



**Bienvenue!**  
**AOCS Members and Guests-**

Welcome to New Orleans, home of the famed French Quarter, world-renowned restaurants, Creole cuisine, and Dixieland jazz. Our local committee is pleased to host the 78th Annual Meeting of the AOCS May 17-21, 1987, the 40th to be held here. While your evenings may be devoted to sampling the city's varied interests, we know your days will be occupied with the excellent technical program arranged by chairman Tom Jacks and his committee. There will be 22 symposia, plus contributed papers in both general and poster sessions, on a variety of subjects to appeal to the professional interests of our entire membership—something for everyone!

While technical registrants will be busy listening to and discussing the latest research findings with their colleagues, spouses will be enjoying a riverboat tour, city sights, the Jackson Brewery, the new Riverwalk, and many other unique events arranged by Noralee Brown and Becky Skau (our two pros in this business). For those who are interested, Bob Hron is arranging a riverboat tour of the import/export shipping facilities along the river (oilseed meals, vegetable oils, soybeans, wheat, corn, etc., are shipped through the Port of New Orleans) for Tuesday morning.

Plan to come early on Sunday to enjoy the opening mixer at the Fairmont Hotel, nibble on tidbits, and sip a few with your friends, setting the stage for the rest of the week. Our entire local committee joins me in inviting you to come "pass a good time" with us at the AOCS meeting in New Orleans. Y'all come! You'll enjoy it.

Sincerely,

*Robert L. Ory*

Robert L. Ory  
 General Chairman

# New Orleans to feature 250 talks

Approximately 250 technical presentations are scheduled for the 1987 annual meeting of the American Oil Chemists' Society, to be held May 17-21, 1987, in the Fairmont Hotel, in New Orleans, Louisiana.

The meeting registration desk in the Imperial Ballroom of the Fairmont will be open from 2 to 6:30 p.m. Sunday, May 17. The first social event is the Sunday evening opening mixer, which will be in the International Ballroom of the Fairmont. Other social events included in the registration fee are the Awards Breakfast on Monday, May 18, and the Inaugural Breakfast on Wednesday, May 20.

The technical program will run from Monday morning, May 18, through Thursday noon, May 21. The tentative technical program is published in this issue of *JAOCs*. The final program will be included in the meeting portfolios given to attendees at the registration desk.

Awards to be presented at the May 18 breakfast will include the Supelco AOCS Research Award; AOCS Award of Merit; The Soap and Detergent Association Award for best technical paper on surfactants and detergents published in *JAOCs* during 1986; the Archer Daniels Midland Awards for best technical papers relating to protein and co-products; and the Ralph H. Potts Memorial Fellowship. Also recognized will be the AOCS Honored Students and the top-ranking Smalley Check Sample Program participants.

Optional social events and tours will be held every day. The meeting registration form includes a section, "Optional events," that may be used for any of these events; attendees may also register for them after arriving in New Orleans, if any space remains available. Early registration is advised.

During the noon hour Monday, the Protein and Co-Products Section will hold its annual luncheon. Cost is \$15 per person. On Monday afternoon, several AOCS geograph-

ical and specialty sections will hold cocktail receptions. Tickets, at \$15 per person, may be ordered on the meeting registration form.

Two special events will be held on Tuesday, May 19. At 7 a.m., the 3rd Annual Fat Peoples' Fun Run or Walk will be held. Buses will take participants to the Audubon Park where a 5-kilometer course will be laid out. Cost is \$10 per entrant, with t-shirts given to early registrants and prizes awarded to top finishers. The second special event on Tuesday is a tour of port facilities along the Mississippi River, where much of America's corn and soybean production is loaded for shipment overseas. Buses will depart at 8 a.m. and return at 10 a.m. The cost is \$10 per person.

On Wednesday evening, a traditional AOCS banquet will be held in the Fairmont. The Jacques Hebert Orchestra will provide music for dining and dancing. The entertainment program will include a history of New Orleans jazz. Cost is \$30 per person for tickets purchased through the registration form; tickets purchased on-site will cost \$35 each.

Those staying in New Orleans through Friday can also register for an optional "Night at the Races," to be held Thursday evening, May 21. Buses will provide transportation to and from a local race track.

The spouses' program will include tours on Monday, May 17, and Tuesday, May 18. On Monday, spouses will have a riverboat trip on the Mississippi River with a stop at a Civil War antebellum home. A box lunch will be provided. Participants will return to the French Quarter in time for shopping and sightseeing. On Tuesday, a city bus tour will include a stop at the warehouse of Blaine Kern, the largest Mardi Gras float maker in New Orleans. The trip will include a light lunch, with return slated for 1 p.m. On Wednesday morning, there will be a New Orleans-style cooking demonstration. Registrants for the spouses' program will receive tick-

ets for the Sunday, May 17, mixer. Tickets for the optional social events—including the Wednesday evening banquet—may be ordered on the registration form.

Housing reservations should be made using the separate housing registration form. Please note that although the meeting registration form is to be returned to AOCS headquarters in Champaign, Illinois, the housing reservation card should be sent to the AOCS housing bureau in New Orleans. While the Fairmont Hotel will be the center of activity, registrants may use the housing form to reserve rooms at the Fairmont; the New Orleans Clarion Hotel (about five blocks from the Fairmont); or the Monteleone Hotel (about four blocks away). If you wish rooms in some other hotel, please make reservations directly with the hotel.

An exposition in conjunction with the meeting will provide registrants a chance to see the latest in equipment, supplies and services available to the fats and oils industries.

Other activities will include meetings of AOCS administrative and technical committees. The AOCS Placement Center will be open, serving as a means for employers and job seekers to locate each other.

If the registration and housing forms in this issue of *JAOCs* have been removed, additional copies may be obtained from the Meetings Manager, AOCS, PO Box 5037, Station A, Champaign, IL 61820 USA.



**Tentative technical program begins on page 47.**

## Box lunches

An innovation at the 1987 AOCS annual meeting will be informal box lunch discussions on a series of topics to be selected.

Basically, the idea is to permit those persons interested in specific topics—such as color in vegetable oils, protein functionality or nutritional value of omega-3 fatty acids—to gather during the lunch hour to informally discuss whatever aspect of that topic they wish. There would be no formal lectures, no formal panels.

The specific topics, the day the box lunches are to be held and the room assignments will be listed in the final printed program distributed in New Orleans. Participants will be able to buy a box lunch for a nominal cost.

The purpose is to provide further opportunity for useful informal discussion.

## Placement center

The 15th AOCS Placement Center will be conducted during the annual meeting slated for May 17–21, 1987, in New Orleans.

The center is designed to bring together employers and job applicants in subject areas served by AOCS.

Job applicants should submit resumes on the form printed in this issue of *JAACS*. Applicants who will attend the meeting may request that their names and addresses be kept confidential through the use of code numbers. Resumes of applicants unable to attend the meeting cannot be kept confidential.

Employers also are requested to provide job descriptions on the form printed in this issue of *JAACS*. All forms will be posted in the placement center. If an employer or company wishes anonymity, a code number will be assigned. Employers who are unable to attend the meeting but are seeking new employees are encouraged to submit job listings.

Forms from applicants and employers should be mailed to arrive

at the AOCS office in Champaign before April 30, 1987. There is no charge to applicants who are AOCS members or to student nonmembers who register and submit applications before April 30; there is a \$10 for nonmembers who register by April 30, and a \$25 fee for nonmembers who register after April 30. There is no fee to employers who list jobs. No one will be allowed to participate in the placement center without a meeting registration badge. Job applicants and employers should check at the AOCS Service Desk in New Orleans for final instructions after picking up their registration materials.

## Exposition

The commercial exposition accompanying the AOCS annual meeting provides an opportunity for registrants to view the latest in equipment, supplies and services available to all segments of the fats and oils industry.

The AOCS exhibit provides one of the year's most concentrated exhibits of interest to fats and oils researchers. Most exhibitors have technical specialists available to help answer questions. The exhibit will be held in the Imperial Ballroom at the Fairmont Hotel. Hours will be 2–5:30 p.m., Sunday, May 17; 9 a.m.–5 p.m., Monday, May 18, and Tuesday, May 19; and 9 a.m.–12:30 p.m. Wednesday, May 20.

