

RP-UHPLC–DAD-QTOF-MS as a powerful tool of phenolic compounds characterization in tunisian olive-leaf and fruits extract

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Olive (*Olea europaea* L.) is one of the most important cultivated fruit tree species in the Mediterranean basin, where it is considered the major oil-producing crop. Olive plantations are present across the entire territory of Tunisia, counting more than 96 million trees and covering about 1.85 million hectares. Nowadays, the discrimination of the olive cultivar becomes an economically important topic, because of the increasing demand of table olives and olive oils with high quality standards. Indeed, I noted that the evaluation and characterization of olive genetic resources is very interesting because both productivity and oil quality are inherently important criteria in a variety. Different types of markers such as morphological (Trigui and Msallem, 2002); agronomic and biochemical (Ben Hamouda et al, 2020; Abidi et al 2018) features have been widely applied to discriminate among olive varieties, identify cultivars origin.

The distinction between olive tree varieties grown in the same geographical site was carried out based on chemotaxonomic markers such as secondary metabolites. Phenolic compounds structure determined by high performance liquid chromatography/electrospray ionization tandem mass spectrometry (HPLC-ESI/MS) (Bouaziz et al., 2005), biophenols from a high performance liquid chromatography diode array detection or diode array and time of flight-mass spectrometry (HPLC-DAD- TOF-MS) (Ammar et al.,2020; Ben hammouda et al 2017; Ammar et al 2017)

The phytochemical profile of Tunisian olive fruits and leaves was investigated with liquid chromatography-ultraviolet-visible (UV-Vis) diode array coupled to electrospray ionization multistage mass spectrometry (LC/DAD/ESI-MSn). It shows that oleuropein is the most abundant compound in olive fruits and leaves, followed by hydroxytyrosol, glucoside derivatives of luteolin and apigenin, and verbascoside. The MS analysis revealed that the extracts were predominated by oleuropein as the major phenolic compound and that Chetoui and chemlali cultivars is the most peculiar cultivar, with high concentrations of Irridoids, verbascoside and flavonoids such as apigenin 7-O-glucoside and luteolin

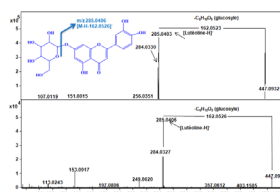


Fig.1 mass Spectra MS1 and MS2 of luteolin 7-O-glucoside

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Biography

Prof. Mohamed Bouaziz was awarded PhD in Analytical chemistry and Bioactive compounds from natural substances (olive by products and medicinal plants) from Sfax University, Tunisia and Kew Gardens, London UK. He has been working on the Food chemistry and food bioactive ingredients for the past 21 years. Now, as a full Professor, he is Director of Studies and member of the Scientific Council at the Higher Institute of Biotechnology of Sfax-Tunisia. In addition he is Scientific Evaluator Expert of the Euro-Mediterranean project, Scientific Evaluator Expert CNEAR assessments of research laboratories in Tunisia and Member of the National Commission: Instance of Evaluation, Quality Assurance and Accreditation INEAQA. He has published more than 200 papers in top-ranked International Food Chemistry journals (h-index=46 in Scopus). He has extended his valuable service for many years and has been a recipient of many award and grants. His international experience includes various programs, contributions and participation in different countries for diverse fields of study.