

Novel valorisation routes of red seaweeds for oligosaccharide and protein extraction

Federico Sabbadin, Leonardo Gomez, Thierry Tonon, Duncan MacQuarrie (University of York) & Tim Van Berkel (The Cornish Seaweed Company), Martin Sutcliffe (The UK Agri-Tech Centre)



Summary

This project employed chemical and physico-enzymatic approaches to extract and characterise high-value fractions from red seaweed biomass.

Aims

- Compositional analysis (monosaccharides, protein, metals).
- Production of recombinant enzymes for polysaccharide degradation.
- Production of oligosaccharides and protein concentrates.
- Assessment of bioactivities of oligosaccharides and biomass.

Outcomes

- Detailed physico-chemical and enzymatic methods for extraction of functional oligosaccharides.
- Red seaweed oligosaccharides are effective prebiotics.
- Red seaweeds are an excellent feed for black soldier fly larvae, advancing circular bioeconomy valorisation opportunities.



"This funding enabled key advances in sustainable red seaweed valorisation with strong potential for health, agriculture, and the circular bioeconomy"
Federico Sabbadin
University of York