## EUROPE PROMOTES A HEALTHY FUTURE




## 

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## HISTORY

The lemon is a citrus fruit grown from the lemon tree, a thorny evergreen belonging to the Rutaceae family. This tree flourishes in temperate and tropical climates, and is grown in many countries throughout the world.

The lemon tree, originally from China or India, has been growing in Asia for over 2,500 years. In the 10th century, the Arabs brought it to the
Mediterranean basin: east toward Greece and west toward Spain. Lemons were practically unknown to the Greeks and Romans, and it was not until the Middle Ages that they began to be consumed regularly.

Appreciated for its medicinal virtues, in the 16th century it completed its world tour, arriving on the coast of Florida.


## Production

Global lemon production has been increasing over
 the last decade. In 2022, the global lemon production reached $9,700,000$ tons ${ }^{1}$.

Argentina, Spain, the United States, Turkey, Italy, and South Africa are the main lemon producing countries.

Europe is a very important player in lemon production worldwide. In fact, in recent years, average lemon production has exceeded $\mathbf{1 , 5 0 0 , 0 0 0}$ tons per year.

|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | EUROPE | argeitilila | TURKEY | USA | S. Africa |
| FRESH | 1,254,000 | 409,000 | 1,450,000 | 609,000 | 585,000 |
| IIILUSTRY | 375,000 | 1,491,000 | 50,000 | 329,000 | 65,000 |
| Pronuctioll | 1,629,000 | 1,900,000 | 1,500,000 | 938,000 | 650,000 |
| 1,800,000 |  |  |  |  |  |
| 1,600,000 |  |  |  |  |  |
| 1,400,000 |  |  |  |  |  |
| 1,200,000 |  |  |  |  |  |
| 1,000,000 |  |  |  |  |  |
| 800,000 |  |  |  |  |  |
| 600,000 |  |  |  |  |  |
| 400,000 |  |  |  |  |  |
| 200,000 |  |  |  |  |  |
| 1 Soure Usod | RoElitila | EUROPE | TURKEY | USA | south <br> AFRICA |

# LEMOHS ARE MAILY IUTENDED FOR FRESH AMD INDISTRAL USE <br> Lemons are primarily destined for fresh consumption, i.e., for culinary use. 



#  <br>  

## GLOBAL SALES <br> OF FRESH LEMOI

Fresh lemon
3,24/4,000 t
Average world production marketed

## 1,629,000 tons

Europe is at the forefront of fresh lemon sales worldwide. Spain is the main producer, with 626,000 tons


## OLORAL PRODUCTIOM OF PROCESSED LEMON



In recent years, the industry has increased the use of processed lemons for:

- Natural juices and concentrates
- Extraction of essential oils, pulp, lemon zest, pectin and/or flavonoids
- Manufacturing feed, aromatics, household products
- Obtaining natural citric acid to produce natural preserves.

European production of processed lemons is 290,000 tons.


255,000 t
Spain is the world's second largest producer of processed lemons

LEMONS ARE Oll TREND

6,900,000 t
The consumption of fresh
lemon worldwide in 2022

## 24\%

an increase
compared to 2018
2,2 kg
person/year
in the world

## III THE USA AID CAIADA EUEN MORE

## 1,478,000 t

The consumption of fresh lemon in the USA and Canada in 2022

2.18 kg<br>person/year in<br>the United States

1.82 kg
person/year
in Canada

CONSUMPTIOI UNTED STATES


As far as the United States is concerned, consumption has increased by $\mathbf{4 1 \%}$ in the period between 2010 and 2019, reaching an average volume of some 1,546,228 tons.

COMSUMPTION CAMADA


Lemon consumption in
Canada was on a clear upswing from 2010 to 2019, increasing by $\mathbf{4 2 \%}$ with an average of $\mathbf{9 0 , 6 9 5}$ tons per year.


