SUNDAY MORNING

Pennsylvania Convention Center
Room 110A

Recent Advances in Functional Biopolymers

Y. Ito, L. S. Liu, Organizers, Presiding

8:00 Introductory Remarks.

8:05 1. Protein engineering using bioorthogonal and combinatorial chemistry. Y. Ito


9:35 Intermission.


11:20 7. Establishing a working intestinal microbiota community in multi-phase structure from biopolymers. L.S. Liu, J. Firman, P.M. Tomasula

11:50 Concluding Remarks.
Pennsylvania Convention Center
Room 110B

General Papers

N. P. Seeram, Organizer, Presiding
W. Liu, H. Ma, Presiding

8:00 Introductory Remarks.

8:05 8. Triterpenoids from the Chinese hawthorn (Crataegus cuneata) fruits: Extraction, structure, quantification, and bioactivity. T. Yuan

8:30 9. Withdrawn.

8:55 10. Alkanal suppression of the enzyme tyrosinase. A. Murray, H. Satooka, K. Shimizu, W. Chavasiri, I. Kubo


9:45 Intermission.


11:15 15. Inhibitory effects of a phenylacetaldehyde-flavonoid adduct, 6-C(E-phenylethenyl)naringenin, on human colon cancer cells. Y. Zhao, M. Wang

11:40 Concluding Remarks.

SUNDAY AFTERNOON

Section A

Pennsylvania Convention Center
Room 110A

Flavor Stability: Chemical Changes in Flavor Molecules, Flavor-Food Matrix Interactions, Flavor Encapsulation

R. J. Mcgorrin, M. C. Qian, Organizers, Presiding
1:00 Introductory Remarks.


2:45 Intermission.

3:00 20. Changes in key orange juice aroma compounds during chilled storage of NFC juice. **P.H. Schieberle**, V. Mall, I. Sellami


4:15 Concluding Remarks.

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Section B

Pennsylvania Convention Center
Room 110B

General Papers

**Journal of Agricultural & Food Chemistry Best Paper Award & Young Scientist Award Symposium**

N. P. Seeram, *Organizer*
K. Deibler, *Organizer, Presiding*

1:00 Introductory Remarks.

1:05 23. Identification of bioactive components in wheat bran: An example of team science. **S. Sang**

1:45 Intermission.

2:00 24. Characterization of oligomeric anthocyanins and proanthocyanidins from red grape pomace by mass spectrometry (MALDI-TOF and ORBITRAP ESI-MS). **E. Salas**

2:30 25. Development of specific dietary biomarkers to better capture whole grain wheat exposure and beneficial health effects. **Y. Zhu**

3:00 26. Integrating traditional disciplines to develop novel technologies to address agricultural and environmental issues. **R. Li**
Concluding Remarks.

**Advances in Residues Analysis of Bee Relevant Matrices: Analytical Methods & Sampling Techniques**
Sponsored by AGRO, Cosponsored by AGFD and ENVR

**Extraction Efficiency-Bridging between Metabolism Studies & Residue Analytical Methods**
Sponsored by AGRO, Cosponsored by AGFD and ENVR

**Glyphosate: Current Status & Future Prospects**
Sponsored by AGRO, Cosponsored by AGFD and ENVR

**SUNDAY EVENING**

Section A

Pennsylvania Convention Center
Hall G

**General Posters**

N. P. Seeram, *Organizer*

5:00 - 7:00

27. Structural and functional studies of ice nucleation protein and its applications in food industry. **L. Zhang**


31. Role of novel multi-starter on the generation of volatile compounds in buckwheat (*Fagopyrum sculentum*) soksungjiang according to fermentation period. M. Park, H. Choi, Y. Kim, **I. Cho**

33. Comparison of mineral contents in vegetables (white cucumber, red paprika, water parsley and kohlrabi) undergoing different cooking methods. **J. Hwang, D. Seo, S. Kim, E. Park, H. Kim, S. Lee, M. Yang**

34. Edible packaging: improved strength and thermal stability of casein films with citric pectin. **L. Aburto, L. Bonnaillie, P.M. Tomasula**

35. Determination of structural amino acid contents in bamboo shoot, tomato and corn undergoing different cooking methods using automated amino acid analyzer. **D. Seo, W. Yoon, H. Lee, J. Hwang, M. Yang**


37. Heat-stabilized rice bran metabolome reveals biochemical contents and metabolic pathways with medicinal properties. **I. Zarei, E.P. Ryan**


41. Understanding sodium diffusion in turkey breast meat. **J.K. Pandya, A. Kinchla**

42. Development of lecithin emulsion gels system: Influence of formulation parameters on physicochemical properties and digestion kinetics. **W. Huang, Y. Ting**

43. In *vitro* release, anti-proliferative and antimicrobial activity of carnosic acid nanoemulsion. **H. Zheng, Q. Huang**

44. Stability of beta-carotene and alpha-tocopherol in cooked *Moringa oleifera* leaves, By HPLC-UV. **A. Vasilatis**

45. Physical characterization of mushrooms as taco filling extender. **K. Wong, A. Kinchla**

46. Total polyphenol antioxidants in the US diet. **J.A. Vinson**

47. Effects and molecular mechanisms of soy foods or soy isoflavones in prostate cancer prevention. **C. Jang, C. Wu**


49. Nondestructive analysis of vitamin C content in dietary supplement tablets by using terahertz time-domain spectroscopy. **J. Kang, K. Kwak, H. Chun**