Approximately three dozen firms had decided as of mid-November to participate in the exhibit accompanying the AOCS 1987 annual meeting. Those firms include:

Anco/Votator Div., Cherry Burrell Corp.  
Brinkmann Instruments Co.  
The Cambrian Engineering Group Ltd.  
Canola Council of Canada  
Crown Iron Works Co.  
De Smet U.S.A. Corp.  
Diamond Crystal Salt Co.  
Eastman Chemical Products Inc.  
Eirich Machines Inc.  
EMI Corp.  
Equipment Engineering  
Florida Industrial Filters Inc.

The Foxboro Company  
S.A. Fractionnement Tirtiaux  
Harshaw/Filtrol Partnership  
Industrial Filter & Pump Mfg. Co.  
Industrial Scientific Inc.  
Manville  
Marcel Dekker Inc.  
Mettler Instrument Corp.  
Milton Roy Co.  
N. Hunt Moore & Associates  
Novo Laboratories Inc.  
Oil-Dri Corp. of America  
Pacific Scientific Co.  
Palm Oil Research Institute of Malaysia  
POS Pilot Plant  
Prater Industries Inc.  
PSI Process Systems Inc.  
Süd Chemie A.G.  
SVO Enterprises  
Tekmar Co.  
The Tintometer Co.  
UOP Inc.  
Waters Chromatography Div., Millipore  
Whatman Inc.  
Wurster & Sanger Inc.  
Zone Devices Inc.

## Honored students

Six students, three from Canada and three from the U.S., have been selected as AOCS Honored Students for the annual meeting in New Orleans.

The awardees are Elizabeth M. Kay of the Department of Crop Science and Plant Ecology, University of Saskatchewan; Robert T. Lorenz of the Department of Microbiology, North Carolina State University; Nancy M. Robblee of the Department of Nutritional Sciences, University of Toronto; José A. Rojo of the Department of Food Science, University of Illinois at Urbana-Champaign; Vivekanand S. Vadke of the Food Science Department, University of Saskatchewan; and Pearly S. Yan of the Food and Nutrition Department, Iowa State University.

Each honored student will receive a complimentary registration for the meeting, as well as funds to help defray travel and housing costs.

In addition to presenting technical papers and attending tech-

nical sessions, honored students are invited to participate in a variety of social events to talk with experienced fats and oils researchers.

## Short courses

AOCS will offer short courses on lipid oxidation, vegetable food proteins and polyunsaturated fatty acids and eicosanoids during the four days before the 1987 annual meeting opens in New Orleans.

Two of the short courses will be held May 13-16, 1987, in Biloxi, Mississippi.

The purpose of the AOCS Short Course on Lipid Oxidation is:

- To review the fundamental principles of the chemistry and mechanism of lipid oxidation;
- To discuss the role of oxidation catalysts and inhibitors;
- To highlight analytical problems and solutions;
- To consider the biological consequences and health effects of lipid oxidation products; and
- To summarize concerns for lipid oxidation in foods.

The course is designed for scientists, researchers, food technologists, flavor chemists, food additive specialists and food processors who are concerned with oxidative properties of lipids.

Chairmen for the short course are Gerhard Maerker of the USDA Eastern Regional Research Center, Edwin Frankel of the USDA Northern Regional Research Center and David Min of The Ohio State University.

The purpose of the AOCS Short Course on Polyunsaturated Fatty Acids and Eicosanoids is to examine the latest biomedical research results from controlled studies of the effects of n-3 and n-6 polyunsaturated fats upon tissue functions and eicosanoid-mediated events. Discussions will examine the information on n-3 fats with regard to dosage forms and duration of ingestion needed to obtain significant results.

The course is intended for scientists and researchers who are interested in the biological role of n-3 and n-6 polyunsaturated fatty acids and in the possible relationship of dietary n-3 contents to the severity and frequency of eicosanoid-related disease processes, as well as for nutritional scientists, nutritional clinicians and food scientists concerned with the composition of dietary fats.

One of the poster sessions at this short course will feature biomedical test materials. Posters describing the composition, production and/or availability of potential test materials are welcomed. Interested contributors to this session may obtain information from Jeanne D. Joseph, NOAA/NMFS Charleston Laboratory, PO Box 12607, Charleston, SC 29412, USA (telephone 803-762-1200).

W.E.M. Lands of the University of Illinois College of Medicine is chairman of the short course on polyunsaturated fatty acids and eicosanoids.

The third short course, Vegetable Food Proteins: Preparation, Modification and Utilization, will be held May 14-15, 1987, at the Food Protein Research and Development Center at Texas A&M University in College Station, Texas.

Short course topics will include:

- Processes for preparation of food protein flours, concentrates and isolates;
- State-of-the-art development and use of vegetable food protein ingredients from major oilseeds and cereal sources;
- The basics of critical engineering processes;
- Techniques for measurement of protein characteristics;
- Techniques for modification of functionality; and
- Major applications of vegetable food proteins.

The course is attended for persons from industry, government and academia who seek to learn the latest information available in the field of vegetable food proteins.

Short course chairmen are E.W.

Lusas, K.C. Rhee and S.S. Koseoglu all faculty members at the Food Protein Research & Development Center at the Texas A&M University.

The annual meeting registration form may be used to register for any of the short courses.

## ISF-JOCS congress

The first informational circular about the 1988 joint world congress of the International Society for Fat Research (ISF) and Japan Oil Chemists' Society (JOCS) is now available. The congress is slated for Sept. 26-30, 1988, at Toranomon Pastoral, Tokyo, Japan.

The scientific program will cover topics of fats research and technology, including more than 15 lectures, oral presentations and poster sessions. Optional technical excursion and social events also are scheduled.

For more information, contact the Japan Oil Chemists' Society, 7th Floor, Yushi Kogyo Kaikan, 13-11, Nihonbashi 3-chome, Chuo-ku, Tokyo 103, Japan.

## Nutrient databank

The 12th National Nutrient Databank Conference will be held April 12-15, 1987, at the Westin Galleria Houston Hotel, Houston, Texas. The purpose is to bring together those who design or use computerized nutrient databases.

Objectives are to provide (a) a forum for discussing nutrient database issues; (b) updates on ongoing U.S. Department of Agriculture and other nutrient database projects, and (c) a resource for new or potential nutrient database users.

For information, contact the 12th National Nutrient Databank Conference, University of Texas System Cancer Center, M.D. Anderson Hospital and Tumor Institute, Department of Cancer Prevention and Control-HMB 189, 6723 Bertner Ave., Houston, TX 77030, USA.

# Tentative Technical Program

The following is the tentative technical program for the 1987 AOCS Annual Meeting to be held May 17-21, 1987, in New Orleans, Louisiana. The final program will be distributed to registrants at the meeting.

## Monday Morning

### Session A

#### Surfactants and Detergents I: Performance and Evaluation

Cochairpersons: L. Kravetz and K. Guin, Shell Development Co.

#### Analysis of Quaternary Ammonium Salts and Other Surfactants by Supercritical Fluid Chromatography

F. Pacholec, C.M. White, R.K. Houck and S.K. Yarbro, Suprex Corp.

#### Evaluation of Automatic Dishwashing Detergents: Critical Parameters Affecting the Estimation of Foam

Paul A. Siracusa and K.W. Dillan, Union Carbide Corp.

#### A Robotic Approach for the Evaluation of Laundry Detergents

E.J. Denton, Shell Development Co.

#### Protease Stabilization by Carboxylic Acid Salts: Relative Efficiencies and Mechanisms

Michael C. Crossin and P. Atwood, Gist-Brocades, USA Inc.; and J. van Ee, Gist-Brocades NV

#### Biodegradation of Nonionic Surfactants Containing Propylene Oxide

Carter G. Naylor, Texaco; F.J. Castaldi and B. Hayes, Radian Corp.

#### Radiolabelled Blood for Detergency Testing: Development and Applications

W.T. Shebs and L. Kravetz, Shell Development Co.

