

## EPA publishes pesticide facts

The U.S. Environmental Protection Agency (EPA) has made available registration standard documents for a number of pesticides and pesticide chemical fact sheets.

The registration standard documents describe the agency's regulatory conclusions and positions on continued registrability for pesticides whose reviews have been completed or draft registration standards for those still under review. Pesticide fact sheets include descriptions of the chemical use patterns and formulations, scientific findings, a summary of the agency's regulatory positions, and a summary of major data gaps.

Copies of these documents and fact sheets may be purchased from the National Technical Information Service, 5285 Port Royal Rd., Springfield, VA 22161, telephone 703-487-4650. Microfiche copies

are available for \$6.50. Hard copies of pesticide fact sheets are available for \$9.95 each. Hard copies of standards vary in price according to the length of the document. Details: *Federal Register*, Feb. 4, 1987, pp. 3477-3478; Jan. 29, 1987, p. 2959.

In other EPA action, the agency has published a rule exempting mineral oil from a tolerance requirement when used as an inert ingredient diluent, carrier and solvent in pesticide formulations. Details: *Federal Register*, Feb. 18, 1987, pp. 4905-4906.

## NTP report on toxicology

The National Toxicology Program (NTP) has completed a technical report describing toxicology and carcinogenesis studies of tetrachloroethylene, used primarily as a dry cleaning agent, an industrial solvent

for fats, oils, tars, rubber and gums, and a metal degreasing agent.

The two-year inhalation studies using rats and mice showed clear evidence of carcinogenicity for male rats and mice studied, and some evidence of carcinogenicity for female rats studied.

Free copies of the report, "Toxicology and Carcinogenesis Studies of Tetrachloroethylene (Perchloroethylene) in F344/N Rats and B6C3F<sub>1</sub> Mice (Inhalation Studies)," TR311, are available from NTP Public Information Office, MD B2-04, PO Box 12233, Research Triangle Park, NC 27709.

Meanwhile, the International Life Sciences Institute, the National Center for Toxicological Research and the University of Arkansas are working on an agreement under which the three institutions can collaborate on the solution of generic methodological problems in risk assessment. Details: *Food Chemical News*, Feb. 2, 1987, p. 2.

## Viewpoint

# Health and nutrition notables

*The following column highlighting four research topics in the area of health and nutrition was written by AOCS member J. Edward Hunter, professional and regulatory relations, food product development, The Procter & Gamble Co., Cincinnati, Ohio.*

### Dietary fat and breast cancer risk

A recent article entitled "Dietary Fat and the Risk of Breast Cancer" by Willett et al. in *The New England Journal of Medicine* (Vol. 316, No. 22, 1987) reports that among women in the highest quintile of calorie-adjusted intake of total and saturated fat, linoleic acid and cholesterol, there was no increased risk of breast cancer.

The study involved a survey of 89,538 U.S. registered nurses 34-59 years of age, with no history of cancer. In 1980, the nurses completed a dietary questionnaire designed to measure individual consumption of total fat, saturated

fat, linoleic acid and cholesterol, as well as other nutrients. The mean value for the highest quintile of total fat intake was 44% of calories, and that for the lowest quintile was 32% of calories. During a four-year follow-up period, 601 cases of breast cancer were diagnosed.

After adjusting the data for established risk factors for breast cancer (such as maternal history of breast cancer, a sister with a history of breast cancer, and current smoking), the relative risk of breast cancer among women in the highest quintile for total fat intake compared to women in the lowest quintile was 0.82. Corresponding

relative risks were 0.84 for saturated fat intake, 0.88 for linoleic acid intake and 0.91 for cholesterol intake. Similar results were observed for both postmenopausal and premenopausal women. Thus, there is no evidence that total fat intake or consumption of specific types of fat among women was positively associated with the risk of breast cancer.

