic applications, which are very useful in the pharmaceutical industry.

The main compounds used are **phenols**, which are powerful antioxidants, dissolved in the aqueous phase of wet fatty pomace, with wide application in cosmetics and food supplements (higher performance in fried foods, substituting artificial antioxidants, etc.).

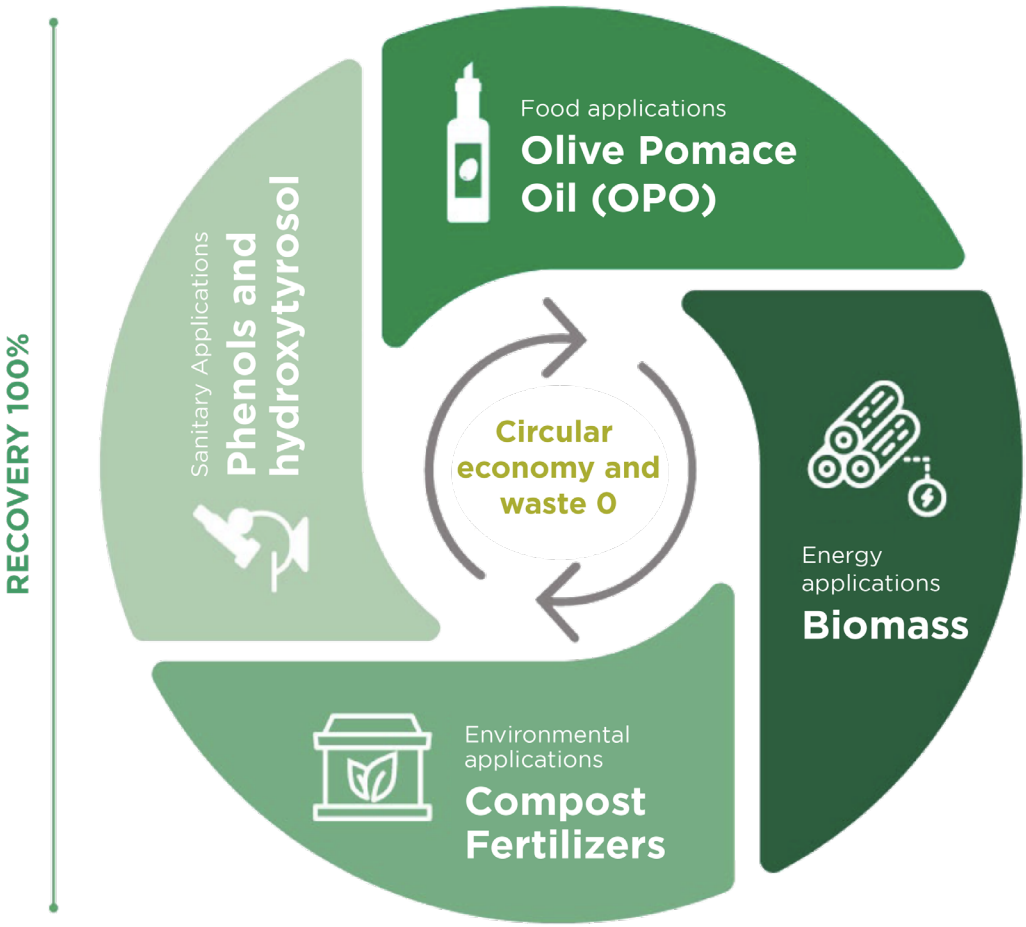
The phenol, **hydroxytyrosol**, an antioxidant present in alperujo stands out, which is used to obtain derivatives such as nitrocatechols, with high nutritional power and oncological treatment applications.

Minimizing environmental impacts

In addition to using 100% of the olive, the olive oil industry recycles vegetable water from olive oil mills. This water contains high levels of COD (Chemical Oxygen Demand) and BOD5 (Biological Oxygen Demand for 5 days) which does not harm the environment.