### Session B

#### General I

#### Preparation of Deuterated Methyl 9,12,15-Octadecatrienoates

H. Rakoff, U.S.D.A. Northern Regional Research Center

#### Preparation of Methyl 8c,11c-Eicosadienoate-17,17,18,18-d<sub>4</sub> and Methyl 5c,8c,11c-Eicosatrienoate-17,-

17-18,18-d<sub>4</sub> and Methyl 8c,11c,14c-Eicosatrienoate-17,17,18,18-d<sub>4</sub>

R.O. Adlof and E.A. Emken, U.S.D.A. Northern Regional Research Center

#### Polymorphism of 2-Oleyl di-saturated Acids Triglycerides: POP, SOS, AOA and BOB

K. Sato, Z.H. Wang, N. Sagi, T. Izumi and H. Mori, Hiroshima University and Fuji Oil Co.

#### Solvent Crystallization of Polymorphs of Principal Unsaturated Fatty Acids

K. Sato, N. Yoshimoto, M. Suzuki and M. Kobayashi, Hiroshima University, Nippon Oil and Fats Co. and Osaka University

#### n-Alkanoic Acids: Evaluating Published and Calculating New Properties

C.H. Fisher, Roanoke College

#### Organometallic Reactions Involving Unsaturated Long Chain Fatty Esters

M.S.F. Lie Ken Jie, University of Hong Kong

#### Mortierella Oils: A Novel Source of gamma-Linolenic Acid and Their Peculiar Effects on Blood Cholesterol and Eicosanoids

M. Sugano, T. Ishida, T. Ide, M. Niwa, M. Arima and A. Morita, Kyushu University School of Agriculture and Kirin Brewery

### Session C

#### Free Radicals, Antioxidants, Skin Cancer and Related Diseases I

Chairperson: Homer S. Black, Veterans' Administration Medical Center, Houston, Texas

#### Introductory Comments

H.S. Black, VAMC

#### Free Radicals in Photo-toxicity Mechanisms

Irene E. Kochevar, Harvard Medical School

#### The Role of Reactive Oxygen and Free Radicals in Light-Induced Skin Reactions

Madhukar A. Pathak, Harvard Medical School

#### Reactive Oxygen in the Tumor Promotion Stage of Carcinogenesis

Susan M. Fischer, University of Texas Cancer Center

#### Round Table discussion

## Meetings

### Session D General II

The Effect of Catalytic Hydrogenation on the Oxidative and Emulsification Properties of Soybean Phosphatides

T.J. Pelur and S.S. Chang, Rutgers University

Novel Reaction Products from the Co-oxidation of Methyl Linolenate and Tocopherols

D.T. Coxon, K.E. Peers and E. Mookerjee, AFRC Institute of Food Research

Elucidation of Ethylidene Functionability in High-Temperature Antioxidants by Use of Linalyl Acetate

P.S. Yan and P.J. White, Iowa State University (Honored Student Presentation)

Novel Reaction Products from the Co-oxidation of Methyl Linoleate and Tertiary-Butylhydroquinone (TBHQ)

K.E. Peers and D.T. Coxon, AFRC Institute of Food Research

Thermal and Metal-Catalyzed Decomposition of Methyl Linolenate Hydroperoxides

E.N. Frankel, W.E. Neff, E. Selke and D.D. Brooks, U.S.D.A. Northern Regional Research Center

Quantification of Carbonyl Compounds in Oxidized Low Linoleate, High Stearate and Common Soybean Oils

L.A. Miller and P.J. White, Iowa State University

Identification of Important Volatile Flavor Compounds Formed During Autoxidation of Linoleic and Linolenic Acids

W. Grosch and F. Ullrich, Deutsche Forschungsanstalt für Lebensmittelchemie

### Session E

#### Mycotoxins

Chairperson: E. Lillehoj, U.S.D.A. Southern Regional Research Center

Automated Methods for the Assay of Natural Toxins Using Robotics

A.S. Carman Jr., S.S. Kuan, G.M. Ware, O.J. Francis Jr. and G.P. Kirschenheuter, Food and Drug Administration

The Use of Ten-Gram Samples of Corn for the Analysis of Mycotoxins

O.J. Francis Jr., G.M. Ware, A.S. Carman, G.P. Kirschenheuter and S.S. Kuan, Food and Drug Administration

Recent Field Studies on *Aspergillus flavus* Infection and Aflatoxin Formation in Arizona Cottonseed: Possible Implications

M.A. Klich, P.J. Cotty and L.S. Lee, U.S.D.A.

Southern Regional Research Center

Preharvest Aflatoxin Contamination of Peanuts

T.H. Sanders, R.J. Cole, P.D. Blankenship and R.A. Hill, U.S.D.A. and New Zealand Ministry of Agriculture and Fisheries

Elucidation of Aflatoxin Biosynthesis Using *Aspergillus parasiticus* Mutants

D. Bnatnagar, T.E. Cleveland, S.P. McCormick, A.R. Lax, A.H. Ullah and L.S. Lee, U.S.D.A. Southern Regional Research Center

Aflatoxin Degradation in Naturally Contaminated Products

R.L. Price and K.V. Jorgensen, University of Arizona

## Monday Afternoon

### Session F

Surfactants and Detergents II: Laundry Bleaches—A Technology Review

Chairperson: Helmut Stupel, Shell Chemical Co.

Laundry Bleaches: History and New Frontiers

Dale S. Steichen, R.A. Fong, S.B. Kong and R.J. Wiersema, Clorox Co.

Current Bleach Trends in U.S. Laundry Detergents

Jesse Lynn, Lever Brothers

Chemistry of Long-Chain Peracids Under Laundry Conditions

A.D. Vreugdenhill, T.A.B.M. Bolsman and R. Kok, Koninklijke/Shell-Laboratorium

Trends in New Bleach Technology for Home Laundering

J.E. Massaux, Colgate Palmolive R&D, Belgium

Laundry Bleaches: Recent Developments in Perborate Activator Chemistry

R.A. Fong, D.S. Steichen and J. Wiersema, Clorox Co.

Sanitation with Peroxygen Bleach

R.G. Lewis, Dial Corp.

### Session G

1987 Update on the Separation and Utilization of Important Worldwide Plant Proteins

Cochairpersons: E.W. Lusas and K. Rhee, Texas A&M University

Reduction of Aflatoxin Contaminants by Ammoniation: Regulation and Status

## Meetings

D.L. Park, Food and Drug Administration

The Significance of Plant Trypsin Inhibitors in Man's Diet and Control of Residual Inhibitor Activity

M.R. Gumbmann and M. Friedman, U.S.D.A. Western Regional Research Center

Detoxification and Deallergenation of Castor Meal

K.C. Rhee, B.K. Kim and E.W. Lusas, Texas A&M University

Processing and Utilization of Rapeseed/Canola, Crambe and Sunflower

F.W. Sosulski, University of Saskatchewan

Influence of Thermal History, Strain History and Their Interaction on the Water Holding Capacity of Extruded Northern Bean Flour

V. Vega, Michigan State University

### Session H

Free Radicals, Antioxidants, Skin Cancer and Related Diseases II

Chairperson: Homer S. Black, Veterans' Administration Medical Center, Houston

Photodynamic Damage in Cell Membranes: Stimulatory and Inhibitory Effects of Iron Reductants on Lipid Peroxidation

Albert W. Firotti, The Medical College of Wisconsin

Fenton Reactions in Lipid Phases

K.M. Schaich, Brookhaven National Laboratory

Sunlight, Melanogenesis and Free Radicals in the Skin

Miles R. Chedekel, The Johns Hopkins University

Assessment of Topical Anti-aging Products

Peter T. Pugliese, Xienta Institute

Relation of Dietary Lipids, Lipid Peroxidation and Antioxidants to Ultraviolet Carcinogenesis

Homer S. Black, VAMC Houston

Round Table discussion

### Session I

Hydrogenation

Cochairpersons: R. Becker, Calsicat Division, Malinckrodt Inc., and D. Kravis, Bunge Corp.

