

Process for Preparing Liposome Composition.  
Marshall, W., and C.J. Hofmann (Kraft Inc.), US 4,678,673, Fermented Oilseed Product for Pre-

paring Imitation Dairy Products. Daiichi-Pharm., J 6 2195-292: 21.02.86-JP-038062, Production of Fatty Acid Esters Using Lipase in Pressurized Evaporator.

Nitto-Electric, J 6 2195-291: 20.02.86-JP-036390, Production of Fats and Oils containing  $\gamma$ -Linolenic Acid Esters by Tissue Culture of *Oenothera*.

## Publications

## Book reviews

**Health Effects of Polyunsaturated Fatty Acids in Seafoods**, edited by Artemis P. Simopoulos, Robert R. Kifer and Ray E. Martin (Academic Press, 6277 Sea Harbor Dr., Orlando, FL 32821-9989, 1986, 473 pp., \$45).

This volume is the proceedings of a conference on health effects of polyunsaturated fatty acids in seafoods, held in Washington, D.C., in 1985. Although it has been available for over a year, there still is much reference material here that is useful to those interested in dietary omega-3 fatty acids.

The volume is divided into seven parts, with a total of 21 chapters. Part One contains a single chapter by Artemis Simopoulos that covers the historical perspective, conference conclusions and recommendations, and actions by federal agencies. Part Two deals with the impact of omega-3 fatty acids on eicosanoid formation. It contains chapters by William Lands on the fate of polyunsaturated fatty acids (PUFA), by Peter Weber et al. on dietary omega-3 PUFA and eicosanoid formation in man, and by G.A. Fitzgerald et al. on biochemical and functional effects of dietary substrate modification in man.

Part Three is on thrombosis and atherosclerosis. Alexander Leaf provides an introduction on approaches to prevention. Other chapters deal with cellular dynamics in atherosclerosis (by A. Faggiotto), thrombosis and omega-3 fatty acids: epidemiological and clinical aspects (by B.A. Bradlow), and the antithrombotic effects of fish oil (by S.H. Goodnight Jr.).

Part Four deals with lipoproteins and atherosclerosis. It contains a chapter by Scott Grundy on effects of fatty acids on lipopro-

tein metabolism in man, a chapter by William Connor on the hypo-lipidemic effects of dietary omega-3 fatty acids in normal and hyper-lipidemic humans, and a chapter by Paul Nestle et al. on suppression of triglyceride formation by PUFA in rat liver and attenuation in man of the effects of dietary cholesterol on lipoprotein cholesterol.

Part Five, on immunology and inflammation, contains chapters by Robert Lewis et al. on the effects of omega-3 PUFA on the 5-lipoxygenase pathway, by Edward Goetzl on effects of eicosapentaenoic acid on immune responses and inflammation in humans, and by D.R. Robinson et al. on the modification of autoimmune diseases by dietary marine lipids.

Docosahexaenoic acid: membrane function and metabolism is the subject of Part Six. N. Salem et al. discuss docosahexaenoic acid (22:6 $\omega$ 3) in membrane function and metabolism. Edward Dratz and Alan Deese discuss the role of 22:6 $\omega$ 3 in photoreceptors and model membrane bilayers, and Howard Sprecher compares omega-3 and omega-6 fatty acid metabolism.

The seventh and final part provides information on the availability, composition and preparation of seafood. It includes a choice of recipes for seafood and a chapter on the effects of cooking on the fatty acid profiles of selected seafoods. An appendix gives a provisional table on the content of omega-3 fatty acids and other fat components in selected foods.

This is a useful volume not only for those working in the omega-3 area but also for those desiring an overview of the findings, which have led to a proliferation of research in this area.

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**Experiments in Industry: Design, Analysis and Interpretation of Results**, edited by R.D. Snee, L.B. Hare and J.R. Trout, (American Society for Quality Control, 230 West Wells St., Milwaukee, WI 53203, 1985, 142 pp., ASQC member price, \$14.95; list price, \$16.95).

The editors use industry-derived examples, presented as a series of individual papers by different authors, to illustrate the application of several statistical methodologies. The authors use real problems that arose in a laboratory or production environment. Each paper includes a description of the problem, the statistical design used and the results of the statistical analysis. Many of the authors use more than one example to illustrate a particular statistical methodology. In addition, several industries are represented, including the food, chemical, electrical, bioanalytical, environmental and cosmetic industries. The book is a tribute to Horace P. Andrews, a statistics professor from Rutgers University who appears to have had quite an impact on many of his students.