But the product's environmental value also lies in the use of renewable energies such as biomass. Using this sustainable energy resource, instead of other fossil fuels, delivers environmental benefits such as the use of agricultural waste or the minimization of emissions, since it is a carbon neutral fuel. It is worth highlighting that the industry produces this biomass, strengthening the circular economy.

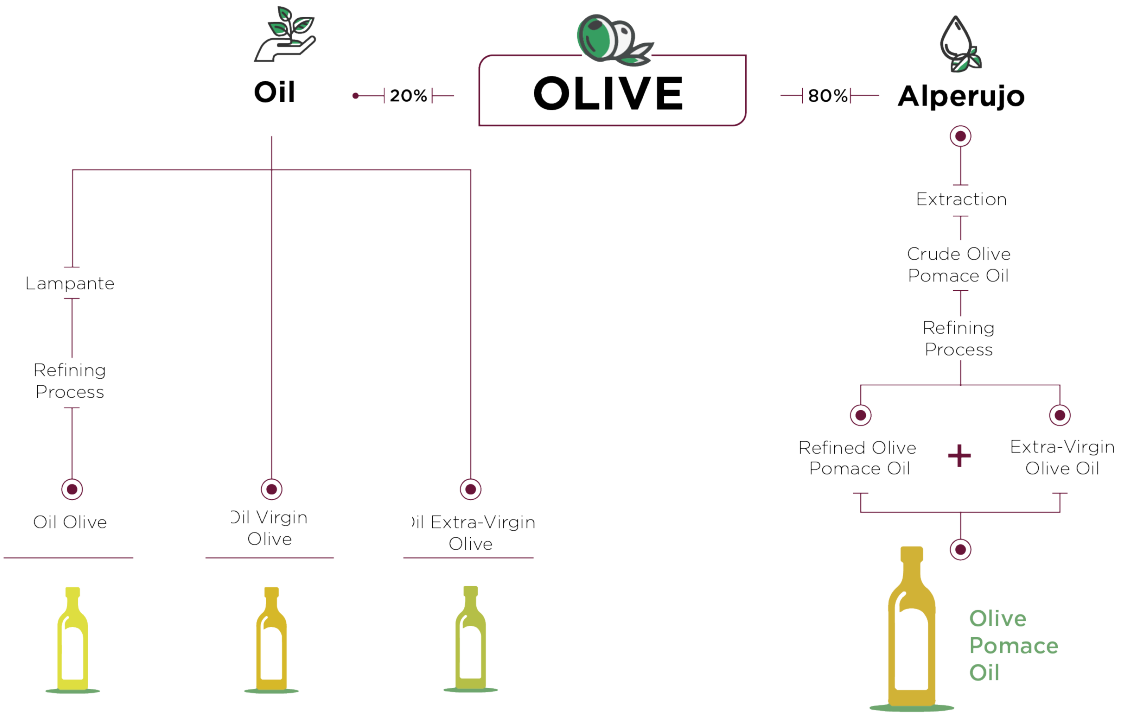
A differential environmental value that shows the pioneering nature of the industry in its commitment to a **more intelligent, sustainable** and inclusive **production model.**