Hydrogenation of Canola and Soybean Oil: A Comparison

D.V. Okonek, T.J. Sullivan and O. Nebesh, Harshaw/Filtrol Partnership

Selective Hydrogenation with *tris*(triphenylphos-

phine)chlororhodium (I) Catalyst: Preparation of Octadecenoate Isomers

E.A. Emken, U.S.D.A. Northern Regional Research Center

Determination of Relative Catalyst Activities

R.F. Ariaansz, Harshaw Chemie B.V.

Continuous Hydrogenation of Soybean and Canola Oils

F.V. Lee-Poy, P.W. Sleggs, R.I. Matanic and S.S. Koseoglu, The Cambrian Engineering Group Limited

Reclamation of Nickel from Spent Nickel Catalyst

A. Shukla, P.N. Maheshwari and A.K. Vasishtha, Harcourt Butler Technological Institute

### Session J

Biochemistry of Plant Lipids

Chairperson: J.K. Raison, CSIRO and Macquarie University

Bioorganic Studies of Nordihydroguaiaratic Acid (NDGA)

E.J. Parish, S. Bradford, W.D. Nes and L.R. Jacobson, Auburn University, U.S.D.A. Western Regional Research Center and Purdue University Cancer Center

Genetic Engineering of ACP Levels in Rapeseed

V.C. Knauf, S. Radke, D. Scherer, B. Andrews and J.C. Kridl, Calgene Inc.

Changes in Some Parameters of Developing *Cuphea wrightii* Seeds

R.R. Lowry, I.J. Tinsley and O. Dawydiak, Oregon State University

Sterol Composition and Chemosystematics of the Angiosperm Subclass Caryophylliceae

T.A. Salt, S. Xu, G.W. Patterson and J.H. Adler, University of Maryland and Michigan Technological University

Characterization of Ecdysterone from *Taxus cuspidata* and *Pteridium aquilinum*

P.R. Ripa and J.H. Adler, Michigan Technological University

Metabolism and Function of Sterols in *Phytophthora cactorum*

W.D. Nes, U.S.D.A. Western Regional Research Center

Mechanism and Regulation of Sterol Uptake in Fungi

R.T. Lorenz and L.W. Parks, North Carolina State University (Honored Student Presentation)

Fatty Acid Composition from Sunflower Seed Tissue Cultures

## Meetings

G. Fuller, R. Pacovsky, A. Stafford and P. Hanner,  
U.S.D.A. Western Regional Research Center

Lipid Composition of Soybean Somatic Embryos and  
Somaclonal Variants

M.L. Dahmer, D.F. Hildebrand, J.A. Berger, G.L.  
Veach, W.A. Parrott and G.B. Collins, University  
of Kentucky

Role of Membrane Lipids in Acclimating Plants to  
Temperature Stress

J.K. Raison, CSIRO and Macquarie University

### Session K

#### Poster Session I

Phospholipase A<sub>2</sub> Hydrolysis of Phosphatidylcholine  
in Vesicles Is Affected by Cholesterol and by  
Lysophosphatidylcholine in the Outer Bilayer Leaflet  
V.V. Kumar and W.J. Baumann, The Hormel  
Institute

Antineoplastic Effects of n-3 and n-6 Polyunsatu-  
rated Fatty Acids: Correlation with Stimulation of  
Lipid Peroxidation in the Cells

M.E. Begin, G. Ells and D.F. Horrobin, Efamol  
Research Institute

Factors Affecting Singlet Oxygen Oxidation of  
Soybean Oil

E.C. Lee and D.B. Min, Ohio State University

Evidence for in vitro Human Cyclooxygenase Meta-  
bolism of Timnodonate to PGBE<sub>2</sub> During Long-  
Term MaxEPA Dietary Supplementation

A. Ferretti and V.P. Flanagan, U.S.D.A. Beltsville  
Human Nutrition Research Center

Effects of gamma-Linolenic Acid (GLA) on Plasma  
Fatty Acids Which Are Markers of Risk of Coronary  
Heart Disease

D.F. Horrobin and M.S. Manku, Efamol Research  
Institute

Lysophosphatidylcholine Metabolism in Human En-  
dothelial Cells is Modulated by Cholesterol and  
Hypolipidemic Drugs

B. Malewicz and W.J. Baumann, The Hormel  
Institute

The Effect of Feeding Columbic Acid to Essential  
Fatty Acid-Deficient Rats

H.S. Hansen, B. Jensen, E. Nielsen and S.  
Jacobsen, Royal Danish School of Pharmacy

Intensification of Essential Fatty Acid Deficiency by  
Restriction of Protein Intake

B.A. Svingen, S.B. Johnson, P.A. Moyer and R.T.  
Holman, The Hormel Institute

Plasma and Liver Fatty Acids in Rats Fed Wheat

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## Meetings

Gluten Supplemented with Lysine and Cholesterol  
Y.S. Huang and D.F. Horrobin, Efamol Research  
Institute

Distribution of Cholesterol in Milk Fat Fractions  
J. Arul, A. Boudreau, J. Makhoul and R. Tardif,  
Université Laval

Comparison of Direct Transesterification of Fatty  
Acids with Procedures Applied to Extracts of Human  
and Cow Milk Fats  
J. Bitman and D.L. Wood, U.S. Department of  
Agriculture

### Tuesday Morning

#### Session L

Surfactants and Detergents III: Polymers in The  
Household Product Formulations

Chairperson: Arno Cahn, Arno Cahn Consulting  
Services Inc.

Performance Benefits of Acrylic/Maleic Co-Polymers  
in Laundry Detergents  
M.A. Reynold, BASF Corp.

New Carbomer Resins for the Toilet Bar Industry  
M.K. Nagarajan, B.F. Goodrich Co.

Silicone Polymers as Foam Control Agents  
George Sawicki, Dow Corning Ltd.

Practical Effects of Polycarbonates in Detergent  
Formulations  
George T. McGrew, Alco Chemical Corp.

Polycarboxylates in Soda Ash Detergents  
Alice Hudson and F.E. Woodward, Surface Chem-  
ists of Florida Inc., and G.T. McGrew, Alco  
Chemical Corp.

Acrylate Polymers in Hard Surface Cleaners  
Jean Dupré, Rohm and Haas Co.

Calcium Binding Capacity—An Attempt at a Defini-  
tion  
E.W. Winkler, BASF AG

#### Session M

New Concepts and Practices in Structuring Vegetable  
Protein

Cochairpersons: R. Hauck and G. Rokey

Extrusion Performance of Functionally Modified  
Oilseed Proteins  
R. Villota, University of Illinois

Extrusion of Oilseed Products Prior to Solvent  
Extraction

J. Farnsworth, Texas A&M University

Potential Application of Wheat Proteins in Meat  
Products  
A. Davis, Kansas State University

Extruded Whole Cottonseed as a Protein Source for  
Dairy Cattle  
A. Nipper, Louisiana State University

Extrusion of Vegetable Protein in Aquatic Feeds  
J. Kearns and A. Lawrence, Wenger International  
and Texas A&M University

Manufacturing and Applications of Textured Soy  
Concentrate  
G. Rakes, Central Soya Co. Inc.

