

Making the best of algae biomass

From sustainably produced biomass to valuable phycocyanin and co-products

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CONTEXT

Spirulina is a filamentous blue-green microalgae known as a fast growing, protein rich species. The world production is estimated at 10 000 tons of dry matter per year. Among its major components, the **blue pigment (phycocyanin), which can reach 20% of the biomass, is identified as a high value product.**



Phycocyanin is primarily used in the pharmaceutical, food and cosmetic industries. The worldwide demand reaches 100 tons per year and the global market is expected to further its growth. Although production systems are still artisanal, huge technological improvements will enable to reach market needs.

SPIRALG PROJECT (2018 – 2022)

AIM: Develop an ambitious demonstrator able to produce 1 ton of phycocyanin per year.

- Partnership: GREENSEA (Fr), MILIS (It), ALGAIA (Fr), MIAL (Al) and UCD (Ir).
- Cost : 5,6 million €

- In order to be economically competitive, the industrial partnership will:
 - ✓ Work towards energy saving production systems (co-generation, automation, water based extractions...)
 - ✓ Build an efficient bio-based value chain for complete valorisation of the biomass (see figure below).

Work plan and implementation

- WP-1: Microalgae cultivation
- WP-2: Phycocyanin extraction
- WP-3: Co-products valorisation
- WP-4: Economic and market analysis
- WP-5: Life Cycle Assessment
- WP-6: Project management

SpiralG has the ambition to modernise a known established sector of microalgae production by boosting innovation in all compartments. This project will increase the competitiveness of European biomass producers and industry by supporting new jobs, growth and investments while ensuring sustainable and low environmental impact.

