AOCS short courses

April 20-25, 1980

Short course registration begins

Registration has begun for two AOCS Short Courses to be held April 20-25, 1980, the week before the ISF/AOCS World Congress.

The first short course, Processing and Quality Control of Fats and Oils, will be held April 20-23. It is one of AOCS' basic short courses, having attracted an overflow registration the last time it was offered in 1978. T.L. Mounts of the USDA's Northern Regional Research Center served as program chairman for the 1978 course and is serving in that capacity again. Abstracts for that course are printed below.

The second short course, Applications of Analytical Methodology in Fats and Oils Processing, will be held April 23-25. This will be the first offering of the course, which is designed to discuss specific application of modern analytical methods and equipment to commercial processing. Program chairmen are David Berner of Frank Beuckman, Inc., and David Min of Ohio State University. Topics and speakers will be: High Pressure Liquid Column Chromatography, H.J. Clements, Waters Associates, Inc.; Application of Mass Spectrometry in Lipid Flavor Study, Dr. Min; Wideline Nuclear Magnetic Resonance, T. Conway, CPC International Inc.; Pulsed Nuclear Magnetic Resonance, J. Witt, Praxis Corp.; New Methodology in High Resolution Nuclear Magnetic Resonance Spectroscopy, P. Pfeffer, USDA Eastern Regional Research Center; Differential Scanning Calorimetry, B. Cassel, Perkin-Elmer Co.; Thermogravimetric Analysis and Pressure Differential Scanning Calorimetry, P.F. Levy, duPont de Nemours and Co.; Application of Spectroscopy, N.M. Ingber, SMC Corp. Glidden Durkee Division; Methods of Antioxidant Analysis, R.E. Austin, Eastman Chemical Products; Rheological and Physical Properties Measurements of Fats and Oils Products, J.M. DeMan, University of Guelph; Capillary Gas Chromatography, H.T. Slover, USDA Agricultural Research; Statistical Methodology, L. Hare, Thomas J. Lipton, Inc.

Abstracts will be published in the March JAOCS.

Fees for the courses include room and board at The Concord Hotel in Lake Kiamesha, NY, during the meeting. No proceedings will be published.

Recovery of Oil from Soybeans

G.S. Mustakas, USDA Northern Regional Research Center, Peoria, Illinois

The discussion will cover developments within the past 40 years, centering on the current trend toward almost exclusive use of solvent extraction to process soybeans. Competitive commercial oil extraction methods will be discussed in detail pointing out the advantages and disadvantages of each. Solvent extraction principles, choice of solvents, and the solvent extraction process as carried out commercially will be reviewed. The basic types of commercial extractors in current use will be discussed. Finally, current developments in the soybean industry will be reviewed with figures on capacity and operating costs given.

Degumming and Refining Crude Soybean Oil

Frank P. Khym, consultant, San Antonio, Texas

A discussion of operations, procedures and equipment available for oil refineries to meet the growing need of high quality soybean oil used in the production of finished food products containing this vegetable oil.

Techniques of Bleaching and Filtration

F.A. Dudrow, Rust Engineering Co., Birmingham, Alabama

The various aspects of bleaching and filtration will be discussed, including economic/quality justification for bleaching; importance of oil quality and previous processing; effects of bleaching on further processing; clay types and other absorbents; effect of bleaching conditions such as temperature, vacuum, contact time, mixing, batch vs. continuous; oil loss and clay disposal; and filtering equipment and use.

Utilization of By-Products from the Refining of Fats and Oils

Karl T. Zilch, Emery Industries, Inc., Cincinnati, Ohio

Alkali refining and steam distillation refining of fats and oils produce by-products which can generally be described as mixtures of fatty acids, glycerides and unsaponifiable materials and various percentages and composition. The composition is related to the refining method as well as the fat or oil being refined. The yield of by-product depends upon the degree of refining as well as to the fat or oil being refined. Refined by-products primarily are used to manufacture fatty acids, fatty acid derivatives and animal feeds. The latter represents the principal use. However, some by-products contain sterols that are isolated commercially and converted into pharmaceutical products. The major portion of the talk will cover commercial aspects of by-product utilization.

