

Novel facile low-cost (Micro) Encapsulation Technology for Dairy Ingredients

Teagasc researchers have developed a low cost novel approach to encapsulating beneficial bioactives in dairy and whey based products that is faster than competing technologies and requires less processing and wasteful reagents.

Encapsulation, Microbeads, Dairy, Cheese, Bio-Actives

Opportunity

Fortification of dairy products is a growing market, expected to increase to US \$150 billion by 2026, with consumers expecting everyday food products to deliver enhanced nutritional functionality. In contrast to this growing need, there is a market desire to minimise the amount of processing in consumer food products. The challenge for food producers is to meet both these needs simultaneously.

The Solution

Our technology offers a bioactive encapsulation approach in dairy and whey based ingredients with minimal use of additional ingredients that require less processing steps to render the product safe for human consumption.

Advantages of Technology

This novel process offers a facile approach to incorporate encapsulated bio-actives into dairy products. Our technology:

- Requires only food grade ingredients
- Fewer production steps
- Is applicable in a variety of dairy products, including milk, cheese, yogurt, drinking yogurt...
- Has successfully encapsulated key bioactives such as black carrot extract, beta-carotene and red cabbage extract
- Has been demonstrated functionality in several food products including: yogurt, cheese, milk, baked goods containing dairy

Intellectual Property Status

Patent application filed by Teagasc in 2021, claiming a novel method of encapsulating bio-actives and preparing bioactive encapsulated dairy-based ingredients for application in dairy, cheese and yogurt production.

Stage of Development

This technology has been extensively demonstrated in a range of dairy and whey based food products:

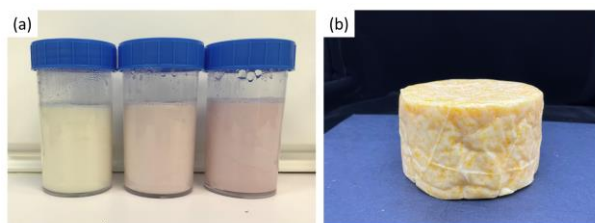


Fig 1: (a) Yoghurt prepared with encapsulated [black carrot extract](#) and (b) Cheese prepared with encapsulated [β-carotene](#)

Opportunity

Teagasc is interested in partnering with a company/companies (existing and start-ups) to commercialise this technology.

Funding

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