

Press Release

Pennakem Europa, INRAE, the Carnot Institute France Futur Élevage and Avignon University launched on December 17, 2021, the EcoXtract® Protein project which has been selected for a total financial support of 4.8 M€ within the framework of the PIA program ¹operated by ADEME.

EcoXtract® Protein aims to bring to the feed market a 100% biobased and safe extraction solution for oils, plant proteins and natural ingredients. This technology will offer an alternative to the current extraction technique using hexane.

Dunkirk, December 17, 2021 - Pennakem Europa, a unit of the Minafin Group, coordinator of the project, together with INRAE and Avignon University, are pleased to announce that **major financial support of nearly five million euros** has been granted by ADEME, the French government's ecological transition agency, to develop the project. When not labeled organic, the extraction of edible oil, the production of vegetable proteins and natural ingredients on an industrial scale implies the use of hexane, a solvent from the petrochemical industry.

The project will produce soybean, rapeseed and sunflower defatted meals² in an experimental plant in Bordeaux using the EcoXtract® biosolvent. These products will then be tested in animal feed by INRAE teams, members of the Carnot France Futur Élevage institute, to assess the health value of the ingredients both on farm animals and in aquaculture. These trials will help the optimisation of the process simultaneously carried out by Avignon Université.

EcoXtract® is a biobased solvent made from sugarcane co-products. This product has been used for 14 years for production in the pharmaceutical industry. It is recognized by pharmaceutical experts as a product with low toxicity for human health (same classification as ethanol). The CO₂ impact of its production is ten times lower than that of a petrochemical solvent.

Provided a limited number modifications, EcoXtract® can be used in plants originally designed to run on hexane.

All of these strengths have enabled us to meet the requirements of the specifications of the **DTIGA (Demonstrators and Innovation Territories of Great Ambition) - Bioeconomy and Environmental Protection** project and henceforth to be a winner of the future investment program (PIA).

¹ PIA: Program set up by the French government to finance innovative and promising investments in the country, in order to enable France to increase its growth and employment potential.

² The meal is the protein-rich, low-fat product of soybeans, rapeseed and sunflower seeds for use in animal feed.

About the Minafin Group

The Minafin Group is a leading developer and producer of fine chemicals with three main business areas: health chemistry, green chemistry and challenging chemistry. The group has six industrial sites in Europe and North America. Its customers include manufacturers in the pharmaceutical, life sciences and high value-added chemical industries for high-tech applications. It provides a range of proprietary processes, custom manufacturing, R&D, analytical and regulatory services, and formulations. Minafin invests significantly in R&D to create value for customers by specializing in innovations and eco-friendly solutions that bring a competitive edge and sustainability. Its strong industrial capabilities are consolidated through eight business units: Minakem CDMO, Minakem Generics, Pennakem, Minasolve, Minagro, EcoXtract, Minascent, and Pressure Chemicals, which generated over €243M (approx. \$280M) in revenue in 2020. Founded in 2004 as a privately-held industrial company, Minafin is headquartered in Belgium and employs 900+ staff.

About INRAE

INRAE, the French National Research Institute for Agriculture, Food and the Environment, is a research and innovation center created on January 1, 2020. A research institute resulting from the merger between INRA and Irstea, INRAE brings together a community of 12,000 people, with 268 research, service and experimental units located in 18 centers throughout France. The Institute is one of the world's leading research organizations in agricultural and food sciences, plant and animal sciences, and ecology-environment. It is specialized in the "agriculture-food-environment" field. INRAE's ambition is to be a key player in the transitions required to meet major global challenges. Faced with population growth, climate change, resource scarcity and declining biodiversity, the Institute is building solutions for multi-performing agriculture, quality food and sustainable management of resources and ecosystems.

About Institut Carnot France Futur Elevage

France Futur Élevage is a network of academic research laboratories and agricultural technical institutes under the Carnot label, dedicated to promoting R&D collaborations and the transfer of innovations concerning the livestock sector.

It offers to companies, professional organizations and actors of the livestock sector, a multidisciplinary and integrated research and innovation offer, from the laboratory to the farm. The Carnot Label recognizes the scientific excellence and professionalism of the members of France Futur Livestock show in the relationship management with their partnership.

The Carnot France Futur Élevage brings together nine reference structures for scientific support to livestock farming: INRAE, the Agro Institute, Oniris, CIRAD, the Toulouse Veterinary School, Idele, IFIP, ITAVI and the University of Tours.

About Avignon University

Concerned about the environmental and societal impact of traditional extraction processes used in the food, cosmetics and pharmaceutical industries, the GREEN team (UMR SQPOV) of Avignon University initiated and defined, in 2010, the concept of eco-extraction of plants. Their expertise in that field is now internationally recognized. To carry out its work, it relies on the use of innovative extraction techniques and alternative solvents that are efficient, less toxic and more environmentally friendly. By combining its expertise on the use of alternative solvents such as EcoXtract®, the optimization of extraction conditions and the use of innovative processes, the GREEN laboratory offers many keys to eco-design that can limit the impact of extraction on our environment



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