3.
Our product: Olive Pomace Oil

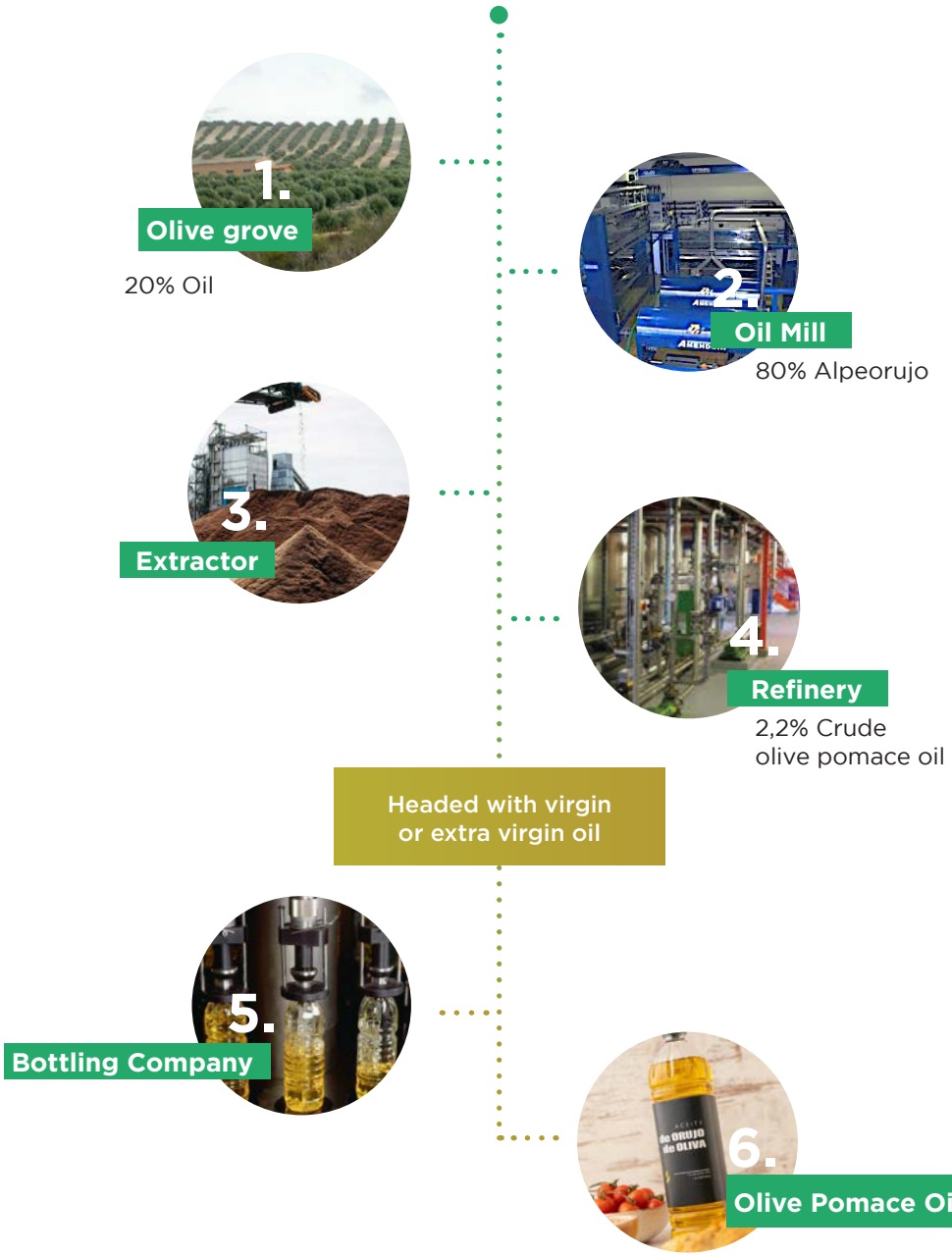
3.1 ORIGIN: THE OLIVAR GROVE

EOlive pomace oil comes from the olive grove. We start with the olive, after pressing 20% of olive oil is obtained in its three traditional categories: extra virgin, virgin and olive oil. What happens with the remaining 80%? This is the alperujo (two-phase olive mill waste). It is composed of water, stone, pulp and olive skin, and is the raw material for Olive Pomace Oil. After the extraction and refining process, 2% of the wet fatty pomace becomes this unique oil product which is topped up or blended with virgin or extra virgin olive oil fit for consumption.



3.2 PROCESSING STEPS

Olive pomace oil is obtained by extracting the alperujo (two-phase olive mill waste) and refining the crude pomace oil from this extraction. Once the refining process is completed, the refined pomace oil is topped up (or blended) with a small proportion of virgin or extra virgin olive oil. At this point, the product is ready to be sold in bulk or to be bottled and distributed.



3.3 HEALTH PROPERTIES

These processing steps for Olive Pomace Oil give it a differential composition. It is part of the group of vegetable fats, containing up to 80% monounsaturated fatty acids, predominantly acidic, which have a positive impact on cholesterol.

