CHERRY CHARACTERIZATION: 
AN ANALYTICAL INTEGRATED APPROACH
Ileri Francesca¹, Vignolini Pamela¹, Scardigli Arianna¹, Innocenti Marzia², 
Mancuso Stefano³, Masi Elisa³, Romani Annalisa¹
¹PHYTOLAB (Pharmaceutical, Cosmetic, Food supplement Technology and 
Analysis), DiSIA –Department of Statistics, Informatics, Applications, 
University of Florence, Via Ugo Schiff, 6–50019, Sesto F.no (FI); 
²Department of NEUROFARBA, Division Pharmaceutical and Nutraceutical 
Sciences, University of Florence, Via U. Schiff 6, Sesto F.no (FI); 
³DISPAA - Department of Agrifood Production and Environmental Science 
University of Florence.

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 Usigiano) 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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