# AGRICULTURAL AND FOOD CHEMISTRY

April 8, 2009

JAFCAU 57(7) 2605–3004 (2009) ISSN 0021-8561 Registered in U.S. Patent and Trademark Office Copyright 2009 by the American Chemical Society

### PERSPECTIVES

2605	Use of Field-Portable XRF Analyzers for Rapid Screening of Toxic Elements i	in
	FDA-Regulated Products	

Peter T. Palmer,\* Richard Jacobs, Peter E. Baker, Kelly Ferguson, and Siri Webber

# 2614 Phytoalexin-Enriched Functional Foods

Stephen M. Boue,\* Thomas E. Cleveland, Carol Carter-Wientjes, Betty Y. Shih, Deepak Bhatnagar, John M. McLachlan, and Matthew E. Burow

# ANALYTICAL METHODS

# 2623 Characterization of Selected South African Young Cultivar Wines Using FTMIR Spectroscopy, Gas Chromatography, and Multivariate Data Analysis

Leanie Louw, Karolien Roux, Andreas Tredoux, Oliver Tomic, Tormod Naes, Hélène H. Nieuwoudt, and Pierre van Rensburg\*

2633 Study on the Performance of the Headspace Liquid-Phase Microextraction, Gas Chromatography—Mass Spectrometry in the Determination of Sorbic and Benzoic Acids in Soft Drinks and Environmental Water Samples

Hadi Farahani, Mohammad Reza Ganjali, Rassoul Dinarvand, and Parviz Norouzi\*

2640 Simultaneous Detection of Recombinant DNA Segments Introduced into Genetically
Modified Crops with Multiplex Ligase Chain Reaction Coupled with Multiplex
Polymerase Chain Reaction

Junichi Mano, Taichi Oguchi, Hiroshi Akiyama, Reiko Teshima, Akihiro Hino, Satoshi Furui, and Kazumi Kitta\*

Fast Determination of Histamine in Cheese by Nuclear Magnetic Resonance (NMR)

E. Schievano, \* K. Guardini, and S. Mammi

2653 Simultaneous Quantitation of Multiple Classes of Organohalogen Compounds in Fish Oils with Direct Sample Introduction Comprehensive Two-Dimensional Gas Chromatography and Time-of-Flight Mass Spectrometry

> Eunha Hoh,\* Steven J. Lehotay,\* Kristin C. Pangallo, Katerina Mastovska, Helen L. Ngo, Christopher M. Reddy, and Walter Vetter

# 2661 Novel High-Throughput Assay for Antioxidant Capacity against Superoxide Anion

Liliang Zhang, Dejian Huang, Miwako Kondo, Ellen Fan, Hongping Ji, Yan Kou, and Boxin Ou\*

2668	Elaboration of a Reliable Strategy Based on Real-Time PCR To Characterize Genetically Modified Plantlets and To Evaluate the Efficiency of a Marker Gene Removal in Grape (Vitis spp.)	
	Lorenza Dalla Costa, Ilaria Vaccari, Marco Mandolini, and Lucia Martinelli*	
	BIOACTIVE CONSTITUENTS	
2678	Gas/Particle Partitioning of Two Acid-Base Active Compounds in Mainstream Tobacco Smoke: Nicotine and Ammonia	
	Cai Chen and James F. Pankow*	
2691	Main Flavonoids, DPPH Activity, and Metal Content Allow Determination of the Geographical Origin of Propolis from the Province of San Juan (Argentina)	
	Beatriz Lima, Alejandro Tapia, Lorena Luna, María P. Fabani, Guillermo Schmeda-Hirschmann, Natalia S. Podio, Daniel A. Wunderlin, and Gabriela E. Feresin*	
2699	In Vitro Antioxidant Activities of Low-Molecular-Weight Polysaccharides with Various Functional Groups	
	Szu Kai Chen, Min Lang Tsai,* Jin Ru Huang, and Rong Huei Chen*	
2705	Relative Changes in Tocopherols, Isoflavones, Total Phenolic Content, and Antioxidative Activity in Soybean Seeds at Different Reproductive Stages	
	Vineet Kumar,* Anita Rani, Amit Kumar Dixit, Deepak Bhatnagar, and G. S. Chauhan	
2711	White Wine Phenolics Are Absorbed and Extensively Metabolized in Humans	
	Mirella Nardini, Monica Forte, Urska Vrhovsek, Fulvio Mattivi, Roberto Viola, and Cristina Scaccini*	
2719	Level of Catechin, Myricetin, Quercetin and Isoquercitrin in Buckwheat (Fagopyrum esculentum Moench), Changes of Their Levels during Vegetation and Their Effect on The Growth of Selected Weeds	
	Jana Kalinova* and Nadezda Vrchotova	
2726	Processing Scale-Up of Sicklepod (Senna obtusifolia L.) Seed  Rogers E. Harry-O'Kuru* and Abdellatif Mohamed	
	BIOFUELS AND BIOPRODUCTS CHEMISTRY	
2732	Production of Cellulosic Ethanol and Hydrogen from Solid-State Enzymatic Treated Cornstalk: A Two-Stage Process	
	Chunmei Pan, Maolin Zhang, Yaoting Fan,* Yan Xing, and Houwei Hou	
2739	Use of Biodiesel-Derived Crude Glycerol for Producing Eicosapentaenoic Acid (EPA) by the Fungus <i>Pythium irregulare</i>	
	Sneha K. Athalye, Rafael A. Garcia, and Zhiyou Wen*	
	CHEMICAL ASPECTS OF BIOTECHNOLOGY/MOLECULAR BIOLOGY	
2745	Comparative Evaluation of Three Different Extraction Methods for Rice (Oryza sativa L.) Genomic DNA	