In addition, 2% consists of minor bioactive compounds. Some are unique to the product, such as triterpenic and aliphatic alcohols which, by virtue of in vitro studies can exercise anti-inflammatory functions. Squalene and beta-sitostirol, antioxidant properties have also been observed.

3.4 CULINARY PROPERTIES

In addition to its health properties, Olive Pomace Oil performs well in the kitchen, particularly in frying, where it stands out for its durability and cost-effectiveness.

- Quality: This is a healthy, premium quality oil that, thanks to its olive origin, provides unbeatable properties for cooking.

- Resistance: Olive Pomace Oil is more resistant to high temperatures and does not reach its smoke point until 230-240º. Its composition (up to 80% oleic acid + 2% bioactive substances) has an antioxidant protective effect on the oil itself.

- Durability: According to a comparative frying study carried out by the CSIC, it can be used more than twice as often as the most common seed oils.

- Value for money: It is highly cost-effective for home cooking and particularly for the catering and food industry. Stability, durability and resistance make the product excellent value for money.

- Neutral flavor: Olive Pomace Oil has neutral sensory qualities which enhances the original properties of the food. Flavor, texture and color.

- Versatility: Its mild flavor not only makes it ideal for fried foods, but also a suitable alternative for sauces, stir-fries, stews or pastries.

EXCELLENT FRYING PERFORMANCE

“The Science of Croquettes”

Olive pomace oil performs much better in discontinuous (domestic) and continuous (industrial) frying than conventional sunflower oils and is similar to or even slightly better than high oleic sunflower oils. This is one of the key findings from the study “ Olive Pomace Oil versus High Oleic Sunflower Oil and Sunflower Oil: A Comparative Study in Healthy and Cardiovascular Risk Humans” carried out by the Institute of Food Science and Technology and Nutrition (ICTAN) of the Spanish National Research Council (CSIC). In the tests carried out for discontinuous frying, the study proves that olive pomace oil withstands more than twice as many uses as conventional sunflower oil.

A follow-up study on “Performance of Olive-Pomace Oils in Discontinuous and Continuous Frying. Comparative Behavior with Sunflower Oils and High-Oleic Sunflower Oils”, conducted by the IG (Instituto de la Grasa/Institute of Fats) attached to the CSIC, reaffirms the advantages of olive pomace oil in frying compared to other oils on the market. It confirms the high thermal stability of the exclusive bioactive components of olive pomace oil and their incorporation in significant quantities in fried foods.

Ideal for frying

Frying is a very widespread culinary process at both domestic and industrial level. Both the procedure and the result depend not only on a stable oil, but also on the appropriate cooking material, temperature of the heat source and the water released by the food. Olive Pomace Oil is ideal for frying, as it results in lower fat absorption while maintaining a distinctive crunchy texture that keeps the flavor of the food intact.

4. LINES OF ACTION

Despite its good qualities, consumer knowledge of Olive Pomace Oil is still low. According to an ORIVA study conducted by GfK among consumers in Spain, only 4.5% of those surveyed mentioned olive pomace oil among oils fit for consumption, although 56.8% acknowledged they knew it existed, although some had never tried it. The survey also revealed a generation gap, with respondents over 60 years old proving the most familiar with the product.

Apart from lack of knowledge about the product, misinformation is another major challenge ORIVA faces. The 2001 food alert affected the reputation of the industry, and other poorer quality oils replaced it in home kitchens and in the professional sectors of the hotel and catering trade and the food industry. This explains the focus on boosting the international projection of the sector with exports acting as a lifeline for the product.

ORIVA focuses on making Olive Pomace Oil more visible and giving value to the product, based on its culinary and healthy potential. As well as the socioeconomic and environmental weight of the industry. It aims to restore levels of domestic market consumption in the medium-long term through two key lines of action: communication and research.

4.1 COMMUNICATION

ORIVA's communication actions are part of a strategic communication plan that combines the disciplines of advertising, marketing and public relations. In an initial phase, ORIVA seeks to position itself among professional audiences and then get closer and closer to end consumers.

