

Food,
Consumers,
and the
Food
Industry

Catastrophe or
Opportunity?

CRC Series in CONTEMPORARY FOOD SCIENCE

Fergus M. Clydesdale, Series Editor
University of Massachusetts, Amherst

Published Titles:

*America's Foods Health Messages and Claims:
Scientific, Regulatory, and Legal Issues*
James E. Tillotson

New Food Product Development: From Concept to Marketplace
Gordon W. Fuller

Food Properties Handbook
Shafiur Rahman

*Aseptic Processing and Packaging of Foods:
Food Industry Perspectives*
Jarius David, V. R. Carlson, and Ralph Graves

*The Food Chemistry Laboratory: A Manual for Experimental Foods,
Dietetics, and Food Scientists*
Connie Weaver

Handbook of Food Spoilage Yeasts
Tibor Deak and Larry R. Beauchat

Food Emulsions: Principles, Practice, and Techniques
David Julian McClements

*Getting the Most Out of Your Consultant: A Guide
to Selection Through Implementation*
Gordon W. Fuller

Antioxidant Status, Diet, Nutrition, and Health
Andreas M. Papas

Food Shelf Life Stability
N.A. Michael Eskin and David S. Robinson

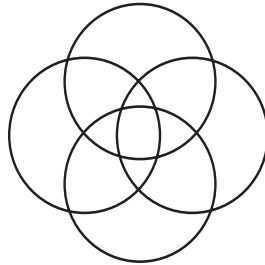
Bread Staling
Pavinee Chinachoti and Yael Vodovotz

Interdisciplinary Food Safety Research
Neal M. Hooker and Elsa A. Murano

CRC Series in
CONTEMPORARY FOOD SCIENCE

Food, Consumers, and the Food Industry

Catastrophe or
Opportunity?



Gordon W. Fuller



CRC Press

Boca Raton London New York Washington, D.C.

Library of Congress Cataloging-in-Publication Data

Fuller, Gordon W.

Food, consumers, and the food industry : catastrophe or opportunity? / Gordon W. Fuller.

p. cm. — (CRC series in contemporary food science)

Includes bibliographical references and index.

ISBN 0-8493-2326-6 (alk. paper)

1. Food. 2. Consumer protection. 3. Food industry and trade. I. Title. II. Series.

TX353 .F835 2000

363.8—dc21

00-046820

CIP

This book contains information obtained from authentic and highly regarded sources. Reprinted material is quoted with permission, and sources are indicated. A wide variety of references are listed. Reasonable efforts have been made to publish reliable data and information, but the author and the publisher cannot assume responsibility for the validity of all materials or for the consequences of their use.

Neither this book nor any part may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, microfilming, and recording, or by any information storage or retrieval system, without prior permission in writing from the publisher.

The consent of CRC Press LLC does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific permission must be obtained in writing from CRC Press LLC for such copying.

Direct all inquiries to CRC Press LLC, 2000 N.W. Corporate Blvd., Boca Raton, Florida 33431.

Trademark Notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation, without intent to infringe.

Visit the CRC Press Web site at www.crcpress.com

© 2001 by CRC Press LLC

No claim to original U.S. Government works

International Standard Book Number 0-8493-2326-6

Library of Congress Card Number 00-046820

Printed in the United States of America 1 2 3 4 5 6 7 8 9 0

Printed on acid-free paper

Preface

For nearly 50 years I have worked exclusively in the agricultural and food industries. My work has been in government as a research analyst; in industry as a hands-on technologist in product development, with a research association in charge of meat products research, and later as vice president, Technical Services, of a multinational food company; in academia as an associate professor teaching and directing research in added value poultry products; and in private practice as a food consultant. During the course of this work, I visited growers, food and ingredient manufacturers, and government research establishments in countries in North and South America, Asia, and Europe. I have lectured or conducted training courses in Canada, the United States of America, England, Ecuador, The Netherlands, China and Germany.

Such opportunities as these travels permitted allowed me to meet and discuss food issues with many distinguished men and women involved in various activities within the food microcosm. Knowingly or unknowingly they helped shape many of my thoughts and concerns that have been presented in this book. I thank all of them.

