

INTERNATIONAL
CONFERENCE
ON FERMENTED
FOODS



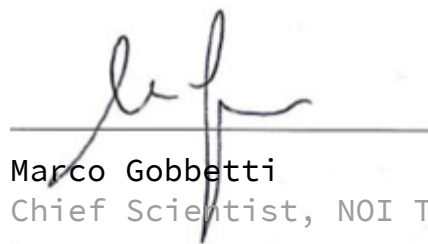
27-30TH
OF OCTOBER
2025

BOOK OF
ABSTRACTS

● The 1st International Conference on Fermented Foods 2025 (ICFF 2025) is a unique worldwide opportunity that brings together leading experts, researchers, and industry professionals from all continents and many countries to delve into the latest advancements and innovations and future exploitation of the potential. Fermented foods, cornerstones of human nutrition for millennia, have witnessed a great resurgence of interest due to their profound impact on human health, food security and safety, nutrition, industrial business, and sustainability. Because of this importance, fermented foods still face evolving challenges, such as how to advance tradition into future foods with different perspectives; how to steer the processes and guide the microbiomes; how to develop innovative biotechnologies to impact human health, the global food safety, and security and precision; and how to exploit the potential for dignifying food waste and reducing food loss and create the next generation of sustainable foods, also responding to the need of using non-conventional protein sources. Sharing knowledge and best practices globally is vital for accelerating this transformative transition.

This dedicated conference on fermented foods is essential to address these challenges and capitalise on the growing opportunities. By bringing together researchers, industry professionals, and policymakers, we can foster collaboration, advance scientific knowledge, and drive innovation in the production and consumption of fermented foods. We are committed to fostering a vibrant exchange of ideas and knowledge sharing among attendees from diverse backgrounds. Through keynote presentations, oral and poster sessions, and interactive workshops, we aim to create a stimulating environment for sharing knowledge, establishing synergistic collaboration, and supporting networking.

ICFF will become a recurring event held every three years, with its permanent locations at NOI Techpark, aiming to be the unique reference for researchers and professionals in this sector. Because of the great relevance of fermented foods in human tradition, society, well-being and economy, ICFF will be the recurrent meeting where scientific achievements will be presented and discussed, and results transferred to industry.



Marco Gobetti
Chief Scientist, NOI Techpark

● Dear participants,

Fermentation is one of humanity's oldest biotechnologies. For millennia, it has enabled us to preserve food, nourish communities, and create flavours that define cultures. Across the world – and especially here in South Tyrol – traditional dishes are rich with fermented ingredients, from cheeses and breads to cured meats and fermented vegetables. These foods are not only a testament to our heritage, but also to the ingenuity of generations who harnessed natural processes to ensure sustenance and safety.

Today, fermentation stands at the threshold of new opportunities. Thanks to advances in biotechnology, we can now understand and control fermentation processes with unprecedented precision. This opens the door to foods that are healthier, tastier, longer lasting, and more sustainable. By valorising by-products and optimising microbial activity, we are able to create products that meet the demands of modern consumers while respecting the environment.

Bozen/Bolzano has become renowned for its expertise in food fermentation. Our region's research centres and companies are at the forefront of innovation, blending tradition with cutting-edge science. It is therefore a great honour for us to host the very first ICFF Conference here in Bozen / Bolzano. With this new initiative, we are bringing together the world's leading experts in the field of fermented foods to share knowledge, spark new ideas, and build lasting collaborations in our region.

What awaits you at ICFF? Inspiring lectures from leading scientists and practitioners, engaging discussions on the future of fermented foods, and the chance to discover new approaches and solutions. The conference is not only a forum for exchanging expertise, but also a unique opportunity for networking – whether during the sessions, in informal conversations, or on our joint excursion, where you can experience South Tyrol's landscapes.

We hope you enjoy your time in South Tyrol, find inspiration in the diversity of perspectives, and leave with new connections and ideas that will shape the future of fermented foods.

With best wishes for a successful and memorable conference,



Philipp
Achammer
Provincial Minister
responsible for NOI



Helga
Thaler Ausserhofer
NOI President

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Study of cultivability and inter-species interactions within the microbial communities of the whey starter used for Parmigiano Reggiano cheese production.

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The project was founded by Consorzio del Formaggio Parmigiano Reggiano and by the NRRP, Mission 4 Component 2 Investment 1.4 - Call for tender No. 3138 of 16 December 2021, rectified by Decree n. 3175 of 18 December 2021 of the Italian Ministry of University and Research funded by the European Union - NextGenerationEU. Project Code CN_000000033, Concession Decree No. 1034 of 17 June 2022 adopted by the Italian Ministry of University and Research, CUP E93C22001090001, "National Biodiversity Future Center - NBFC

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● The aim of this study was to investigate the role that different amino acid sources and interspecies interactions may play in the cultivability of lactic acid bacteria (LAB) from the natural whey starter (NWS), an undefined microbial consortium used for Parmigiano Reggiano PDO cheese production. Two NWS samples type-H (dominated by *Lactobacillus helveticus*) and type-D (dominated by *Lactobacillus delbrueckii*) were subjected to metagenomic analysis and viable cell counts on MRS agar supplemented with 12 different nitrogen sources. The media were evaluated for their ability to estimate the cultivable fraction (Log_{10} CFU/mL), to maintain the viability and cultivability of isolates (percentage of viable isolates), and to preserve the original species ratios. All conditions altered species ratios and failed to cultivate *L. delbrueckii* subsp. *lactis* effectively, even in type-D whey where it dominated, indicating its recalcitrant to growth despite nitrogen supplementation. Cross-feeding experiments in milk were performed using three sets of axenic cultures, each composed of one strain of *L. helveticus* (Lh), *L. delbrueckii* (Ld), and *S. thermophilus* (St), tested in mono-culture, co-culture, and tri-culture combinations. Tri-cultures, followed by Lh-St and Ld-St co-cultures, showed faster, more efficient acidification compared to monocultures, while the Lh-Ld combination did not. Analysis of lactate isomers revealed that St positively influences Ld without reciprocal benefit. Moreover, Ld and Lh showed negative interactions, likely due to sugar competition, as both are proteolytic.

These findings demonstrate the complexity of microbial interactions in NWS and highlight the limitations of traditional culture-dependent methods in preserving microbial biodiversity *ex situ*.