

# 1st International Multidisciplinary Acorn as Food Workshop

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# Navigating the Food Regulatory Landscape of Acorns in the European Union

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# OakFood Project

The **OakFood** project aims the integrated valorisation of acorns as a Portuguese raw material for the development of value-added products, as sustainable and short-chain alternatives, for the food industry. It is a consortium that involves **twelve entities** ranging from producers, food industry companies, academia, among others.

## Objectives

- Development of national network of acorn producers of *Quercus suber*, *Quercus pyrenaica* and *Quercus rotundifolia*
- Optimization of acorn collection and processing techniques for use in the food industry for human consumption
- Development of innovative acorn-based products and their by-products
- Creation of a marketing and communication strategy, focused on national and international emerging markets

**Arcadia International** is responsible for the legal regulatory landscape analysis associated with the processes and products



**Duration: 24  
months**

# Historical consumption of acorns

- Acorns played an important role in human nutrition for centuries in Europe, particularly in the Mediterranean region
- Historically consumed in times of poverty and famine
- Forms of consumption: raw, flour, roasted, etc.
- Currently underused, mostly used as animal feed



# Potential of Acorns

- Good source of carbohydrates (especially **starch**), unsaturated fats, fibre
- Contains **vitamins** (E) and **minerals** (Fe, Cu, Zn, K, P)
- **Gluten-free:** Suitable for celiac and gluten-intolerant consumers
- Potential for nutritional and health **claims** under Regulation (EC) No 1924/2006



e.g.

#### SOURCE OF FIBRE

A claim that a food is a source of fibre, and any claim likely to have the same meaning for the consumer, may only be made where the product contains at least 3 g of fibre per 100 g or at least 1,5 g of fibre per 100 kcal.

- **Sustainable:** oak trees act as carbon sinks and their extensive root systems protect against soil erosion and help to retain water



# EU Novel Food Framework

Regulation (EU) No 2015/2283

**Novel food** - Food that was not used for human consumption to a significant degree within the Union **before 15 May 1997**

including:

«Food consisting of, isolated from or produced from plants or their parts, except when the food has a history of safe food use within the Union and is consisting of, isolated from or produced from a plant or a variety of the same species obtained by:

- ! *Traditional propagating practices which have been used for food production within the Union before 15 May 1997; or*
- ! *Non-traditional propagating practices which have not been used for food production within the Union before 15 May 1997, where those practices do not give rise to significant changes in the composition or structure of the food affecting its nutritional value, metabolism or level of undesirable substances.»*




# EU Novel Food - Acorns

- Currently, only two species of acorns are listed in the EU Novel Food Catalogue:

*Quercus robur* L.

STATUS
<ul style="list-style-type: none"><li>Whole (bark,fruit, nut gal, leaf, bud, seeds and wood)</li></ul>
 <b>NOT NOVEL IN FOOD SUPPLEMENTS</b> - According to the information available to Member States' competent authorities, this product was used in food supplements in the EU before 15 May 1997. Therefore, its use in food supplements is not considered to be novel and is not subject to the pre-market authorisation in accordance with Regulation (EU) 2015/2283.
Any other food uses of this product, other than as, or in, food supplements, might be considered to be novel and consequently might need to be authorised pursuant to the requirements of the Novel Food Regulation (EU) 2015/2283 before they can be placed as food on the EU market.

*Quercus rotundifolia* Lam.

STATUS
<ul style="list-style-type: none"><li>Fruit (acorn)</li></ul>
 <b>NOT NOVEL IN FOOD</b> - According to the information available to the Member States' competent authorities, this product was used for human consumption to a significant degree within the Union before 15 May 1997. Thus, it is not considered to be 'novel' according to the provisions of the Novel Food Regulation (EU) 2015/2283 and its access to the market is not subject to the pre-market authorisation in accordance with Regulation (EU) 2015/2283.