50. Fabrication of oil-in-water nanoemulsions by dual-channel microfluidization using natural emulsifiers: saponins, phospholipids, proteins, and polysaccharides. **L. Bai, D. McClements**

52. High throughput analysis of caffeine in beverages using 2.3 µm analytical reversed phase chromatography column with dual functionality for use both in HPLC and UHPLC. A. Chakrabarti, C. Benner


54. Investigation of the lymphatic transport of solid-lipid curcumin particles (Longvida®) in comparison to curcumin extract in rats. T. Eidenberger, N. Kheradia, S. Cropper

55. Chemical composition and anti-hyperglycaemic effects of triterpenoids enriched *Eugenia jambolana* Lam. berry extracts. Y. Li, J. Xu, C. Yuan, H. Ma, T. Liu, F. Liu, N.P. Seeram, L. Han, X. Huang, L. Li

56. In vitro anti-neuroinflammatory effects of urolithins, ellagitannin-gut microbial metabolites. N. DaSilva, P.P. Nahar, H. Ma, A. Slitt, N.P. Seeram

57. Inhibitory effects on the formation of advanced glycation endproducts by hydroponically grown *Moringa oleifera*. S. Johnson, W. Liu, H. Ma, S.M. Meschwitz, J. Chace, N.P. Seeram

58. Natural anthraquinones inhibited protein glycation and amino acids side chain modification by protecting protein structures. W. Liu, H. Ma, J.A. Dain, N.P. Seeram


60. Bioactive glucitol-core containing gallotannins and other phytochemicals from silver maple (*Acer saccharinum*) leaves. A.J. Bin Muhsinah, H. Ma, T. Yuan, N.P. Seeram

61. Comparison of acidic collagen extraction methods of collagen from channel catfish skin. Y. Tan, S. Chang


63. Tyrosine nano-emulsion stability for supplementation of Army rations. K.R. Conca, K.R. Kensil


65. Expression and characterization of a thermostable endo-1,5-α-arabinanase (TS-ABN) in *Pichia pastoris* for biocatalytic solubilization of bioactive feruloylated arabino-oligosaccharides from sugar beet pulp. N. Zhang, J. Xu, B.J. Savary

66. Biochemical investigation into the functional properties of *Delonix regia*, *Cassia fistula* and *Blighia sapida* extracts. A. Goldson-Barnaby, R. Williams


68. Simultaneous determination of unregistered pesticides in Korea for agricultural products using LC-MS/MS. S. Lee, J. Hwang, M. Kang, M. Chang, Y.D. Lee, J. Kim, G. Lee

69. Identification and quantification of phenolic acids and flavonoids in three phenolic-rich legume varieties as affected by thermal treatments. Y. Zhang, S.K. Chang
70. Comparative study of phenolic substances in astringent and non-astringent persimmon fruits during development and ripening. S. Kumari, **S.K. Chang**, Y. Zhang, Y. Zhang

71. Determination of carbohydrates in kombucha using HPAE-PAD. **B. Huang**, J. Hu, J. Rohrer

72. Quantitative analysis of allergens in peanut varieties from USDA Core Collection and other resources and assessment of food processing effects on peanut allergens. **S. Meng**, S.K. Chang, L. Jiang, J. Li, N. Puppala, S. Chung

73. Profiling fructosyloligosaccaride (FOS) and galactosyloligosaccharide (GOS) -containing samples by high-performance anion-exchange chromatography with pulsed amperometric detection (HPAE-PAD). **M. Aggrawal**, J. Rohrer

74. 1,2,4-Trithiolane, found in stinky bean (*Parkia speciosa*), is a slow releasing hydrogen sulfide donor. **D. Liang**, D. Huang


76. Design, synthesis and herbicidal activity of novel triketone compounds. H. Li, A. Guan, Z. Yao, X. Xia, Z. Wang, H. Ma, **C. Liu**

77. Development of an absorbent to reduce pesticide residue in ginseng. **S. Byeung Kon**, J. Kim


79. Cellulose-bodipy nanohybrids for singlet oxygen production. **P. Chauhan**, N. Yan


81. Solid phase mesh enhanced sorption from headspace (SPMESH) coupled to DART-MS/MS for high throughput quantification of trace-level odor-active volatiles. **J.A. Jastrzembski**, G.L. Sacks

82. Effect of microstructure on the barrier property of water and oxygen in hydroxypropyl starch (HPS)/SiO₂ nanocomposites films. **S. Liu**, X. Li, L. Chen, L. Li, B. Li

83. Fully automated sample extraction and analysis of mycotoxins in foods by online SFE-SFC-MS. **W. Hedgepeth**, K. Tanaka, T. Ogura

84. Microbiological and physicochemical analysis of pumpkin juice fermentation by the basidiomycetous fungus *Ganoderma lucidum*. **J. Zhao**

85. Design, synthesis and biological activity of novel substituted diamides derivatives containing thiophene ring. M. Li, L. Li, B. Chai, J. Yang, Y. Song, **C. Liu**

