

# Flavour, odour and texture improvements of plant-based dairy products using microbial fermentation products

Tanja Kostic<sup>1</sup>, Charilaos Xiros<sup>2</sup>, Paula Aguado<sup>3</sup> and DELICIOUS consortium<sup>4</sup>  
<sup>1</sup> MicrobiomeSupport Association, Vienna, Austria; <sup>2</sup> RISE Processum AB, Örnsköldsvik, Sweden; <sup>3</sup> Clúster de Alimentación FOOD+I, Logroño · La Rioja · España; <sup>4</sup> <https://deliciousproject.com/partners/>  
Corresponding author: [charilaos.xiros@ri.se](mailto:charilaos.xiros@ri.se)

## BACKGROUND & CHALLENGE

Plant-based diets and alternative proteins offer environmental benefits. They are also linked to health benefits due to lower levels of harmful components found in animal products. Several barriers limit consumer acceptance:

- Poor organoleptic properties and challenges in meal preparation.
- Concerns about nutritional adequacy.
- Safety concerns, such as allergies.
- Sociocultural factors like price, tradition, and food neophobia.

Dairy analogues in particular struggle with acceptance due to difficulties in achieving the right taste, smell, texture, and nutritional profile through plant-based fermentation.

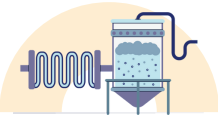
## OBJECTIVE

DELICIOUS aims to create next-generation plant-based kefir and cheese with enhanced taste, texture, and functionality by combining advanced fermentation technologies, industrial know-how, and input from chefs and consumers.

## EXPECTED IMPACT & BENEFITS

- **DELICIOUS & ACCESIBLE:** Suitable taste and texture and cheaper than current alternatives.
- **NUTRITONALLY RICH:** Up to 75% more protein, 10% more prebiotics, and enriched with vitamin B
- **SAFE, CLEAN & NATURAL:** Free from additives and ultra-processing.
- **SUSTAINABLY PRODUCE:** Compared to conventional dairy, it aims to reduce CO<sub>2</sub> emissions and water consumption up to 70%, require significantly less land, and rely on renewable raw materials.

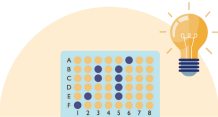
## DELICIOUS APPROACH



**MICROBIAL FERMENTATION**  
Enhance flavour, odour, and texture of plant-based dairy analogues by adding various microbial products.



**PRECISION FERMENTATION**  
Use microbial fat produced via engineered metabolic pathways to achieve functional properties of dairy fat.



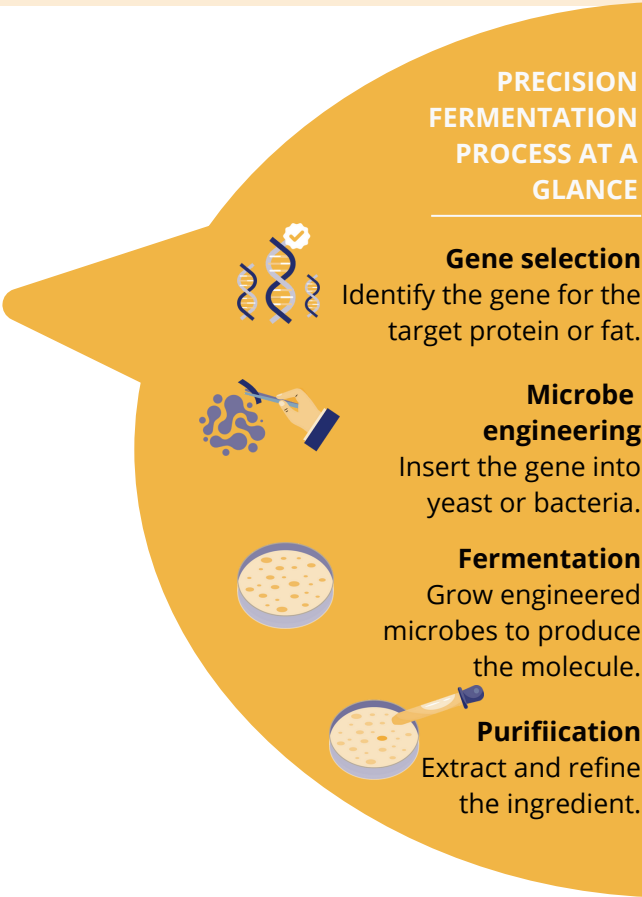
**HIGH-THROUGHPUT SCREENING**  
Tests multiple microbial and raw material combinations, cutting R&D costs by 40%.



**BIOINFORMATIC TOOL**  
Predictive model linking microbial genotypes and phenotypes, fermentation parameters, and sensory attributes to streamline formulation design



**CHEF'S & CONSUMER'S INSIGHTS & SENSORY OPTIMIZATION**  
Integration of iterative feedback into product design to enhance acceptance.



Join us & #TasteTheFuture  
[info@deliciousproject.com](mailto:info@deliciousproject.com)