# EU Novel Food

- If an acorn species has not been significantly consumed by humans in the EU before 15 May 1997, **it is classified as a novel food** and must undergo an **approval process** at the EU level before it can be used
- Proving significant consumption in the EU before that date **is challenging** - evidence of general consumption but not specifically linked to individual acorn species



# EU Novel Food – Procedures

## Article 4 - Determination of novel food

Regulation (EU) No 2015/2283

status

- FBO may consult the competent authorities of the EU country where they first intend to place the food product or ingredient on the market
- FBO must provide technical dossier containing full description of the food, production process, history of human consumption, availability of the food on the market (if applicable), etc.
- EU Member State (MSs) may consult other EU MSs and the European Commission in order to help determining the status



**Duration: 4 months +  
(additional) 4 months**

# EU Novel Food – Procedures

## Article 10 - Procedure for authorisation

Regulation (EU) No 2015/2283

- If an acorn is ultimately deemed as novel food, it must face an approval process at EU level before it can be used
- FBO must provide **technical dossier** containing full description of the production process, detailed composition of the novel food, scientific evidence demonstrating that the novel food does not pose a safety risk to human health, etc.
- The analytical information provided in the dossier should be provided preferably on **at least five representative batches** of the novel food that have been independently produced

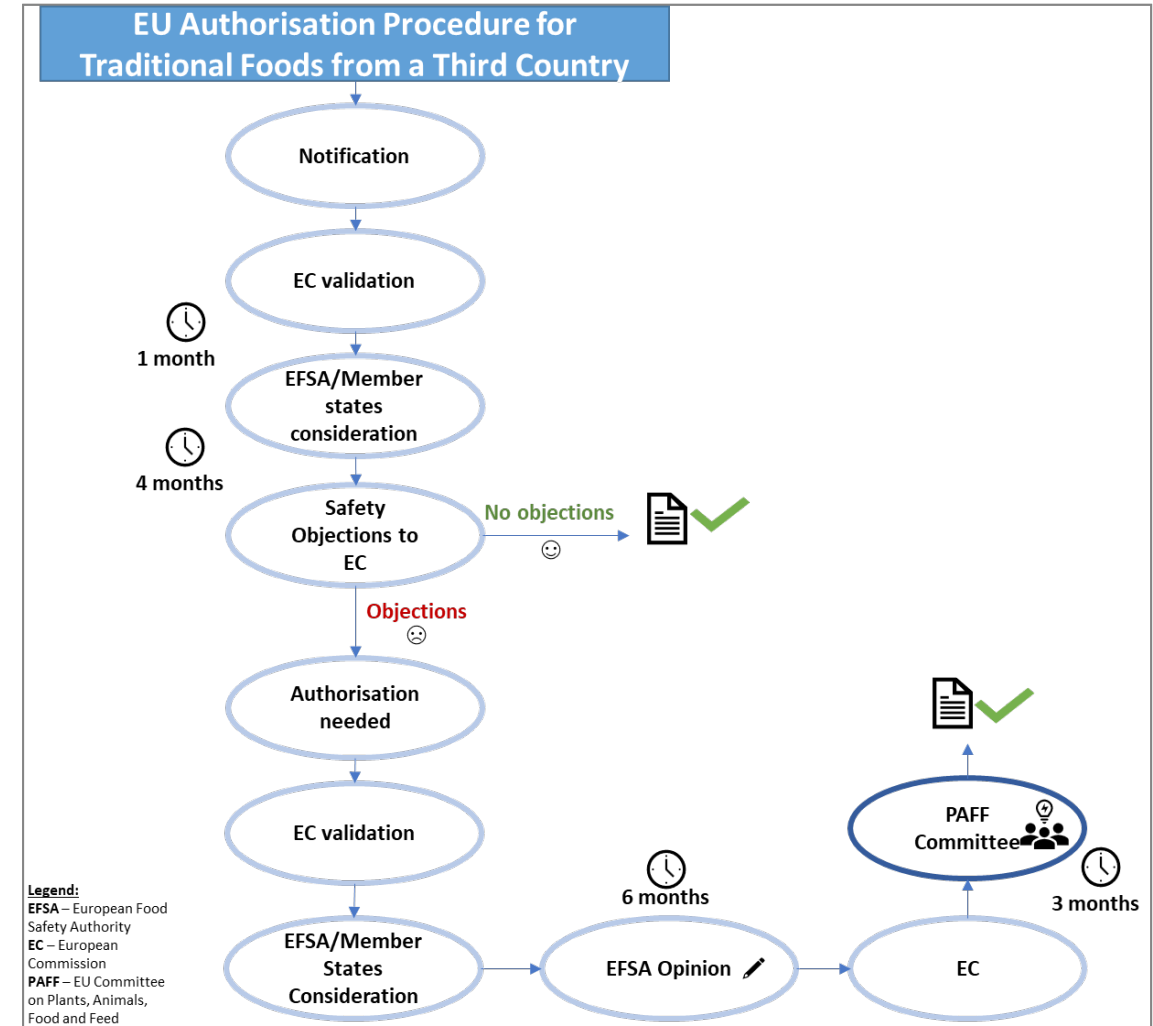
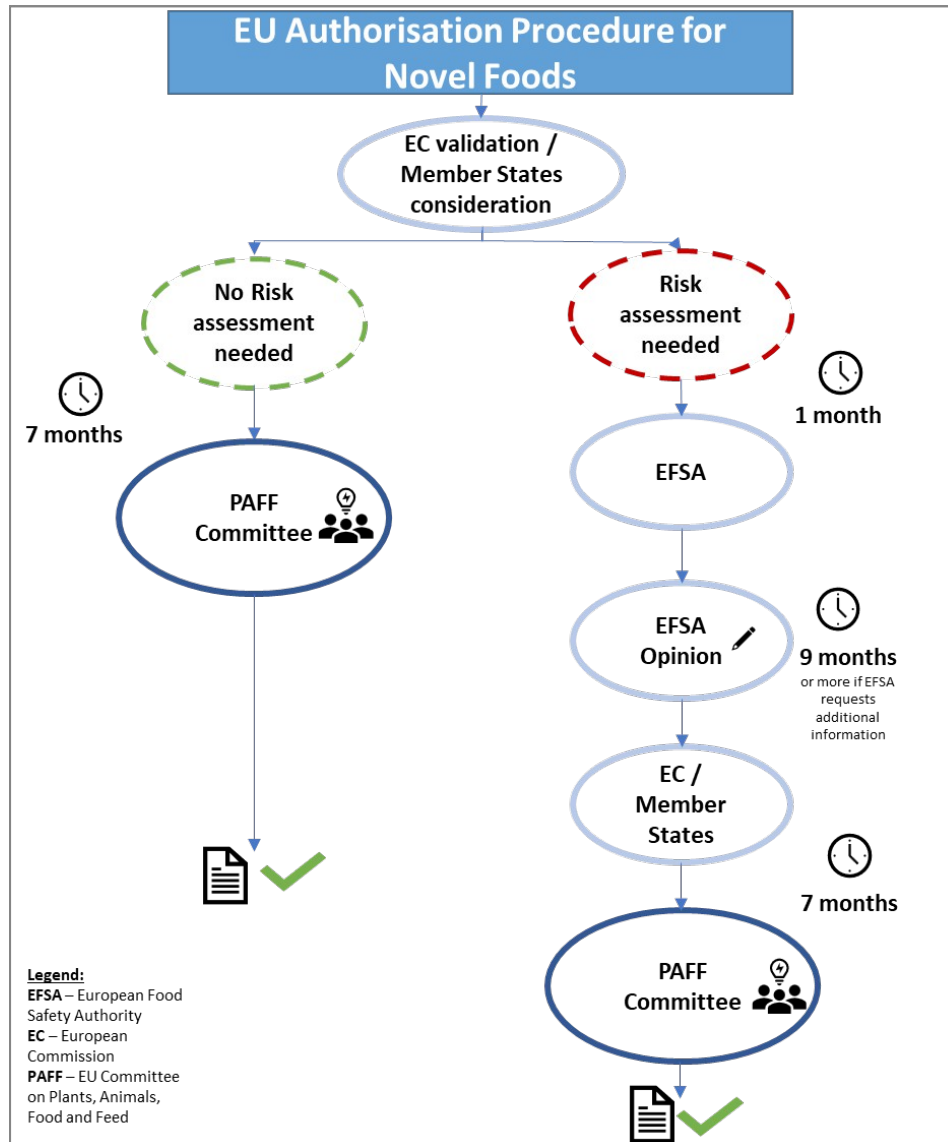
# EU Novel Food – Procedures