Naoki Sagi,\* Kimio Monma, Akihiro Ibe, and Kunihiro Kamata

Characterization and Quantification of Flavonoids and Hydroxycinnamic Acids in

Curly Kale (Brassica oleracea L. Convar. acephala Var. sabellica) by

Helle Olsen, \* Kjersti Aaby, and Grethe Iren A. Borge

2816

HPLC-DAD-ESI-MS"

2826	New Triterpenic Saponins from the Aerial Parts of Medicago arabica (L.) Huds  Aldo Tava,* Mariella Mella, Pinarosa Avato, Elisa Biazzi, Luciano Pecetti,
	Zbigniew Bialy, and Marian Jurzysta
2836	Nutritional, Fatty Acid and Triacylglycerol Profiles of Castanea sativa Mill. Cultivars A Compositional and Chemometric Approach
	João C. M. Barreira, Susana Casal, Isabel C. F. R. Ferreira,
	M. Beatriz P. P. Oliveira,* and José Alberto Pereira*
-	CROP AND ANIMAL PROTECTION CHEMISTRY
2843	Influence of Soil Characteristics on Copper Sorption from a Copper Oxychloride Fungicide
	Eva Pose, Raquel Rial-Otero, Marcos Paradelo, and J. Eugenio López-Periago*
2849	Design, Synthesis, and Biological Activities of Novel 2-Cyanoacrylates Containing Oxazole, Oxadiazole, or Quinoline Moieties  Qiqi Zhao, Shaohua Liu, Yonghong Li, and Qingmin Wang*
	Qiqi Enao, Shaohad Lia, Tonghong Li, and Qingmin Wang
mell o	ENVIRONMENTAL CHEMISTRY
2856	Use of Ethylcellulose To Control Chlorsulfuron Leaching in a Calcareous Soil
	Francisco Flores-Céspedes, Isabel Daza-Fernández, Matilde Villafranca-Sánchez, and
	Manuel Fernández-Pérez*
2862	Fate of Toxic Potato Glycoalkaloids in a Potato Field
	Pia H. Jensen,* Bjarne W. Strobel, Hans Christian B. Hansen, and Ole Stig Jacobser
2868	Addition of Modified Bentonites in Polymer Gel Formulation of 2,4-D for Its
	Controlled Release in Water and Soil
	Jianfa Li,* Man Jiang, Huan Wu, and Yimin Li
	FLAVORS AND AROMAS/CHEMOSENSORY PERCEPTION
2875	Lipoxygenase Gene Expression in Ripening Kiwifruit in Relation to Ethylene and Aroma Production
	Bo Zhang, Xue-ren Yin, Xian Li, Shao-lan Yang, Ian B. Ferguson,* and Kun-song Chen*
2882	Characterization of the Key Aroma Compounds in Pink Guava (Psidium guajava L.) by Means of Aroma Re-engineering Experiments and Omission Tests
	Martin Steinhaus, Diana Sinuco, Johannes Polster, Coralia Osorio, and Peter Schieberle*
2889	Generation of 4-Hydroxy-2,5-Dimethyl-3(2H)-Furanone from Rhamnose as Affected by Reaction Parameters: Experimental Design Approach
	Silke Illmann, Tomas Davidek,* Elisabeth Gouézec, Andreas Rytz, Heike P. Schuchmann, and Imre Blank
Lonn	FOOD CHEMISTRY/BIOCHEMISTRY
2896	Mannose-Binding Lectin from Yam (Dioscorea batatas) Tubers with Insecticidal
	Properties against Helicoverpa armigera (Lepidoptera: Noctuidae)
	Yuki Ohizumi, Mariam Gaidamashvili, Shyuichi Ohwada, Kazuhiro Matsuda,
	Junko Kominami, Sachiko Nakamura-Tsuruta, Jun Hirabayashi, Takako Naganuma,

