

Kalichem
a lamberti company



Olivoil Specialties

UPCYCLING IN PERSONAL CARE

EMULSIFIERS & SURFACTANTS



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Olivoil specialties include a family of **original and unique emulsifiers, surfactants and emollients** sourced from **upcycled olive oil** and developed through a technology where olive oil fatty acids are functionalized with vegetable derived aminoacids, polypeptides and sugars.

Approved by Cosmos and Natrue



**COSMOS
APPROVED**





/ UPCYCLING

Upcycling is the art of giving new life, renewed functions and a new value to already used resources.

The term upcycling was invented in 1994 by a German mechanical engineer, Reiner Pilz.

Upcycling would therefore be very different from recycling, whose goal is sometimes to return an object to the same function, sometimes to transform itself by losing value. Upcycling, on the other hand, means reusing objects and resources to create a product of higher quality, real and perceived.

/ FOOD BYPRODUCTS

Food byproducts and waste are associated with greenhouse gas emissions of 8% of total emissions (in 2016, equal to 51.9 billion tons of CO₂). They account for 18% of freshwater consumption, 30% of agricultural land use, and altogether contribute 3 times more to global warming than does plastic waste.

This is one of the major causes of the ecological crisis, due to the alteration of geological, biological and physical processes, including the cycle of carbon, water, nitrogen and phosphorus.

/ OLIVOIL APPLICATIONS

The ethical sourcing of natural ingredients in cosmetics industry plays a relevant role in boosting the sustainability and cleanliness of beauty products. Olivoil Specialties fully address these needs.

Olivoil range includes **original emulsifiers, surfactants and emollients** with advanced functional and sensorial characteristics that enable to develop several personal care applications, including:

- **Skin and hair care emulsions** (creams, serums, lotions, sprays, roll-on deodorants, conditioners)
- **Make-up products** (primers, concealer, foundation, BB and CC creams, sticks, mascara, eye shadow)
- **Sunscreens and soothing pastes** loaded with minerals
- **Cleansers** (shower gel, bubble bath, shampoo, cleansing milk and foams, micellar water, intimate washes, wet wipes) and **oral care products**
- **“Water-less “ or dry formulations for plastic saving** (powders, bars, tablets, jellies)

OLIVE OIL

Mediterranean people have been growing olive trees and extracting olive oil for thousands of years. Today, approximately 900 million olive trees cover over 10 million hectares worldwide, 98% of which are located in the Mediterranean Basin.



WORLDWIDE DEMAND FOR OLIVE OIL, THANKS TO ITS NUTRITIONAL QUALITIES, IS CONSTANTLY GROWING WITH INCREASES FROM 3 TO 5% PER YEAR.

The European Union accounts for 80% of world olive oil production.

The major European producers are Spain, Italy, Greece and Portugal, with minor shares of France.

In these countries, olive growing is of great importance not only for the rural economy, but also for the cultural and environmental heritage (about 2,5 million producers, about a third of farmers in the European Union). The International Olive Council (IOC) has communicated the data for the 2019/20 vintage, which show a world production of 3.207.000 t.

OLIVE OIL SUSTAINABILITY PROFILE

Olive oil has substantial sustainability benefits over the most commonly purchased cooking oils (soybean, canola, corn, sunflower and peanut) because these oils are produced from annual crops, while olives are a long-living permanent crop.



Olive oil is cultivated in 66 countries and on 5 continents; olive trees comprise the world's largest non-tropical permanent crop.

WATCH OUR
SUSTAINABILITY
AWARD VIDEO



Permanent crops, which are crops that do not require planting each year, are beneficial for the environment for the below 6 reasons:

1 • CARBON SINK/BALANCE

Perennial crops capture a greater amount of carbon from the atmosphere, with values 7 times higher than annual plants. One hectare of olive trees compensates a person's annual carbon footprint. For instance, world olive oil production can absorb the CO₂ emissions of a city the size of Hong Kong.

2 • SOIL MANAGEMENT

The process of tillage, planting and harvesting of annual plants (eg. soy or corn) depletes nutrients from the soil over time and causes topsoil erosion. Regularly farmed land requires more inputs, such as fertilizers or energy. On the other hand, perennial fields such as olive fields contain more nutrients in the soil due to the higher diversity of soil microbes.

