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EXCornSEED

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Separation, fractionation and isolation of biologically active natural substances from corn oil and other side streams to be used in food, specialty chemicals and cosmetic markets.

THE SCENARIO

There's an emerging interest in Europe (and globally) for new and improved valorization approaches able to finally unlock the vast potential of side streams and co-products of biotech productions, dramatically improving their environmental and economic problem, at the same time ensuring much higher sustainability of the bioenergy supply chain.

The by-products of these industrial processes are currently mostly utilized for energy, animal feed, or for other low-value purposes without utilization of their full potential.

The production of added-value bio-based products from these side streams, following the emerging EU paradigms of integrated biorefinery and circular economy, is necessary to maximize full biomass-to-products value along the whole value chain, at the same time making the production costs of biofuels competitive without any governmental support.

THE PROJECT

The EXCornSEED project aims to exploit the convergence between science, chemistry, biology, engineering and biotechnology tools for the creation of new knowledge and innovative applications to develop and validate an integrated process of innovative and highly sustainable extraction, purification and concentration technologies to be applied to biorefineries side streams. The objectives are the recovery of proteins and several other bio-active compounds and the preparation of these as ingredients for food, specialty chemicals and cosmetics markets.

OBJECTIVES

- To assess industrial side streams and coproducts of two biotech processes (bioethanol and biodiesel production), characterizing the quality and amount of extractable compounds.
- To develop, upscale and validate an innovative and environmentally friendly process to extract/purify/concentrate proteins and bioactive compounds from industry side streams.
- To test and validate the application of the extracted compounds as ingredients in food, specialty chemicals, and cosmetics.
- To assess the environmental sustainability, technical performances, cost-benefits of technological solutions and final products, as well as preindustrial feasibility.
- To evaluate the business potential of the proposed innovative approach and build solid business cases for the exploitation of the project's results.
- To raise awareness, engage stakeholders and build a robust network around the project's results through a well-designed dissemination & communication strategy and activities.

