



ADVANCED BIOETHANOL, BIOPRODUCTS, AND BIOENERGY FROM  
ORGANIC WASTE AND BY-PRODUCTS

## DEVELOPMENT AND IMPLEMENTATION OF INDUSTRIAL WASTE VALORISATION PROJECTS

### PERSEO Biotechnology S.L

We are a company specialised in the **development of processes for the valorisation of the organic and cellulosic fraction of waste and by-products** into new high-value bioproducts such as advanced bioethanol, bioenergy, and other bioproducts, using proprietary patented technology and the company's know-how.

At **PERSEO**, we have the capacity to develop organic waste valorisation projects for your company, from the technical-conceptual development phase and techno-economic feasibility study to process engineering development and the implementation of industrial plants.

**PERSEO** offers its process development services in three key phases: laboratory-scale optimisation (analysis, optimisation, and pre-scaling), semi-industrial scale process demonstration (up to 25 tons/day), economic feasibility study, and engineering design.

### INNOVATION SERVICES FOCUSED ON MARKET LAUNCH

We develop and optimise your process to bring it to industrial scale. We specialise in biotechnological development from the experimental phase to industrial implementation and commercialisation. What sets us apart is our strong market vision and our ability to transform technological developments into applicable industrial solutions, ready to be integrated into our clients' operations across the entire value chain.

We can assist you in all phases.

#### DEVELOPMENT AND OPTIMISATION:

- **Feasibility studies covering technical, economic, and environmental aspects** for the valorisation of organic waste and by-products, ensuring a comprehensive view of the process.
- **Development of technological solutions focused on circularity and sustainability**, transforming by-products into high-value bioproducts to optimise resources and reduce environmental impact.
- **Optimisation of biotechnological and industrial processes** both at laboratory scale (up to 50 L) and semi-industrial scale (up to 50 m<sup>3</sup>), maximising process efficiency while reducing operational costs.

#### PROCESS DESIGN AND ENGINEERING:

- **Design and scaling of processes** using either proprietary or client technology, tailoring to client needs, ensuring each process is optimised for the market.
- **Complete engineering development and plant implementation.** We support our clients throughout all development phases, from process engineering to the implementation and operation of industrial plants at commercial scale.

#### SCALE-UP FOR THIRD PARTIES

**Support in scaling up** processes developed by the client, providing technical assistance at any phase of the project.

- **Assistance in R&D projects.**



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## INFRASTRUCTURE

### SEMI-INDUSTRIAL PLANT



- Reception, dosing, and conditioning of raw materials.
- Physical and/or thermo-chemical pretreatment tailored to the characteristics of the raw material.
- Hydrolysis and fermentation (10, 20 y 50 m<sup>3</sup>).
- CO<sub>2</sub> capture produced during fermentation.
- Solid-liquid separation (press filter and centrifuge).
- Distillation.
- CIP (Cleaning In Place).
- Anaerobic digester (2 m<sup>3</sup>).
- Automated process control centre.
- Process control laboratory.

### LABORATORIES



- Physical-chemical pretreatment systems.
- Hydrolysis and fermentation system for 1, 3, 5, and 50 L.
- System for performing anaerobic digestion assays (BMPs)
- Distillation equipment.
- Analytical determination by HPLC.
- Equipment for physicochemical characterisations.



### Any questions?

Contact us at **+34 960 70 49 55** or write to **informacion@perseobiotech.com**.