



PRESS RELEASE: **PURPLE4LIFE SELECTED TO ADVANCE SUSTAINABLE FOOD AND FEED INNOVATION**

Purple4Life - Innovative, sustainable, and circular production of purple phototrophic bacteria as a health-promoting ingredient for food and feed applications.

Purple4Life is set to transform **the future of sustainable food and feed production** by harnessing the benefits of **purple phototrophic bacteria (PPB)**. Funded by the European Union under the Circular Bio-based Europe Joint Undertaking (CBE-JU), the project (Grant Agreement No. 101212806) brings together 12 organisations across Europe to develop circular, high-value bio-based ingredients for both human nutrition and aquaculture.

Selected for funding among 57 proposals submitted to the CBE-JU 2024 Call, Purple4Life will run from 2025 to 2029 under the coordination of the University of Mons (UMONS) in Belgium.

Advancing Europe's Sustainable Food Transition

Agriculture currently accounts for over 10% of Europe's greenhouse gas emissions and contributes significantly to nitrogen imbalances, eutrophication, land-use pressure and ammonia emissions. At the same time, global food demand continues to rise, increasing pressure on natural resources and ecosystems.

Purple4Life addresses this challenge by introducing an **innovative, circular bio-based solution**: the sustainable cultivation of purple phototrophic bacteria. These microorganisms use light as an energy source and can convert a wide range of substrates, including industrial by-products, into **high-value biomass with exceptional carbon conversion efficiency**.

Unlike conventional agricultural systems, PPB production does not compete for arable land and does not contribute to nitrogen emissions associated with soil fertilisation. By **integrating circular bioprocessing with high-value functional ingredients**, the project aligns with the European Green Deal and the EU Bioeconomy Strategy.

Press Release #1: Purple4Life Selected to Advance Sustainable Food and Feed Innovation

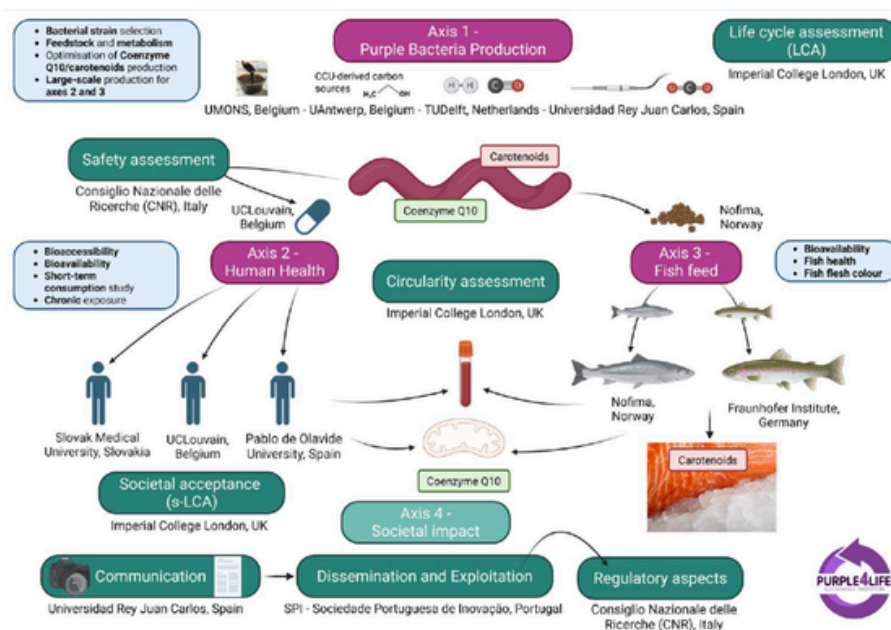


Figure 1. Conceptual Framework of Purple4Life.
Source: Aquaculture Europe, Vol. 50 (2), September 2025.

Purple4Life has the following specific objectives:

1. **Develop innovative, circular and sustainable bioprocesses** to produce food-grade CoQ10/carotenoids-rich purple bacteria by upcycling industrial by-products.
2. **Evaluate health benefits in humans** of consuming CoQ10 and carotenoids from purple bacteria.
3. Evaluate the beneficial effects of **purple bacteria as a functional feed ingredient in salmonid fish**.
4. **To define and minimise the environmental and climate footprint** of the use of PPB in the food chain.
5. **Determine the needs and requirements of stakeholders and inform them of the benefits** of introducing purple bacteria in the food chain.

Strengthening Sustainable Aquaculture

A major demonstration component of Purple4Life focuses on aquaculture, one of the fastest-growing food production sectors worldwide. The project will evaluate PPB as a **functional feed ingredient** for Atlantic salmon (*Salmo salar*) and rainbow trout (*Oncorhynchus mykiss*).

Purple4Life will produce and analyse feeds incorporating PPB, screening for safe and suitable levels for dietary incorporated PPN, conducting bioavailability trials, and evaluating the commercial applicability of these feeds in commercial-size fish. Additionally, the project will assess the impact of purple bacteria on fish health, immune response, stress resistance, and fillet quality (mainly colour).

Expected Impacts

By 2029, Purple4Life will deliver **four novel bioprocesses optimised for high productivity and efficient light utilisation**, alongside improved electricity management strategies to enhance the energy performance of PPB production.

The project will demonstrate and economically assess pilot-scale production, establish a comprehensive safety guarantee for PPB, and validate its performance in both food and feed applications. In parallel, it will develop a targeted strategy to strengthen consumer and end-user acceptance and define a roadmap for the submission of a novel food agreement dossier, paving the way for market entry.

Purple4Life Consortium

University of Mons
University of Antwerp
Delft University of Technology
Catholic University of Louvain
Nofima
Fraunhofer IMTE
Imperial College London
Pablo de Olavide University
Comenius University Bratislava
Sociedade Portuguesa de Inovação
National Research Council of Italy
Rey Juan Carlos University

