

Industry News

600 Attend Oleochemicals Conference



Registrants board cruise ship for Lake Geneva tour.



Exposition area was gathering point during coffee breaks.

More than 600 persons participated in the World Conference on Oleochemicals in Montreux, Switzerland, this past September.

"People seemed very pleased with the total conference and the technical content," conference chairman William Link, director of research for Sherex Chemical Co., commented after the conference.

Participants included approximately 470 technical program registrants, about 100 spouses' program registrants, plus approximately 60 persons who represented exhibitors during the conference.

The first day's technical program opened with economic presentations, which Link said attracted a capacity audience to the Montreux Convention Centre. The continuing question of whether natural fats and oils or petrochemicals represent a better feedstock was discussed throughout the week. "The oleochemical people said, 'We're here and we're going to be here in the future,'" Link said, "And the petroleum people admitted there had to be a place for them." Fatty alcohol production also was a favorite topic for dis-

cussion, Link said.

A well prepared paper by H. J. Richtler, director of Henkel's oleochemicals division, drew several favorable comments on the opening day, not only for its technical content but also for an elaborate multi-projector audio-visual presentation.

More than 200 persons participated in discussion groups held after the plenary sessions ended each afternoon. "People were answering questions with a great deal of candor," Link said. "I don't recall hearing anyone decline to answer a question because of proprietary reasons."

The attendance was below original projections of 600-1,000, made when organizers began planning the conference some four years ago. Link said there were fewer registrants from the United States than had been anticipated, probably because the oleochemicals industry has been somewhat depressed in recent years, mirroring the world economy.

The conference was designed to provide a thorough review of the technical and marketing factors affecting the



Conference chairman William Link (standing) of Sherex offers a toast at dinner.

oleochemical industry worldwide. Registrants came from approximately 30 different nations. Session topics included marketing and economics; processing and production; fatty acids, derivatives; raw materials, feedstocks and intermediates; energy and environment; fatty alcohols and derivatives; nitrogen fatty chemicals, derivatives; fatty chemical applications and analysis; and fatty chemicals, new chemistry.

Link said registrants seemed particularly interested in the marketing and economics topics. The new chemistry papers attracted good crowds on Friday, Sept. 23, the final day of the conference.

A proceedings of the conference will be published as the February issue of *JAOCs*. All AOCS members, *JAOCs* subscribers, and technical registrants at the conference will receive a copy of the proceedings. Additional copies will cost \$30 for AOCS members (\$45 for nonmembers) and may be ordered from the AOCS, 508 S. Sixth Street, Champaign, IL 61820.

AOAC report

(Former AOCS President David Firestone serves as general referee on fats and oils for the Association of Official Analytical Chemists. The following consists of his report to the AOAC at its annual meeting in October 1983. His report includes a report on the August 1983 meeting of the Commission on Oils, Fats and Derivatives of the International Union for Pure and Applied Chemistry (IUPAC). Dr. Firestone just completed a term as chairman of the commission.)

Antioxidants. B.D. Page is investigating procedures to confirm the presence of antioxidants detected by the HPLC method (1).

Cyclopropene fatty acids. G. S. Fisher has reported that there is currently little or no interest in this topic and recommends that the topic be discontinued.

Chromatographic method. W. G. Doeden Jr. has resigned as associate referee. Because of the rather general nature of this topic, the referee recommends that it be discontinued in favor of more specific topics as the demand arises.

The International Union of Pure and Applied Chemistry (IUPAC) Commission on Oils, Fats and Derivatives has completed collaborative study of a GC method for determination of triglyceride composition of fats and oils using 2-4 mm id x 50-60 m long packed columns with 3% methyl silicone liquid phase (2). Palm oil, coconut oil and cocoa butter triglycerides were examined by eight collaborators in an initial collaborative study. Lard, butterfat, soybean oil, hydrogenated soybean oil and peanut oil triglycerides were analyzed by 15 collaborators in a second collaborative study. Several collaborators reported results using a capillary column. For the major triglycerides, it appeared that the type of column (either packed or capillary) did not significantly influence the results. The method was adopted

by the commission. A recommendation for adoption by the AOAC will be made after publication of the collaborative results.

Emulsifiers. H. Bruschweiler has completed a joint AOAC/IUPAC collaborative study of a GC procedure for emulsifiers involving separation of the emulsifiers from an oil sample by column chromatography, hydrolysis of the emulsifier fraction, silylation, and analysis by either packed or capillary column GC. Among the emulsifier components detected by GC are: fatty alcohols, glycols and polyglycols, glycerol and polyglycerols, carbohydrates and mono- and disaccharides, carboxylic and dicarboxylic acids. A recommendation for adoption of the method will be made after publication of the collaborative results.

