



[AOAC Home Page](#)

Subscribe to the AOAC Journal

[Journal Masthead](#)

[AOAC Journal Submissions](#)

[Customer Service](#)

Username

Password

[Register](#) or

[Athens Login](#)

[Forgotten your password?](#)

[View my basket](#)



[Browse](#)

[Search](#)

[My Profile](#)

[Activate](#)

[Help](#)

[Home](#) > [List of Issues](#) > [Table of Contents](#)



## Journal of AOAC INTERNATIONAL

Volume: 93 | Issue: 6

[◀ Prev](#) | [Journal Home](#) | [Next ▶](#)

[Trouble viewing articles as PDF?](#)

[Email this link](#) [Add to my alerts](#)  [What is RSS?](#)

Contents

Indicator:  = Free Access  = Full Access  = Partial Access  = No Access

### SPECIAL GUEST EDITOR SECTION

**Modern Gas Chromatography, Column Liquid Chromatography, Planar Chromatography, and Bioanalytical Methods for the Analysis of Pesticides and Study of Quantitative Structure-Retention Relationships**

Authors: Tomasz Tuzimski

Page start: 1679

[View Header/Abstract](#) [View PDF article](#) (534K) [View PDF with links](#) (88 K)

**Bioanalytical Methods for Food Contaminant Analysis**

Authors: Jeanette M. Van Emon

Page start: 1681

[View Header/Abstract](#) [View PDF article](#) (514K) [View PDF with links](#) (322 K)

**Determination of Pesticide Residues in Sewage Sludge: A Review**

Authors: José L. Tadeo, Consuelo Sánchez-Brunete, Beatriz Albero and Ana I. García-Valcárcel

Page start: 1692

[View Header/Abstract](#) [View PDF article](#) (197K) [View PDF with links](#) (241 K)

**Quantitative Structure-Retention Relationship Studies as an Analytical Tool in the Determination and Modeling of Pesticide Residues in Plant Organisms**

Authors: Bogusław Buszewski and Monika Michel

Page start: 1703

[View Header/Abstract](#) [View PDF article](#) (646K) [View PDF with links](#) (498 K)

**Use of Pressurized Liquid Extraction for the Simultaneous Analysis of 28 Polar and 94 Non-polar Pesticides in Agricultural Soils by GC/QqQ-MS/MS and UPLC/QqQ-MS/MS**

Authors: José Luis Martínez Vidal, Juan Antonio Padilla Sánchez, Patricia Plaza-Bolaños, Antonia Garrido Frenich and Roberto Romero-González

Page start: 1715

[View Header/Abstract](#) [View PDF article](#) (255K) [View PDF with links](#) (387 K)

**Multiresidue Analysis of 95 Pesticides at Low Nanogram/Liter Levels in Surface Waters Using Online Preconcentration and High Performance Liquid Chromatography/Tandem Mass Spectrometry**

Authors: Christer Jansson and Jenny Kreuger

Page start: 1732

[View Header/Abstract](#) [View PDF article](#) (352K) [View PDF with links](#) (504 K)

**Application of HPLC and TLC with Diode Array Detection After SPE to the Determination of Pesticides in Water Samples from the Zemborzyccki Reservoir (Lublin, Southeastern Poland)**

Authors: Tomasz Tuzimski  
Page start: 1748

[View Header/Abstract](#) [View PDF article](#) (253K) [View PDF with links](#) (392 K)

**Separation of Four Mixtures of Pesticides by Pressurized Planar Electrochromatography (PPEC)**

Authors: Tomasz Tuzimski  
Page start: 1757

[View Header/Abstract](#) [View PDF article](#) (679K) [View PDF with links](#) (425 K)

**AGRICULTURAL MATERIALS****Real-Time Polymerase Chain Reaction Detection of Fishmeal in Feedstuffs**

Authors: Irene Martín, Teresa García, Maria Rojas, Nicolette Pegels, Miguel Ángel Pavón, Pablo E. Hernández, Isabel González and Rosario Martín  
Page start: 1768

[View Header/Abstract](#) [View PDF article](#) (304K) [View PDF with links](#) (400 K)

**DIETARY SUPPLEMENTS****Quantitative Determination of Chemical Constituents from Seeds of *Nigella sativa* L. Using HPLC-UV and Identification by LC-ESI-TOF**

Authors: Bharathi Avula, Yan-Hong Wang, Zulfiqar Ali and Ikhlas A. Khan  
Page start: 1778

[View Header/Abstract](#) [View PDF article](#) (1660K) [View PDF with links](#) (594 K)