86. Changes of polyphenolic compounds level in artichoke (*Cynara scolymus* L.) grown in Korea during cultivation. **K. Hwang**, D. Son, C. Kim, K. Seong, J. Moon

88. Self-assembling behavior of food globular proteins and applications in stabilizing Pickering emulsions. **W. Jin**, Y. Jiang, B. Li, Q. Huang


92. Design, synthesis, and biological activities of novel quaternary salts derivatives containing substituted aniline. Q. Wu, J. Yang, H. Ma, **C. Liu**

93. Determination of nepetalactones and dihydronepetalactones in catnip by LC/MS. X. Dong, **W. Reichert**, J. Simon, Q. Wu

94. Design, synthesis and biological activity of thienopyrimidine derivatives. F. Yang, **C. Liu**, A. Guan, Z. Yao, Z. Li, Y. Song

95. Molecular modeling of plant ripening receptors and their interactions with ethylene and ripening inhibitors. **J. Gold**, E. Rosa, R.S. Kelly

96. Dual-enzyme nano-biocatalyst for the cascade conversion of cellulose-derived oligomers to fructose via a glucose pathway. H. Chi, D.R. Radu, G. Ozbay, **C. Lai**

97. Design, synthesis and fungicidal evaluation of novel substituted aryloxy pyridine compounds containing pyrimidinamine moiety. A. Guan, X. Sun, J. Yang, Y. Xie, J. Zhou, **C. Liu**


100. Dietary exposure and toxicological effects of non-phthalate plasticizers from use in food contact materials. **L.T. Cureton**, O.J. Bandele, A.B. Bailey, A. Ogungbesan


103. Peptidolytic activity of three probiotic lactic acid bacteria for possible use as sourdough starters. **H. Hernandez-Sanchez**, M. Nava-Romero


105. Effects of maltodextrins with different dextrose-equivalent values on the release of aldehydes in aqueous model systems. **S. Lee**, A. Cho, S. Yoo, Y. Kim

107. Phenolic group on A-ring is key for dracoflavan b as a selective noncompetitive inhibitor of α-amylase. T.Z. Zhi Siang

108. Relationship between structural characteristics and digestibility of debranched starch. G. Liu, Y. Hong, Z. Gu, Y. Jiang

109. Alginate conjugated keratin for wound dressing materials. R. Wang


111. Evaluation of hydrogen peroxide scavenging activity of phenolic acids by employing optical nanoprobes based on gold nanoshells. W. Qian

112. Growth inhibition of bladder cancer cells is greater with quercetin-3-glucoside than with quercetin or quercetin-3-rutinoside. M.A. Lea, A. Tandon, C. desBordes


114. Synthesis and development of a new selective ryanodine receptor activator insecticide. W. Lee

115. Fluorescence fingerprinting of antioxidants in sorghum and sugarcane. S.M. Uchimiya

116. Starch modified by wet-milling process to stabilize Pickering emulsions. X. Lu, Q. Huang

117. Chromatography method for determination of penicillin used for dairy production. A. Miranda, M. de Moura, D. da Silva

118. ELISA detection of soy proteins in traditionally brewed soy sauce samples obtained during manufacture and commercial soy sauce products. P. Kande, M. Bakke, B. Bedford, J. Hammerstone, L. Jackson

MONDAY MORNING

Section A

Pennsylvania Convention Center
Room 110A

Challenges in Flavor Chemistry Associated with Developing Healthy Foods & Beverages

K. Tandon, Organizer
V. M. Acquarone, R. Elias, J. A. Grover, Organizers, Presiding

8:00 Introductory Remarks.

8:05 119. Taste biology and its application to new ingredient discovery. S. Gravina
8:35 120. How sweet works and what it means for non-caloric sweeteners. R. Margolskee


9:35 Intermission.

10:00 122. Stevia innovation: Improved leaf extracts from advanced understanding of taste. J.C. Fry


Section B
Pennsylvania Convention Center
Room 110B

Chemistry Behind Health Effects of Grains

R. Landberg, S. Sang, Organizers, Presiding

8:00 Introductory Remarks.

8:05 124. Dietary fibers and associated phytochemicals in cereals. K. Bach Knudsen

8:35 125. Alkylresorcinols as dietary biomarkers of whole grain wheat and rye intake. R. Landberg

9:00 126. Biomarkers of whole grain wheat intake identified by targeted and non-targeted metabonomic approaches. Y. Zhu, W. Sha, P. Wang, S. Sang

9:25 127. Non-targeted metabolite profiling for characterization of bioactive compounds in cereals and their metabolic effects in different models. K. Hanhineva


10:15 Intermission.

10:30 129. Rice-bran phytochemical extracts inhibit invasion and intracellular replication of Salmonella typhimurium in mouse and porcine intestinal epithelial cell. E.P. Ryan


Section C
Pennsylvania Convention Center
Room 111A

Flavor Stability: Chemical Changes in Flavor Molecules, Flavor-Food Matrix Interactions, Flavor Encapsulation

R. J. Mcgorrin, M. C. Qian, Organizers, Presiding

8:00 Introductory Remarks.