Lipid Protein Interactions on Structure Stabilization  
of Extruded Protein Isolates  
J.A.G. Areas, Universidade de Sao Paulo

#### Session N

Lipids and Health I

Chairperson: R. Nicolosi, University of Lowell

Early Onset of Coronary Heart Disease and Hyper-  
tension: A Problem for Prevention  
G.S. Berenson, Louisiana State University Medical  
Center

Are the Unusual Blood Fatty Acid Patterns in  
Eskimos Due to High Consumption of Fish Oils?  
D.F. Horrobin, M.S. Manku and C. Bates, Efamol  
Research Institute

Monounsaturates vs. Polyunsaturates in the Control  
of Serum Cholesterol  
D.M. Hegsted, Harvard Medical School

Effects of Dietary Fat/Cholesterol Interactions on  
Plasma Lipoprotein Levels of Non-Human Primates  
R.J. Nicolosi, University of Lowell

Divergent Effects of Dietary Carbohydrate Types on  
Serum Lipoproteins of Non-Human Primates  
S.R. Srinivasan, Louisiana State Medical Center

The Influence of Dietary Soybean and Egg Lecithin  
on Plasma and Tissue Lipid Levels in Hypercholes-  
terolemic Guinea Pigs  
B.C. O'Brien, Texas A&M University

Analysis of Serum Lipoproteins Using Immobilized  
Enzyme System by HPLC  
I. Hara, K. Makino, T. Sasaki and M. Okazaki,  
Toya Sode Mfg. Co., Kyoto Institute of Tech-  
nology and Tokyo Medical and Dental University

The Molecular Weight of Apo B 100 in Low Density  
Lipoprotein Subfractions in Normal Males

## Meetings

T.S. Kahlon and F.T. Lindgren, U.S.D.A. Western Regional Research Laboratory and University of California

### Session O

#### Lipoxygenase Pathways of Plants and Animals I

Chairpersons: H. Gardner and G. Carter

Primary Structures of Soybean Lipoxygenase-1 and -3  
B. Axelrod, Purdue University

Lipoxygenase Catalyzed Reactions  
J.F.G. Vliegthart, Utrecht University

The Lipoxygenases in Developing Soybean Seeds, Their Characterization and Synthesis in vitro  
M.O. Funk, University of Toledo

Inactivation of Soybean Lipoxygenase by Desferrioxamine B and Ferene S. Removal of the Iron  
M.J. Gibian, Seton Hall University

Plant Lipoxygenases: Characterization, Cooxidation and Control  
B.P. Klein, University of Illinois

Chemical and Enzymatic Properties of a Lipoxygenase from Immature English Peas  
J.R. Whitaker, University of California-Davis

### Session P

#### The Biology, Biochemistry and Technology of Lipases I

Chairpersons: S. Stegink and G. Abraham, U.S.D.A. Southern Regional Research Center

Introduction  
S. Stegink

Lipid-Lipid Complexes: Properties and Effects on Lipase Binding to Surfaces  
H.L. Brockman, W.E. Momsen and T. Tsujita, The Hormel Institute

Purification of Equine Post-heparin Plasma Lipoprotein Lipase and Its Selective Determination on Induction of Hypertriglyceridemia  
J.E. Bauer, University of Florida

Characteristics and Biosynthesis of Seed Lipases in Maize and Other Plant Species  
A.H.C. Haug, University of South Carolina

Effect of Gibberellic Acid on Lipase Distribution in Barley Aleurone Layers  
D.E. Fernandez and L.A. Staehelin, University of Colorado

Specificity of Free and Immobilized Lipases from *Mucor meihei*  
R.G. Jensen, University of Connecticut

Methods for Purification and Characterization of *Mucor meihei* lipase  
B. Høge-Jensen, Novo Industri A/S

Substrate Specificity of the Exocellular Lipases from Two Strains of *Geotrichum candidum*: A Comparative Study  
S. Aneja, R. Aneja and W. Hollin, Nutrimed Biotech., Cornell University and Clemson University

Lipase Selectivities  
P.E. Sonnet, U.S.D.A. Eastern Regional Research Center

Isolation and Characterization of a Lipase for Cheddar Cheese Flavor Development  
M.V. Arbige and S. Leung, Genecor Inc.

Lipases as Key Reagents in the Preparation of the Phosphoinositides  
R. Aneja, S. Aneja and A. Elbaggari, Nutrimed Biotech.

## Tuesday Afternoon

### Session Q

#### Surfactants and Detergents IV: Advantages of Surfactant Mixtures

Chairperson: John F. Scamehorn, University of Oklahoma

Detergency Study of Mixed Surfactant Systems  
Jeff C.L. Hsieh, W.D. Turley, J.G. Briones, J.G. Weers and D.R. Scheuing, Clorox Co.

Stability of Detergent Enzymes in Mixtures of Anionic and Nonionic Surfactant  
Daniel Kochavi, V.A. Lentner and D.G. McQuillen, Novo Laboratories

Behavior of Mixed Surfactant Systems Containing Alkyl Polyglycoside Nonionics  
Randal M. Hill, Horizon Chemical Co.

Adsorption Behavior of Anionic/Cationic Surfactant Mixtures  
Osamu Okumura, T. Satsuki and S. Ohta (speaker), Lion Corp.

Precipitation of Anionic/Cationic Surfactant Mixtures  
John F. Scamehorn, K.L. Stellner, J.G. Amante and J.H. Harwell, University of Oklahoma

Synergism in Binary Mixtures of Surfactants. VII.

## Meetings

### Synergism in Foaming and Its Relation to Other Types of Synergism

Milton J. Rosen and Z.H. Zhu, Brooklyn College

### Synergism in Binary Mixtures of Surfactants. VIII. Effect of the Hydrocarbon on Surfactant Interaction in the Hydrocarbon/Water Systems

D.S. Murphy and M.J. Rosen, Brooklyn College

### Solubilization and Solubility Kinetics of Oil Mixtures in Aqueous Mixed Surfactant Solutions: Consequences for Separation Processes

Anthony J.I. Ward and K. Quigley, University College (Dublin)

### Advantages of Surfactant Mixtures in Removal of Heavy Metals from Water Using Micellar-Enhanced Ultrafiltration

John F. Scamehorn, L.W. Brant, S.D. Christian, K.L. Stellner and R.T. Ellington, University of Oklahoma

## Session R

### Functionality of Oilseed and Legume Protein

Chairperson: M. Uebersax

### Current Status of Soy Protein Functionality in Food Systems

C.V. Morer, Clemson University

### Functional Characteristics of Cowpea Flours in Foods

K.H. McWatters, University of Georgia

### Protein Conformation in Relation to Functionality

M.A.H. Ismond, S.D. Arntfield and E.D. Murray, University of Manitoba

### Pea and Lentil Protein Extraction and Functionality

B.S. Swanson, Washington State University

### Effects of Processing on the Functional Properties of Canola/Rapeseed Protein

S.M. McCurdy, POS Pilot Plant Corp.

### Production and Functional Characteristics of Protein Concentrates from *Phaseolus vulgaris*

A.L. Kohnhorst, M.A. Uebersax and M.E. Zabik, Michigan State University

### Functionality of Peanut Seed Proteins

J.P. Cherry, U.S.D.A. Eastern Regional Research Center

## Session S

### Lipids and Health II

Chairperson: P. Wells

### Influence of Dietary Vitamin E and Fats on Age

### Associated Changes in Brain on Regional Alpha-Tocopherol, Lipid Peroxidation and PGE<sub>2</sub> Synthesis

M. Meydani, S.N. Meydani and J.B. Blumberg, U.S.D.A. Human Nutrition Research Center on Aging at Tufts University

### Dietary and Age Associated Changes in Lung Prostanoid Synthesis

S.N. Meydani, M. Meydani, L.M. Stocking and J.B. Blumberg, Human Nutrition Research Center on Aging at Tufts University

### Isomeric Fatty Acids: Effect of Individual Monoenes on Lipid Class Profiles

R. Wood, M.J. Pirwitz and D. Bagnall, Texas A&M University

### Isomeric Octadecadienoates of Rat Liver Phospholipids

R.T. Holman, F. Pusch, B. Svingen, D.M. Sand and H.J. Dutton, The Hormel Institute

### The Influence of Dietary Fat on the Lipogenic Activity and Fatty Acid Composition of Rat White Adipose Tissue

G.J. Nelson, D.S. Kelley, P.C. Schmidt and C.M. Serrato, U.S.D.A. Western Human Nutrition Research Center

### Phospholipid Profile and Production of Metabolites of Prostaglandin E<sub>2</sub> and Thromboxane A<sub>2</sub> (PGE<sub>2</sub>) and Thromboxane A<sub>2</sub> (TXA<sub>2</sub>) by Murine Colonic Epithelium: Effect of Dietary Fat

N.M. Robblee and R.P. Bird, Ludwig Institute for Cancer Research (Honored Student Presentation)