**Liquid Chromatography-Particle Beam Electron Ionization Mass Spectrometry Method for Analysis of Botanical Extracts: Evaluation of Ephedrine Alkaloids in Standard Reference Materials**

Authors: Joaudimir Castro, M.V. Balarama Krishna and R. Kenneth Marcus  
Page start: 1788

[View Header/Abstract](#) [View PDF article](#) (345K) [View PDF with links](#) (389 K)

**Fingerprint Analysis of *Ginkgo biloba* Leaves and Related Health Foods by High-Performance Liquid Chromatography/Electrospray Ionization-Mass Spectrometry**

Authors: Jiajia Song, Guozhen Fang, Yan Zhang, Qiliang Deng and Shuo Wang  
Page start: 1798

[View Header/Abstract](#) [View PDF article](#) (630K) [View PDF with links](#) (369 K)

**Quantitative Analysis of Eugenol in Clove Extract by a Validated HPLC Method**

Authors: So-Mi Yun, Myoung-Heon Lee, Kwang-Jick Lee, Hyun-Ok Ku, Seong-Wan Son and Yi-Seok Joo  
Page start: 1806

[View Header/Abstract](#) [View PDF article](#) (131K) [View PDF with links](#) (179 K)

**DRUG FORMULATIONS AND CLINICAL METHODS****Ultra-Fast Gradient LC Method for Omeprazole Analysis Using a Monolithic Column: Assay Development, Validation, and Application to the Quality Control of Omeprazole Enteric-Coated Pellets**

Authors: Keyller Bastos Borges, Antonio José Macías Sánchez, Mónica Tallarico Pupo, Pierina Sueli Bonato and Isidro González Collado  
Page start: 1811

[View Header/Abstract](#) [View PDF article](#) (818K) [View PDF with links](#) (440 K)

**Optimization and Validation of an RP-HPLC Method for Direct Determination of Metformin Hydrochloride in Human Urine and in a Dosage Form**

Authors: Alaa El-Gindy, Mohammed Wafaa Nassar, Nasr Mohammed El-Abasawy, Khalid Abdel-Salam Attia and Maisra Al-Shabrawi  
Page start: 1821

[View Header/Abstract](#) [View PDF article](#) (167K) [View PDF with links](#) (183 K)

**Stress Degradation Studies and Kinetic Determinations of Duloxetine Enteric-Coated Pellets by HPLC**

Authors: Patrícia Gomes, Nathalie R. Wingert, Clésio S. Paim, Elfrides E.S. Schapoval and Martin Steppe  
Page start: 1829

[View Header/Abstract](#) [View PDF article](#) (151K) [View PDF with links](#) (175 K)

**An Interlaboratory Investigation on the Use of High-Performance Thin Layer Chromatography to Perform Assays of Lamivudine–Zidovudine, Metronidazole, Nevirapine, and Quinine Composite Samples**

Authors: Eliangiringa Kaale, Peter Risha, Eike Reich and Thomas P. Layloff  
Page start: 1836

[View Header/Abstract](#) [View PDF article](#) (166K) [View PDF with links](#) (181 K)

**Quantitative Analysis of the Cholesterol-Lowering Drugs Ezetimibe and Simvastatin in Pure Powder, Binary Mixtures, and a Combined Dosage Form by Spectrophotometry, Chemometry, and High-Performance Column Liquid Chromatography**

Authors: Hayam Mahmoud Lotfy, Amal Mahmoud Aboul Alamein and Maha Abdel Monem Hegazy  
Page start: 1844

[View Header/Abstract](#) [View PDF article](#) (231K) [View PDF with links](#) (324 K)

**LC/MS/MS Study for Identification of Entacapone Degradation Product Obtained by Photodegradation Kinetics**

Authors: Clésio S. Paim, Eduardo C. Palma, Marcelo D. Malesuik and Martin Steppe  
Page start: 1856

[View Header/Abstract](#) [View PDF article](#) (193K) [View PDF with links](#) (186 K)

**Development and Validation of a High-Performance Liquid Chromatographic Method for Determination of Eprosartan in Bulk Drug and Tablets**

Authors: Harsha U. Patel, Bhanubhai N. Suhagia and Chhaganbhai N. Patel  
Page start: 1862

[View Header/Abstract](#) [View PDF article](#) (228K) [View PDF with links](#) (277 K)

**Development and Validation of a New HPLC-UV Method for the Simultaneous Determination of Triclabendazole and Ivermectin B1a in a Pharmaceutical Formulation**

Authors: Maher Shurbaji, Mohamad H. Abu Al Rub, Munib M. Saket, Ali M. Qaisi, Maher L. Salim and Eyad S.M. Abu-Nameh  
Page start: 1868

