2019 AOCS Annual Meeting & Expo
May 5–8 America's Center Convention Complex | St. Louis, Missouri, USA

Lipid Oxidation and Quality (LOQ) Interest Area
Tentative Technical Program

As of February 12, 2019

This presentation list is not final and is subject to change.

The presenter is the first author, or the author indicted with an asterisk (*).

Monday Afternoon

LOQ 1a: Antioxidant Mechanism and Activity
Chairs: Fereidoon Shahidi, Memorial University of Newfoundland, Canada; and Zhuliang Tan, DSM Nutritional Products, Canada

Antioxidant Activity and Mechanism of Action of Natural Extracts: Their Impact on Color and Lipid Stability in Meat Products. S.P.J. Namal Senanayake*, *Camlin Fine Sciences, USA*

Antioxidant Mechanism of Natural Phenolics on Scallop Adductor Muscle During Drying and Storage. Dayong Zhou*[1], Hongkai Xie[2], Fereidoon Shahidi[3], and Beiwei Zhu[4], *[1]Dalian Polytechnic University, China; [2]National Engineering Research Center of Seafood, China; [3]Memorial University of Newfoundland, Canada; [4]College of Food Science & Technology, Dalian Polytechnic University, China*

To be announced. *Fereidoon Shahidi, Memorial University of Newfoundland, Canada*

Influence of Antioxidants on Oxidation Pathways. *Zhehan Jiang*, Suzanne M. Budge, and Wei Xia, Dalhousie University, Canada*

LOQ 1b / PRO 1b: Effect of Processing on Lipid Oxidation in Oils and Oats and Lipid-containing Foods
Chairs: Sean Liu, USDA, ARS, USA; and S.P.J. Namal Senanayake, Camlin Fine Sciences, USA

Effects of Modified Phosphatidylcholine on Physical and Oxidative Stability of Omega-3 Delivery 70% Oil-in-Water Emulsions. Betül Yesiltas*[1], Ann-Dorit Moltke Sørensen[2], Pedro J. Garcia-Moreno[2], Sampson Anankanbil[3], Zheng Guo[4], and Charlotte Jacobsen[2], *[1]National Food Institute, Technical University of Denmark, Denmark; [2]Technical University of Denmark, Denmark; [3]Dept. of Engineering, Aarhus University, Denmark; [4]Aarhus University, Denmark*

Effect of Maillard Reaction Conditions on Physicochemical Properties and Oxidative Stability of Microencapsulated Chia Oil. Vanesa Y. Ixtaina[1], Bernd W.K Diehl[2], Claudia N. Copado[1], and Mabel Tomás*[1], *[1]CIDCA (CONICET-UNLP), Argentina; [2]Spectral Service AG, Germany*

Impact of Ratios of Polyunsaturated and Saturated Fatty Acids on Oxidation Kinetics in Oil/Water Emulsions. Raffaella Inchingolo[1], D. Julian J. McClements[2], Eric A. Decker[2], and Mitchell D. Culler*[2], *[1]University of Massachusetts, USA; [2]University of Massachusetts Amherst, USA*

Effective Prevention of Oxidative Deterioration of Fish Oil by the Combination of Amine-compounds and General Antioxidants. Mariko Uemura[1], Masashi Hosokawa[1], Kazuo Miyashita*[1], Ai Iwashima-Suzuki[2], and Hiroaki Kubouchi[2], *[1]Hokkaido University, Japan; [2]Megmilk Snow Brand Co. Ltd., Japan*

Determination of Lipid Oxidation Parameters in Solid Non-oil Matrices and the Impacts on the Pet Food Industry. BJ Bench*, *Tyson Foods, USA*

Tuesday Morning

LOQ 2a: Oxidation and Antioxidants in High Protein Foods
Chairs: Michelle Peitz, Archer Daniels Midland Co., USA; David Johnson, Kalsec, Inc. USA; and Minwei Xu, North Dakota State University, USA

Maillard Reaction Products as Antioxidants in a Muscle Model System: Effect of pH and Tocopherol. Ling Liu, Jie Yin, and Mark P. Richards*, *University of Wisconsin-Madison, USA*

Increasing Oxidative, Microbial and Color Stability of Fresh Meats: Mechanism and Application. Min Hu*, *DuPont Nutrition & Health, USA*

Pea Protein Isolate/Gum Arabic Glycation Improves the Oxidative Stability of Oil-in-Water Emulsions. Bingcan Chen*, *North Dakota State University, USA*

ANA 2c / LOQ 2b: Chemical and Sensory Methods to Predict Food Stability
Chairs: J. David Pinkston, Kellogg Company, USA; and Lan Ban, Kemin Food Technologies, USA