3 • MANAGEMENT OF WATER RESOURCES

Permanent crops such as olive trees have roots that penetrate deeper into the soil; they absorb more water without irrigation, helping farmers avoid soil compaction and surface water runoff. Olive trees are drought tolerant: 70% of the world's olive plantations are rain fed, with no water for irrigation.

4 • BIODIVERSITY

Tropical crops (eg. palm or coconut) are permanent, but have known criticalities on global biodiversity, affecting at least 193 threatened species. Conversely, olive plantations support diversity and habitats for agricultural pest enemies, with reduction/elimination of the need to use herbicides and insecticides.

5 • "CLEAN" PRODUCTION METHODS

Most vegetable and seed oils are extracted with hexane, which is produced from fossil fuels, and requires high heat. On the other hand, Olive oil is extracted mechanically without the use of solvents and is produced in lower temperature conditions (maximum 26°C).

6 • GENETICALLY MODIFIED CROPS

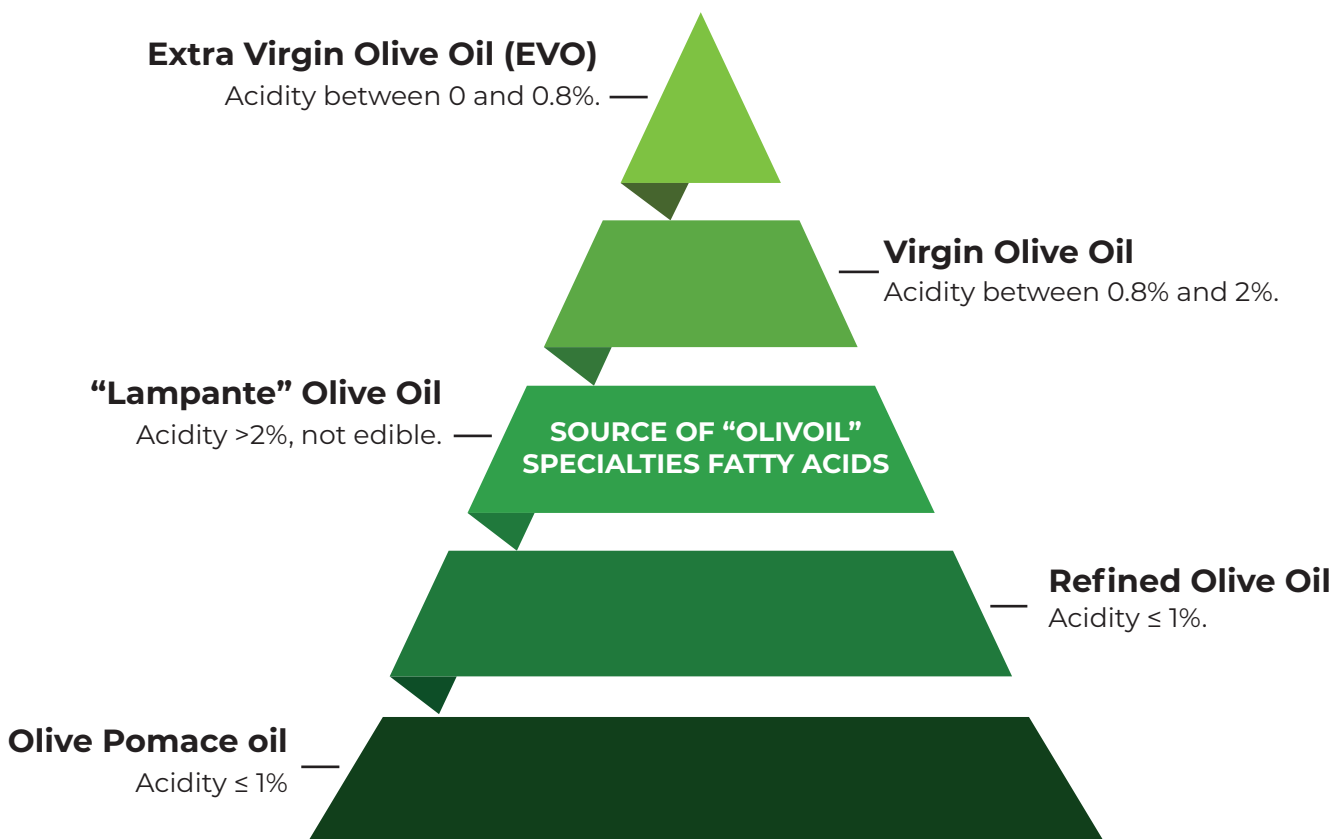
Canola, soy, and corn oils are almost always made from genetically modified crops. Olive oil, in contrast, is always non-GMO.