### Gamma Linolenic Acid and Salt-Induced Hypertension in the Borderline Hypertensive Rat

D.E. Mills and R.P. Ward, University of Waterloo

### Linoleic Acid Requirement of Fats Fed *trans* Fatty Acids

J.L. Zevenbergen, Unilever Research

### Reaction of 5,6-Epoxycholestanols with Hydrogen Chloride and with Simulated Gastric Juice

G. Maerker and E.H. Nungesser, U.S.D.A. Eastern Regional Research Center

## Session T

### Lipoxygenase Pathways of Plants and Animals II

Chairpersons: H. Gardner and G. Carter

### The Linoleic and Linolenic Acid Cascades in Plants

B.A. Vick, U.S.D.A. Metabolism and Radiation Research Laboratory

### Enzymic Lipid Peroxidation in Mushrooms

W. Grosch, Deutsche Forschungsanstalt für Lebensmittelchemie

## Meetings

### On the Role of Lipoxygenase in Higher Plant Defense Mechanisms

H.J. Grambow, Institut für Biologie III

### Lipoxygenase Metabolism in Potato Tuber and Cell Cultures

E.C. Lulai, U.S.D.A. Potato Research Laboratory

### An Active Site Proposal for Plant Lipoxygenases

H.W. Gardner, U.S.D.A. Northern Regional Research Center

### Round Table discussion

## Session U

### The Biology, Biochemistry and Technology of Lipases II

Chairpersons: G. Abraham and S. Stegink

#### Introduction

G. Abraham

#### Molecular Cloning of the DNA of a Lipase Producing Fungus

M.J. Hass, U.S.D.A. Eastern Regional Research Center

#### Interesterification of Oils and Fats Using Lipases in Micro-Emulsions as Catalysts

A.R. Macrae, Unilever Research

#### Lipase Catalysis in Dry Organic Solvents

A.M. Klibanov, Massachusetts Institute of Technology

#### Lipase Made Active in Hydrophobic Media

Y. Saito, Tokyo Institute of Technology

#### Improved Transesterification Through Enzyme Engineering

A.J. Poulou, M.J. Pepsin, D.A. Estell and M.V. Arbige, Genecor Inc.

#### Characteristics of an Immobilized Lipase for the Commercial Synthesis of Esters

C.A. Miller, H. Austin, J. Gonzalez and L. Posorske, Novo Laboratories

#### Process Consideration of Continuous Fat Modification with an Immobilized Lipase

L. Posorske, G. LeFebvre and C.A. Miller, Novo Laboratories

#### Enzyme Immobilization Technology for Specialty Chemical Production

G.A. Lee, Dow Chemical Co.

#### Lipase Immobilized on a Hydrophobic Microporous Support for Hydrolysis of Fats

C. Brady, Akzo Chemie America

## Session V

### Poster Session II

#### Inactivation of Trypsin Inhibitors in Whole and Cracked Soybeans

D.J. Sessa, E.C. Baker and J.P. Friedrich, U.S.D.A. Northern Regional Research Center

#### Salt Soluble Proteins of Grain Sorghum: A Physicochemical Comparison of Varieties

J.N. Neucere, U.S.D.A. Southern Regional Research Center

#### The Inhibitory Effect of Neem (*Azadirachta indica*) Leaf Formulations on Aflatoxin Synthesis in *Aspergillus parasiticus*

D. Bhatnagar and S.P. McCormick, U.S.D.A. Southern Regional Research Center

#### Environment Improvement and Energy Saving, a New Concept for Vacuumplant for the Edible Oil Industry

H. Hoeg-Petersen and J. Rolfgaard, Atlas-Danmark A/S

#### Preparation of Trehalose and Sorbitol Fatty Acid Polyesters by Interesterification

C.C. Akoh and B.G. Swanson, Washington State University

#### Saponification of Cholesteryl Esters

M.P. Zubillaga and G. Maerker, U.S.D.A. Eastern Regional Research Center

#### Volatile Components of Menhaden Fish Oil

T.C-Y. Hsieh, S.S. Williams and W. Vejaphan, Louisiana State University

#### Quality Assessment of Oils During Heating and Frying

L-B. Hau, L.S. Hwang, and P-K. Young, National Taiwan University

#### Determination of Gossypol in Iranian Cottonseed, Cottonseed Meal and Cottonseed Oil

F. Malek and P. Zandi, National Institute of Nutrition (Iran)

#### Using Near Infrared Methodology for Measuring Oilseed Quality

J.P. Madacsi, F.W. Parrish and R.J. Berni, U.S.D.A. Southern Regional Research Center

#### Phosphorus and Trace Metal Analysis by ICP

P. Kassa and J.M. Bogdanor, W.R. Grace & Co.

## Wednesday Morning

### Session W

#### Surfactants and Detergents V: Surfactant Applications

## Meetings

Chairperson: Nelson F. Borys, Horizon Chemical Co.

Methyl Glucoside Esters—Properties and Applications

Robert A. Aleksejczyk and C.D. Roth, Horizon Chemical Co.

Interactions of Surfactants with Alumina Based Thickening Agents

Dewey L. Smith, Vista Chemical Co.

Oleochemical Surfactants and Lubricants in the Textile Industry

Thomas J. Proffitt Jr. and H.T. Patterson, E.I. du Pont de Nemours & Co. Inc.

Physico-Chemical Properties of the Aqueous Vesicle Dispersion Formed with Polyoxyethylene Hydrogenated Castor Oil Ether

Teruo Horiuchi, H. Fukuda and M. Tanaka, Lion Corp.

### Session X

Update on Automated Analytical Methods

Chairpersons: E.G. Perkins, University of Illinois, and R. Sleeter, A.D.M.

Measurement of Oil and Fat Using NIRA Procedures

R.B. Roy, Technicon Industrial Systems

Dynamic Headspace Analysis of Vegetable Oils by Capillary Gas Chromatography. Elimination of Adsorbent Trap

G. Spyres, A.E. Staley Manufacturing Co.

Nephelometric AI Analysis of Fluidized Lecithin

R.D. Sinram, A.E. Staley Manufacturing Co.

Robotics—The Next Step in Laboratory Automation

J.N. Little and K. Dobson, Zymark Corp.

On-Line, Free Fatty Acid Analyzer Utilizing Flow Injection Technology

P. Karges, FIATron Process Systems

Automated Quantitative Analysis of Isolated *trans* Isomers Using Fourier Transform Infrared Spectroscopy Incorporating Improvement in the Procedure

R.T. Sleeter and M. Matlock, ADM Co.

Studies on the Crystallization Behavior of the Confectionery Fats by Pulse Nuclear Magnetic Resonance Employing Various Tempering Modes

V.K.S. Shukla, Aarhus Oliefabrik

### Session Y

Proteins and Health

Chairperson: George Liepa, Texas Woman's University

Dietary Protein Effects on Blood Amino Acids, Hormones and Lipids

A. Sanchez and R.W. Hubbard, Loma Linda University

Studies on Serum Cholesterol Response to Soya Protein and Casein in Humans and Experimental Rabbits

S. Mukherjee and B. Basu, University College of Science (Calcutta)

Effects of Animal and Plant Protein-Containing Diets on Gallstone Formation and Serum and Biliary Constituents in Male and Female Mice

M.G. Gorman, J.M. Anderson, J. Johnson, J. Ashby and G.U. Liepa, Texas Christian University and Texas Woman's University

Alternative Dietary Protein Sources and Their Effects on Synthesis and Absorption of Cholesterol in Hamster During Cholelithiasis

I-F. Chen, N.M. DiMarco, G.U. Liepa and B. Kudchodkar, Texas Woman's University and Texas College of Osteopathic Medicine

The Effect of Dietary Cottonseed Protein on Urinary Sodium, Potassium and Aldosterone Excretion in Young Adult Women with Down's Syndrome

C.C. Bowman, A.N. Milner, K. Lawson, M.A. Gorman and G.U. Liepa, Texas Christian University and Texas Woman's University

Composition of Major Fatty Acids in Triglycerides from Selected Tissues of Harp Seal (*Phoca groenlandica*) Mother-Pup Pairs During Lactation and in Pups During Fasting

M. Yurkowski, Fisheries and Oceans Canada

Moisture, Fat and Cholesterol Content of Some Raw, Barbecued and Cooked Meat Organs of Beef and Mutton

F.A. Mustafa, Mosul University (Iraq)

### Session Z

Lipoxygenase Pathways of Plants and Animals III

Chairpersons: H. Gardner and G. Carter

Regulation of Human Leukocyte 5-Lipoxygenase

C.A. Rouzer and B. Samuelsson, Merck Frosst Canada Inc. and Karolinska Institute

Kinetic Mechanism for Regulation of 5-Lipoxygenase Catalysis by Activators and Inhibitors

D. Aharony, Stuart Pharmaceuticals

Stereoselective Lipoxygenase Reactions Initiated at Carbon 10 of Arachidonic Acid

A.R. Brash, D.J. Hawkins, C. Yokoyama and S.