Lecithin Production and Utilization

William E. Prosise, Central Soya Co., Fort Wayne, Indiana

The paper will open with an explanation of vegetable oil technology to lead into discussion of crude lecithin production methods. Various types and aspects of degumming and drying processes will be included. Modern lecithin chemistry will be discussed as it relates to important governmental regulations as well as the numerous lecithin product types. Manufacturing methods for these product types will be detailed. Various applications will be discussed and related to product types. The paper will conclude with a discussion of the future of lecithin products.

Deodorization, Steam-Refining and Heat-Bleaching

T.K. Mag, Canada Packers Limited, Toronto, Ontario

The process of deodorization and the related processes of steam-refining and heat-bleaching are of great importance to the edible oil industry. The fundamentals of these processes, the changes in process designs over the years, the methods used to evaluate performance and possible future developments will be discussed.

Partial Hydrogenation and Winterization of Vegetable Oils

P.S. Puri, CPC International, Union, New Jersey

Hydrogenation is a complex three-phase reaction whose end result is largely dependent upon transport and chemical resistances. Control of these factors is of critical importance to a predictable end product, and this control is possible if a fundamental understanding of the process is achieved. The basic transport steps involved to bring the hydrogen and oil together in the presence of catalyst and the effect of different process variables on the course of the chemical reaction will be the major subject in this presentation. Winterization consists of fractional crystallization and oils and fats followed by the separation of solids from the oil to make high quality salad oils. For the design of a winterization process, the rate of cooling of oil, the temperature of crystallization and mobility of a triglyceride, molecules in the oil mass are very crucial and play a significant role in both separating the solid fats and distinct crystals and facilitating their filtration from the liquid oil. Thus the main emphasis will be given to the effect of the variables on the stearine yield, filtration rate and cold test of winterized oil.

Fractionation of Edible Vegetable Oils

Peter C. Linnemann, Neumunz, Inc., Leonia, New Jersey

Various methods of vegetable oil fractionation, as engineered, constructed and supplied by several engineering firms, will be discussed, including data from several Neumunz overseas clients who work primarily with palm oil. In addition to processing descriptions, flow, operating conditions and such factors, the economic considerations of fractionation will be discussed.

Production of Finished Vegetable Fat Margarine and Shortening Products

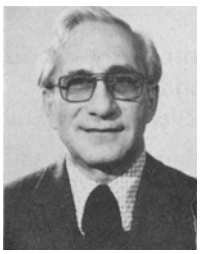
E.G. Latondress, Arthur G. McKee & Company, Chicago, Illinois

With the development of catalytic hydrogenation, it has become possible for the producers of shortening and margarine to progress beyond manufacture of simple lard and butter substitutes to the manufacture of shortening and margarine products tailored to meet special consumer requirements. Typical formulae and the SFI requirements for various products will be discussed. The function of various fats in formulations and the effects of variations in formulation and process variables on product character and performance will be reviewed.

Specialty Fats

F.R. Paulicka, SCM Corporation Glidden Durkees Division, Strongsville, Ohio

The scope of this presentation is limited to hard butters or those specialty fats which find application in confectionery applications as alternatives to cocoa butter. Interest in hard butters has grown recently due to the rapid increase in the price of cocoa beans and also because of proposed EEC chocolate regulations. The different hard butter applications – cocoa butter equivalent or extender, complete replacer, partial replacer, and substitute – are defined. Characteristics of hard butters suitable for use in each application are discussed. Methods for their manufacture are described generally.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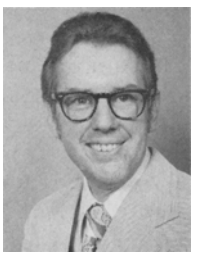
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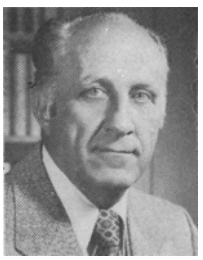
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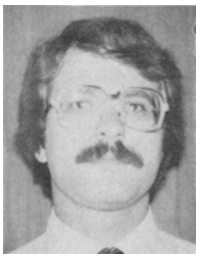
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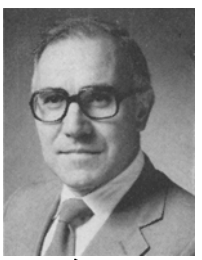
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