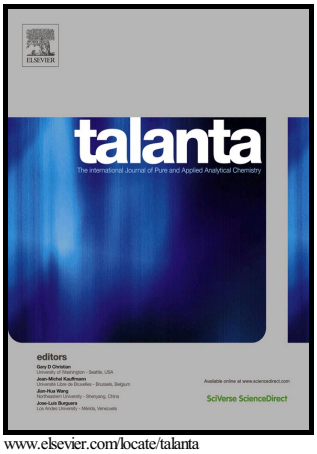
Multiresidue method for trace pesticide analysis in honeybee wax comb by GC-QqQ-MS

M.D. Gil García, S. Uclés Duque, A.B. Lozano Fernández, A. Sosa, Amadeo R. Fernández-Alba



www.elsevier.com/locate/talanta

PII: S0039-9140(16)30838-4
DOI: http://dx.doi.org/10.1016/j.talanta.2016.10.083
Reference: TAL17003

To appear in: *Talanta*

Received date: 13 July 2016
Revised date: 21 October 2016
Accepted date: 23 October 2016

Cite this article as: M.D. Gil García, S. Uclés Duque, A.B. Lozano Fernández A. Sosa and Amadeo R. Fernández-Alba, Multiresidue method for trace pesticid analysis in honeybee wax comb by GC-QqQ-MS, *Talanta* http://dx.doi.org/10.1016/j.talanta.2016.10.083

Multiresidue method for trace pesticide analysis in honeybee wax comb by GC-QqQ-MS

M.D. Gil García[a], S. Uclés Duque[a,b], A.B. Lozano Fernández[a], A. Sosa[b], Amadeo R. Fernández-Alba[a*]

[a]Agrifood Campus of International Excellence (ceiA3), Department of Chemistry and Physics, University of Almeria. European Union Reference Laboratory for Pesticide Residues in Fruit & Vegetables, 04120 Almería (Spain)

[b]National Agricultural Technology Institute (INTA). Concordia Agricultural Experimental Station (Argentina)

[*]Corresponding author. Amadeo R. Fernández-Alba.. amadeo@ual.es

ABSTRACT

The aim of this analytical study is to develop an improved multi-residue methodology of high sensitivity and expanded scope for pesticide residue analysis in honeybee wax combs. The method was validated for 160 pesticide residues (including acaricides, insecticides, fungicides and herbicides) gas chromatography amenable and covering a wide variety of polarity and chemical structure. This method of analysis applied gas chromatography coupled to a triple quadrupole mass spectrometer for the quantitative analysis of pesticide residues. The extraction procedure applied was based QuEChERs method allowing acceptable recoveries for most of the pesticides (98%), within the