OLIVOIL SPECIALTIES UPCYCLING

The stages of olive oil production begin with the olive harvest followed by various steps including *washing, pressing, kneading, grinding and storage*. The production process leads to the formation of different olive oil varieties, defined by the regulation of the European Commission 2019/1604 of 27 September 2019.

The varieties in object change depending on the fraction of free fatty acids not bonded to glycerol to form triglycerides. The quantity of these fats enables to determine the oil acidity.

Following a summary of the classification of olive oils:



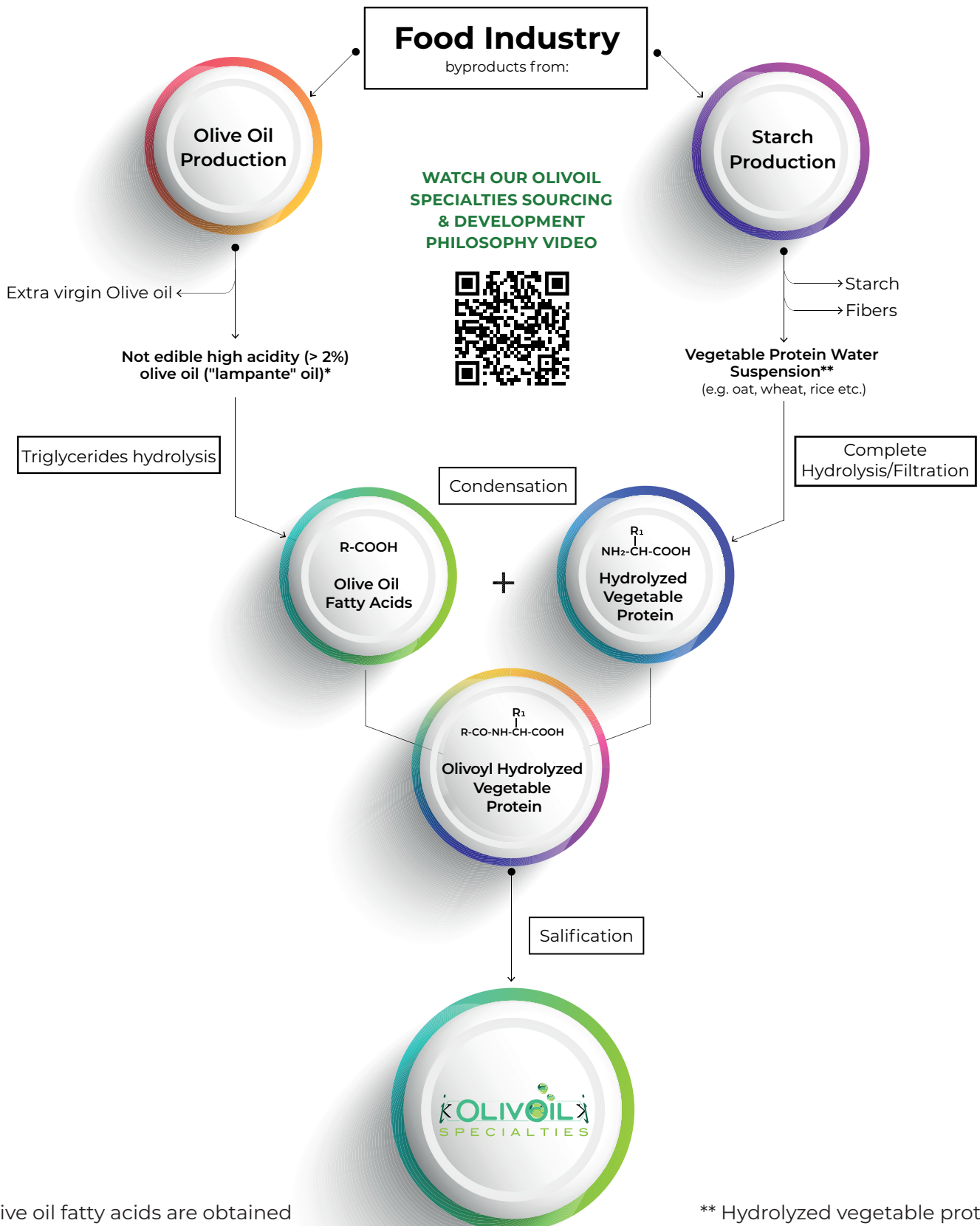
“Lampante” Olive Oil

In the past, lampante olive oil was used for oil lamps. Due to its high acidity index (high concentration of free fatty acids), this specific variety cannot be used as it is for food purposes.

