

[P-23] MONITORING THE METABOLITES CONTENT OF SEASONED ZUCCHINI DURING SHELF LIFE BY NMR-BASED METABOLOMICS

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The shelf life of a food products is the time during which food remains safe under defined storage conditions, maintaining the desired sensory, chemical, physical and biological characteristics in compliance with the label declaration [1]. Many physical factors could influence the shelf life like temperature changes, light exposure, gases transmission, humidity changes as well as contamination with microorganism and spores. Packaging plays a critical role in extending the shelf life of food products, preventing or reducing the environmental interactions. Recent EU regulations promoted a growing interest in bio-based materials production for replacement of the traditional petro-plastics, limiting the accumulation problem and reducing the environmental pollution. NMR spectroscopy represents a valid approach to evaluate the effects of packaging on the shelf life of foods and possible chemical contamination. [2]. Moreover, NMR spectroscopy has already demonstrated its pivotal role in metabolomics [3,4] allowing to monitor in a single experiment different classes of chemical compounds, and its capabilities in microstructural characterization of packaging materials. In this study the analyses of polar and organic extracts of seasoned zucchini stored at 4°C for 35 days, in plastic and compostable trays, performed by NMR in combination with chemometrics, are reported.

References

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