

Contents

Dedication	v.....
Foreword — Tribute to Edward G. Perkins	ix.
Introduction	xi.
About the Editor	xiii

Part 1 ● Overview

1 Production and Composition of Frying Fats	
<i>David R. Erickson</i>	3
2 Storage and Handling of Finished Frying Oils	
<i>David R. Erickson</i>	25
3 Initial Quality of Frying Oil	
<i>Frank T. Orthofer and Gary R. List</i>	33

Part 2 ● Physical Characteristics

4 Volatile Odor and Flavor Components Formed in Deep Frying	
<i>Edward G. Perkins</i>	51
5 Isomeric and Cyclic Fatty Acids as a Result of Frying	
<i>Jean-Louis Sébédio and Pierre Juaneda</i>	57
6 Formation and Analysis of Oxidized Monomeric, Dimeric, and Higher Oligomeric Triglycerides	
<i>M. Carmen Dobarganes and Gloria Marquez-Ruiz</i>	87
7 Formation , Analysis, and Health Effects of Oxidized Sterols in Frying Fat	
<i>Paresh C. Dutta, Roman Przybylski, Michael N.A. Eskin, and Lars-Åke Appelqvist</i> ..	111

Part 3 ● Nutrition

8 Role of Fat in the Diet	
<i>Bruce E. McDonald and Michael N.A. Eskin</i>	167
9 Nutritional and Physiological Effects of Used Frying Oils and Fats	
<i>Gloria Márquez-Ruiz and M. Carmen Dobarganes</i>	1 7 3
10 Physiological Effects of <i>trans</i> and Cyclic Fatty Acids	
<i>Jean-Louis Sébédio, Jean-Michel Chardigny, and Corinne Malpuech-Brugère</i>	205
11 The Chemistry and Nutrition of Nonnutritive Fats	
<i>William E. Artz, Louise L. Lai, and Steven L. Hansen</i>	229

Part 4 ● Application

12	Dynamics of Frying	
	<i>Frank T. Orthoefer and Gary R. List</i>	253
13	Foodservice Frying	
	<i>Don Banks</i>	277
14	Industrial Frying	
	<i>Don Banks</i>	291
15	Practical Foodservice Frying: Troubleshooting	
	<i>Michael D. Erickson</i>	305

Part 5 ● Evaluation

16	General Considerations for Designing Laboratory Scale Fry-Tests	
	<i>Don Banks</i>	317
17	Designing Field Frying Tests	
	<i>Michael D. Erickson</i>	323
18	Evaluation of Used Frying Oil	
	<i>Frank T. Orthoefer and Gary R. List</i>	329
19	Evaluation of Passive and Active Filter Media	
	<i>Robert A. Yates</i>	343
20	Sensory Evaluation of Frying Fat and Deep-Fried Products	
	<i>Sharon L. Melton</i>	359

Part 6 ● Regulation

21	Regulation of Frying Fat and Oil	
	<i>David Firestone</i>	373
22	Environmental Concerns	
	<i>Michael J. Boyer</i>	387
23	Options for Reducing/Eliminating trans Fatty Acids in Deep Fat Frying and Labeling Implications	
	<i>Robert E. Wainwright, Denise Fallaw, Lynne Morehart, Jim Womack, and Consuelo Renteria</i>	397
24	Current and Future Frying Issues	
	<i>Robert E. Wainwright and Dan Lampert</i>	415

Index	4..1
-------	-------	------