I have deliberately tried to steer a course between presenting a technical discourse on food issues in the third millennium and creating a more readable, non-technical presentation of the concerns that will confront future generations. Support material for the issues presented has come from the public media, popular scientific magazines and peer reviewed journals. My colleagues may find this approach too non-technical. However, it was necessary that all, scientists, lay business people and the general public see how we, the technologists and food business community, are perceived in the public media as well as in technical journals. For those in the non-technically trained general public who are concerned about their food I trust the book is not too technical and may stir some critical understanding of food issues so some positive action that reconciles divergent philosophies may be undertaken. Culturally acceptable, safe food that is of high quality and is nutritionally adequate must be not only

available to all at a price they can afford but continue to be available to future generations.

I would, in particular, like to acknowledge the assistance of my son, Grahame Fuller, who prepared the figures.

The Author

Dr. Gordon W. Fuller has had extensive experience in industry, in academia and in government, all of which was in association with food and agriculture. In government, he worked as a research analyst on the characterization of citrus flavors using gas chromatography with the Food and Drug Directorate in Ottawa, Canada.

Industrial activities included work on chocolate and chocolate products with the Nestlé Co., Fulton, NY; tomato, fruit, and canned soup products with the Mellon Institute for Industrial Research, Pittsburgh, PA, for the H. J. Heinz Co.; and fresh and preserved meat products with the Food Research Association, Leatherhead, U.K. This product experience was broadened when as vice president of technical services, Imasco Foods Limited, he was responsible for corporate research and development over a product line that included canned goods, and bakery operations for tortillas and frozen foods.

In academia, Dr. Fuller was an associate professor in the department of poultry science at the University of Guelph. Here he taught and conducted research on poultry and egg products. He was also an external lecturer at both Concordia and McGill Universities in Montreal.

He is the author or co-author of several papers in scientific journals and food trade magazines. He is the author of *New Food Product Development: From Concept to Marketplace*, published by CRC Press (1994) and *Getting the Most Out of Your Consultant* also published by CRC Press (1999). He is a Fellow of the Institute of Food Science and Technology (U.K.), a charter member of the Institute for Thermal Processing Specialists, and is a member of the Institute of Food Technologists and the Canadian Institute of Food Science and Technology.

Table of Contents

1: The Present Status

Introduction

A Perspective on Events Leading up to the Present

The Present Status on the Threshold of the Third Millennium

2: Customers, Consumers, and Consumerism

An Introduction to Change

Getting to Know the Protagonists

The Impact of Change During the Past Thousand Years

Techniques for Understanding Customers and Consumers

Issues Confounding Knowledge of the Customer/Consumer

3: Marketing and Markets

What's in a Name

The Technology of Marketing

Marketing and the Global Village

4: The Selling Fields: The Arenas for Marketing

Setting the Stage

The Many Selling Arenas

The Varied Marketplaces

The Computer, the Internet, and the Marketplace

Enter: The Electronic Food Marketplace

5: Nutrition and Health

A Growing Concern

The Nutritional Sciences

The Macronutrients

The Micronutrients: Biologically Active Non-Nutrients

Challenges for the New Nutrition

Genetics and Nutrition

Medical Foods

The Quest for A Long and Healthy Life

Exploiting the Consumer's Quest

6: The Challenge of Ever Newer Technologies

An Accelerating Pace of Technological Change

Old Technologies, New Hazards

New Technologies: What Hazards?

7: Food Safety, Risk, and Quality

“All I Ask of Food is that It Doesn’t Harm Me”

Major Issues Causing Concern for Food Safety

An Erosion of A Belief in the God of Science and Its Apostles

Summary

8: Legislative Dilemmas in the New Millennium

“Here Lay the Dilemma”

How the Dilemma for Food Legislators Arose

The Quest for A Safe and Wholesome Food Supply

9: The Issues, The Problems, Maybe Some Solutions

An Age of Technology

The Legacy from the Second Millennium

Fighting the Current: Forces in the Marketplace

The Challenges: A Summary of Confusing Issues

References

Dedication

To my wife, Joan, for her proofreading and suggestions for improvements and clarification of my writing, but most of all for her patience, understanding, and encouragement.