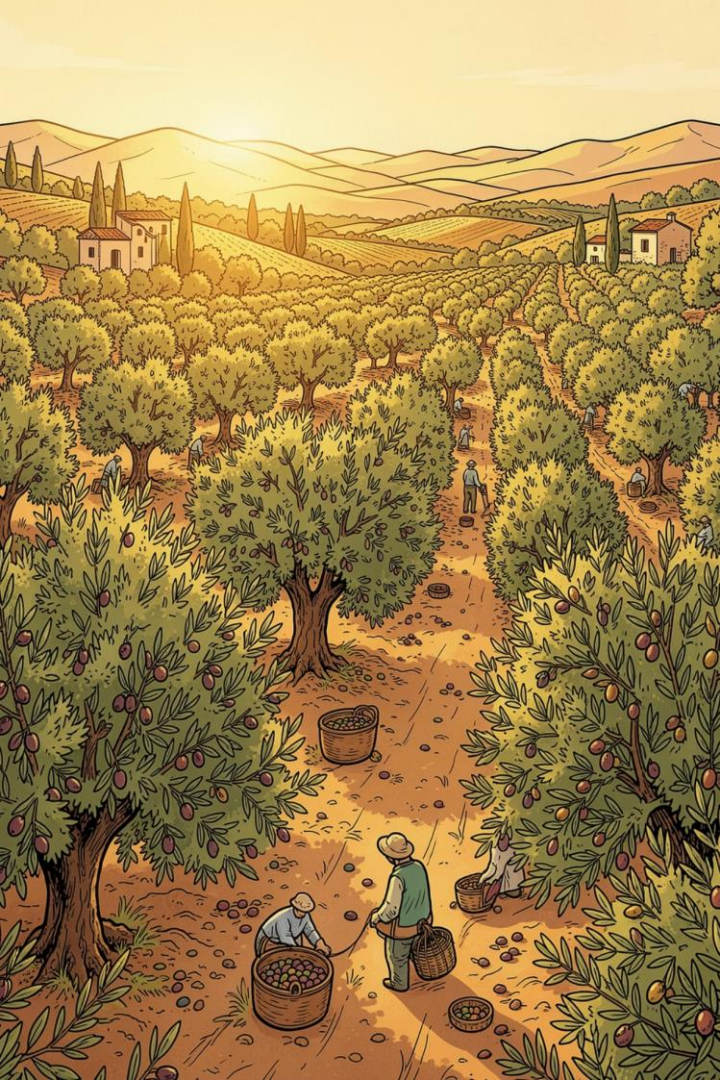




UP4HEALTH

Upcycling Olive, Grape & Nut By-Products into Natural Ingredients

Sustainable, cost-effective valorization for nutraceutical and cosmetic applications

CBE JU Cluster Projects' Workshop on food & feed (Brussels, 09/06/2026)

ISANATUR
— NUTRITION & HEALTH —



Funded by
the European Union



A Massive Valorisation Opportunity

1.4M

Tons Olive Oil

Spain's annual production (2024/25)

67%

EU Share

42% of all IOC countries

3–4 kg

Pomace per kg Oil

Generated during extraction

600K

Tons/Year Potential

High-value ingredient capacity in Spain/Europe

Today, olive pomace is largely relegated to biomass energy, incineration, or animal feed, meaning a significant underutilisation of a polyphenol-rich resource.

U4H: Four Years, €4M in EU Co-Funding



Duration

June 2020 – December 2024

EU Co-Funding

€4 million contribution under the Circular Bio-based Europe Joint Undertaking

Mission

Transform olive, grape and nut by-products into certified, market-ready functional ingredients for food, feed, and cosmetic applications



From Waste Stream to Value Stream



km0 Natural Source

Olive pomace, the paste remaining after oil extraction, is a locally sourced, zero-kilometre feedstock rich in polyphenols and dietary fiber.



Antioxidant Power

High polyphenol content delivers proven antioxidant activity and measurable health benefits, supporting reincorporation into the human food chain.



100% Fraction Utilisation

Every component is valorised: leaves, seeds, and pit: zero waste, fully organic, and certified natural.



Beyond the Olive Mill: A 360° Valorisation Process

U4H redefines the olive mill as a multi-output biorefinery. Every fraction of the olive has a high-value fate, from top-quality organic EVOO to patented functional powders and biochar, achieving complete circular valorisation.

The 55% moisture fraction represents an untapped opportunity for xylo-oligosaccharide (XOS) extraction, currently under development.



