

Technical committee project update

The following update, prepared by AOCs Technical Director Dave Berner, summarizes the status of technical committee projects following committee meetings held in November 1988.

Historically, the AOCs technical committees have met during the national meeting. However, the Commercial Fats and Oils Analysis Committee has elected to meet in November to avoid conflicts with the annual meeting program. In addition, the Uniform Methods Committee (UMC) now schedules two meetings per year, one at the national meeting and one in November to coincide with the Commercial Fats and Oils Committee meeting.

All AOCs technical committees except the Examination Board are open committees. Visitors are welcome and membership is open to anyone wishing to actively participate. Individuals interested in participating in collaborative studies should contact either the committee chairman or the AOCs technical director.

Chromatography

Collaborative studies completed and being evaluated are the *cis*, *trans* fatty acid method by GC; fish oil method; and the triglyceride number by HPLC. Collaborative studies are planned for tocopherols in vegetable oils by GC. Under consideration and review are methods for the determination of gossypol (HPLC) and chlorophyll (HPLC).

Potential new projects include developing the following: methods for conjugated dienes and green color in oils; and procedures for determining saturated fatty acids, *cis*-monoenes, *trans*-monoenes, PUFA and non-PUFA polyunsaturated fatty acids (*trans*-dienes). John Callahan is committee chairman.

Commercial Fats and Oils

Collaborative studies completed and being evaluated include evaluation of pulsed NMR units, manual vs. automated color in oils, and oil stability index (OSI) vs. AOM.

Collaborative studies planned include cold test and emulsifiers by capillary GC. Under consideration and review are residual citric acid in vegetable oils (HPLC), a new QA/QC method for chlorophyll in oils, update of the current AOCs methylation procedure, revision of the current NMR method for SFI to include new instruments and IUPAC parallel tempering procedure, and an update of the current methylation method.

In other action, the Wiley melting point was declared obsolete (surplus method), with the Mettler dropping point method proposed as its replacement. Roger Sinram is committee chairman.

Industrial Oils

In collaborative studies completed and being evaluated, statistics are nearing completion for three methods—hot plate moisture (Tb 1a-64), KF moisture (Tb 2-64) and the ash method (Tm 1a-64). Collaborative studies planned in 1989 include the evaluation of two methods for amine oxides.

A new method for evaluating catalyst activity is needed and under consideration. In other action, Gerald Szajer, committee chairman, has completed the review of all methods in Sections S and T of AOCs Methods.

Lecithin

This committee, chaired by Bernard Szuhaj, has almost completed the update of Section J (lecithin) of the methods. The committee is now formatting methods for the analysis of deodorizer distillate for tocopherol/sterol content and pesticides/residues. A potential project is development of a method for hexane residuals in lecithin.

Flavor Quality and Stability

Collaborative studies completed and being evaluated are sensory

and volatiles analysis of four vegetable oils (soy, sunflower, canola and corn). The committee is chaired by Kathleen Warner.

NMR

In collaborative studies, a six-sample study is under way to test pulsed NMR instrument response. Under consideration is a method(s) for determining oil in oilseeds. An NMR session, dealing with high resolution applications, will be presented at the 1989 annual meeting. Bryan Madison is committee chairman.

Seed and Meal Analysis

Roger Sinram is temporary chairman; a new chairman will be needed by the 1989 annual meeting. Studies in progress include: IR method for determining oil in soybeans, a collaborative study for validation of copper sulfate catalyzed method for protein nitrogen (through Smalley Program), and alternate solvents for IV and PV methods.

Completed is a comparison study of effects of various solvents (hexane, petroleum ether, diethyl ether) on the results obtained with oil extraction methods from various standard-writing organizations (AACC, AOAC, AOCs), done by Ralph Lane at the University of Alabama. Collaborative studies are planned for the Soxtec method for oil extraction and determination in oilseeds.

Projects under consideration include: sulfuric acid/hydrogen peroxide digestion for protein nitrogen, evaluation of a titanium dioxide/copper sulfate catalyst mix for protein nitrogen, rapid equilibrium method for determining oil in oilseeds, and validation of Kjeldahl method for protein nitrogen in oilseeds and oilseed meals. Other actions include: wax in sunflower oil method written in AOCs methods format for consideration for adoption as a Recommended Practice, and update of chlorophyll in oils method (Cc 13d-55) for 1988.

