

Fats & Oils News

Spotlight on cottonseed oil

The oil portion of cottonseed was the primary topic for the Mississippi Valley Cottonseed Crushers' annual symposium held during January, with papers on oil use in fast-food restaurants, as an agricultural chemical carrier, in soaps and detergents and in other products.

Approximately 100 persons participated in the January meeting, held in New Orleans with cooperation of the USDA Southern Regional Research Center, located in that city.

William L. Baran of Chick-fil-A Inc. of Atlanta, Georgia, estimated the annual value of fats and oils used in the food service industry at more than \$2 billion. He said more research is needed to determine service life for fats and oils used in fast-food restaurants. This would include studies on how different types of foods affect fats and oils, and whether the way those foods are prepared for cooking is a significant factor.

T. L. Steepy of ICI Americas Inc. discussed weed control using crop-oil concentrates containing vegetable oils.

Warner Linfield of the USDA Eastern Regional Research Center discussed the sources of raw materials used in various soap and detergents, including a discussion of the lime soap dispersing agents developed at the ERRC.

T. S. Shuler, president of the National Cottonseed Products Association, discussed possible technological change in the cottonseed industry. A new solvent or solvent system is needed that is safer, Shuler said, noting that during the past five years, losses from hexane explosions have resulted in more than \$50 million in physical property damage and \$300 million in liability losses. A revised solvent system could be less petroleum dependent, he said, as well as remove any toxic substances from meal. Second, he said development of glandless cottonseed—without gossypol—that is economically competitive with regular cotton varieties is needed. Third, genetic engineering or biotechnology might provide a cotton plant resistant to aflatoxin contamination, Shuler said. Biotechnology might also provide a higher oil content, higher seed yield, higher protein yield, increased lysine content and provide nonshattering seed coats, Shuler said.

Norm Witte of Central Soya Co. Inc. described the pace of automation in the processing phase of the industry. With relatively few new plants being built now because of economic considerations, Witte said automation will increase through improvements to existing plants. Single control systems for a specific application are found almost everywhere, Witte said, but whereas they formerly were pneumatic controls, now they are electronic. Single-loop controllers can be installed in many plants without requiring hiring additional expertise, he said. Automation of a full process is suitable for most plants, but requires some electrical engineering expertise to install and maintain. Micro-computer control of an entire plant should be considered only with a major revamping or expansion of an existing plant, he said.

Two speakers from Texas A&M's Food Protein Research and Development Center also participated. John T. Farnsworth described development of the center's computerized cottonseed oil mill model, which can be used to predict

yields and composition for oil mill products. Larry Johnson described a computer model that provides economic analysis of milling cottonseed with high residual linters.

Marv Bagby, director of the Northern Agricultural Energy Center at the USDA's Northern Regional Research Center, described research done thus far on developing diesel fuel for farm equipment.

Oilseed samples sought

The edible oil authenticity project, jointly funded by the U.K. Ministry of Agriculture, Fisheries and Foods, the Federation of Oils, Seeds and Fats Associations (FOSFA) and by the British Manufacturing Industries Research Association (Leatherhead Food R A), was announced on page 896A of the December 1981 *JAOCS*.

The first oils investigated were palm, groundnut and sunflowerseed oils, some of the Food R A results on these three oils having been reported in the February 1983 *JAOCS* (Vol. 60, page 333).

The first stage of the work is now almost complete with the establishment of purity criteria for nine vegetable oils based on fatty acid composition, 2-position acid enrichment factors, carbon number triglyceride compositions and tocopherol concentrations. Altogether over 350 oil samples have been analyzed.

In the second stage of the project, which has just commenced, safflower-seed oil has been added to the list of oils and additional samples of the nine original oils are being analyzed in order to fill gaps in the geographical distribution of the available samples.

In addition, the applicability of several new methods of analysis are being examined, such as the measurement of methyl and dimethyl sterol concentrations.

With regard to the geographical distribution of oilseed samples, the project has been hampered by the nonavailability of certain oilseed types in the U.K., in particular U.S. cottonseed. In order to complete this important project, the Food R A would therefore greatly appreciate oilseed samples, especially safflower seeds and North American cottonseeds.

Anyone able to help in this respect should please send quantities of 500 g to 1 kg of normal, commercial grade seed samples, giving appropriate information about harvest, location and year. Samples should be addressed to: J. A. Turrell, Oil & Fats Section, Leatherhead Food R A, Randalls Road, Leatherhead, Surrey, U.K.

The pricing of vegetable oils

David Bartholomew, senior soybean analyst for Merrill Lynch Futures Inc., is a regular columnist for *JAOCS*. For the AOCS 1983 annual meeting in Chicago, he organized a symposium on vegetable-oil pricing—how prices are determined in volume trading. Specialists from different organizations each explained how his portion of the market functions. This article was prepared by Bartholomew on the basis of those talks.