Tomohisa Ogawa, and Koji Muramoto\*

2903	Evaluating Precision and Accuracy When Quantifying Different Endogenous Control Reference Genes in Maize Using Real-Time PCR	
	Tandace A. Scholdberg, Tim D. Norden, Daishia D. Nelson, and G. Ronald Jenkins*	
2912	Characterization of Major Radical Scavenger Species in Bovine Milk through Size Exclusion Chromatography and Functional Assays	
	Morten R. Clausen, Leif H. Skibsted, and Jan Stagsted*	
2920	Physicochemical Properties of Selectively Oxidized 1-Monolaurin from 2,2,6,6-Tetramethyl-1-Piperidinyl Oxoammonium Ion/Sodium Hypochlorite-Mediated Reaction	
	Seon Min Ahn, Hyong Joo Lee, Sang Woo Kim, JaeHwan Lee, and Pahn-Shick Chang*	
2925	Bioactive Compounds during Storage of Fresh-Cut Spinach: The Role of Endogenous Ascorbic Acid in the Improvement of Product Quality	
	Antonella Bottino, Elena Degl'Innocenti, Lucia Guidi,* Giulia Graziani, and Vincenzo Fogliano	
2932	Search for Diagnostic Proteins To Prove Authenticity of Organic Wheat Grains (Triticum aestivum L.)	
	Christian Zörb, Thomas Betsche, and Georg Langenkämper*	
2938	Preparation and pH Stability of Ferrous Glycinate Liposomes	
	Baomiao Ding, Shuqin Xia, Khizar Hayat, and Xiaoming Zhang*	
2945	Isothermal Titration Calorimetry Study of the Interaction of Sweeteners with Fullerenols as an Artificial Sweet Taste Receptor Model	
	Zhong-Xiu Chen,* Gang-Min Guo, and Shao-Ping Deng*	
2955	Changes in Polysaccharide and Protein Composition of Cell Walls in Grape Berry Skin (Cv. Shiraz) during Ripening and Over-Ripening	
	Anysia Vicens, David Fournand, Pascale Williams, Louise Sidhoum, Michel Moutounet, and Thierry Doco*	
2961	Phenolic Composition, Sugar Contents and Antioxidant Activity of Tunisian Sweet Olive Cultivar with Regard to Fruit Ripening	
	Hedya Jemai, Mohamed Bouaziz, and Sami Sayadi*	
2969	Relationships between Free Radical Scavenging and Antioxidant Activity in Foods  Jean Alamed, Wilailuk Chaiyasit, D. Julian McClements, and Eric A. Decker*	
2977	Effects of Latitude and Weather Conditions on Contents of Sugars, Fruit Acids, and Ascorbic Acid in Black Currant (Ribes nigrum L.) Juice	
	Jie Zheng, Baoru Yang, Saska Tuomasjukka, Shiyi Ou, and Heikki Kallio*	
2988	Identification and Quantification of $\alpha_{S1}$ , $\alpha_{S2}$ , $\beta$ , and $\kappa$ -Caseins in Water Buffalo Milk by Reverse Phase-High Performance Liquid Chromatography and Mass Spectrometry	
	Maria Feligini,* Ivan Bonizzi, Joanna Natalia Buffoni, Gianfranco Cosenza, and Luigi Ramunno	
2993	Role of Iron and Hydroperoxides in the Degradation of Lycopene in Oil-in-Water Emulsions	

Caitlin S. Boon, D. Julian McClements, Jochen Weiss, and Eric A. Decker\*

# MOLECULAR NUTRITION

# 2999

Does an Extract of Carob (Ceratonia siliqua L.) Have Chemopreventive Potential Related To Oxidative Stress and Drug Metabolism in Human Colon Cells? Stefanie Klenow,\* Franziska Jahns, Beatrice L. Pool-Zobel, and Michael Glei

- Supporting Information is available free of charge via the Internet at http://pubs.acs.org.
- \* In papers with more than one author, the asterisk indicates the name of the author to whom inquiries about the paper should be addressed.

Digital Object Identifier (DOI): The DOI appears at the bottom of the first page of each article. We suggest that you include the DOI in all CCC reporting and document delivery requests. See the masthead of this journal or our Web site at http://pubs.acs.org for more details.

Visit the Web Current ACS Ethical Guidelines to Publication of Chemical Research and other information for authors and reviewers, including guidelines for manuscript preparation and copyright forms, can be found on the Web at the Author & Reviewer Resource Center at http://pubs.acs.org/page/4authors/index.html.