8:05 133. Chemical stability of citral. Y. Wang, C. Ho

8:30 134. Stability of the curry leaf aroma impact compound 1-phenylethanethiol during traditional processing and use in the kitchen. M. Steinhaus

8:55 135. Flavor and off-flavor in canned tuna fish. F. He, Y.L. Qian, M.C. Qian

9:20 136. Unraveling the off-flavor formation of native cold-pressed rapeseed oil using the molecular sensory science concept. M. Granvogl, K. Matheis

9:45 Intermission.

10:00 137. NMR approaches to studying wine oxidation: Pathways of acetaldehyde. A.L. Waterhouse, A. Peterson


10:50 139. Stability of smoke taint during the aging of smoke-affected wine. L. van der Hulst, R. Ristic, K. Wilkinson

11:15 Concluding Remarks.

Glyphosate: Current Status & Future Prospects

Sponsored by AGRO, Cosponsored by AGFD and ENVR

Synthetic Biology & Genetically Modified Organisms

Evolution or Revolution? Policy Challenges & Opportunities in the Biotechnology Golden Age

Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI‡ and COMSCI

MONDAY AFTERNOON

Section A
Challenges in Flavor Chemistry Associated with Developing Healthy Foods & Beverages

K. Tandon, Organizer
V. M. Acquarone, R. Elias, J. A. Grover, Organizers, Presiding

1:00 Introductory Remarks.

1:05 140. Cellular and molecular mechanisms of salty taste: Implications for developing strategies to combat NaCl overconsumption. B. Lewandowski

1:35 141. Aroma compounds to rescue the taste of healthy foods and beverages. T. Thomas Danguin, C. Salles, E. Guichard

2:05 142. Mechanisms of bitterness generation in whole wheat foods. Q. Bin, D.G. Peterson

2:35 Intermission.

3:00 143. Effect of pressure and heat treatment on volatile profile in Chinese bayberry juice analysed by GC-MS during storage. S. Lin, Y. Yu, Y. Lin, S. Zhu


4:00 145. Mitigation strategies for toxicologically relevant styrene during the production of wheat beer. M. Granvogl, D. Langos, P.H. Schieberle

4:30 Concluding Remarks.

Chemistry Behind Health Effects of Grains

R. Landberg, S. Sang, Organizers, Presiding

1:00 Introductory Remarks.

1:05 146. Phytochemicals in wheat bran for colon cancer prevention. S. Sang, Y. Zhu, J. Fu

1:30 147. Whole grain polyphenols in colon health: Positive interaction of complementary sorghum-legume flavonoids. J. Awika, S. Agah, L. Yang, S. Talcott, C. Allred

1:55 148. Phytochemicals in quinoa grains and their antioxidant and anti-inflammatory effects. R. Tsao, T. Yao, R. Liu

2:45 Intermission.

3:00 150. Health-promoting lipids in corn kernels and corn oils. R. Moreau

3:25 151. Phytosterols and sterol conjugates in cereal grains. L. Nystroem

3:50 152. Genetic and environmental impacts bioactive components in cereals. P.R. Shewry

4:15 153. Polyphenols in breakfast cereals and snacks: important contribution to beneficial health effects of whole grain consumption. J. Goodman, J.A. Vinson, S. Wang

Section C

Pennsylvania Convention Center
Room 111A

Flavor Stability: Chemical Changes in Flavor Molecules, Flavor-Food Matrix Interactions, Flavor Encapsulation

R. J. Mcгрorrin, M. C. Qian, Organizers, Presiding

1:00 Introductory Remarks.

1:05 154. Differences in the non-volatile composition of younger and older Armagnac and Cognac brandies and bourbon and Scotch whiskies using UHPLC/QTOF-MS. T.S. Collins

1:30 155. Lichenysin, a novel nonvolatile compound in Chinese distilled spirits reduced the headspace concentration of phenolic off-flavors via hydrogen-bond interaction. S. Chen, Y. Xu, R. Zhang, Q. Wu

1:55 156. Research on the aroma characteristics and impacts of the nonvolatile matrix composition on the aroma release of Vidal icewine based on sensomics. K. Tang, Y. Xu


2:45 Concluding Remarks.

Glyphosate: Current Status & Future Prospects

Sponsored by AGRO, Cosponsored by AGFD and ENVR

Undergraduate Research Posters

Agricultural & Food Chemistry
Pollinators: Agrichemicals, Behavior & Disease

Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI

Synthetic Biology & Genetically Modified Organisms

The Debate: What Role Should We Play in the Biotechnology Era?

Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI† and COMSCI

MONDAY EVENING

Pennsylvania Convention Center
Halls D/E

Sci-Mix

N. P. Seeram, Organizer

8:00 - 10:00

6, 39, 46, 51, 57, 64, 66, 71, 73, 80-81, 83-84, 90-91, 101, 113, 116, 121. See previous listings.


TUESDAY MORNING

Kenneth A. Spencer Award for Outstanding Achievement in Agricultural & Food Chemistry

Food Components for Cardiovascular & Brain Health

Cosponsored by AGRO
E. Hellmuth, A. M. Rimando, Organizers
M. Appell, Presiding

8:00 Introductory Remarks.
8:10 158. Pterostilbene in blueberries and PPARα activation. **A.M. Rimando**

8:40 159. Physiological effects of pterostilbene and blueberries in animal models of obesity. **W.H. Yokoyama**, D. Shao, H. Kim, A.M. Rimando


9:40 Intermission.