Stabilization of Omega-3 Fatty Acid in Edible Oil Blends During Storage and Frying. Anand A. Zanwar*[1], Pramod D. Farde[2], Prakash B. Ghorpade[2], P.K. Singh[3], and Mahbaleshwar V. Hegde[4], *[1]Center for Innovation in Nutrition Health Disease, Interactive Research School for Health Affairs, Bharati Vidyapeeth (Deemed to be University), Pune, India; [2]Center for Innovation in Nutrition Health Disease, Interactive Research School for Health Affairs, Bharati Vidyapeeth Deemed University, India; [3]ICAR- Project Coordinating Unit Linseed, ICAR- Indian Institute of Pulses Research (ICAR-IIPR), Kanpur - 208024, India; [4]Centre for Innovation in Nutrition Health Disease, Interactive Research School for Health Affairs, Bharati Vidyapeeth (Deemed to be University), India*

The Effect of Rosemary Extract and Phospholipase A2 on the Color Stability and Lipid Oxidation of Fresh Pork Sausage. James Whalin*, Ling Liu, and Mark P. Richards, *University of Wisconsin-Madison, USA*

Correlation of Oxidative Shelf-life to Test Conditions and Physical Stability of Antioxidants. Chia-Yu F. Shen*[1], Kristen Robbins[2], and Lan Ban[1], *[1]Kemin Food Technologies, USA; [2]Kemin Food Technologies, USA*

When is "Rancid" Rancid? Influence of Food Composition on Sensory Perception of Oxidative Rancidity and Correlation with Analytical Measurements. J. David Pinkston*, and Nancy Swarthout, *Kellogg Company, USA*

The Use of Sensory Evaluation in Assessing the Shelf Life of Foods- Predicting Consumer Acceptability through Sensory Analysis. Andrew Livermore*[1], and Nancy Swarthout[2], *[1]Kellogg's, USA; [2]Kellogg Company, USA*

Evaluation of Oxipres™ Apparatus to Study Oxidative Stability and Antioxidant Activity. Cindy Tian*, *Kalsec, Inc., USA*

Tuesday Afternoon

ANA 3c / LOQ 3a: Advanced Analytical Techniques for Lipid Oxidation
Chairs: Matthew Fhaner, University of Michigan-Flint, USA; and Rick Della Porta, Pepsico / Frito-Lay, USA

New Method for the Investigation of Oxidation Stability of Fats, Oils and Complex Food Products. Carolin Edinger*, *Anton Paar ProveTec GmbH, Germany*

Application of Flow Cytometry as Novel Technology in the Study of Lipid Oxidation in Oil-in-Water Emulsions. Peilong Li*[1], D. Julian J. McClements[2], and Eric A. Decker[2], *[1]Dept. of Food Science, University of Massachusetts, Amherst, USA; [2]University of Massachusetts Amherst, USA*

Electrochemistry as an Analytical Tool for Monitoring Antioxidant and Omega-3 Fatty Acid Levels during Degradation. Matthew Fhaner*, *University of Michigan-Flint, USA*

Analysis of Polar Compounds Generated during Thermal Process of Oils and its Biochemical Function Evaluation. Chen Cao*[1], Yongjiang Xu[2], and Yuanfa Liu[2], *Jiangnan University, China*

LOQ 3b: Specialty Oils: Phytochemicals, Extraction and Oxidative Stability
Chairs: Ignacio Vieitez, UdelaR, Uruguay; Alex Kripps, Caldic USA, USA; and Hong-Sik Hwang, USDA, ARS, NCAUR, USA

Characterization of Key Aroma Compounds of Turkish Olive Oils by Aroma Extract Dilution Analysis. Gamze Guclu*[1], Songul Kesen[2], Hasim Kelebek[3], and Serkan Selli[1], *[1]Cukurova University, Turkey; [2]Gaziantep University, Turkey; [3]Adana Science and Technology University, Turkey*

Development of pulse protein-polyphenol conjugates for improved oxidative stability of flaxseed oil-in-water emulsions. Saakshi Parolia[1], Rick Green[2], Michael Nickerson[3], and Supratim Ghosh*[3], *[1]University of Sasatchewan, Canada; [2]POS Bio-Sciences, Canada; [3]University of Saskatchewan, Canada*

Physicochemical Characteristics and Bioactivities of Black Raspberry Seed Oil. Keum Taek Hwang*[1], Hee Jae Lee[2], Taehwan Lim[2], and Hana Jung[2], *[1]Seoul National Univeristy, Korea; [2]Seoul National Univeristy, South Korea*

Supercritical Fluid Extraction of Black Sesame Seeds and Study of the Functional Properties Obtained in Comparison with the Extraction by Soxhlet Method. Ignacio Vieitez*[1], Florencia

