Handbook of Dairy Foods and Nutrition, Second Edition

National Dairy Council®
Rosemont, Illinois

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Series Preface

The CRC Series in Modern Nutrition is dedicated to providing the widest possible coverage of topics in nutrition. Nutrition is an interdisciplinary, interprofessional field par excellence. It is noted by its broad range and diversity. We trust the titles and authorship in this series will reflect that range and diversity.

Published for a broad audience, the volumes in the CRC Series in Modern Nutrition are designed to explain, review, and explore present knowledge and recent trends, developments, and advances in nutrition. As such, they will appeal to professionals as well as the educated layman. The format for the series will vary with the needs of the author and the topic, including, but not limited to, edited volumes, monographs, handbooks, and texts.

Contributors from any bona fide area of nutrition, including the controversial, are welcome.

I welcome the contribution of the book *Handbook of Dairy Foods and Nutrition, Second Edition* by my talented and energetic colleagues Gregory D. Miller, Ph.D., F.A.C.N., Judith K. Jarvis, M.S., R.D., L.D., Lois D. McBean, M.S., R.D. The first edition proved extremely useful and we have received lots of positive feedback. It serves as a resource for those interested in nutritional and clinical aspects of milk and milk products. The second edition is again timely, up-to-date, and covers an important subject area.

Ira Wolinsky, Ph.D.
University of Houston
Series Editor

Introduction

America's dairy farmers participate in a national check-off program that provides monies to promote the consumption of dairy foods. A large portion of these funds is used to support nutrition research, communication, and education. Since 1915, the National Dairy Council® has been committed to establishing programs and developing educational materials based on current scientific research, as well as providing sound scientific information in all of its communications.

This book is an update of the first edition of the *Handbook of Dairy Foods and Nutrition*. We have again attempted to review the most current scientific information available on the role and value of dairy foods in a healthful diet. It is a part of our ongoing effort to provide up-to-date information on foods and nutrition research to health professionals, educators, consumers, processors, and other interested groups. We hope this new edition will continue to be a useful resource on the role of dairy foods in health and nutrition.

The Authors

Gregory D. Miller, Ph.D., F.A.C.N., is vice president, nutrition research for National Dairy Council® (NDC), Rosemont, Illinois. Dr. Miller graduated in 1978 from Michigan State University with a B.S. degree in nutrition and in 1982 earned an M.S. degree in nutrition (toxicology) from The Pennsylvania State University. In 1986 he received a Ph.D. in Nutrition (toxicology) from The Pennsylvania State University.

He served as an undergraduate research assistant in nutrition-toxicology at Michigan State University in 1978 and was a graduate research assistant in the Center for Air Environment Studies and the Nutrition Department of The Pennsylvania State University from 1979 to 1986. Dr. Miller was a research scientist for Kraft, Inc., Glenview, Illinois from 1986 to 1989 and was a senior research scientist from 1989 to 1992.

Dr. Miller is a member of the American College of Nutrition, The American Society for Nutritional Sciences, The American Society for Clinical Nutrition, Institute of Food Technologists Nutrition Division, the American Dairy Science Association, and the International Society for the Study of Fatty Acids and Lipids. He was a scientific advisory panel member for the Office of Technology Assessment for the development of several reports to Congress on issues in the treatment and prevention of osteoporosis. He has chaired or co-chaired more than 20 workshops and symposia for national organizations including the American Society for Nutritional Sciences, American College of Nutrition, and the International Life Sciences Institute.

Dr. Miller is a member of the Editorial Board for the *Journal of the American College of Nutrition* and *Mature Medicine Canada*. He has served as a symposium editor for the *Journal of Nutrition* and the *Journal of the American College of Nutrition*. He is an editorial advisor for *Prepared Foods* and *Dairy Foods* magazines. He has served as a member of the board of directors and is secretary treasurer for the American College of Nutrition. He is currently a board member of the United States National Committee to the International Dairy Federation and is president of the International Dairy Federation's Commission on Science, Nutrition, and Education.

Among other awards, he has received the 1989 Kraft Basic Science Award and was listed in the 1992 *American Men and Women of Science* and the 1992 *Who's Who in Science*. In 1993, Dr. Miller was elected as a Fellow of the American College of Nutrition. He was selected as an outstanding alumnus by the Michigan State University in 1996, and received the Health and Human Development Alumni Recognition Award in 1996 from The Pennsylvania State University.

Dr. Miller has presented more than 65 invited lectures at national and international meetings and has published more than 85 research papers, reviews, articles, and abstracts. He has co-edited three books on diet, nutrition, and toxicology and contributed chapters to eight books. He is co-author of the *Handbook of Dairy Foods and Nutrition*.

Lois McBean, M.S., R.D., is a nutrition consultant for National Dairy Council. She is the author/editor of NDC's *Dairy Council Digest*, a bimonthly review of nutrition research for health professionals.

Lois McBean received a B.A. degree in 1966 from the University of Toronto, and obtained her M.S. degree in nutrition in 1968 from Cornell University. Lois is a registered dietitian and an active member of The American Dietetic Association, The American Society for Nutritional Sciences, and The Institute of Food Technology.

Prior to her career as a nutrition writer/editor and consultant, Lois McBean was a research nutritionist for the federal government in Washington, D.C., where she was involved in the establishment of zinc as an essential nutrient. Lois has written extensively on many diet and health issues, especially those related to the dairy industry. In addition to newsletters, she has authored numerous articles in peer-reviewed scientific journals, chapters in food and nutrition books, scientific backgrounders, fact sheets, educational materials (e.g., the *Calcium Counseling Resource*), speeches, video conference scripts, and press releases. The *Dairy Council Digest* and the *Calcium Counseling Resource* can be obtained by logging onto www.nationaldairycouncil.org.

Judith K. Jarvis, M.S., R.D., L.D., is manager of consumer and health professional information in the nutrition research department of the National Dairy Council. In this position, she writes scientific background papers, develops other educational pieces for health professionals, and manages quarterly mailings to the nutrition and health community. Judy monitors major medical/nutrition journals and writes or reviews summaries of current research for dissemination to local Dairy Councils and other dairy industry organizations. In addition, she reviews materials for technical accuracy from a variety of departments and develops corporate comments provided to regulatory agencies as needed. Judy also answers technical inquiries related to dairy foods, nutrition, and health from local Dairy Councils, health professionals, the dairy and food industry, educators, government agencies, and consumers.

Judith Jarvis earned a bachelor of science degree in communications from the University of Illinois and a master of science degree in human nutrition and nutritional biology from the University of Chicago.

Prior to joining the National Dairy Council, she worked as a clinical dietitian, providing nutritional care and education to cardiac and renal patients. She is a member of The American Dietetic Association, the American College of Nutrition, and is current President of the Chicago Nutrition Association. She served as editor of the *American College of Nutrition* newsletter from 1995-1998 and has authored articles for scientific and nutrition journals.

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Two experts reviewed each chapter. A list of the chapters and reviewers is provided. We thank them for their helpful suggestions in the preparation of each chapter.

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