10:25 162. Phytochemicals against oxidative stress and inflammatory responses in microglial cells. **G. Sun**

10:55 163. Quest for indirect modulators of the endocannabinoid system from natural products. **A. El-Alfy**, E.A. Abourashed

Section B

Pennsylvania Convention Center
Room 113B

**Chemistry, Safety & Technology of GMO Foods**

Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡
J. W. Finley, L. Jackson, J. N. Seiber, *Organizers, Presiding*

8:00 Introductory Remarks.

8:05 164. Traditional plant breeding vs molecular plant breeding. **W. Parrott**

8:35 165. Biotechnology innovations and solutions for sustainable agriculture. **D.J. Williams**


9:35 Intermission.

9:50 167. Challenges for the production and acceptance on transgenic wheat. **P.R. Shewry**

10:20 168. How basic research can lead to development of improved cereal crops: But where are they? **P.G. Lemaux**

Section C

Pennsylvania Convention Center
Room 110A

**AGFD Division Award**

**Symposium in honor of Dr. Zhen-Yu Chen**

B. Park, *Organizer, Presiding*
8:00 Introductory Remarks.

8:05 169. Prebiotic-like properties of feruloylated arabinoxylan-oligosaccharides generated from rice bran arabinoxylan. S. Lee, T. Pham, B.J. Savary, M. Chen


8:55 Concluding Remarks.

Section D

Pennsylvania Convention Center
Room 110B

General Papers

N. P. Seeram, Organizer, Presiding
W. Liu, H. Ma, Presiding

8:00 Introductory Remarks.


8:55 173. Solid/oil/water emulsions as novel approaches of encapsulating probiotic bacteria. Y. Zhang, Q. Zhong

9:20 Intermission.


10:00 175. Microencapsulation of tributyrin to improve sensory qualities and intestinal delivery. Y. Lee, W. Kuo


10:50 Concluding Remarks.

Section D

Pennsylvania Convention Center
Room 110B

USDA-ARS Sterling B. Hendricks Memorial Lectureship: Symposium in honor of May Berenbaum
Cosponsored by AGRO
K. Kaplan, M. H. Tunick, Organizers, Presiding

11:00 Introductory Remarks.

11:05 177. How to eat a plant: phytochemical detoxification in bees vs. butterflies. M.R. Berenbaum

11:55 Concluding Remarks.

Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches

Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI

Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges

Sponsored by AGRO, Cosponsored by AGFD

TUESDAY AFTERNOON

Section A

Pennsylvania Convention Center
Room 111B

Kenneth A. Spencer Award for Outstanding Achievement in Agricultural & Food Chemistry

Anticancer Food Components: Functional Food Polymers, Food Flavor & Odor Chemistry & Processing-Induced Food Toxicants

Cosponsored by AGRO
E. Hellmuth, A. M. Rimando, Organizers
M. Appell, Presiding

1:00 Introductory Remarks.

1:05 178. Dietary pterostilbene is a novel chemopreventive and therapeutic agent in prostate cancer: Pre-clinical studies. A. Levenson

1:35 179. Topical pterostilbene prevents UV-B-mediated skin damage. R. Dellinger

2:05 180. Health benefits of natural tocopherol mixtures. N. Suh

2:35 Intermission.

2:50 181. Chemistry, safety and caloric value of partially hydrolyzed guar gum. J.W. Finley

3:20 182. Fifty years of smelling sulfur: From the chemistry of garlic to the molecular basis for olfaction. E. Block

4:20 184. Chemical mechanisms for 3-MCPD ester formation. L.L. Yu

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**Chemistry, Safety & Technology of GMO Foods**

Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡
J. W. Finley, L. Jackson, J. N. Seiber, *Organizers, Presiding*

1:00 185. GMO crops may contribute to decline of monarch butterfly populations. J.N. Seiber

1:30 186. Impressive progress, opportunities, and obstacles in the use of genetically engineered trees. S.H. Strauss

2:00 187. Progress on transgenic approaches to solving citrus greening disease. M. Dutt, J.W. Grosser

2:30 Intermission.


3:15 189. Transgenic and gene edited animals for use in agriculture: Where are we now? J.D. Murray


4:15 Concluding Remarks.

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**International Student Symposium**

**Nanoparticles & Delivery Systems**

P. Schmidberger, R. Tardugno, *Organizers, Presiding*

1:00 Introductory Remarks.

1:05 191. Supramolecular design of coordination bonding architecture on zein nanoparticles for pH-responsible drug deliver and the cellular uptake mechanism. H. Liang

1:30 192. Preparation, characterization, in *vitro* lipolysis and cell study on antioxidant and anti-inflammatory activities of carnosic acid nanoemulsion. H. Zheng, Q. Huang
Evaluation of postharvest washing on Ag NPs removal from spinach leaves. **Z. Zhang**, L. He

Influence of food matrix on the fate of titanium dioxide (TiO₂) nanoparticles in gastrointestinal tract. **X. Cao**, H. Xiao, D. McClements

Application of new nanomaterials as signal probes in immunoassay. **G. Hu**, S. Wang, W. Sheng, Y. Zhang

Assemblies, properties and food applications of kafirin nanoparticles based Pickering emulsions. **J. Xiao**, Q. Huang

Real-time and *in situ* monitoring of pesticide penetration in edible leaves by surface-enhanced Raman scattering mapping. **T. Yang**, L. He

Concluding Remarks.