The investigators could not exclude the possibilities that the amount of fat consumed earlier in life or at levels below 30% of calories might influence the occurrence of breast cancer or that fat intake might influence the risk of breast cancer in specific subsets of the population, such as older postmenopausal women or women with an unidentified genetic susceptibility. Nevertheless, the findings

suggest that a moderate reduction in total fat intake by women is not likely to decrease substantially the incidence of breast cancer.

#### Calories and cancer

The proceedings of a symposium entitled "Calories and Energy Expenditure in Carcinogenesis," held Feb. 24-25, 1986, in Washington DC, have been published as a supplement to the January 1987 *American Journal of Clinical Nutrition*. The conference was sponsored by the International Life Sciences Institute-Nutrition Foundation in cooperation with the American Dietetic Association, the American Medical Association, the Agricultural and Food Chemistry Division of the American Chemical Society and the U.S. Department of Agriculture.

One general conclusion from the symposium was that excessive calories from any source may be a greater risk than the amount or type of fat in the diet. Furthermore, while there is considerable evidence linking dietary factors and cancer, the relationship is exceedingly complex. Thus many speakers felt that at present there is insufficient evidence to warrant specific recommendations for diet modification for all Americans for the purpose of reducing cancer risk.

Executive summaries of the conference have appeared in the July/August 1986 issue of *Nutrition Today* (by Michael W. Pariza) and in the January 1987 issue of *The Journal of the American Dietetic Association* (by Artemis P. Simopoulos).

#### Isomeric fatty acids in the U.S. diet

In a recent review article entitled "Isomeric Fatty Acids in the U.S. Diet: Levels of Health Perspectives," published in the December 1986 issue of the *American Journal of Clinical Nutrition*, J. Edward Hunter and Thomas H. Applewhite estimated current, previous and predicted levels of *trans* fatty acids in the U.S. diet from data on market size, market share and compositional changes of various products made from partially hydrogenated fats and oils. In addition, they

reviewed recent literature and various perceptions of the toxicological, physiological and nutritional effects of *trans* fatty acids.

Despite increased use of partially hydrogenated vegetable fats and oils during the period 1960 to 1984, the authors noted that the availability of *trans* acids in the diet changed little, largely because typical *trans* acid levels of many products declined. Hunter and Applewhite estimated current dietary intake availability of *trans* acids to be about 7.6 grams per person per day and suggested that modest decreases in total fat intake, including *trans* fatty acid intake, may occur in the future if consumers adopt certain dietary recommendations. The authors concluded that concerns about possible relationships of *trans* fatty acids to the development of atherosclerotic disease or cancer are not supported by reliable data. They noted that numerous literature accounts support the conclusion that *trans* fatty acids do not pose any harm to humans or animals consuming a balanced diet containing adequate linoleic acid.

#### Monounsaturates and HDL cholesterol


A recent *Lancet* article by Mensink and Katan of the Agricultural University, The Netherlands, reports that an olive oil-rich diet,

unlike a complex carbohydrate-rich diet, conserved HDL cholesterol while leaving serum triglyceride levels virtually unchanged.

In this study, 48 subjects first received a Western-type diet (38% of calories as fat) high in saturated fat for 17 days. For the next 36 days, half of the subjects were given an olive oil-rich diet (41% of calories as fat) and the other half, a diet low in fat (22% of calories as fat) and high in complex carbohydrates and fiber. Serum samples obtained periodically were analyzed for total and HDL cholesterol and triglyceride levels.

The olive oil diet, which combined a high intake of total fat with a low intake of saturated fat, caused a decrease in total cholesterol but no change in HDL or triglyceride values. The high carbohydrate diet resulted in a similar decrease in total cholesterol; however, in contrast to the olive oil diet, it caused a decrease in HDL and an increase in triglycerides. The investigators suggested that in view of the supposed benefits of HDL, "reducing total fat intake per se may not be the best way to prevent CHD" (coronary heart disease). Details: *The Lancet*, Jan. 17, 1987, p. 122, "Effect of Monounsaturated Fatty Acids Versus Complex Carbohydrates on High-Density Lipoproteins in Healthy Men and Women."

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