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2.3.3 US EPA Legislation 2.4 METHOD VALIDATION AND QUALITY CONTROL PROCEDURES FOR PESTICIDE RESIDUES ANALYSIS; 2.4.1 CAC Guidelines; 2.4.2 EU Guidelines: SANCO Document; 2.4.3 FDA and EPA Guidelines; REFERENCES; Chapter 3 Advanced Sample Preparation Techniques for MS Analysis; 3.1 INTRODUCTION; 3.2 CONVENTIONAL EXTRACTION AND CLEANUP PROCEDURES; 3.2.1 LLE; 3.2.2 SPE; 3.2.3 MSPD; 3.2.4 QuEChERS; 3.3 MICROEXTRACTION TECHNIQUES; 3.3.1 Sorbent-Based Microextraction Techniques; 3.3.2 Liquid-Based Microextraction Techniques; 3.4 ALTERNATIVE EXTRACTION AND CLEANUP PROCEDURES 3.4.1 Alternative Energy Sources to Enhance the Extraction 3.4.2 Coupled-Column Liquid Chromatography (LC/PC, LC/LC Techniques); 3.4.3 Direct Analysis in Real Time; 3.5 CONCLUSIONS; ACKNOWLEDGMENTS; REFERENCES; Chapter 4 Recent Developments in Gas Chromatography-Mass Spectrometry; 4.1 INTRODUCTION; 4.2 ADVANCES IN GC SEPARATIONS; 4.2.1 Multidimensional and Comprehensive Two-Dimensional Gas Chromatography; 4.2.2 Fast GC; 4.2.3 LPGC; 4.3 MASS SPECTROMETRIC IONIZATION TECHNIQUES; 4.3.1 Electron Impact Ionization (EI); 4.3.2 CI (Positive/Negative Modes); 4.3.3 Atmospheric Pressure GC-MS 4.4 MASS ANALYZERS INTERFACED TO GC 4.4.1 Quadrupole Mass Analyzer; 4.4.2 Ion Trap Mass Analyzer; 4.4.3 QqQ; 4.4.4 TOF; 4.5 MASS SPECTRAL LIBRARIES AND SOFTWARE APPROACHES IN GC-MS ANALYSIS; 4.6. MATRIX EFFECTS IN GC-MS ANALYSIS; 4.7 CONCLUSIONS AND PERSPECTIVES; REFERENCES; Chapter 5 Recent Developments in Liquid Chromatography-Mass Spectrometry: Advances in Liquid Chromatographic Separations and Ionization Techniques/Interfaces; 5.1 INTRODUCTION; 5.2 ADVANCES IN LIQUID CHROMATOGRAPHIC SEPARATIONS; 5.2.1 Ultrapformance Liquid Chromatography 5.2.2 Hydrophilic Interaction Liquid Chromatography

Sommario/riassunto

Provides an overview of the use of mass spectrometry (MS) for the analysis of pesticide residues and their metabolites. Presents state of the-art MS techniques for the identification of pesticides and their transformation products in food and environment Covers important advances in MS techniques including MS instrumentation and chromatographic separations (e.g. UPLC, HILIC, comprehensive GCxGC) and applications Illustrates the main sample preparation techniques (SPE, QuEChERS, microextraction) used in combination with MS for the analysis of pesticides Describes various established and new