Its use can be aimed either at obtaining refined oils intended for food use, or at obtaining fatty acids used as components of raw materials used in the cosmetic field.

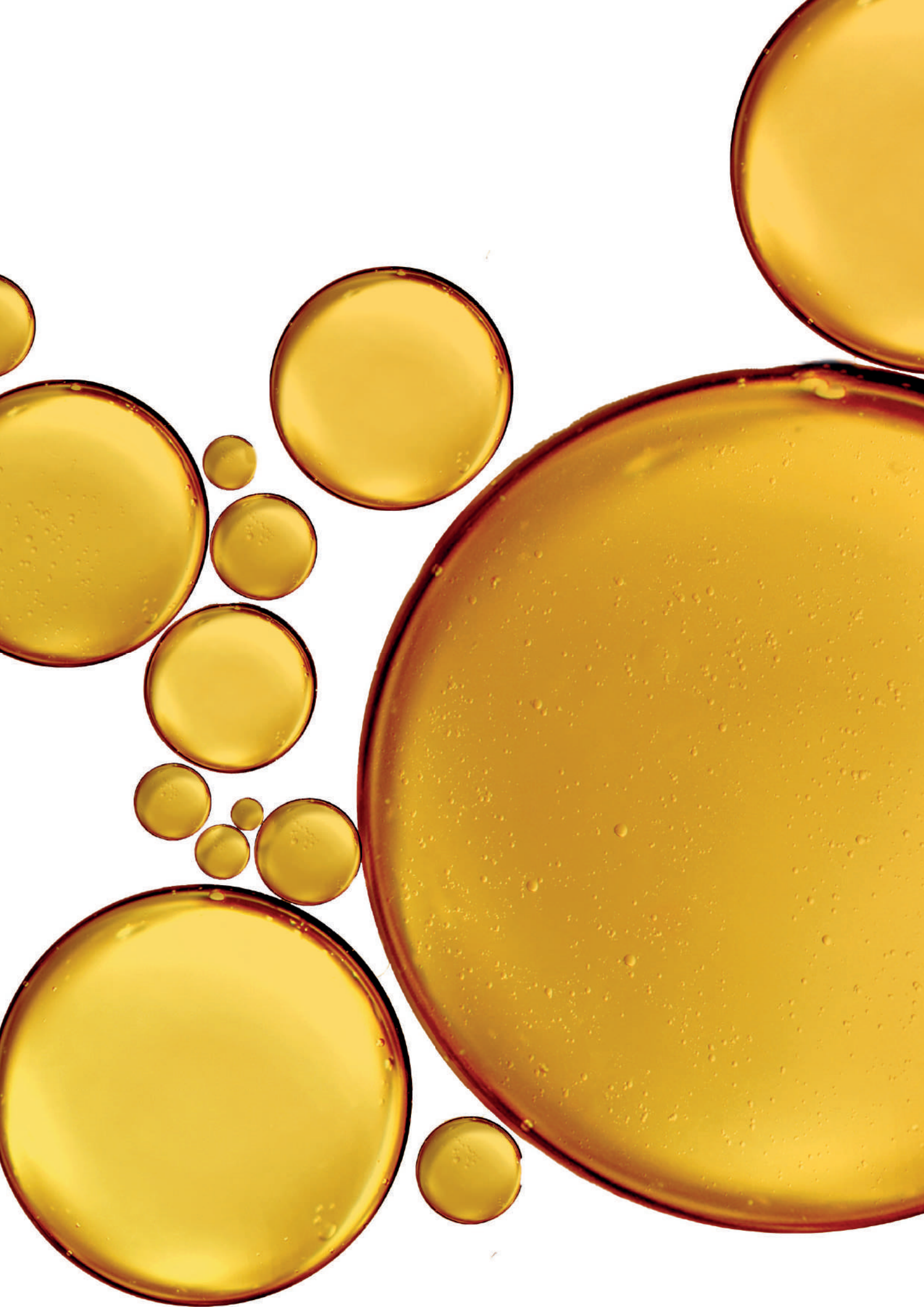
The Olivoil Specialties are therefore developed starting from the hydrolysis of the triglycerides resulting from the lampante olive oil. These fatty acids are following condensed with vegetable derived aminoacids obtained as by-products from the extraction of cereal starch and fibers (eg. oat, wheat, rice, etc).

