

## AOAC fats, oils program reviewed

AOCS Vice president David Firestone is General Referee for the Oils and Fats section of the Association of Official Analytical Chemists. At the annual AOAC meeting last fall, Dr. Firestone reported on various AOAC work programs. The following is a condensation of his report. Persons seeking more details should contact Dr. Firestone, Division of Chemistry and Physics, Food and Drug Administration, Washington, DC 20204. The General Referee report will appear in the March 1978 issue of *JAOAC* (Vol. 61, No. 2, p. 347-349).

**Antioxidants:** AOAC Associate Referee B.D. Page has developed a GLC procedure of quantitative determination of BHA, TBHQ, Ionox 100, THBP, PG, OG, DG, NDGA and BHT. Preliminary recovery experiments (50 ppm level) gave recoveries in the range of 82-113%. Additional work is needed to reduce the levels of interfering lipid materials extracted from vegetable oil samples.

**Chlorinated Aromatics in Oils, Fats, and Fatty acids:** Evaluation continues of the Baughman Messelson (B-M) cleanup for polychlorodibenzo-p-dioxins, using electron capture GLC for detection at parts-per-billion levels or less.

**Fats and Fatty Acids, Gas Chromatography:** AOAC Associate Referee H.B.S. Conacher is continuing work on analysis of *trans* isomers of unsaturated fatty acids by GLC. A method using a 20-foot column packed with 15% OV-275 provided better agreement with IR *trans* values than those obtained using a 15-foot column packed with 10% Silar 10C. Collaborative studies using the 20-foot column were recommended.

**Marine Oils:** AOAC Associate Referee R.G. Ackman has completed a collaborative study of a screening method for determination of erucic acid (*cis*-docos-13-enoic acid) at the 10% level in partially hydrogenated margarine oil based on marine oils. The method involves use of GLC open-tubular (capillary) columns. Ackman recommended that studies on the method be continued.

**Oxidized Fats:** AOAC Associate Referee A.E. Waltking reported that studies of two methods for heated fats both produced unsatisfactory results for various reasons. One method used was the AOAC official first action GLC method of nonelution materials; the second was a modification of the column chromatographic method of Guillaumin. Waltking recommended that studies be continued for various methods for oxidized fats.

**Pork Fats in Other Fats:** AOAC Associate Referee H.A. Mughal reported that use of TLC and GLC of intact glycerides proved unsatisfactory in detecting lard and pork fat in other fats. New work will be done on whether a method can be based on the fact that pig fat is unusual in that most of the palmitic acid present in the fat is esterified at 2-position.

**Spectrophotometric Methods:** AOAC Associate Referee A.J. Sheppard recommended possible approval of two similar procedures for enzymatic (lipoxidase) determination of *cis,cis*-methylene interrupted polyunsaturated fatty acids.

**Sterols and Tocopherols:** AOAC Associate Referee H.T. Slover is working on determination of tocopherols and sterols by TLC-GLC, as well as including trying to develop simpler, more rugged methodology than that based on TLC-GLC. One option is to use capillary column GLC, which may permit elimination of preliminary TLC cleanup.

Of the Associate Referees providing reports, Conacher, Ackman, Waltking, Sheppard, and Slover are also members of AOCS.

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