## Article 14 – Notification of a traditional food from a third country

Regulation (EU) No 2015/2283

- Instead of following the procedure for authorisation, there is a simplified notification procedure (**fast-track**) for traditional foods from third countries
- Requires **less information** – simplified; focus on evidence of safe traditional use
- Need to demonstrate safe history of use of at least **25 years**
- The analytical information for the **5 batches** also apply in this procedure

# EU Novel Food – Procedures



**Duration: 17 months** 2024  
**Average: up to 3**



**Duration: 14 months**  
**Average: 10-18**

# EU Member States - Evidences



- Evidence of consumption of several *Quercus* from prehistoric times until the 1960s

TABLE 2. SPECIES OF THE GENUS *QUERCUS* WITH EVIDENCE OF HUMAN CONSUMPTION OF THE ACORNS IN THE IBERIAN PENINSULA AND FORMS OF CONSUMPTION.

Species	Forms of consumption	Sources
<i>Q. ilex</i> subsp. <i>ballota</i>	Raw, boiled, roasted and toasted, dried fruit, flour, bread, coffee, oil, puree, omelet, crumbs, beverage, sweets, poor nougat, cocoa/chocolate, honey, stews, olives tanning	Interviews; Pardo de Santayana et al. 2014
<i>Q. coccifera</i>	Raw	Fernández 2000; Ramiro et al. 2005
<i>Q. faginea</i>	Raw, roasted, coffee	Tardío et al. 2004; Ramiro et al. 2005
<i>Q. humilis</i>	Raw, roasted, coffee	Pérez 2006
<i>Q. ilex</i> subsp. <i>ilex</i>	Raw, boiled, dried fruit, roasted, coffee, flour for making cakes, bread	Pérez 2006
<i>Q. petraea</i>	Raw, roasted, coffee, dried fruit, medicinal	Lastra 2003; Pérez 2006
<i>Q. pyrenaica</i>	Boiled, raw, roasted	Tardío et al. 2004; Pérez 2006
<i>Q. robur</i>	Boiled, raw, roasted, coffee, medicinal	Pérez 2006
<i>Q. suber</i>	Raw, coffee	Interviews; Pardo de Santayana et al. 2014

From *The Consumption of Acorns (from Quercus spp.) in the Central West of the Iberian Peninsula in the 20th Century*, Gracia-Gomez et al. (2017)



- National legislation containing the list of substances and plant preparations permitted for use in food supplements
- 9 species are listed

- Quercus alba* L.
- Quercus coccifera* L.
- Quercus ilex* L.
- Quercus infectoria* G. Olivier
- Quercus petraea* (Matt.) Liebl.
- Quercus pubescens* Willd.
- Quercus robur* L.
- Quercus serrata* Murray subsp. *serrata*

# EU Member States - Evidences



- List of plants that represent borderline cases “Stoffliste des Bundes und der Länder” to be used in food supplements (not legally binding) includes:
- National legislation containing list of plants or plant preparations to be used in food supplements
- 9 species are listed

*Quercus cortex* (Eichenrinde): BAnz Nr. 22a, 1.2.1990

Quercus alba L.	Quercus ilex L.	Quercus robur L.
Quercus coccifera L.	Quercus infectoria G. Olivier	Quercus serrata subsp. serrata
	Quercus petraea (Matt.) Liebl.	Quercus suber L.
	Quercus pubescens Willd.	



# Products Derived from Acorns

- Products derived from acorns may require individual authorisation
- A novel food is also:  
*«Food resulting from a production process not used for food production within the Union before 15 May 1997, which gives rise to significant changes in the composition or structure of a food, affecting its nutritional value, metabolism or level of undesirable substances»*

# Products Derived from Acorns - Starch



- (Chemically) Modified starches:

«Obtained by one or more chemical treatments of edible starches, which may have undergone a physical or enzymatic treatment, and may be acid or alkali thinned or bleached»



**Food  
additive**

- Food additives that are not listed under Regulation (EC) No 1333/2008 cannot be used without a through authorisation
- Procedures authorisation: FBO must provide detailed information about the additive



**Duration: 18 months | Average: up to 3 years**



# Conclusions

- Need of **evidences** of consumption of acorns by species
- Acorns have the potential to achieve a market position as a **sustainable, nutritious**, and **versatile** ingredient but their successful integration into the food system necessitates **careful navigation of the EU regulatory landscape**

# Thank you!



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