The associate referee has also described procedures for determination of anionic emulsifiers and surfactants (lauryl sulfate, dioctylsulfosuccinate, etc.) and nonionic emulsifiers (ethoxylated and propoxylated compounds such as polyoxyethylene fatty acid esters) as well as a procedure for specific determination of emulsifier components by capillary column GC without prior hydrolysis (see also Soe, J.B., *Fette, Seifen, Anstrichm.* 85:72 [1983]). The associate referee recommends that these procedures be subjected to collaborative study.

Lower fatty acids. G. Bigalli is planning a collaborative study of revised methodology for quantitation of lower fatty acids by GC.

Marine oils. R. G. Ackman is continuing the study of methodology for analysis and identification of fish oils.

Olive oil adulteration. Several methods used in Italy and supplied by the associate referee are under review. The IUPAC Commission on Oils, Fats and Derivatives has completed study of a method for determination of erythrodiol in olive oil, useful for detection of solvent-extracted olive oil in pressed olive oil. The method involves fractionation of extracted unsaponifiable matter by thin layer chroma-

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tography, followed by silylation of the sterol and triterpenoid glycol fractions and analysis by GC. The results of the IUPAC collaborative study are under review.

Oxidized fats. A. E. Walting is continuing study of procedures for oxidation products (polymers) in vegetable oils. Stephan C. Anderson, Cargill, Inc., Wayzata, MN 55391, is planning a joint AOCS/AOAC/IUPAC collaborative study of a method for determination of polymers in abused vegetable oils by gel permeation chromatography employing μ -Styragel columns to separate fatty acid methyl esters from polymer (dimer) fatty acid methyl esters. The results of collaborative study of the method for determination of polar compounds in frying fats (3) have been published in *Pure and Applied Chemistry* (55:1381 [1983]).

Pork fat in other fats. There was no activity on this topic during the past year.

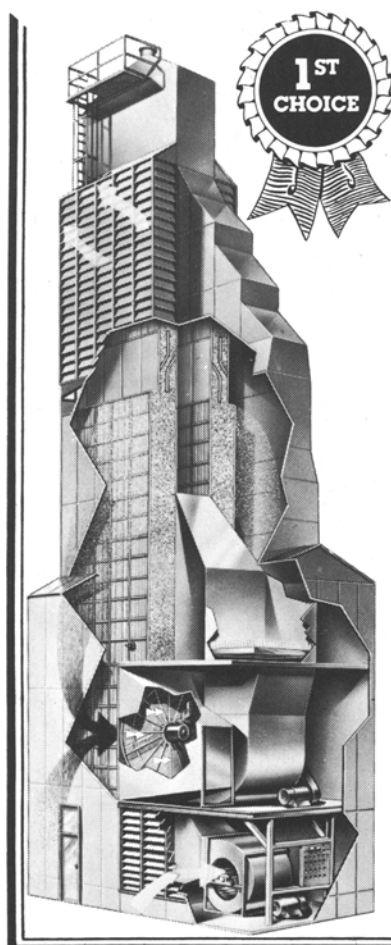
Spectrophotometric methods. A. J. Sheppard has completed study of the enzymatic method for *cis, cis*-methylene interrupted polyunsaturated fatty acids in vegetable oils. The associate referee recommends that the topic be discontinued and the referee concurs.

Sterols and tocopherols. H. J. Slover has completed a collaborative study of the GC method for determination of tocopherols and sterols in vegetable oils. The method involves addition of an internal standard (5,7-dimethyltolcol) to ca. 0.1 g of sample, saponification (aq KOH) in the

presence of pyrogallol, extraction of the unsaponifiables, preparation of trimethylsilyl ethers, and chromatography of the derivatized unsaponifiables on either a packed (Apiezon L, 15' \times 2 mm id) or capillary (50 m \times 0.25 mm id Dexsil 400) column at 245-250 C. The collaborative results indicate that the method should be simplified and that a single GC column, preferably fused silica methyl silicone bonded phase, be specified for the GC analysis.

Water content. R. Bernetti has completed work on validation of the Karl Fischer method for determination of water in oils and fats recommended by the International Standards Organization (ISO/TC 34/SC 11, N99). A final draft of the international collaborative study report has been prepared and the associate referee recommends that the method, granted interim first action status, be adopted official first action.