U4H Full-Operating Pilot Plant

The U4H pilot plant operates year-round (non-continuous mode) and serves as an **open innovation platform** for third-party scale-up campaigns.



→ Third-Party Access

Successfully used for ALEHOOP's lupine by-product protein scale-up
Unforeseen but successful application generating real process data.

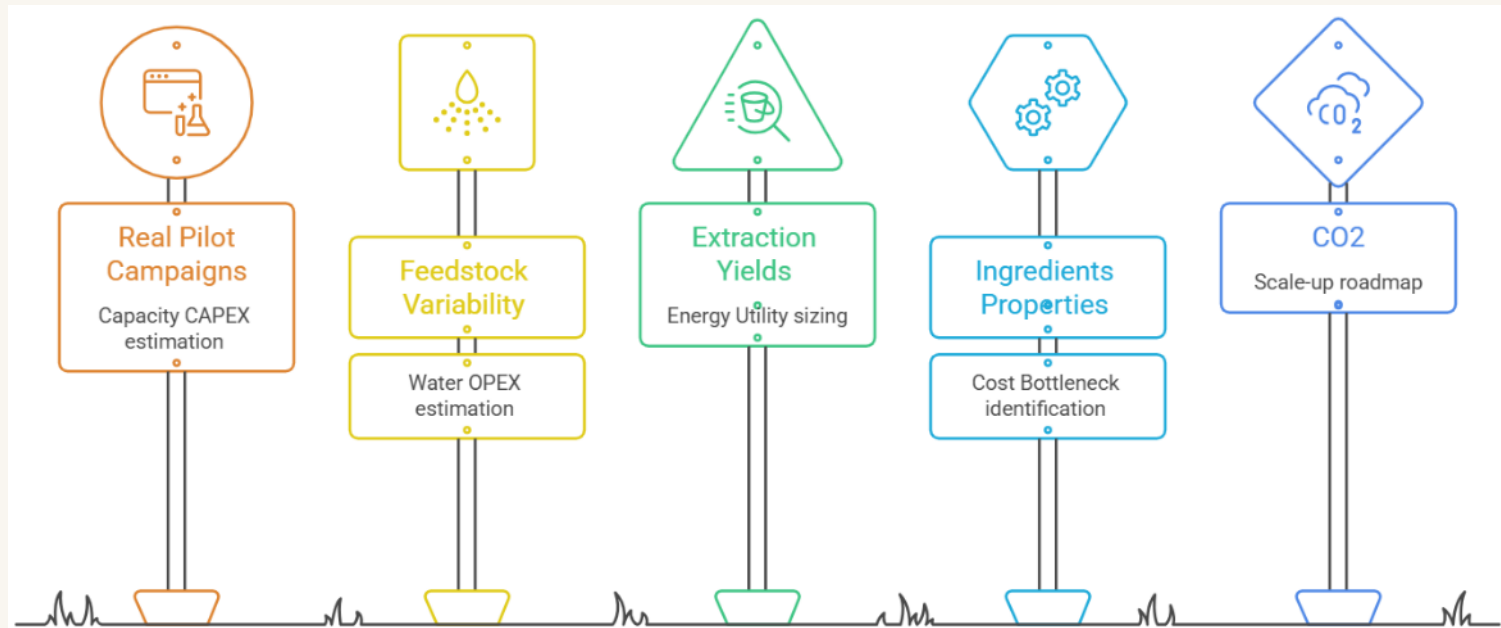
→ Real Data for Simulation

Operational data feeds directly into process models, reducing industrial scale-up risk.

→ Expanding Feedstock Portfolio

Grape and artichoke by-products are next in the pipeline for valorisation.

Turning Pilot Evidence into Lower-Risk Investment Decisions



Simulation bridges the gap between pilot campaigns and full industrial deployment.

Transforms real extraction yields, feedstock variability data, and ingredient properties into reliable CAPEX/OPEX estimates, utility sizing, and bottleneck identification.

This approach significantly lowers scale-up risk and supports confident investment decisions.

PBF+: A Patented Prebiotic Olive Powder



PBF+ (Prebiofenol)

Antioxidant olive powder with proven functional and nutritional properties.