METHODOLOGY

Soaps and Detergents

A collaborative study is planned for an improved method to determine the color of LAS. Meanwhile, the review of the subsection on fatty alkyl sulfates in Section D of the methods has been completed. The review of the remainder of Section D should be completed by the 1989 annual meeting. George Bat-taglini is chairman.

Aflatoxins

The AOAC method for the preparation and evaluation of aflatoxin standards was edited into AOCS format, approved by the UMC and appears in the *1988 Additions and Revisions to Methods*. This is the last of the series of six aflatoxin methods to be included in the methods book. Art Walkling is chairman.

Tocopherols in Deodorizer Distillates
Committee activities have been suspended until there is further interest in validating the tocopherols

in deodorizer method (Ce 7-87) as an official method. Charles Marks is chairman.

AOM Alternatives

Results of a study comparing Oil Stability Index (OSI) vs. AOM are being evaluated. Generally, there is good correlation between OSI and AOM; however, AOM has to be run exactly. A major problem with the AOM method is that air pressure is not specified. A standard should appear in the current version of the method. The OSI method will be proposed for consideration for adoption by the UMC. Mark Matlock is chairman.

Bleaching Methods

There has been no activity since the 1988 annual meeting. The UMC has proposed that the committee consider developing a method for bleaching clay evaluation, using such parameters as titratable acidity, residual acidity, pH, particle size and pore size (determined by

methylene blue, magnesium chloride adsorption or fatty quaternary ammonium salts). Chairman is David Wolfe.

Physical Methods

Methods under consideration are melting point by DSC on fats and oils; relative viscosity by Brookfield on oils, margarine, salad dressing; fat crystal structure by optical microscopy on fats melting above 25°C; firmness by Instron on margarine and shortening; and fat crystal structure by X-ray diffraction on fats melting above 25°C. Chairman is Art Walkling.

Trace Metals

There are no active projects, and a chairman is needed. The current approved methods are under review by William McShane of Kraft Foods.

Jojoba Analysis

There has been no activity since May 1987. Chairman is Ralph Price.

PUBLICATIONS

Book reviews

Nutrition and Immunology (Contemporary Issues in Clinical Nutrition, Vol. 11), edited by Ranjit K. Chandra (Alan R. Liss Inc., 41 East 11th St., New York, NY 10007, 1988, 352 pp., \$96).

Since the original observations that protein-energy malnutrition in children leads to impaired immunocompetence, the field of nutrition and immunology has expanded to examine the effects of many single nutrients on immune responses. This volume reflects that expansion by providing chapters on the role of many vitamins, trace elements and lipids in the modulation of immunity.

The introduction by R.K. Chandra, "Nutritional Regulation of Immunity," includes a brief description of the immune system before

going on to a general discussion of nutrition and immunity. This description of the immune system and information in chapters on "Lymphokines and Monokines in Protein-Energy Malnutrition" (by Laurie Hoffman-Goetz) and "Plasma Inhibitory Factors in Protein Caloric Malnutrition" (by Lekan S. Salimonu) provide good background for readers with little knowledge of immunology. They should aid such readers to understand the remaining chapters and to gain a good general knowledge of this rapidly emerging area of nutrition.

The next chapter, on "Lipid Modulation of Immune Responses," includes a discussion of the role of eicosanoids in immunity. Next, Ronald R. Watson and James A. Rybshi discuss immunological response modification by vitamin A and other retinoids. The B vitamins and their effects on specific and nonspecific immune re-

sponses are discussed by Adrienne Bendich and Marvin Cohen. Adrienne Bendich provides the next chapter on antioxidant vitamins and immune responses. The nutrients covered are vitamin E and vitamin C, vitamin E and selenium, vitamin E and lipids, and β -carotene.

Chapter 8, by P. Bhaskaram, emphasizes studies on human populations with iron deficiency anemia. Adria R. Sherman and Leslie Helyar follow this with a chapter on iron deficiency, immunity and resistance to disease in early life. Susanna and Ward F. Cunningham-Rundles discuss modulation of immune responses by zinc. The next chapter—"Trace Element Deficiencies and Immune Responsiveness in Humans and Animal Models," by Mark P. Fletcher, M. Eric Gershwin, Carl K. Keen and the late Lucille S. Hurley—includes sections on iron, zinc, copper and manga-