Other topics. The general referee recommends that the following official first action methods be adopted official first action: Preparation of Methyl Esters—Boron Trifluoride Method, 28.052-28.056; Methyl Esters of Fatty Acids—AOAC/IUPAC Gas Chromatographic Method, 28.057-28.065; Docosenoic Acid—Gas Chromatographic Method, 28.066-28.069; Polymers and Oxidation Products of Heated Vegetable Oils—Gas Chromatographic Method for Non-Elution Materials, 28.070; *cis, cis*-Methylene Interrupted Polyunsaturated Fatty Acids, 28.071-28.074; Polar Components in Frying Fats, 28.C01-28.C08.



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IUPAC Oils, Fats report

The general referee completed a term this year as chairman of the IUPAC Commission on Oils, Fats and Derivatives. The commission met on August 19-21, 1983, at the Technical University, Lyngby, Denmark, during the 32nd IUPAC General Assembly. The commission discussed 23 projects and topics, including methods for polyunsaturated fatty acids, antioxidants, emulsifiers, plastic monomers in oils, polycyclic aromatic hydrocarbons, industrial lecithin products, erythrodiol in olive oil, total sterols, mineral oil residues, solvent residues in oils and oilseed cakes, thiobarbituric acid value, triglyceride composition by GC, tocopherols and sterols, moisture by the Karl Fischer method, butterfat content (butyric acid), and metal content by atomic absorption spectroscopy.

The commission adopted methods for determination of acetone-insoluble fraction of commercial lecithin, determination of solvent residues in oilseed cakes, and determination of triglyceride composition of fats and oils by GC. Additional collaborative data were reviewed for two methods adopted last year, determination of erythrodiol in pressed and solvent-extracted olive oil and determination of total sterols by enzymatic oxidation with cholesterol oxidase. A precollaborative study is planned of a method for determination of thiobarbituric acid (TBA) as well as for GC determination of linolenic and other n-3 polyunsaturated fatty acids.

Several new projects which were discussed include: determination of solvents in oils; determination of butyric acid in butterfat (in cooperation with the International Dairy Federation); determination of tocopherols by HPLC; and determination of iron, copper and nickel by atomic absorption spectroscopy. The AOAC method for determination of antioxidants by HPLC (1) will be considered by the commission for adoption next year.

Methods adopted earlier which have been published in *Pure and Applied Chemistry* include erucic acid (4), linoleic acid (5), and solid content in fats by low resolution NMR (6), along with several methods for glycerol (7). In addition, plans have been made to publish a supplement to the 6th edition of the Commission's Standard Methods as well as a reprinting of the 6th edition itself.

With respect to procedures for organizing, conducting and evaluating collaborative studies, the commission has prepared tentative guidelines for conducting collaborative studies and has established a timetable for carrying out and reporting the results of collaborative studies. In addition, the commission arranged for a presentation by Dr. William Horwitz on validation of performance of methods at a joint meeting of the commission on fats and the commission on food chemistry during the IUPAC General Assembly. The new officers of the commission are: chairman, Prof. M. Naudet (France); vice-chairman, Dr. A. Hautfenne (Belgium); secretary, Mr. D. Pocklington (Great Britain).

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IFT cites Chang

Stephen S. Chang, chairman of the Department of Food Science, Rutgers University, New Jersey, received the Institute of Food Technologists' 1983 Nicholas Appert Award at IFT's annual meeting in June. The award, consisting of a bronze medal and \$1,000 honorarium, is presented annually to honor a person for preeminence in and contributions to the field of food technology.

A native of Beijing, People's Republic of China, Dr. Chang served as AOCS president in 1970. He became a full professor at Rutgers in 1962 and chairman of its food science department in 1977.

He has worked extensively on flavors and on fats and oils. His research group has identified the compounds in soybean oil responsible for the oil's "beany" or "grassy" flavor and has defined the chemical reactions leading to their formation. The group also has developed techniques for purifying edible oils and has patented a process for producing an oil/water emulsion suitable for intravenous feeding.

Dr. Chang received AOCS' Lipid Chemistry Award in 1979. He is a member of the Sigma Xi and Phi Tau Sigma honorary societies.

Indonesian facility

A new palm oil facility in Meliau, Indonesia, is expected to become operational in February, according to a report in *Oil World*, a German weekly fats and oils newsletter. The plant capacity will be 60 tons of fresh fruit bunches a day, the report said.

News briefs

Larry E. Davis has been named technical director for the **Fats and Proteins Research Foundation Inc.** of Des Plaines, Illinois . . . Dr. Richard L. Hall, vice-president of research and development for McCormick & Co., took office in September for a four-year term as president of the **International Union of Food Science and Technology**. He is a past president of the Institute of Food Technologists . . . Dr. K. C. Rhee, research chemist in food protein research and development at Texas A&M, has received a one-year fellowship from the **Texas Engineering Experiment Station** . . . Jill Schwendt Pruett has been named food marketing and nutrition specialist for the **American Soybean Association**.