

Determinazione dei prodotti fitosanitari nell'olio extra vergine di oliva: validazione e indagine conoscitiva

P. Fusari²
F. Orgiu^{1*}
P. Rovellini^{2§}

¹ Università Degli Studi Di Milano
Facoltà di Scienze del Farmaco

² INNOVHUB – SSI
Azienda Speciale della
Camera di Commercio di Milano
Area Oli e Grassi - Milano Italy
Settore Micronutrienti e Sicurezza
Alimentare
Laboratorio Sostanze Grasse e Derivati

[§] CORRESPONDING AUTHOR:
pierangela.rovellini@mi.camcom.it

(*) Tesi di Laurea in Scienze e Sicurezza
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Determination of pesticides in extra virgin olive oil: validation and survey

A new analytical method was developed for the determination multiresidual of plant protection products, belonging to different chemical categories, using the technique UHPLC/MS-MS triple quadrupole with H-ESI-II interface. Validation experiments were conducted following the guidelines of the SANCO 12571/2013 protocol [1] to determine the lowest calibration level (LCL), the linearity of the instrumental response (R^2), the recovery, the repeatability (r) and percent standard deviation for repeatability (RSDr%). As regards recoveries, 83% of the principles showed values comprised in reference range (70% - 120%). The principles that have not complied with this reference range showed yield lower values, only three of them, yielded higher values (Table III). 97% of the principles showed a residual value relative to the calibration curve in matrix $\leq 20\%$, 99% of the principles showed RSDr values $\leq 20\%$, 91% of the residues possessed of at least 2 transitions in the spectrum fragmentation. All the principles analyzed showed LCL values \leq maximum residue limits set by the EC Regulation 396/2005 [2]. Once validated, the analytical method was used for the analysis of 23 samples of extra virgin olive oil, collected during the year 2015/2016 in the large national distribution in order to conduct an analysis of survey type.