

BOOK OF ABSTRACTS

10th International Symposium on **RECENT ADVANCES IN FOOD ANALYSIS**

**September 6-9, 2022
Prague, Czech Republic**

Jana Pulkrabová, Monika Tomaniová, Stefan van Leeuwen,
Michel Nielen and Jana Hajšlová
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AGING DISCRIMINATION OF GRANA PADANO PDO CHEESE WITH AN NMR-BASED METABOLOMIC APPROACH

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In recent years, the interest of consumers in high-quality food products has been increased remarkably. One of the most imitated products is the Grana Padano PDO cheese, one of the most renowned Italian cheeses. Grana Padano PDO cheese can be mislabeled regarding its aging, because the quality and consequently the price of the cheese increases accordingly to this parameter. Thus, younger cheeses can be mislabeled for economic gain as more aged products. In this study, we tried to study Grana Padano PDO cheeses to discriminate them based on the aging. After a simple extraction, the samples were analyzed with NMR spectroscopy and an untargeted metabolomic approach was developed: the fingerprints of the samples obtained from the NMR spectra were studied and treated with multivariate statistical analysis. The results demonstrated that this approach can be used to distinguish Grana Padano of different ages and therefore can be interesting for industry and authorities in charge for controlling food quality and labels.

Keywords: *NMR, cheese, authenticity, metabolomics*

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