## EUROPE PROMOTES A HEALTHY FUTURE



## CHALLEIOES

Q
Identify the European and Spanish lemon with the Mediterranean diet

Maintain a leadership position for the European consumer

Give visibility to the value of the European production model, such as freshness, certified quality assurance and sustainability


Position European lemons as consumer preference over lemons from third countries


Inform the younger generations, encouraging new uses

## WHAT?

A fresh, new, young and modern promotional and informational campaign for the European lemon

## WHERE

In the United States and Canada

## 

During 2020, 2021 and 2022

## TO WHOM?

Our target market is Europeans between $\mathbf{2 5}$ and $\mathbf{4 5}$ years old who are interested in gastronomy, food, restaurants, and a balanced, healthy diet

## WHAT IS THE

## 

## it's an attitude

that brings out the best in Europe

## IT'S All OUTLOOK

healthy, attractive, youthful, energetic, zesty, a European lifestyle

## IT'S ABOUT DEING NATURAL

and upholding tradition while looking towards the future.

## THE LEMON ATTITUDE

isn't just one attitude, it's many. It's multicultural.

## IT'S ABOUT HARNESSIMO

the properties of lemon to make our lives shine bright.

IT'S DEING UP-TO-DATE
and embracing a trend, but not just
any trend: a healthy trend.

## IT'S ABOUT FLEXING OUR MUSCLES,

feeling proud of and satisfied with our products and production.

## IT'S ABOUT "SQUEELIHO"

the most out of the day instead of waiting for things to happen.

## IT'S ABOUT BELIG ACTIUE

IT'S ABOUT ENJOYING EUROPE
and flipping the switch from "lemoff" to "lemON!"

## HAS ARRUED

A new age has arrived: the Lemon Age, brought to you by the LEMONENCER, the world's first lemon influencer.


## DIGITAL

LEMONENCER will connect with the youngest audience in an innovative and creative way through social media and the campaign website

## ADUERTISINO

We will amplify the campaign through special actions on various platforms creating special actions to achieve international coverage


## HEALTHY

## Lemon is a source of

 $\pi_{\text {viamin }} \mathrm{C}$It is part of the Mediterranean Diet, the healthiest diet in the world according to the World Health Organization (WHO).

## IUTRITIONAL COMPOSITION

|  | PER $\mathbf{1 0 0} \mathbf{g}$ <br> OF EDIBLE SERVING | AVERAGE UNIT $\mathbf{1 1 0} \mathbf{g}$ |
| :--- | :---: | :---: |
| ENERGY (Kcal) | 44 | 31 |
| PROTEIN (g) | 0.7 | 0.5 |
| TOTAL FATS (g) | 0.4 | 6.3 |
| CARBOHYDRATES (g) | 9 | 0.7 |
| FIBER (g) | 1 | 62.6 |
| WATER (g) | 88.9 | 8.4 |
| CALCIUM (mg) | 12 | 0.3 |
| IRON (mg) | 0.4 | 2.1 |
| IODINE (ug) | 3 | 12.7 |
| MAGNESIUM (mg) | 18 | 0.1 |
| ZINC (mg) | 0.12 | 2.1 |
| SODIUM (mg) | 3 | 104.9 |
| POTASSIUM (mg) | 149 | 11.3 |
| PHOSPHORUS (mg) | 16 | 0.7 |
| SELENIUM (ug) | 1 | 0.04 |
| THIAMINE (mg) | 0.05 | 0.02 |
| RIBOFLAVIN (mg) | 0.03 | 0.12 |
| NIACIN EQUIVALENTS (mg) | 0.17 | 0.08 |
| VITAMIN B6 (mg) | 0.11 | 4.9 |
| FOLIC ACID (ug) | 7 | 35.2 |
| VITAMIN C (mg) | 50 | 1.6 |
| VITAMIN A: Eq Retinol (ug) | 2.3 | 0.4 |
| VITAMIN E (mg) | 0.5 |  |