Since its inception, the Interprofessional has developed an intense communication action program, taking an active role in professional events; rolling out initiatives aimed at the HORECA channel and promotional actions at points of sale and distribution. Likewise, to combat misinformation, it has produced an array of information and educational materials, activating the necessary channels for their dissemination, in particular, focusing on the digital scenario.

4.2 RESEARCH

En el campo de la investigación, ORIVA promueve distintos estudios, fundamentalmente en dos líneas: potencial saludable y ventajas culinarias del Aceite de Orujo de Oliva. Una labor que ha confiado a la principal institución investigadora de nuestro país, el Consejo Superior de Investigaciones Científicas (CSIC). La alianza con el CSIC es básica para llenar el vacío bibliográfico sobre Aceite de Orujo de Oliva con todas las garantías de continuidad, independencia y rigor científico.

STUDIES COMPLETED

"Performance of Olive-Pomace Oils in Discontinuous and Continuous Frying. Comparative Behavior with Sunflower Oils and High-Oleic Sunflower Oils"

- **Research center:** Institute of Food Science and Technology and Nutrition (ICTAN-CSIC).
- **Lead Researcher** Dra. Gloria Márquez Ruiz.
- **Objective:** To provide the scientific bases necessary to observe that olive pomace oil is more suitable for frying than sunflower oils, both conventional and modified "high oleic sunflower oil", in domestic and industrial frying procedures
- **Results:** After 7 months of tests in the ICTAN laboratory, it is clear that olive pomace oil performs much better in frying than conventional sunflower oils and is similar to, and even slightly better than, high oleic sunflower oils. Its composition, rich in oleic acid and exclusive bioactive compounds, such as squalene or beta-sitosterol, provides Olive Pomace Oil with differential properties that achieve a protective effect of the oil itself, making it more durable and stable.

"Stability of Bioactive Compounds in Olive-Pomace Oil at Frying Temperature and Incorporation into Fried Foods"

- **Research center**: Instituto de la Grasa (IG-CSIC).
- **Lead researcher**: María Victoria Ruiz Méndez.
- **Objective:** Following the study initiated by Dr. Gloria Márquez in previous research, this project seeks to establish new scientific evidence of resistance to alteration and the advantages of olive pomace oil in domestic frying compared to oils marketed as the most suitable for frying.
- **Results:** High thermal stability of unsaponifiable compounds of nutritional interest characteristic of olive pomace oil, such as triterpenic alcohols, triterpenic acids and aliphatic or fatty alcohols, which are not present in seed oils, has been observed. The frying process modifies the fatty profile of foods: it increases their total fat content and decreases the proportion of saturated fatty acids and cholesterol (in foods containing ingredients of animal origin). In the case of frying with Olive Pomace Oil, the distinctive minor components of this oil have also been incorporated into the food.

"Olive Pomace Oil versus High Oleic Sunflower Oil and Sunflower Oil: A Comparative Study in Healthy and Cardiovascular Risk Humans"

- **Research center:** Institute of Food Science and Technology and Nutrition (ICTAN-CSIC).
- **Lead researchers:** Laura Bravo Clemente and Raquel Mateos Briz.
- **Objective:** The specific aim of the project is to assess the potential beneficial role of olive pomace oil after its consumption at nutritional doses in biomarkers for cardiovascular health and associated pathologies (hypertension, diabetes and obesity), by means of two clinical trials conducted on healthy and cardiovascular risk volunteers (hypercholesterolemic terolemics) in comparison with sunflower oil and high oleic sunflower oil, widely used in Spain.
- **Results:** After four years of research, the results obtained suggest that, in general, olive pomace oil intake could improve cardiometabolic risk biomarkers, especially by reducing parameters related to cholesterol, waist circumference and lipid oxidation in healthy and hypercholesterolemic subjects. Furthermore, the positive modulation in the normocholesterolemic group of biomarkers and indices assessing insulin resistance and sensitivity suggest that olive pomace oil consumption could lead to a lower risk of type 2 diabetes in healthy consumers. Therefore, as a whole, the results highlight the health benefits of olive pomace oil, unknown until now, which support the consumption of this healthy oil.