Section D

Pennsylvania Convention Center
Room 110B

General Papers

N. P. Seeram, *Organizer, Presiding*
W. Liu, H. Ma, *Presiding*

Introductory Remarks.


Effects of brewing conditions and re-infusion on the antioxidant activity of twenty-four varietal green teas. **E.M. Sharpe**, R. Bradley, S. Andreescu, F. Hua, S. Schuckers

Comparative study of performance of regular pyrolysis oil and TGRP oil for catalytic cracking with HZSM-5. **Y. Choi**, Y. Elkasabi, P. Tarves, C.A. Mullen, A. Boateng

Novel promising biocomposite derived from calcined eggshells for mitigating soil antibiotic resistance bacteria/gene dissemination and accumulation in bell pepper. **Y. Mao**, S. Mingming, X. Li, A. Schwab, X. Jiang

Stability of anthocyanin pigments in purple wheat bran and powder isolates. **E.M. Abdelaal**, P. Hucl

3:50 204. Analysis of changes in anthocyanin and volatile compounds of Fuji apple under different sizes and storage conditions. **H. Jang**, M. Jeong

4:15 205. Measuring color in turbid beer and wort samples. **R. Barth**

4:40 206. Investigation of monoterpene enantiomers in Pinot gris wine and sensory perception of these compounds on matrix interactions. **M. Song**, E. Tomasino

5:05 Concluding Remarks.

**Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches**

Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI

**Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges**

Sponsored by AGRO, Cosponsored by AGFD

**Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges**

Sponsored by AGRO, Cosponsored by AGFD

**Glyphosate: Current Status & Future Prospects**

Sponsored by AGRO, Cosponsored by AGFD and ENVR

**WEDNESDAY MORNING**

Section A

Pennsylvania Convention Center
Room 110A

**Natural & Bio-Based Antimicrobials for Food Applications**

X. Fan, H. L. Ngo, C. Wu, **Organizers, Presiding**

8:00 Introductory Remarks.

8:05 207. Safer salads and grilled meats: Clean and green approaches. **S. Ravishankar**

8:30 208. Organic acids as food antimicrobials. **J. Gurtler**
8:55 209. Natural and value-added antimicrobials for pathogen control. B. Brehm-Stecher


9:45 Intermission.

10:05 211. Improve microbial food safety of fresh fruits and vegetables with aqueous and vaporous essential oils. X. Fan, C. Wu

10:30 212. Berry pomace extracts in enhancing microbial food safety. D. Biswas


Section B

Pennsylvania Convention Center
Room 111B

Chemistry, Safety & Technology of GMO Foods

Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡
J. W. Finley, L. Jackson, J. N. Seiber, Organizers, Presiding

8:00 Introductory Remarks.


9:35 Intermission.


10:50 219. It is about safety. V.C. Knauf

Section C

Pennsylvania Convention Center
Room 111A

International Student Symposium
Bioactive Compounds

P. Schmidberger, R. Tardugno, Organizers, Presiding

8:00 Introductory Remarks.

8:05 220. Synergism between sulforaphane and luteolin in anti-inflammation. K. Rakariyatham, X. Wu, H. Xiao

8:30 221. 3-MCPD 1-palmitate induced tubular cell apoptosis via JNK/P53 pathways. G. Huang, M. Liu, W. Lu, X. Sun, L.L. Yu

8:55 222. Functional analyses on antioxidant and anti-inflammatory effects of polyphenols extracted from a Chinese bitter tea (ilex latifolia thunb). T. Zhang

9:20 Intermission.

9:40 223. Role of cell walls in controlling the release and bioaccessibility of polyphenols from raw compared to processed apples. D. Liu, M.J. Gidley, P. Lopez-Sanchez

10:05 224. Redox active antioxidants increase chemical stability and biological function of curcumin. W. Wang

10:30 225. Enhancing bioavailability of lipophilic nutraceuticals in natural food: Excipient emulsion design. R. Zhang, D. McClements

10:55 Concluding Remarks.

Section D

Pennsylvania Convention Center
Room 110B

General Papers

N. P. Seeram, Organizer, Presiding
W. Liu, H. Ma, Presiding

8:00 Introductory Remarks.

8:05 226. Impact of harvest time and switchgrass cultivar on conversion to sugars and pyrolysis oils using biochemical and thermochemical routes. M. Serapiglia, C.A. Mullen, A. Boateng, B.S. Dien, M. Casler


8:55 228. Effect of cluster sunlight exposure on rotundone concentration in Noiret grapes and wine. L.J. Homich, R.J. Elias, M. Centinari, J. Vanden Heuvel

9:45 Intermission.