[View Header/Abstract](#) [View PDF article](#) (155K) [View PDF with links](#) (170 K)

**FOOD CHEMICAL CONTAMINANTS****Effect of Gamma Irradiation on Caprolactam Migration from Multilayer Polyamide 6 Films into Food Simulants: Development and Validation of a Gas Chromatographic Method**

Authors: Juliana S. Félix, Magali Monteiro, José E. Manzoli and Marisa Padula  
Page start: 1874

[View Header/Abstract](#) [View PDF article](#) (172K) [View PDF with links](#) (199 K)

**Determination of Aflatoxin in Processed Dried Cassava Root: Validation of a New Analytical Method for Cassava Flour**

Authors: G.J. Benoit Gnonlonfin, David R. Katerere, Yann Adjovi, Leon Brimer, Gordon S. Shephard and Ambaliou Sanni  
Page start: 1882

[View Header/Abstract](#) [View PDF article](#) (175K) [View PDF with links](#) (170 K)

**FOOD COMPOSITION AND ADDITIVES****Determination of Calcium, Magnesium, Sodium, and Potassium in Foodstuffs by Using a Microsampling Flame Atomic Absorption Spectrometric Method After Closed-Vessel Microwave Digestion: Method Validation**

Authors: Rachida Chekri, Laurent Noël, Christelle Vastel, Sandrine Millour, Ali Kadar and Thierry Guérin  
Page start: 1888

[View Header/Abstract](#) [View PDF article](#) (166K) [View PDF with links](#) (168 K)

**Method for the Direct Determination of Available Carbohydrates in Low-Carbohydrate Products Using High-Performance Anion Exchange Chromatography**

Authors: David Ellingson, Brian Potts, Phillip Anderson, Greg Burkhardt, Wayne Ellefson, Darryl Sullivan, Wesley Jacobs and Robert Ragan  
Page start: 1897

[View Header/Abstract](#) [View PDF article](#) (323K) [View PDF with links](#) (208 K)

**Rapid Method for the Determination of Capsaicin and Dihydrocapsaicin in Gochujang Using Ultra-High-Performance Liquid Chromatography**

Authors: Jaeho Ha, Hye-Young Seo, You-Shin Shim, Hyun-Jin Nam, Homoon Seog, Masahito Ito and Hiroaki Nakagawa  
Page start: 1905

[View Header/Abstract](#) [View PDF article](#) (147K) [View PDF with links](#) (165 K)

**Optical Determination of L-tyrosine Based on Eggshell Membrane Immobilized Tyrosinase**

Authors: Yong Jin Li  
Page start: 1912

[View Header/Abstract](#) [View PDF article](#) (104K) [View PDF with links](#) (128 K)

**Classification of Wines from Five Spanish Origin Denominations by Aromatic Compound Analysis**

Authors: Cecilia Sáenz, Trinidad Cedrón and Susana Cabredo  
Page start: 1916

[View Header/Abstract](#) [View PDF article](#) (178K) [View PDF with links](#) (225 K)

**ELISA Kit for Determination of Egg White Proteins: Interlaboratory Study**

Authors: Kvita Tomková, Petr Cuhra, Jana Rysová, Petr Hanák and Dana Gabrovská  
Page start: 1923

[View Header/Abstract](#) [View PDF article](#) (146K) [View PDF with links](#) (179 K)

**MICROBIOLOGICAL METHODS****Genotyping of *Francisella tularensis*, the Causative Agent of Tularemia**

Authors: Anders Johansson and Jeannine M. Petersen  
Page start: 1930

[View Header/Abstract](#) [View PDF article](#) (1013K) [View PDF with links](#) (471 K)

**Theoretical and Experimental Aspects of Microbicidal Activities of Hard Surface Disinfectants: Are Their Label Claims Based on Testing Under Field Conditions?**

Authors: Navid Omidbakhsh  
Page start: 1944

[View Header/Abstract](#) [View PDF article](#) (439K) [View PDF with links](#) (233 K)

**RESIDUES AND TRACE ELEMENTS****Determination of Trace Amounts of Pd(II) Ions in Water and Road Dust Samples by Flame Atomic Absorption Spectrometry After Preconcentration on Modified Organo Nanoclay**

Authors: Daryoush Afzali, Ali Mostafavi and Zahra Afzali  
Page start: 1952

[View Header/Abstract](#) [View PDF article](#) (127K) [View PDF with links](#) (151 K)

**A Fast, Inexpensive, and Safe Method for Residue Analysis of Meptyldinocap in Different Fruits by Liquid Chromatography/Tandem Mass Spectrometry**