"Attenuation of Inflammatory Processes Associated With Alzheimer's Disease After Consumption of Pomace Olive Oil (PHASES I-II)."

- **Research center:** Instituto de la Grasa (IG-CSIC).
- **Lead researcher:** Javier Sánchez Perona.

- **Objective:** This is the third phase of this line of research with trials on Alzheimer's patients, after passing the first phase based on in vitro trials and the second phase with application on at risk or with the first symptoms of the disease.
- **Results:** The results of in vitro studies (PHASE I) and clinical trials on humans (PHASE II) confirm the initial double hypothesis. First, it confirms that TRLs, fat-soluble substance-carrying particles in the bloodstream, have the capacity to activate microglia cells leading to an inflammatory process. Second, it shows that minority compounds in Olive Pomace Oil, such as oleanolic acid (tocopherol and -sitosterol) can attenuate the activation of microglia. Therefore, the results suggest that the bioactive compounds in Olive Pomace Oil could have a protective effect against Alzheimer's disease by attenuating microglia activation.

STUDIES COMPLETED

"Quality and Nutritional Changes of Traditional Cupcakes in the Processing and Storage as a Result of Sunflower Oil Replacements with Refined Olive Pomace Oil"

- **Research center:** Instituto de la Grasa (IG-CSIC).
- **Lead researcher:** Joaquín Velasco Jiménez.
- **Objective:** To improve the nutritional properties of bakery products, olive oil tortas or Spanish cupcakes. The project proposes totally or partially substituting sunflower oil, commonly used as an ingredient in these products, with olive pomace oil. Not only is the fatty acid composition of olive pomace oil healthier, but it also has a higher concentration of bioactive components, such as squalene, and other components that are not found in sunflower oil, such as triterpenic dialcohols.

"Functionality of Puff Pastry Olive Pomace Oil-Based Margarines and Their Baking Performance."

- **Research center:** Institute of Food Science and Technology and Nutrition (ICTAN-CSIC).
- **Lead researchers:** María Dolores Álvarez Torres and Susana Cofrades Barbero.
- **Objective:** To explore the feasibility of creating new Olive Pomace Oil structuring systems (oleogels) as substitutes for palm fat in the production of margarines for puff pastry dough. These systems should present adequate structural properties and final quality, in addition to presenting a healthier fatty acid profile.

5.
IN BRIEF

- Olive pomace oil is a little-known product in Spain. Only 4.5% of consumers mention it among oils fit for consumption. Interprofesional del Aceite de Orujo de Oliva, ORIVA, was created in 2015 to promote awareness of this product in the domestic market through **communication and research** actions.

- Olive pomace oil comes from the **olive grove**. After pressing or milling, only 20% is olive oil (olive, virgin and extra virgin). The remaining 80% is alperujo comprising water, stone, pulp and olive skin. 2% becomes crude pomace oil which is refined and topped up with virgin or extra virgin olive oil for consumption.

- Among the different types of vegetable oils, olive pomace oil is classified among **monounsaturated fats**. It is rich in oleic acid (up to 80% of its composition) and has 2% bioactive compounds to which healthy properties are attributed.

- In cooking, the oil's **frying** performance stands out for its stability and durability. Scientific tests have shown that it can be used more than twice as often as conventional sunflower oil. Its neutral flavor makes it very versatile **for sauces, stir-fries, stews and desserts.**

- ORIVA is committed to top-level research **to study the health** and culinary potential of Olive Pomace Oil, collaborating in different studies with the Spanish National Research Council (CSIC), which guarantees the independence and continuity of the lines of research undertaken.

- Olive Pomace Oil production uses 100% of the olive, making the whole olive oil activity **sustainable**. The olive pomace sector plays a key environmental role by becoming an essential part of a pioneering model of circular economy and zero waste. In the 2021/2022 campaign, 6.3 million tons of alperujo were recovered, obtaining bio-mass, compost and other valuable components for the pharmaceutical industry.

More information:

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