## IUTRITIONAL PROPERTIES OF THE LEMON

The lemon is a product: fat-free, no saturated fat, very low in sodium, cholesterol-free, low in calories and high in vitamin $\mathbf{C}$. Therefore, it is considered a healthy food

## HEALTHY PROPERTES OF THE LEMON

The lemon has a high levels of Vitamin $\mathbf{C}$, which:

## supports immune system function

## supports nervous system function

protects cells against oxidative damage
helps regulate psychological function
helps regulate energy metabolism
contributes to the normal formation of collagen for the normal functioning of blood vessels • bones • cartilage • gums • skin • teeth

## helps decrease fatigue and tiredness

helps regenerate the reduced form of vitamin $\mathbf{E}$
improves the absorption of iron


## SUSTMIMRER

The European lemon is the most sustainable lemon in the world

Sustainability is the new paradigm, the word that is on the tip of everyone's tongue, especially among consumers who are passionate about sustainability and won't accept anything less.

Europe is the most sustainable lemon producer in the world thanks to a model based on three key pillars:


## LEMONS IN SPAIN

## Sustainability



In addition, the European lemon produced in Spain has a Handbook on Corporate Social Responsibility

## ECOMOMIC SUSTANABLLITY

The social and economic responsibility of the European lemon sector is oriented towards the creation and distribution of added value among employees and shareholders, taking into account market conditions, equity and justice. This therefore leads to the production and distribution of useful and profitable goods and services for the community of which it is a part.

For this reason, all lemon purchases must be formalized through the approved Standard Contract that is in accordance with the demanding conditions set by Law 12/2013 of the Spanish Food Supply Chain and summarized in the Code of Good Business Practices in Food Contracting (CBPCA) issued by Spain's Ministry of Agriculture, Fisheries and Food.

## CVUROMMEITALSUSTHIMBLITY

The European lemon sector works to improve the environment with an eco-efficient and prevention approach that maximizes input and natural resources.
$\Rightarrow$ It has a "Manual of Active Matters and Recommendations in Treatments for Lemon" that is even more restrictive than the European regulations. Its main aims are to:

Inform the sector of the legal situation and adjust the product offer to the legal requirements of the different markets.
$\Rightarrow$ Recommend the most effective treatments that rationalize the work both in the field and in the preparation warehouses.

## 119,094 acres (ac.) 13,000,000 lemon trees

$\Rightarrow$ Positive net balance of $\mathrm{CO} \rightarrow 311,250$ tons of sequestered $\mathrm{CO} 2 \rightarrow$ Ally against climate change, with a positive net balance of 311,250 tons of CO2. In other words, each kilo of lemon produced helps to trap 300 grams of CO2.
$\rightarrow$ Efficient water use $\rightarrow 232.4 \mathrm{hm} 3 /$ year
$\rightarrow$ Organic production: 10,300 acres and an estimated production of 210,600 tons
Sustainability also requires protecting and restoring the environment, promoting the corresponding principles and values along the value chain in which the sector participates and minimizing environmental damage caused during the production processes.
$\Rightarrow$ The European lemon sector is proud to collaborate with the ANSE Foundation in a project related to the impact and coexistence of lemon plantations with the long-fingered bat, a species in danger of extinction.
$\Rightarrow$ Environmental sustainability of the European lemon sector is guaranteed by the GLOBAL G.A.P. Certification.

## sUCIAL SUSTAIHABLLITY

The responsibility for social sustainability of the European lemon sector is related to key aspects of human resources management, health and safety at work, training and performance of workers, quality management and other elements such as adaptation to change and the environment.

It also implies the shared and subsidiary responsibility of investors, managers, collaborators and suppliers to monitor and promote quality of life at work and the comprehensive development of all members of the sector.