Jorge[1], Elena Dutto[1], Lucia Velazco[1], and Cecilia Abirached[2], *[1]UdelaR, Uruguay; [2]PEDECIBA Química, Dept. de Ciencia y tecnología de los Alimentos, Universidad de la República, Uruguay*

Effects of Deacidification Methods on High FFA Containing Oils Obtained from Sea Buckthorn Berry. Longkai Shi*, Ruijie Liu, Ming Chang, Qingzhe Jin, and Xingguo Wang, *Jiangnan University, China*

Wednesday Morning

LOQ 4a: Development of Novel Antioxidants
Chairs: John Sander, Kemin Agrifood, USA; Yu Zhao, Penn State University, USA; and Min Hu, DuPont Nutrition & Health, USA

Enzyme Assisted Extraction of Antioxidant Ingredients from Seaweeds. Sabeena Farvin Koduvayur Habeebullah*[1], Zainab Al-Sattari[2], Sakhina Al-Haddad[2], Saja Fakhraldeen [2], Surendraraj Alagarsamy[2], and Faiza Al-Yamani[2], *[1]Environmental and Life Science Research Center, Kuwait Institute for Scientific Research, Kuwait; [2]Kuwait Institute for Scientific Research, Kuwait*

Opposite Antioxidative Activity Variation of Soluble Free and Soluble Bound Phenolic Compounds during Yellow Pea Germination. Minwei Xu*, and Bingcan Chen, *North Dakota State University, USA*

Structural determination of polyphenols bound to hemoglobins: Mechanisms of anti-oxidative and pro-oxidative effects. Jie Yin, Mark P. Richards*, Wenjing Zhang, and Craig Bingman, *University of Wisconsin-Madison, USA*

Impact of Intrinsic Chemical Properties and External Emulsion State on Antioxidant Performance in Food Emulsions. Yvonne Gildemaster*, Joan Randall, and Lan Ban, *Kemin Food Technologies, USA*

Mechanistic Investigation and Efficacy of Polar Antioxidants to Stabilize Bulk Oil. David R. Johnson*, Laura Lafond, Xin Tian, and Nora Yang, *Kalsec Inc., USA*

Physicochemical properties of black bean protein hydrolysates and their antioxidant activities in oil phase. Zhaojun Zheng*[1], Yuanfa Liu[2], Yongjiang Xu[1], Chen Cao[1], and Jinwei Li[1], *[1]Jiangnan University, China; [2]School of Food Science and Technology, State Key Laboratory of Food Science and Technology, Jiangnan University, China*

LOQ 4b: Frying Oils: Industry Perspective and Novel Solutions
Chairs: Shawn Pan, Bunge North America, USA; Cindy Tian, Kalsec, Inc., USA; and Chandra Ankolekar, Kemin Food Technologies, USA

Practical Application of Amino Acids as Natural Antioxidants for Frying. Hong-Sik Hwang*[1], Jill Moser[1], Kenneth M. Doll[1], Mayuresh Gadgil[2], and Sean Liu[3], *[1]USDA, ARS, NCAUR, USA; [2]Bradley University, USA; [3]USDA, ARS, USA*

The Advantage of Adsorbent Treatment in Snack Foods Frying Oil Application. Joby Ulahanan*, *Crystal Filtration Co., USA*

Capturing the Value of Fry Life Extension Through High Oleic Oils. Susan Knowlton*, *DuPont Company, Pioneer, USA*

Improve High Oleic Soybean for Frying. Linsen Liu*, *Bunge Loders Croklaan, USA*

Achieving Desired Shelf Life for Fried and Baked Products. Monoj K. Gupta*, *MG Edible Oil Consulting International, Inc., USA*

Posters will be available for viewing from Monday at 10:00 a.m. until Wednesday at 1:00 pm.

LOQ-P: Lipid Oxidation and Quality Poster Session
Chair: Scott Bis, Kemin Industries Inc., USA

Effect of furan fatty acids and 3-methyl-2,4-nonanedione on light-induced off-odor in soybean oil. Takashi Sano*[1], Ryo Okabe[1], Maiko Iwahashi[1], Jun Imagi[1], Toshiro Sato[1], Eiichiro Fukusaki[2], and Takeshi Bamba[3], *[1]J-Oil Mills, INC., Japan; [2]Osaka University, Japan; [3]Kyushu University, Japan*

The Antioxidant Effect of Licorice Root Extract in Retarding Lipid Oxidation in High Oleic Canola Frying Oil and Comparison to Rosemary Extract. Brandon Williams*[1], Jane Whittinghill[2], and Rachael Miller[3], *[1]ICL Phosphate Solutions, United States; [2]ICL Food Specialties, USA; [3]ICl Phosphate Solutions, United States*

