

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

Tanja Kostic¹, Charilaos Xiros², Paula Aguado³ and DELICIOUS consortium⁴

¹ MicrobiomeSupport Association, Vienna, Austria; ² RISE Processum AB, Örnsköldsvik, Sweden; ³ Clúster de Alimentación FOOD+I, Logroño · La Rioja · España; ⁴ <https://deliciousproject.com/partners/>

Corresponding author: charilaos.xiros@ri.se

BACKGROUND & CHALLENGE

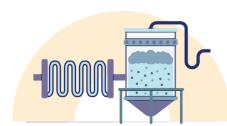
Plant-based diets and alternative proteins offer environmental benefits. They are also linked to health benefits due to lower levels of harmful components found in animal products.

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.

DELICIOUS APPROACH



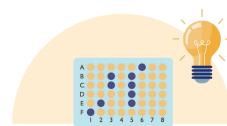
MICROBIAL FERMENTATION

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.

PRECISION FERMENTATION PROCESS AT A GLANCE



Gene selection

Identify the gene for the target protein or fat.



Microbe engineering

Insert the gene into yeast or bacteria.



Fermentation

Grow engineered microbes to produce the molecule.



Purification

Extract and refine the ingredient.

Join us & #TasteTheFuture

info@deliciousproject.com