The European lemon sector in Spain generates:


# 22,670 jobs +50\% positions held by women 

 Growing: 4,000 jobsHarvesting: 8,400 jobs
Handling: 9,000 jobs
Industry and Other: 1,200 jobs

Spain data. Ailimpo Source
In addition, there has been quite a significant generational change during the last few years, the average age among managers of the cooperatives, producing companies, exporters and industry is under 45.

## QUALITY

## THE EUROPEAN LEMON, THE HIGHEST QUALITY IN THE WORLD

The European lemon differs from its competitors because it is part of the European production model, which has the highest quality and food safety standards in the world. A very demanding system of traceability from the field to the table, which guarantees that the European lemon is a healthy, safe, top-quality food produced with low environmental impact.

The quality of the European lemon Fino and Verna produced in Spain is guaranteed by several quality seals.



The European lemon is available $\mathbf{1 2}$ months a year.
Lemon trees are more sensitive to low temperatures than other citrus fruits. The most important areas of production and distribution correspond mainly to semi-arid and arid subtropical regions with minimum temperatures above $-4^{\circ} \mathrm{C}$. In other words, lemon trees are perfectly adapted to the Mediterranean climate.

Therefore, the Mediterranean basin is perfect for growing lemons. The east and south of Spain is one of the top global areas of production.

Spain, with an average production of around $\mathbf{1 , 0 0 0}, \mathbf{0 0 0}$ tons, accounts for more than $\mathbf{6 0 \%}$ of European production. During the 2020-21 season, Spain hit its historical record for lemon production, with 1,400,000 tons.

You can't talk about European lemons without talking about Spain. This country is the biggest producer of fresh lemon in Europe. Its production during the 2021/2022 campaing was: 1,017,000 tons.

## Increase in organic production

The European lemon is a global point of reference in the organic sector. In recent years it has experienced an increase in production of 148\% (between 2012 and 2018). Spain is the main producer of organic lemons in Europe with 210,600 tons (2021).
*Source: MAPA


210,600 t
of organic lemon,
produced in 2021


Spain data. Source: MAPA

## III SUMMARY

The European lemon is a global leader in both fresh and processed lemons. You don't have to look any further than the data to prove it:


Europe's \#1 organic producer and one of the world's leading producers
\#1 globally in fresh lemon sales
\#1 European producer
\#2 global producer of fresh lemons
\#2 global producer of processed lemons

700 millon euros
in business value from Spain's lemon sector in 2010-2020

## PARTS OF THELEMOH

## FLAVEDO

is what is usually known as the peel. Its color ranges from green to bright yellow depending on its ripeness. It contains numerous essential oil glands that are responsible for its aroma. These glands, rich in terpenes, form an effective barrier against attacks by insects and microorganisms.

## ALBEDO <br> is the white, spongy inner layer of the fruit and the most important source of pectin and carbohydrates. Its thickness varies according to the variety and the ripeness of the fruit.

## ENDOCARPO

also known as pulp, is the edible part, representing between $65 \%$ and $70 \%$ of the lemon's weight. It is pale yellow in color. It is generally divided into segments that contain elongated cells (endocarpal hairs formed by small cavities -vacuoles- where water, carbohydrates and citric acid accumulate) wrapped in an internal epidermis (endocarp). This is what is known as the juice sacs. Each segment contains hundreds of little sacs, and occasionally there may be a seed.

## COLUMELLA/CENTRAL AXIS

The white, central part of the lemon. Its thickness depends on the variety. Mainly it can be more or less thick.


JUICE SACS

## EUROPEAN LEMON VARIETIES

Europe mainly grows two varieties of lemons that guarantee a supply of lemons all year round


## FINO LEMON

This is the most common variety in Spain, it is usually grown in meadows. The main flowering period for this lemon tree falls between April and May, and the fruit is harvested between October and May

At the end of summer, the Fino lemon tree has a second flowering period that produces late lemons, which are harvested the following summer.

## BOTAIGAL CHARGTERISTICS:

- Spheroidal or ovoid fruit, with a pointy, small nipple, fine skin and pale yellow color.
- Leaves larger than those of the Verna lemon trees. Prone to produce strong shoots with robust thorns.
- Medium to large sized tree, vigorous and prolific.