Authors: Kaushik Banerjee, Soma Dasgupta, Manjusha R. Jadhav, Dattatraya G. Naik, Axel Patrick Ligon, Dasharath P. Oulkar, Rahul H. Savant and Pandurang G. Adsule  
Page start: 1957

[View Header/Abstract](#) [View PDF article](#) (721K) [View PDF with links](#) (319 K)

**Analysis of Acrylonitrile, 1,3-Butadiene, and Related Compounds in Acrylonitrile-Butadiene-Styrene Copolymers for Kitchen Utensils and Children's Toys by Headspace Gas Chromatography/Mass Spectrometry**

Authors: Hiroyuki Ohno and Yoko Kawamura  
Page start: 1965

[View Header/Abstract](#) [View PDF article](#) (476K) [View PDF with links](#) (236 K)

**Simultaneous Analysis of 70 Pesticides Using HPLC/MS/MS: A Comparison of the Multiresidue Method of Klein and Alder and the QuEChERS Method**

Authors: Melanie Riedel, Karl Speer, Sven Stuke and Karl Schmeer  
Page start: 1972

[View Header/Abstract](#) [View PDF article](#) (300K) [View PDF with links](#) (431 K)

**Rapid Method for the Determination of Organochlorine Pesticides and PCBs in Fish Muscle Samples by Microwave-Assisted Extraction and Analysis of Extracts by GC-ECD**

Authors: Angelika M. Wilkowska and Marek Biziuk  
Page start: 1987

[View Header/Abstract](#) [View PDF article](#) (828K) [View PDF with links](#) (525 K)

**STATISTICAL ANALYSIS****Simultaneous Determination of Antazoline and Naphazoline by the Net Analyte Signal Standard Addition Method and Spectrophotometric Technique**

Authors: Karim Asadpour-Zeynali, Raoof Ghavami, Roghayeh Esfandiari and Payam Soheili-Azad  
Page start: 1995

[View Header/Abstract](#) [View PDF article](#) (2082K) [View PDF with links](#) (328 K)

[Back](#)

Copyright © AOAC INTERNATIONAL 2011 All Rights Reserved.  
[Terms of use](#) | [Privacy policy](#)

Modern gas chromatography, column liquid chromatography, planar chromatography, and bioanalytical methods for the analysis of pesticides and study of quantitative structure-retention relationships. J AOAC Int. Nov-Dec 2010;93(6):1679-80. Chromatography, Gas / methods\*. Chromatography, High Pressure Liquid. Chromatography, Liquid / methods\*. Pesticide Residues / analysis\*. Pesticides / analysis\*. Structure-Activity Relationship. Substances. Pesticide Residues. Pesticides. Modern gas chromatographs are connected to a computer which displays the peaks of all the substances in the sample. This is called the chromatogram. Software can perform all the calculations you will do in this experiment. An example of an analysis for cholesterol esters is shown above. Here it took 21 min for the analysis and a few hours to prepare the sample for injection into the chromatograph. However, so that you can understand how the computer does its analysis, we will supply you with peaks drawn by a chart recorder and you will perform all the measurements and calculations. by gas chromatography, you must first determine the proportionality constant for each substance in the sample. You will do this by constructing calibration lines as described below. Special guest editor section. Modern Gas Chromatography, Column Liquid Chromatography, Planar Chromatography, and Bioanalytical Methods for the. Analysis of Pesticides and Study of Quantitative. Structure-Retention Relationships. Since the middle of 20th century, the rapid increase in the application of pesticides, especially in agriculture, combined with global contamination of the environment and a growing content of these toxic compounds in soil and water has resulted in increased toxicity of food from plant and animal sources. The analysis of numerous compounds from this. New developments in bioanalytical chromatography. February 1989 Journal of Pharmaceutical and Biomedical Analysis. Milos V Novotny. Gas chromatography (GC) and high performance liquid chromatography (HPLC) are the most commonly used today. HPLC provides for the separation of compounds that are nonvolatile and often highly polar, such as biological molecules and drugs. GC is the most common method used for the separation and analysis of volatile compounds such as chlorinated hydrocarbons, atmospheric components, petroleum components and combustion products, and a wide variety of other volatile organic pollutants. Pesticides are of environmental concern in streams in both the water column and sediment. Those pesticides that are more hydrophobic tend to be detected more frequently in sediment; thus, measuring pesticides in sediment is important for tracking their fate in the environment and evaluating for potential toxicity. Determining priority pesticides for analysis in water and sediment has been undertaken by the U.S. Geological Survey (USGS) by using a broad approach to address multiple USGS program goals, including the upcoming third decade (Cycle 3) of sampling for the National Water Quality Asses...