

# Things are growing – Fermentation of side stream blends in FERBLEND

## Project synopsis

Sustainable production which, among others, addresses waste reduction and the exploration of innovative ways to increase resource efficiency is one of the major challenges of the food chain. The project FERBLEND aims at valorizing blends of two side streams through fermentation, namely press cakes from organic oilseed processing and whey from cheese production, to create platform products with improved technological and nutritional functionality. Especially small and medium sized organic seed oil producers and dairy companies are challenged by an adequate handling and meaningful utilization of their side streams. By combining the aforementioned side streams, process circularity will be strengthened, and the strategies developed in this project can be exploited by different actors in the food supply chain. Pre- and posttreatment procedures of raw materials and the fermented blends will reduce antinutritional compounds, increase fermentability and ensure sensory quality and food safety. Processing methodologies thereby will pay attention to the reduction of energy consumption and CO<sub>2</sub> emissions, aiming at creating more climate friendly food platforms.



*Photo 1: Press cakes made from dehulled, hulled and partially dehulled sunflower seeds (from left to right).*

Fermentation of the combined side streams is the key process to obtain safe and adequate products through microbial activity. Subsequent to appropriate post-treatment, we aim at developing a series of solutions for the obtained platform products, with beverages, semi-solid spreads and snacks being the target model applications. We expect a substantial increase of knowledge concerning processing and fermentation of blends of oilseed press cakes and whey resulting in tailored food products.

## Project update

This project brings together the competencies of 4 partners from Denmark, Germany, Italy and Poland, and of 2 institutes from Spain and Turkey who contribute as associated partners. The project officially started at 1st of April 2021. Due to travel restrictions the first project meetings were held online but fortunately we could meet in person for the first time at 11th October 2021 at Università degli Studi di Milano, Department of Food, Environmental and Nutritional Sciences.



*Photo 2: Participants of the FERBLEND project meeting in Milano, October 2021*

The initial work in work packages 1 and 2 gives the consortium knowledge about the composition of the used raw materials, necessary pretreatment of press cakes and blending of the two side-streams. Fermentation experiments showed that the blends represent an excellent growth medium for several lactic acid bacteria and yeast strains. The main concern we will focus on now is the physical stability and the sensory properties of the fermented blends.

**Photo legend(s):**

Photo 1: Press cakes made from dehulled, hulled and partially dehulled sunflower seeds (from left to right).

Photo 2: Participants of the FERBLEND project meeting in Milano, October 2021

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