10:00 230. Restoring herbicide control in multiple herbicide resistant black grass (Alopecurus myosuroides). **M.C. Schwarz**, P.G. Steel, E. Pohl, G. Mitchell


11:40 Concluding Remarks.

Who Should Regulate Pesticides in Our Food?

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WEDNESDAY AFTERNOON

Section A

Pennsylvania Convention Center
Room 110A

Natural & Bio-Based Antimicrobials for Food Applications

X. Fan, H. L. Ngo, C. Wu, Organizers, Presiding

1:00 234. Anti-listerial activity of hops beta acids on ready-to-eat meat products. **C. Shen**

1:25 235. Natural antimicrobials for acid and acidified foods. C. Chung, H. Haley, R. Price, **F. Breidt**

1:50 236. Use of plant-based antimicrobials for enhanced pressure destruction of pathogens in juices. **A. Mendonca**

2:15 237. Use of natural antimicrobials with combined non-thermal treatments to control *Listeria monocytogenes* and *Clostridium sporogenes* in food systems. **M. Lacroix**

2:40 Intermission.

2:55 238. Modeling the impact of the natural antimicrobial citral and high pressure processing on the survival of *Escherichia coli* O157:H7 and uropathogenic *E. coli* in ground beef. S. Chien, **S. Sheen**, C. Sommers, L. Sheen

3:20 239. Development of delivery systems for essential oils and applications for foods and biofilm removal. **L. McLandsborough**
3:45 240. Novel uses of lauric arginate for food preservation: Physical and antimicrobial properties. Q. Ma, Q. Zhong

4:10 241. Methods to deliver natural antimicrobials to food. T. Jin

Section B

Pennsylvania Convention Center
Room 111B

Chemistry, Safety & Technology of GMO Foods

Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡
J. N. Seiber, Organizer
J. W. Finley, L. Jackson, Organizers, Presiding

1:00 242. Unintended effects associated with GM crops are both expected and low risk. R. Herman, W. Parrott

1:30 243. Assessing the risks of resistance evolution for transgenic crops for insect control: Capitalizing on successes and learning from mistakes. B. Siegfried

2:00 244. FDA’s safety evaluation of foods from genetically engineered plants. R.I. Merker

2:30 Intermission.

2:45 245. Intellectual property issues of GMO food crops. A. Coates

3:15 246. Communication of GMO issues to non-technical audiences. J. Finley

3:45 Concluding Remarks.

Section C

Pennsylvania Convention Center
Room 111A

International Student Symposium

Analytical Approaches

P. Schmidberger, R. Tardugno, Organizers, Presiding

1:00 Introductory Remarks.

1:05 247. Filter based approach to rapid and sensitive SERS detection of ferbam in environmental water. S. Gao, L. He


2:20 Intermission.

2:40 **250.** Detection of *Escherichia coli (E. coli)* and sensing of antibiotic drugs using engineered enzymatic bacteriophage. **J. Chen, S.D. Alcaine, V.M. Rotello, S.R. Nugen**

3:05 **251.** Optimization of a new HPLC method with UV/DAD and ESI-MS^n detection for the analysis of non-psychoactive cannabinoids in *Cannabis sativa* L. **V. Brighenti, R. Tardugno, S. Benvenuti, F. Pellati**

3:30 **252.** Extraction and isolation of stypoldione from stypopodium zonale. **M.R. Denny**

3:55 Concluding Remarks.

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Section D

Pennsylvania Convention Center
Room 110B

**High-Resolution Mass Spectroscopy Techniques for Identification & Quantification of Phytochemical Metabolites**

Y. Kim, M. Sucan, S. Talcott, *Organizers*
L. Howard, *Organizer, Presiding*

1:00 Introductory Remarks.

1:05 **253.** Scope and limitations of HPLC-HRESI/MS for the analysis of anthocyanins from tropical fruits. **C. Osorio Roa**

1:30 **254.** Target oriented synthesis and mass spectral characterization of curcumin-phenformin adduct: Potential insights into the role of this conjugate as anti-diabetic and anti-cancer agent. **B. Dayal, D.N. Shah, S. Patel, A. Mehta, M.A. Lea**

1:55 **255.** Analysis of urinary and fecal metabolites of tea polyphenol EGCG in mice by LC-MS/MS. **S. Zhang, S. Sang**

2:20 **256.** Qualitative and quantitative analysis of antioxidant and quinone reductase-inducing phytochemicals present in a Maqui berry (*Aristotelia chilensis*) botanical dietary supplement. **C. Naman, J. Li, Y. Deng, W. Keller, A. Kinghorn**

2:45 Intermission.


3:25 **258.** Accuracy of HPLC-MS methods used to assess the absorption, metabolism and excretion of bioactive (poly)phenols: Implications for nutritional and biomedical research. **J. Ottaviani**
Absorption, distribution, metabolism and excretion of orange juice flavanones in humans. **A. Crozier,** G. Pereira-Caro

Elucidating metabolic signatures of phytochemical consumption. **C. Kay**

Concluding Remarks.

**Who Should Regulate Pesticides in Our Food?**

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**THURSDAY MORNING**

Pennsylvania Convention Center  
Room 110A

International Student Symposium  
Application of Natural Ingredients

P. Schmidberger, R. Tardugno, **Organizers, Presiding**

Introductory Remarks.

