

More sustainable, resilient, and competitive food systems through the development of intermediate food value chains



## PRACTICE ABSTRACT No: 27

### Fermentation: a promising alternative to valorize cheese whey

Cheese whey is the watery part obtained after milk curdling in cheese-making: production of 1 kg of cheese generates up to 9 L of whey. Its high organic acid and lactose content makes it difficult to discard and whey has long been considered a major pollutant by dairy plant. However, it also contains high quality proteins that are extracted and/or purified by industrial process to obtain value-added food ingredients such as whey protein isolate and concentrate. Unfortunately, current processes have drawbacks: it is only applicable to some types of whey, it is energy-consuming, and it only concerns large-scale dairy plants leaving small ones out of the system.

In FAIRCHAIN, we aim at developing whey-based beverages as alternative whey valorization using fermentation. Fermentation relies on microorganisms to biochemically transform a raw material into a complex food. It is already used extensively in the production of various foods worldwide, such as cheese, bread, wine, beer, ....

Applied to whey, fermentation by lactic acid bacteria can help.

- improving taste: the bacteria use whey sugars (lactose) and proteins to produce acids and aroma compounds.
  - increasing conservation: the acids produced contribute to preventing the growth of spoilage microorganisms thus increasing shelf-life;
  - enriching nutritional value: bacteria can produce beneficial compounds such as vitamins and amino acids essential for human body. Altogether, we hope to create an appetizing and tasty beverage but also a fair and sustainable one.
- Sustainable as it requires low energy and little equipment and uses whey under its native form; Fair as it will provide small cheese producers with a turnkey solution to valorize their whey.

A great challenge for FAIRCHAIN!

#### Authors

[Marine.penland@inrae.fr](mailto:Marine.penland@inrae.fr)

[Stephanie.deutsch@inrae.fr](mailto:Stephanie.deutsch@inrae.fr)

#### Affiliation

INRAE

#### Contact

[Marine.penland@inrae.fr](mailto:Marine.penland@inrae.fr)

[Stephanie.deutsch@inrae.fr](mailto:Stephanie.deutsch@inrae.fr)

#### End Users

Consumer, Farmer & Cooperative, Industry & Retail

#### Country

Worldwide



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### Links for additional information



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[www.fairchain-h2020.eu](http://www.fairchain-h2020.eu)

All Practice Abstracts prepared by FAIRCHAIN can be found [here!](#)

### ABOUT FAIRCHAIN

The FAIRCHAIN project launched in 2020 and coordinated by INRAE, is developing intermediate food value chains in the fruits and vegetable and dairy sectors. Through technological, organizational and social innovations and by developing business models FAIRCHAIN will enable small and mid-size stakeholders to scale up to supply fresh, sustainable and high-quality food products to consumers at a regional level.

### FAIRCHAIN PARTNERS



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