



# NZIFST Conference 2023

## SPEAKER ABSTRACTS

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## Session I3 Fermented foods: flavour, nutrition and health

**Speaker I3-1**      **Franco Biasioli (Italy) - supported by Catalyst Funding**  
Affiliation      Supported by Catalyst Funding  
Paper Title      *Use of proton transfer reaction mass spectrometry to understand flavour generation during food fermentations*

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### Abstract

Fermented food encompasses a wide range of food products created through the intentional growth of microorganisms and enzymatic transformations. Fermentation offers numerous benefits that extend to various aspects, including economic value, reduced food waste, efficient energy and resource utilization, environmental considerations, social aspects such as food security, wellness, and preservation of cultural heritage. Traditional fermented products have long existed, and new innovative fermented foods continue to be introduced.

Understanding and controlling fermentation can be challenging due to the involvement of different raw materials, various microbes (both known and unknown), diverse fermentation techniques, and a range of technological parameters and applications. To unravel this complex web, it is crucial to employ analytical methodologies that provide insights into the metabolic processes and allow for rapid and non-invasive measurements.

Proton-transfer-reaction time-of-flight mass spectrometry (PTR-ToF-MS) is a direct injection mass spectrometry (DIMS) technique that enables fast and online measurements of VOCs. With the integration of an autosampler and advanced data processing capabilities, this approach offers enhanced automation, enabling the analysis of wide and complex experimental designs. Furthermore, PTR-ToF-MS analysis aligns with the principles of Green Analytical Chemistry by requiring minimal sample volumes, eliminating the need for toxic reagents, and producing no toxic analytical waste.

**Speaker I3-2**      **Rebecca Roberts**  
Affiliation      University of Otago  
Paper Title      *Monitoring dynamic biotransformation of terpenes during beer fermentation*

### Abstract

To meet consumer demand for hop-flavour driven beers, there is increasing interest to control, optimise and predict hop flavour development in beer. Few aroma compounds present in hops directly contribute to beer flavour