Development of food-grade filled hydrogels for oral delivery of lipophilic active ingredients: pH-triggered release. **Z. Zhang**

Legume proteins as alternative emulsifiers to encapsulate omega-3 oils. **C.E. Gumus,** D.J. McClements

Structures and interfacial properties of self-assembled protein-polyphenol-polysaccharide ternary complexes. **W. Jin,** B. Li, Q. Huang

Intermission.

Stabilization of pickering emulsions by polysaccharide-polypeptide nanocomplexes. **Y. Jiang,** Q. Huang

Ultrasonic treatment of regenerated a-chitin with tunable capacity for stabilization of oil in water emulsion. **Y. Wang**


Concluding Remarks.
Pennsylvania Convention Center
Room 111A

Natural & Bio-Based Antimicrobials for Food Applications

X. Fan, H. L. Ngo, C. Wu, *Organizers, Presiding*

8:00 267. Antimicrobial character of lactonic sophorolipids against select bacterial strains commonly associated with foodborne illness. **R. Ashby**, D. Solaiman, X. Fan, X. Zhang, M. Olanya, D. Ukuku


8:50 269. Thiamine dilauryl sulfate (TDS) and organic acid combined treatment to secure microbial safety of selected products. H. Park, **H. Feng**

9:10 Intermission.

9:30 270. Characterization of LAB bacteriocins with the potential for food safety and functional food applications. **J. Renye**, G.A. Somkuti


10:45 273. Evaluation of toxicity and endocrine disruption potential of the natural antimicrobials or biobased antimicrobials. **C. Wu**, C. Jang, M. Guo

Section C

Pennsylvania Convention Center
Room 110B

General Papers

N. P. Seeram, *Organizer, Presiding*
W. Liu, H. Ma, *Presiding*

8:00 Introductory Remarks.

8:05 274. Applications of the polysaccharide-polypeptides nanocomplexes in multi-platforms for nutraceuticals encapsulation. **Y. Jiang**, Q. Huang

8:30 275. Interaction and structure formation between α-lactalbumin and chitosan grafted with poly(ethylene glycol) chains. **J. Du**, O.G. Jones

8:55 276. De-polymerization of lignin via co-pyrolysis with 1,4-butanediol in a microwave reactor. **P. Tarves**, C.A. Mullen, A. Boateng

9:20 Intermission.


10:50 280. Evaluation of polycyclic aromatic hydrocarbons (PAHs) in edible palm oil produced in the Niger Delta, Nigeria. R.O. Raji, V.O. Akpambang

11:15 281. Analysis and reduction of possible carcinogenic 4(5)-methylimidazole in a caramel colorant model system. K.G. Lee

11:40 Concluding Remarks.

Who Should Regulate Pesticides in Our Food?

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THURSDAY AFTERNOON

Pennsylvania Convention Center
Room 110A

International Student Symposium

Molecular Definition of Food Quality

P. Schmidberger, R. Tardugno, Organizers, Presiding

1:00 Introductory Remarks.

1:05 282. Decoding the taste of foods: What makes that cheese taste so good? M. Salger, T. Hofmann

1:30 283. Changes in the key aroma compounds of dried shiitake mushroom induced by rehydration. P. Schmidberger, P.H. Schieberle

1:55 284. Evaluation of chiral heterocyclic key aroma compounds in cooked Allium-varieties - A case study regarding organoleptic and quantitative characteristics. M. Flaig, M. Granvogl

2:20 Intermission.

Differentiating cultivation locations and flowering stages of chrysanthemum by UPLC fingerprints combined with chemometric data analysis techniques. **L. Yanfang, W. Lu, L.L. Yu**

3:30 Concluding Remarks.

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**General Papers**

N. P. Seeram, *Organizer, Presiding*
W. Liu, H. Ma, *Presiding*

1:00 Introductory Remarks.

1:05 287. Lateral flow assay exploiting aptamers for the extremely rapid detection of the anaphylatic allergen β-conglutin. **C. O'Sullivan, M. Jauset, M. Svobodova**

1:30 288. Portable optoelectronic nose for rapid monitoring of meat freshness. **Z. Li, K.S. Suslick**

1:55 289. Ultrasensitive detection of the anaphylatic allergen β-conglutin exploiting lateral flow, tailed primers and isothermal amplification. **C. O'Sullivan, M. Jauset, M. Svobodova**


2:45 Intermission.

3:00 291. Variations in the enantiomeric composition of thujone-containing essential oils. **J.D. Williams, K.A. Anderson, J.A. Yazarians, G.R. Boyce**

3:25 292. Improved method for determination of biofuel sugars by HPAE-PAD. **S. Patil, J. Rohrer**


4:15 294. Estimation of total phenolic compounds in leaf tissues of American chestnut (*Castanea dentate*), Chinese chestnut (*Castanea mollissima*), and their back-cross breeding generations. **J. She**

4:40 295. Microwave-induced chemical synthesis of oxidized lanosterol and cholesterol derivatives using KMnO₄-CuSO₄ catalyst: Potential target molecules for clearing up protein aggregation in diabetes patients suffering from cataract formation. **B. Dayal, J. Chou**

5:05 Concluding Remarks.

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