CHERRY CHARACTERIZATION: AN ANALYTICAL INTEGRATED APPROACH

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Typical food and agricultural products are an advanced response to the growing research on the part of consumers of variety, simplicity and authenticity, and find their competitive advantage in the difficulties of the industrial system to give a coherent answer to this query .

The purpose of this work was to characterize some cherry varieties (Ferrovia, Morellina and Duroni of Usigliano) from Lari (PI) via metabolomics analysis, in order to enhance their production.

The volatile fraction was determined by the proton transfer reaction time-of-flight mass spectrometer (PTR-TOF-MS), HS-SPME-GC-MS and HS-SPME-2DGC-MS/TOF analysis. PTR-TOF-MS is a non-destructive technique which allows the achievement of the whole spectra of analyte masses with a time of resolution inferior to 1 s and the detection of high molecular weight molecules with a high resolution power [**1**]. HS-SPME-GC-MS and HS-SPME-GC×GC-MS fingerprint analysis are ideal tools to analyze complex volatile matrices, and provide a sensitive method for the direct comparison and chemical visualization of food volatile components. GC×GC-MS is currently adopted as separation technique not only because of its high separation power and sensitivity but also for its ability to produce more widely distributed and rationalized peak patterns [**2**] for chemically correlated group of analytes. The advantages and drawbacks of each techniques are compared and discussed.

Other antioxidant and antiradical active secondary metabolites are identified by HPLC/DAD/ESI-MS technique.

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1. Masi et al., Food Chemistry 192 (2016) 75-81.
2. Cordero et al., J Agric Food Chem 56 (2008) 7655–7666.

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