

# Matrix solid-phase dispersion associated to gas chromatography for the assessment in honey bee of a group of pesticides of concern in the apicultural field

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© 2018 Elsevier B.V. A method based on matrix solid-phase dispersion (MSPD) associated to gas chromatography-flame photometric detection (GC-FPD), GC-electron capture detection (GC-ECD) and GC-mass spectrometry (GC-MS) for confirmation purposes, was developed for the determination of a representative group of twelve pesticides in honeybee with particular concern in the apicultural field (fipronil, thiamethoxam, acetamiprid, acrinathrin, metamidophos, dimethoate, diazinon, chlorpyrifos, methidathion, profenophos, azinphos methyl and coumaphos). Factors influencing the extraction efficiency of MSPD were investigated and optimized through response surface method. The use of octadecylsilyl (C18) sorbent combined with a florisil clean-up and acetonitrile-methanol (99:1) elution was the optimal condition for the extraction of the selected pesticides. Under this condition the recovery of pesticides at the limit of quantification of the method (0.007 to 0.050  $\mu\text{g g}^{-1}$ ) ranged from 68 to 102% with