Arborea

Accelerating the Global Transition to a Sustainable Food Supply

The Challenge – The Demand for Sustainable Protein

Between 2015 and 2050, the planet's protein consumption will double. Animal-derived protein sources are unsustainable and there is a drive to identify alternatives that are easy to cultivate, environmentally friendly, and acceptable to consumers. Plant-based proteins like soya/pea are attractive alternatives, but both are imported and rely on quality topsoil; a resource which, according to the UN, could run out within 60 years. Phototrophic microalgae, such as Spirulina, can be cultivated in bioreactors but production costs and customer perceptions have prevented microalgae becoming a commodity protein for human consumption.

The Solution – PROFILE

The PROFILE project (Protein RecOvery for Food using Ionic Liquid Extraction) has developed a new extraction method using recyclable ionic liquids to remove key flavour and colour compounds. Unlike conventional processes, this approach targets unwanted compounds directly through a low-cost, environmentally friendly process. The resulting protein isolate has minimal off-flavours and colour, making it an attractive and commercially viable food ingredient.

The Funding

Neon supported Arborea throughout the preparation, proposal construction, and grant management journey, securing and helping the team to manage a £600k Innovate UK grant which allowed them to improve their production methods whilst also creating the opportunity to license their highly scalable process to food manufacturers. Unlocking a £135m market in the UK and generating £18.5m profit by 2030.

The Impact

Arborea and its licensees will be able to produce 26,500 tonnes of carbon-neural protein by 2030, emitting 1 million tonnes less CO_2 than the same amount of protein produced via UK beef production.

UKRI Innovate UK

29 months

£600k Grant

Arborea Ltd (UK)
Imperial College London (UK)
University of Greenwich (UK)

neon innovation