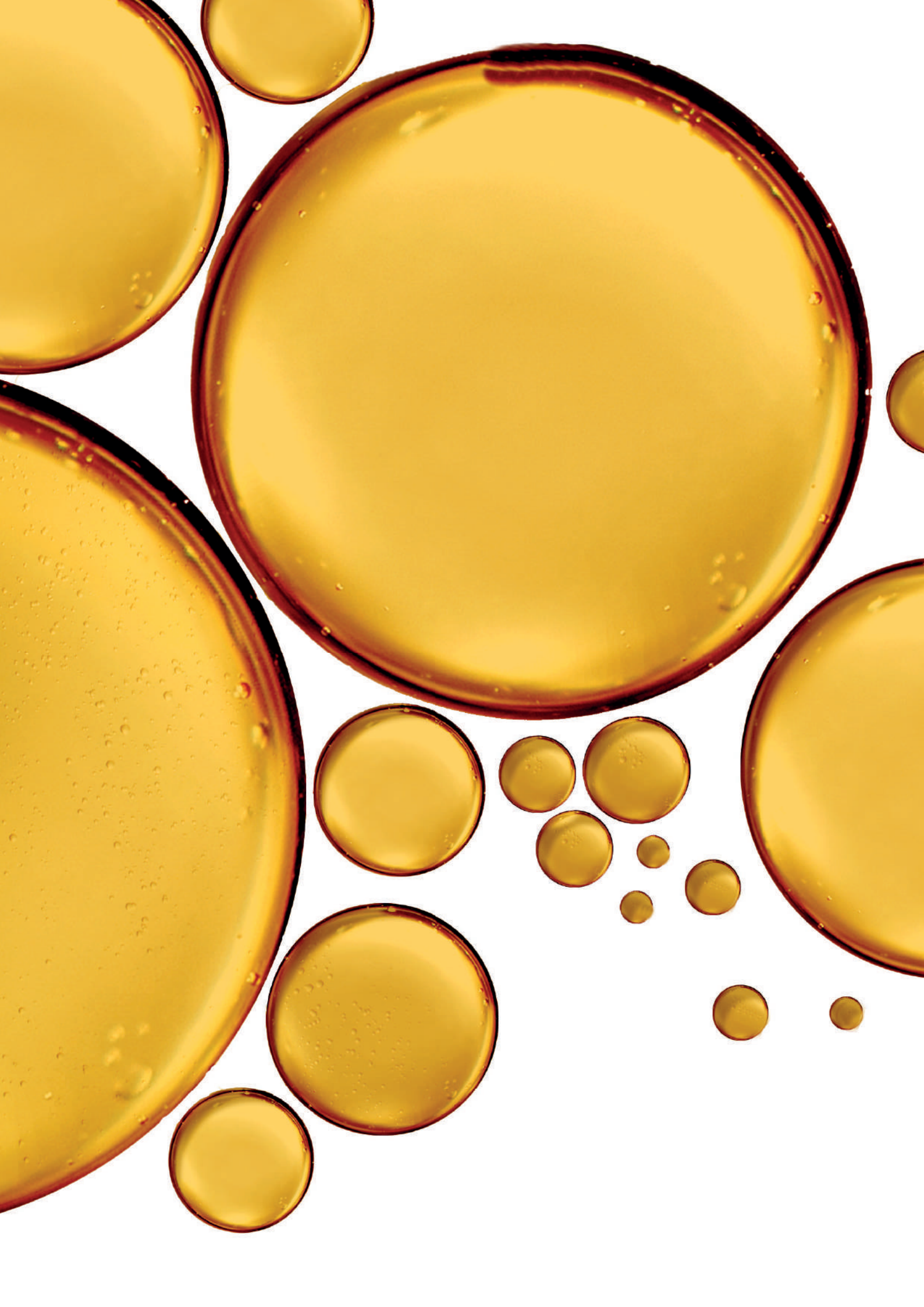
"OLIVOIL" FLOWCHART



* Olive oil fatty acids are obtained through the hydrolysis of olive oil triglycerides contained in the high acidity, not edible, fraction resulting from olive oil production process.

** Hydrolyzed vegetable protein is obtained through the hydrolysis of the vegetable protein resulting from the production process of starch from vegetables.







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