Influence of Margarine and Oil Composition on Phytosterols, Fatty Acid Profile and Quality Parameters at High Heating Temperatures. Jallah Smith[1], Peace C. Asuzu[2], Anh T.L Nguyen[3], Benjamain M. Bougouneau[4], Samuel A. Besong[5], and Alberta N A Aryee*[3], *[1]Delaware State University, United States; [2]College of Agriculture & Related Sciences, Delaware State University, Dover, DE 19901, USA; [3]Delaware State University, USA; [4]Department of Human Ecology, Delaware State University, Dover, DE 19901, United States; [5]Dept. of Human Ecology, College of Agricultural Sciences, Delaware State University, USA*

Oxidative Stability of Spray-dried Microencapsulated Chia Seed Oil with the Addition of Antioxidants. Elizabeth Hoffmann[1], Claudia N. Copado[2], Vanesa Y. Ixtaina*[2], and Mabel Tomás[2], *[1]CIDCA, Argentina; [2]CIDCA (CONICET-UNLP), Argentina*

Antioxidative Polyphenols of Canola Meal: Effect of High Pressure, Temperature and Solvents. Usha Thiyam, Michael Eskin, and Ruchira Nandasiri*, *University of Manitoba, Canada*

Prediction of Oxidative Stability in Edible Bulk Oils using Dielectric Constant Changes. HeeSun Na*[1], YunSik Woo[2], SeungBeen Jo[2], MiJa Kim[3], and JaeHwan Lee[4], *[1]Sungkyunkwan university, South Korea; [2]Sungkyunkwan University, South Korea; [3]Kangwon National University, South Korea; [4]Department of Food Science and Biotechnology, Sungkyunkwan University, Republic of Korea*

Antioxidant Effects on the Oxidative Stability in Bulk Oil Treated with Plasma Stress. HeeSun Na*[1], SeungBeen Jo[2], MiJa Kim[3], and JaeHwan Lee[4], *[1]Sungkyunkwan university, South Korea; [2]Sungkyunkwan University, South Korea; [3]Kangwon National University, South Korea; [4]Department of Food Science and Biotechnology, Sungkyunkwan University, Republic of Korea*

Effects of Sesamol on the Oxidative Stability of Canola Oil-based Organogels with Beef Tallow. SeungBeen Jo*[1], Heesun Na, Seungmi Hong, MiJa Kim[2], and JaeHwan Lee[3], *[1]Sungkyunkwan University, South Korea; [2]Kangwon National University, South Korea; [3]Department of Food Science and Biotechnology, Sungkyunkwan University, Republic of Korea*

Influence of Oil Type on Epoxy Fatty Acid Formation in Repeated Deep-frying of Potatoes. Ru Shen*[1], Jingyi Meng[2], Claire Schane[2], Tilo Lamken[2], William G. Helferich[2], and Nicki J. Engeseth[2], *[1]University of Illinois, USA; [2]University of Illinois at Urbana-Champaign, USA*

Antioxidant Performances and Emulsifying Activity of Corn Gluten Meal Hydrolysate in Oil-in-Water Emulsions. Yanting Shen*[1], Ruijia Hu[2], and Yonghui Li[1], *[1]Kansas State University, USA; [2]Kansas State University, Grain Science and Industry, USA*

Proximate Composition, Fatty Acids Profiles and Nutritionally Valuable Minerals of 10 Industrial Hemp Seeds Varieties. Minwei Xu*, and Bingcan Chen, *North Dakota State University, USA*

Determination of Triacylglycerol Oxidation Mechanisms using Liquid Chromatography-tandem Mass Spectrometry. Shunji Kato*[1], Naoki Shimizu[2], Yurika Otoki[1], Junya Ito[2], Masayoshi Sakaino[3], Takashi Sano[4], Takahiro Eitsuka[2], Teruo Miyazawa[5], and Kiyotaka Nakagawa[1], *[1]Tohoku University, Japan; [2]Food and Biodynamic Chemistry Laboratory, Graduate School of Agricultural Science, Tohoku University, Japan; [3]Innovation Development Section, J-OIL MILLS, INC., Japan; [4]J-Oil Mills, INC., Japan; [5]Food and Biotechnology Innovation Project, New Industry Creation Hatchery Center (NICHe), Tohoku University, Japan*

Wednesday Afternoon

AOCS Member + Volunteers Appreciation Luncheon
12:30–2 p.m.
Complimentary with all meeting registration types.

"Meet Me in St. Louis" Afternoon Excursion
3–7 p.m.
Departs from the Marriott Grand
Optional event. Ticket purchase is required.