## GHARMGTRISTLG OF COMMERCIL MDIMDUSTRAL IMTEREST

| MEDIUM SIZE | RIND | SEGMENTS | JUICY PULP | JUICE |
| :---: | :---: | :---: | :---: | :---: |
| - Diameter: 54.2 mm <br> - Height: 68.9 mm <br> - Diameter/height ratio (D/H): between 1.03 and 0.65 | - Very adherent, thin, with an average value of 3.91 mm . <br> - It represents more than $30 \%$ of the total weight of the fruit. | - It has between 7 and 13 . | - pale yellow in color | - Represents $40 \%$ of the total weight of the fruit, with an acidity of about 72 grams of citric acid per liter. |

## UERNA LEMON

The second most important variety in Spain, it is usually grown on hillsides bordering meadows and on newly converted land. It can have up to three flowering periods, and in areas with good weather, it can bear fruit all year round.

The first flowering period, which produces the so-called harvest fruit, takes place between March and May. These lemons are picked between February and late July.

The second flowering period falls between spring and summer. Its fruit is known as the "second" or "Saint John's" fruit.

The third flowering period takes place between August and September. The fruit is called the "late lemon," and it is picked during the summer of the following year.

## BUTMICAL CHARMTERISTLCS:

- Leaf with acute point and closed margins; isolated petiole, joint-like connection with the blade.
- Hermaphrodite or staminate flower, with pistil abortion; petals are violet on the outside border and white on the inside; stamens are free or united in bundles; they have an ovoid shape on a prominent disc; they are thick and deciduous.
- Ovoid fruit, with large nipple, the base of the fruit is prominent; thin or rough skin, yellow in color when the fruit is ripe, with many oil glands.



## GHARMCTERSTIGS OF COMMRGCA AID IIDUSTRAL INTREST

| VARIABLE SIZE | RIND | SEGMENTS | JUICY PULP | JUICE |
| :---: | :---: | :---: | :---: | :---: |
| - Diameter, 60.6 mm; <br> - Height, 86.7 mmi <br> - Diameter/height (D/H) ratio, 0.7 | - The thickness of the rind ranges from 3 to 11 mm . | - Has an average of 9 segments per lemon. | - The "late lemons" have thinner skin, less thick than lemons from the spring flowering. | - Juicy pulp, with an acidity of about 55 g of citric acid per liter. |

## VERSATILE

## A lemon is a treasure

Lemons are used for many purposes:

- Fresh lemon
- Direct juice or concentrate
- Essential oils used in food, aromas, cosmetics and perfumery;
- Dehydrated peel for pectin to be used as an emulsifier, i.e., to give texture and creaminess to yogurt


## A lemon is a treasure. Why?

Because the lemon has many multidisciplinary uses, thanks to its fresh, lemon juice, lemon oil and dehydrated peel.

## LEMOMS 8 GASTRONOMY

Its intense aroma, its tart juice and flavorful peel enhance any dish and quench any thirst!

The lemon is a healthy food that offers infinite gastronomic possibilities:


Food seasoning

| Rice |
| :--- |
| Chicken |
| Soups |
| Salads |
| Fish and seafood |



Drinks
Soft drinks
Water with lemon
Smoothies
Limoncello
Cocktails


Dessert ingredient
Creams

## Cakes

Sponge cake
Ice cream
Yogurt

## LEMONS 8 CLEALLINESS

## Lemons help to clean and refresh numerous materials:

It is antiseptic and antibacterial It is practical because it cleans, cuts grease, removes stains, polishes, deodorizes...

It is eco-friendly, since it does


## LEMONS 8 COSMETIC USE

The lemon has also been famously known for its cosmetic use for centuries. Many people believe its active principle ingredients to be useful as a homemade alternative in certain beauty treatments.

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