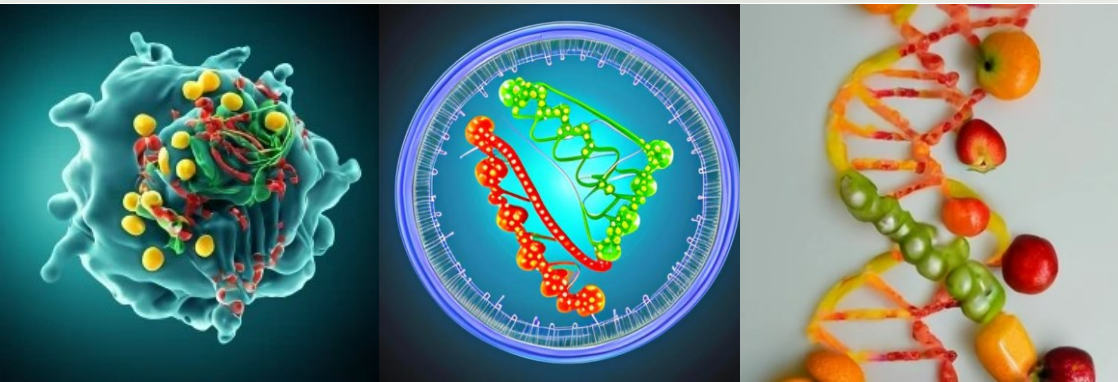


A detailed pencil sketch of a white plate with a fork resting on its left side. The plate has concentric circular lines, and the fork is also sketched with fine lines.

# FoodOmics 2024

**7<sup>th</sup> International Conference**



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Where are we now, what's next.***

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ABSTRACT BOOK

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## **Multi-analytical characterization of Parmigiano Reggiano PDO cheeses produced with milk from different dairy cows feeding.**

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This investigation is addressed to characterize Parmigiano Reggiano PDO cheeses produced with milk from dairy cows fed different forage sources. In particular, ten samples of

Parmigiano Reggiano PDO cheeses, seasoned for 24 months, were produced with milk from dairy cows fed dry hay (PDH; N=5) and fresh forage (PFF; N=5). Instrumental volatilomics technologies (HS-Flash GC-FID and HS-GC-IMS), texture and image analyses, and sensory descriptive analyses (QDA®) were carried out. To investigate possible relations between dairy cows diet and cheeses microbiome and to assess samples safety, microbiological analyses were performed on total mesophilic bacteria (TMB), *Lactobacillus* spp., *Lactococcus* spp., yeast and molds, *Staphylococcus* spp. (including *S. aureus*), total Enterococci, and *Pseudomonas* spp. Instrumental, microbiological and sensory data were jointly elaborated. The results highlighted visual differences between the two experimental groups: indeed, the Parmigiano Reggiano cheeses belonging to the PFF group showed a higher intensity of yellow than PDH for both sensory and image analyses. Instrumental and sensory results were also discussed to investigate olfactory, taste, texture, and visual characteristics. In addition, all samples fulfilled the microbiological safety parameters and showed a similar TMB cell load. Such a multi-instrumental, microbiological and sensory characterization allows to obtain a unique fingerprinting analytical profile for each Parmigiano Reggiano PDO cheese, produced with milk from dairy cows fed different forage sources, thus contributing to the quality and authenticity control of this typical high-value food product.

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