## Meetings

Yamamoto, Vanderbilt University and Tokushima University School of Medicine

Lipoxygenase in the Male Reproductive System  
S. Grossman, I. Schön, Y. Sofer, N. Magid and B. Bartoov, Bar-Ilan University

### Session AA

#### Fats and Oils Processing I

Chairpersons: Peter Wan, Anderson Clayton, and Laurence Johnson, Iowa State University

CFS Process for the Extraction of Oilseeds Utilizing Gas Solvents

R. Abrishamian, P. Rice and A. Meisinger, CF Systems Corp.

A Process for Extracting Wax and Detoxification of Jojoba Meal

L.A. Johnson and N.Z. Sadek, Iowa State University and Texas A&M University

Mathematical Simulation of an Oilseed Screw Press  
V.S. Vadke, F.W. Sosulski and C.A. Shook, University of Saskatchewan (Honored Student Presentation)

Automation and Process Control in the Fat and Oil Processing Industry

Z. Zalicer, H.L.S. Ltd.

Meadowfoam: Physical and Chemical Characteristics  
R.H. Purdy and C.D. Craig, Richard H. Purdy Inc. and Oregon Meadowfoam Growers Association

Sterols and Tocopherols of Meadowfoam Oil  
R.R. Lowry, I.J. Tinsley and R.C. Paeth, Oregon State University

## Wednesday Afternoon

### Session BB

Surfactants and Detergents VI: Surfactant Performance and Structure Relationships

Chairperson: Milton J. Rosen, Brooklyn College of the City University of New York

Surface Chemical Properties of Alkyl Methyl Sulfate-Ionic Surfactant Systems

Guo-Xi Zhao and De-Min Zhu, Beijing University

Effect of the Non-Aqueous Phase on Interfacial Properties of Surfactants. 1. Thermodynamics and Interfacial Properties of a Zwitterionic Surfactant in Hydrocarbon/Water Systems

D.S. Murphy and M.J. Rosen, Brooklyn College

Correlation Between Phase Behavior of Ternary

Systems and Fatty Soil Removal  
F. Schambil and M.J. Schwuger, Henkel KGaA

Wetting and Adsorption Properties of Aqueous Solutions of Fluorocarbon and Hydrocarbon Surfactants on Paraffin

Bu-Yao Zhu and Yan Xiang, Beijing University

Effect of Molecular Structure on the Physical Properties and Performance of Linear Alcohol Ethoxylates

M.F. Cox, Vista Chemical Co.

N-Alkyl Pyrrolidones, A New Class of Surfactants  
R.B. Login, GAF Corp.

Micelle Formation, Adsorption and Applications of Alkyl Polyglycosides

Randal M. Hill and M. Swartzlander, Horizon Chemical Co.

Analysis and Interfacial Activity of Sorbitan Oleates  
L.J. Nowakowski and R.L. Potter, American Cyanamid Co.

### Session CC

#### General Analytical Topics

Chairperson: V. Shukla, Aarhus Oliefabrik A/S

Dimer Fatty Acids in Heated Fats: Synthesis, Separation and Characterization

C. Christopoulou and E.G. Perkins, Colgate Palmolive Co. and University of Illinois

Quantitative Determination of Monomeric Cyclic Fatty Acids in Fats and Oils: Analytical Considerations

J.A. Rojo and E.G. Perkins, University of Illinois (Honored Student Presentation)

High Performance Liquid Chromatographic Analyses of Mixed Glycerol-Ether-Esters

T.A. Foglia, P. Vail and P. Sonnet, U.S.D.A. Eastern Regional Research Center

Separation and Determination of Hydroperoxides from Oxidized Triglycerides Using HPLC

E.M. Kay, F.W. Sosulski and A.R. McCurdy, University of Saskatchewan (Honored Student Presentation)

Discrimination Between Oxidation and Maillard Browning by Means of Fluorescence in Model Systems and Foods

W.L. Porter, E.D. Black, Y-D. Kim, L. Hoke and J.G. Kapsalis, U.S. Army Natick Center

A Rapid Method for the Determination of Total Polar Components in Frying Oils

S.L. Melton and D. Sykes, University of Tennessee

## Meetings

A Rapid Fractionation Procedure for Isolation of Non-Triglyceride Components in Vegetable Oils  
S.L. Melton, University of Tennessee

Determination of Triglyceride Composition  
T. Grossberger and E. Rothschild, CPC International

A Rapid Equilibrium Method of Analytical Extraction of Soybean Oil  
G. Sheu, H. Snyder, P. Clark, H. Brown and K. Wiese, University of Arkansas

Rapid Analysis of Long Chain Quaternary Ammonium Compounds by Gas Chromatography  
C.N. Wang and L.D. Metcalfe, Akzo Chemie America

### Session DD

#### Lipids and Health III

Chairperson: P.V. Johnston, University of Illinois

Unconventional Oils and Their Beneficial Roles  
C. Rukimini, National Institute of Nutrition (India)

Fat Content Labelling of Foods in the United Kingdom  
R. Burt, Ministry of Agriculture, Fisheries & Food

Nonesterified Fatty Acids in Myocardial Infarction in Humans  
S.B. Johnson, J.W. Crofts, P.L. Ogburn and R.T. Holman, The Hormel Institute, and Women and Infants' Hospital of Rhode Island

Chain Shortening of Palmitic Acid in Human Subjects  
M.T. Clandinin, S. Kehtarpal, E. Kielo, M. French and Y.K. Gosh, University of Alberta

Deposition and Distribution of Fatty Acids in Tissue Lipids in Aquaria Fed Cod (*Gadus morhua*)  
Q. Lie and G. Lambertsen, Institute of Nutrition (Norway)

Some Potentially Negative Aspects of Supplemental Nutrition with Marine Oils and Concentrates  
R.G. Ackman, W.M.N. Ratnayake and B. Olsson, Technical University of Nova Scotia

Composition of Commercially Available Fish Oil Capsules  
A.M. Guarino, A. Sheppard, W. Wekell, S. Plakas and J. Iverson, Food and Drug Administration

Interaction of (n-3) and (n-6) Fatty Acids in Desaturation and Chain Elongation Pathways of Cultured Cells  
H.W. Cook and M.W. Spence, Dalhousie University

Effect of Dietary (omega-3) Fatty Acids and Cholesterol on delta-6-Desaturase Activity in Rat Liver Microsomes

M.L. Garg, E. Sebokova, A.B.R. Thomson and M.T. Clandinin, University of Alberta

Analysis of Cardiac Membrane Phospholipid Peroxidation Kinetics as Malondialdehyde (MDA): Quantitation of the Non-Specificity of Thiobarbituric Acid (TBA)-Reactivity

D.R. Janero and B. Burghardt, Hoffmann-La Roche Inc.

### Session EE

#### Lipoxygenase Pathways of Plants and Animals IV

Chairpersons: H. Gardner and G. Carter

Control of Prostaglandin Biosynthesis by Weak Cyclooxygenase Inhibitors  
R.W. Egan, P.H. Gale and M. Minnicozzi, Schering Research and Merck Sharp and Dohme Laboratories

Inhibitors of 5-Lipoxygenase  
D.W. Brooks, J.B. Summers, F.A.J. Kerdesky, J.H. Holms, H. Mazdiyasn, J.D. Ratajczyk, R.D. Dyer and G.W. Carter, Abbott Laboratories

2,3-Dihydro-6-3-(2-hydroxymethyl)phenyl-2-propenyl-5-benzofuranol (L-651,896), A Novel Dual Inhibitor of Prostaglandin and Leukotriene Synthesis with Potent Topical Antiinflammatory and Analgesic Activity  
R.J. Bonney, Merck Sharp & Dohme Research Laboratories

Overview of the Physiology and Pharmacology of Peptidoleukotrienes with Special Reference to Leukotriene Receptors and Antagonists  
R.D. Krell, Stuart Pharmaceuticals

Round Table discussion

### Session FF

Fats and Oils Processing II: Physical Refining, Bleaching and Deodorizing  
Chairpersons: R. Carr, POS Pilot Plant Corp., and T. Mag, Canada Packers Inc.

