UNIVERSITY OF LIMERICK OLLSCOIL LUIMNIGH | Technology Transfer Office

Licensing Opportunity

Sustainable Ingredients from Brewer's Spent Grains

Overview

The brewing industry produces 39 million tonnes of Brewer's Spent Grain (BSG) waste every year. The University of Limerick (UL), has isolated and developed nutritious food products that meet the demands of health-conscious consumers for clean-label ingredients from the spent grains. This process reduces waste, promotes sustainability and makes healthier food options.

Technology

The technical challenge at hand is how to recover and utilize sustainable and clean-label fractions from brewer's spent grains (BSG). These fractions include phenolic compounds, fiber, and proteins that can be used to create new food products. Additionally, this ingredient recovery process can help to reduce waste, promote sustainability, and develop healthier food options. UL researchers use a biorefinery approach to extract and isolate three different fractions of polyphenols, fiber, and proteins with high yields and value for the food industry.

Benefits

The UL process sets itself apart from conventional techniques, which typically focus on isolating a single fraction at a time, leading to reduced utilization of this already wasted resource. Overall, this helps support a circular economy, promoting sustainability.

Here are three innovative uses for brewer's spent grains that address the need for healthier food options and meet consumer demands for clean-label ingredients:

1. **High-Fiber Granola**: This nutritious granola utilizes the fiber content from spent grains, providing a high-fiber option for those looking for a healthy breakfast or snack.
2. **Antioxidant Tea**: Polyphenols extracted from the spent grains are used to produce an antioxidant-rich tea. This tea offers a clean-label alternative to artificial antioxidant additives in beverages.
3. **Protein Hydrogel**: The isolated proteins from brewer's spent grains are used to create a protein-rich hydrogel. This offers a clean-label protein source for various food applications, catering to the demand for sustainable protein options.

Applications

The development of these innovative products that utilize brewer's spent grains offers a promising avenue for the production of clean-label food products that meet the increasing demand for healthier and more sustainable food options.

Commercial Opportunity

The University of Limerick is seeking partners to exploit the commercial potential of these technologies by entering into licensing agreements.

☐ Development partner

☒ Commercial partner

☒ Licensing

☐ University spin-out

☐ Seeking investment

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Figures

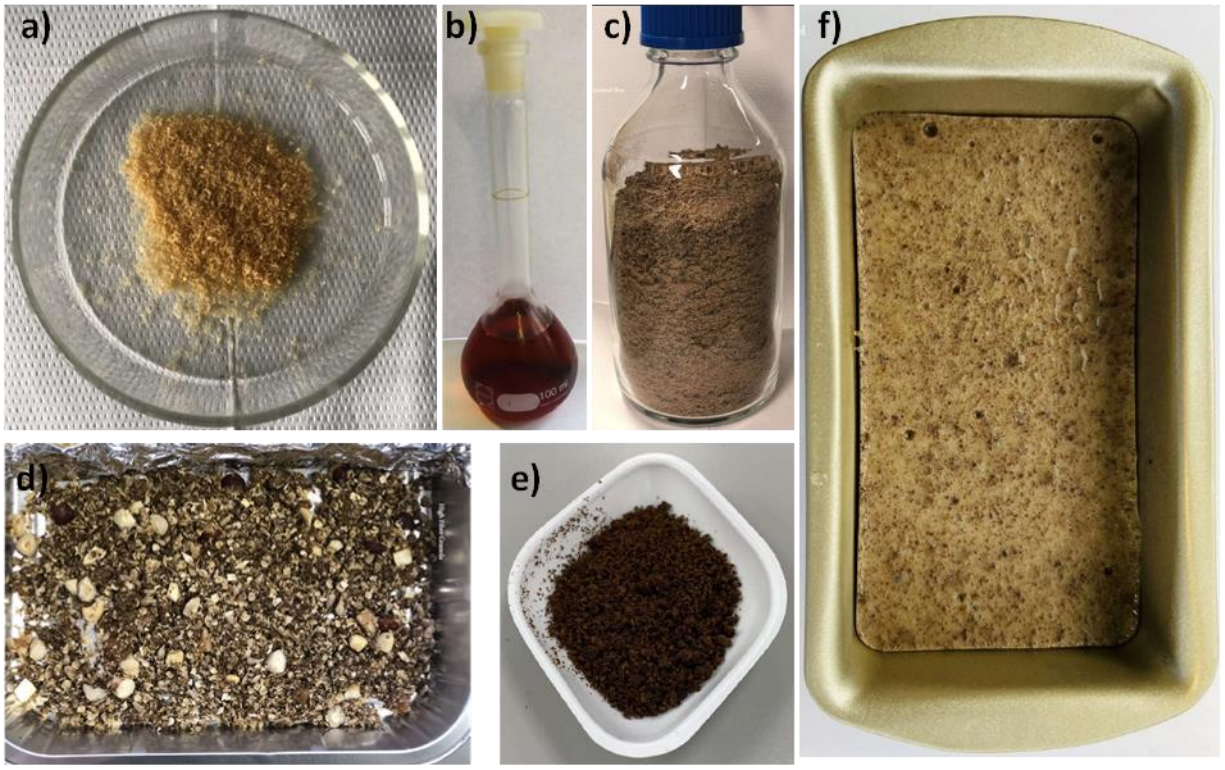

Figure 1: **a**) Isolated phenolic compounds; **b**) Phenol-enriched herbal tea; **c**) Isolated fibre; **d**) High fibre granola; **e**) Isolated BSG (*Brewer's spent grains*) protein; **f**) Protein-enriched fruity hydrogel.