Potential use

Protected by European/US patent

Prebiotic+: nutritional properties

Healthy fat content & Minerals for FOOD nutritional enrichment and technological applications

NutraCosmetics >50,000 mg/kg

Microencapsulated polyphenols
Antioxidant in Nutraceutical applications

FEED additive: Enriched Formats

PBF+ is enriched to target specific application needs (PBFH+ as additive for feed applications)

PBF+: Interventional Studies with Promising Results

62%

Phenolic Bioavailability

In PBF+ enriched snack bars (IPB assays)



100%

Caffeic Acid & Tyrosol

Full bioaccessibility confirmed

26 mg/dL

Total Cholesterol Reduction

Across 100 individuals (up to 15%)



24 mg/dL

LDL Reduction

Significant cardiovascular risk marker improvement

✓ Results confirm PBF+ as both a **hypcholesterolemic agent** and a **gut health promotor**, balancing the microbiome and supporting beneficial bacteria growth.

U4H in the Market: Progress & Path Forward

Current Market Presence

Olive Powder is commercially available in niche market applications (**Germany, Belgium, Lithuania, Netherlands, USA, and Spain**)

- Further validation needed for CVD and feed claims
- Novel Food regulatory pathway under assessment

The Scale-Up Imperative

To reach the **global market price target** production must scale up **20×** from current pilot capacity.



Regulatory

Safety studies & Novel Food dossier

Volume

Industrial-scale production to reduce unit cost

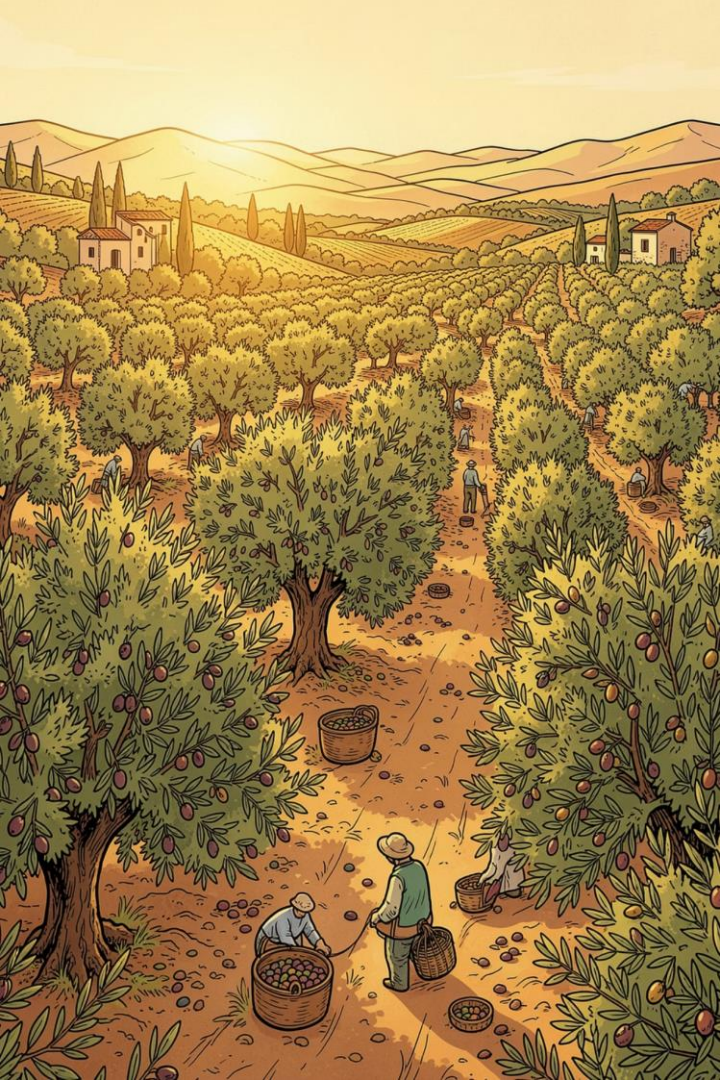
Validation

CVD and feed efficacy studies



Next Steps: Scaling for Global Impact

- 1 — Commercial Expansion**
PBF+ /PBF sales across additional European and US markets
- 2 — CBE & EIC Co-Funding**
EIC Accelerator and INNOVFUND applications; **IA-Flagship-04 aligned with ISA**. *Support from End users interested in COLESTEROL, MICROBIOME tested in human ingredients*
- 3 — Navarra Full Plant (starting funding opportunities in 2026)**
Full-operating facility with **>6,000 tons/year** intake capacity fully operational in 2030/31
- 4 — Replication Model expected in 2035**
Second plant in Navarra/**Murcia, for legume byproducts valorization**
Scaling the model across the Mediterranean



UP4HEALTH

THANK YOU FOR YOUR ATTENTION!

Contact us:  innovation@isanatur.com / isanatur@isanatur.com

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