Membrane Degumming, Refining and Bleaching of Crude Vegetable Oils  
S.S. Koseoglu, E.W. Lusas and K.C. Rhee, Texas A&M University

Silica Refining of Edible Oil  
J.M. Bogdanor and W.A. Welsh, W.R. Grace & Co.

Chlorophyll Removal from Edible Oils

## Meetings

J.N. Pryor, J.M. Bogdanor and W.A. Welsh, W.R. Grace & Co.

Factors Influencing the Filtration of Triglyceride Oil Suspensions of Bleaching Earth  
D.B. Shaw, F.B.J. Wright and P.K. Stemp, Laporte Inorganics

Alternative Layered Compounds for Bleaching Oils: A Comparison with Acid-Activated Montmorillonite  
D.R. Taylor, C.B. Ungermann and D.B. Jenkins, Harshaw/Filtrol Partnership

The Use of Bleaching Clay: An Optimization  
Werner Zschau, Süd-Chemie AG

Bleaching  
I. Otteson

Bleaching  
D. Taylor, Harshaw/Filtrol Partnership

Continuous Winterization of Soybean Oil  
B.T. Papahronis, Beatrice/Hunt-Wesson

Experience with Physical Refining of Canola Oil  
T.K. Mag, H.G. Duff and J.H. Ritchie, Canada Packers Inc.

Bleaching Efficiency of Adsorbent and Bleachability of Oil  
E.H. Goebel, Quimica Sumex S.A. de C.V.

### Thursday Morning

#### Session GG

Environmental Control—Hazardous Waste Handling and Disposal

Chairperson: Michael J. Boyer, AES Engineering Inc.

Update of Recent Developments Under the Resource Conservation and Recovery Act (RCRA)

Recovery of Spent Hydrogen Nickel Catalysts  
Scott Fisher, Falconbridge Trading Co., and R. Hastert, Harshaw/Filtrol Partnership

Recent Developments Under The Toxic Substances Control Act (TSCA)  
Jack Wagner, Resource Consultants Inc.

Current Method for Handling Contaminated Bleaching Clays

Leaking Underground Storage Tanks (LUST)—Today and Tomorrow

What the Chemical Manager Should Know About Superfund II Re-authorization

Michael E. Pisani, P.E. ERM-Southwest

Corporate Response to PRP Notification: We've Got the Bad News—Now What?  
David C. Garrett III, Mallory and Evans Contracting

Remedial Responses to CERCLA Hazardous Waste Sites  
Joseph T. Surowiec, AES Engineering Inc.

#### Session HH

Biochemistry and Molecular Biology of Oilseed Protein and Carbohydrates  
Chairpersons: T. Kuo and W. Wolf, U.S.D.A. Northern Regional Research Center

Galactinol Synthase and Partitioning Between Raffinose Saccharides and Sucrose  
D.M. Pharr, D.M. Saravitz and T.E. Carter Jr., North Carolina State University

Catabolic Control of Raffinose Saccharides in Plant Seeds During Germination  
T.M. Kuo, D.C. Doehlert and W.J. Wolf, U.S.D.A. Northern Regional Research Center

Subclassification of Soybean Bowman-Birk Isoinhibitors  
A. Tan-Wilson, State University of New York

Developmental and Organ Specific Control of the Soybean Seed Lectin Gene Is Maintained in Transformed Tobacco Plants  
L.O. Vodkin, J.T. Lindstrom, R.W. Harding and R.M. Goeken, U.S.D.A. Beltsville Agricultural Research Center

Expression of Soybean 3-Conglycinin Genes in Transformed Plants  
R.N. Beachy, Z.L. Chen, S. Naito, I. Nakamura and N.S. Pan, Washington University

The Effect of Site Directed Mutation on Assembly of Proglycinin Trimers  
N.C. Nielsen and C.D. Dickinson, Purdue University

The Structure and Expression of Storage Protein-Like Genes in the Soybean Leaf  
P. Staswick, University of Nebraska

The Storage Protein of the Cotton Seed  
L. Dure III, University of Georgia

Developmental Expression and Structural Organization of Sunflower Storage Protein Genes  
T. Thomas, R. Allen, E. Cohen, R.V. Haar, M. Kiefer, C. Adams, J. George, K. Koprivnikar and C. Nessler, Texas A&M University



## Meetings

### Session II

#### General III

Heat of Combustion of Fatty Esters, Fatty Alcohols and Triglycerides

B. Freedman and M.O. Bagby, U.S.D.A. Northern Regional Research Center

Diesel Fuel from Thermal Decomposition of Vegetable Oils

A.W. Schwab, G.J. Dykstra, E. Selke, S.C. Sorenson and E.H. Pryde, U.S.D.A. Northern Regional Research Center

n-Heptanoic Acid from the Reaction of 2-Octanol with Molten Caustic

N.E. Lawson and T.E. Farina, Union Camp Corp.

Heptaldehyde and Undecylenic Acid from Castor Oil

G. Das, R.K. Trivedi and A.K. Vasishtha, Harcourt Butler Technological Institute

The Keto Fatty Acid Content of Fats and Oils

D.P. Schwartz and A.H. Rady, U.S.D.A. Eastern Regional Research Center

Effect of Heating a Fast-Food Fat on Some Minor Classes

A.H. Rady and D.P. Schwartz, U.S.D.A. Eastern Regional Research Center

Comparison of the Structures of Cyclic Fatty Acid Monomers Isolated from Heated Linseed and Sunflower Oils

J.L. Sebedio, J.L. LeQuere, O. Morin, J. Prevost and A. Grandgirard, I.N.R.A. Station de Recherches sur la Qualite des Aliments de l'Homme, and ITERG

The Effect of Different Phospholipids Upon the Stability of Oil-in-Water Emulsions for Parenteral Nutrition

K-C.M. Rhee and S.S. Chang, Rutgers University

The Influence of Monoglycerides on the Shelflife, Textural Properties and Dough Rheology of Corn Tortillas

T.J. Twillman and P.J. White, Iowa State University

### Session JJ

#### Fats and Oils Processing III: Oil Quality

Chairpersons: P. Wan, Anderson Clayton, and L. Johnson, Iowa State University

An Analysis Scheme for Estimation of Crude Oil Quality

J.M. Snyder, T.L. Mounts, R. Holloway and K. Joyce, U.S.D.A. Northern Regional Research Center

HPLC Criteria for Determination of Grade of Commercial Olive Oils

R.V. Flor and L.T. Tiet, U.S. Customs Service

Update on Control of Olive Oil Adulteration in the United States

D. Firestone and R.J. Reina, Food and Drug Administration

Quality Evaluation of Soybeans Received in Europe

T.L. Mounts, J.M. Snyder, T.T. Hinsch, A.J. Bongers and A.R. Class, U.S. Department of Agriculture

Free Fatty Acid Content of Damaged Soybeans

M.L. Iverson, U.S. Federal Grain Inspection Service

Improved Methodology for Flavor and Oxidative Stability of Soybean, Sunflower and Low-Erucic Rapeseed (Canola) Oils

K. Warner and E.N. Frankel, U.S.D.A. Northern Regional Research Center

Sensory and Chemical Evaluation of Stored Oil-Roasted, High-Oleic Confectionery Sunflower Kernels

J.A. Robertson, B.G. Lyon, W.H. Morrison III and J.F. Miller, U.S.D.A. Rayburn Research Center and North Dakota State University

Trends in Sunflower Seed Oil Production and Consumption

J. Henderson and L. Kleingartner, National Sunflower Association

Directed Interesterification of Peanut Oil

A.D. Shitole, The Tata Oils Mills Co. Ltd.