A variety of statistical methodologies are used. Some of the authors apply fractional factorial designs to their particular problem. Others discuss the application of surface response methodologies. One author demonstrated that even when statistics have been overlooked in the experimental design, statistical analysis that is done carefully still can be applied to the results. Another important aspect of statistical analysis covered in detail was the graphical presentation of the results. Several of the papers address this important aspect of statistical analysis. A graphical display of the results is a major component of the more advanced statistical software available for use on the personal computer. The widespread availability of personal

computers, along with the recent development of several commercial statistics packages, will be beneficial to both industrial and academic personnel. This text augments many of those programs quite well and would make an excellent reference text.

One item the book stresses is the importance of incorporating statistics in the early stages of the experimental design. However, occasionally overlooked is the reason for selecting a particular statistical model for the experimental design. It is not always clear why one experimental design was chosen over another.

In light of the availability of several good statistical design and analysis programs for personal computers, this text provides excellent support and example information that allows one to take greater advantage of personal computer-based statistical software. The editors even provide a short guide for software evaluation and selection. I recommend the text for those interested in the use of statistics for experimental design and analysis, particularly in the industrial environment, whether in the lab or processing plant.

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**Biological Research in Aging, Vol. 3**, edited by Morton Rothstein (Alan R. Liss Inc., 41 E. 11th St., New York, NY 10003, 1987, 547 pp., \$140).

This is the third volume of a series devoted to up-to-date summaries of the status of various areas within the field of aging research. The literature is covered through the first half of 1986.

The introduction is a review of the evolution of gerontology as a science, written by Nathan W. Shock, a scientist who had much to do with the emergence of the science of gerontology. There are six divisions of the book. The first encompasses theories, evolution and genetics of aging and contains eight chapters that cover theories of aging and aging among proto-

zoa, fungi, worms, insects and mice. The second section, on immunology of aging, contains four chapters. These cover T-Cell-mediated immunity, killer cells, lymphokine production and humoral immunity. The sections on neurobiology and endocrinology of aging each contain four chapters that discuss, among other subjects, synaptic regulation of neurotransmitter function, neuroanatomy and hormone secretion in aging animals and man. Reviews on cellular aging in culture and the use of cultured endothelial cells are presented under the heading of cell biology of aging. There are five subjects discussed under biochemistry of aging. These include a critique of the free radical theory of aging and an update on the effects of food restriction on the aging process. The final section contains one contribution that discusses aging and drug disposition.

The book is easy to read, using an attractive typeface. References are complete, giving the names of all authors and inclusive pages of cited work. A good subject index is available, but there is no author index. In all, this book represents a carefully edited, well-printed review of the current status of important areas in aging.

The aging field covers a number of different areas, as can be attested by the 29 chapters in the current work. The book is designed for experts in aging research, but any scientist working in an adjacent area (drug disposition and caloric restriction, for instance) will find it a source of useful, up-to-date information.

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**Recent Advances in Chemistry and Technology of Fats and Oils**, edited by R.J. Hamilton and A. Bhati (Elsevier Science Publishing Co. Inc., 52 Vanderbilt Ave., New York, NY 10017, 1987, 188 pp., \$54).

This slender volume consists of eight unrelated chapters, of which only two deal with fats and oils technology. The preface states that all of the chapters except one origi-

nally were presented at conferences. This may explain why some of the chapters are brief.

The first chapter deals with physical properties of fats and oils, mainly from the viewpoint of phase diagrams and compatibility of fats. The second chapter is a useful summary of methods of analysis of triglyceride structure. The technology of fats is covered in chapters on hydrogenation and modification techniques. Other chapters deal with the analysis of milk lipids and the role of wheat grain lipids in the bread-making process. A chapter on varietal differences in plant lipids consists of an extensive tabulation of recent data. Many lipid chemists will find something of interest in this book, but it probably will be used only for specific chapters.

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## Other publications

A U.S. Department of Agriculture's (USDA) Economic Research Service report, **An Assessment of Marketing Loan Program Options**, by Michael Hawthorn and Joseph Glauber, analyzes why marketing loan rates were not implemented for wheat, feed grains and soybeans in 1987. The report explains how marketing loans work, how they compare with generic certificates in cost and effectiveness, and the possible effects of a soybean marketing loan on other oilseeds. The 33-page booklet (stock number 001-019-00563-7), published in December 1987, is available for \$2 from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

W. Charles & Co. has available a two-volume manual on quality assurance and operations for manufacturing facilities. The cost is \$125. Contact: W. Charles & Co., 28740 SW Parkway Ave., #A1, PO Box 54, Wilsonville, OR 97070.