

Third Edition

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# Fats *and* Oils

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Formulating and  
Processing for  
Applications

Richard D. O'Brien



CRC Press  
Taylor & Francis Group

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Boca Raton London New York

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CRC Press is an imprint of the  
Taylor & Francis Group, an **informa** business

CRC Press  
Taylor & Francis Group  
6000 Broken Sound Parkway NW, Suite 300  
Boca Raton, FL 33487-2742

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Printed in the United States of America on acid-free paper  
10 9 8 7 6 5 4 3 2 1

International Standard Book Number-13: 978-1-4200-6166-6 (Hardcover)

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**Library of Congress Cataloging-in-Publication Data**

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O'Brien, Richard D.

Fat and oils : formulating and processing for applications / Richard D. O'Brien.

-- 3rd ed.

p. cm.

Includes bibliographical references and index.

ISBN-13: 978-1-4200-6166-6

ISBN-10: 1-4200-6166-6

1. Oils and fats, Edible. I. Title.

TP670.O27 2009

664'.3--dc22

2008020476

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# **Fats** *and* **Oils**

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Formulating and  
Processing for  
Applications

## Third Edition Preface

The objective of this edition remains the same as the two previous editions — to provide a practical reference for fats and oils processing and formulation for effective food processor, foodservice, and household applications. It is designed to be an information source for personnel and students of fats and oils processing as well as the personnel of the user industries. Most of the additions for this edition are related to nutrition. Dietary recommendations for fat and fatty acids continue to evolve as a better understanding of the role of dietary lipids in human health is gained. Processing and formulation techniques are reviewed to help determine how to achieve the most favorable nutritional characteristics while maintaining functionality for the various food applications.

This book was designed to delve into the technical aspects that control the functional characteristics of fats and oils products, how these characteristics can be purified and/or modified to perform as needed, and the processing control necessary to produce these characteristics on a continuing uniform basis at the most economical cost. Applications development and quality management begin when the customer's requirements are identified and continue through product design, sales, manufacturing, product costing, delivery, and service. A thorough understanding of the functions and properties of the various fats and oils products is the basic key to formulating for the desired attributes. Chapters dealing with the raw materials or source oils and fats, process performance and availability, evaluation techniques, formulation attributes, historic changes, and food applications were designed to provide the elements of formulation. Control of oil processing requires consideration of the problems associated with the properties of the raw materials and each process as well as the real and potential customer problems with the ingredients use. A quality management chapter was included to help establish when a system is in or out of control, and a troubleshooting chapter was included to help identify solutions to problems or at least stimulate the thought process for solving the problem.

Fats and oils user industries have a vested interest in the development, processing, and quality control for shortening, margarine, and liquid oil products. The properties of the fat and oil ingredients are key elements in the performance and nutritional characteristics of most prepared food products. Fats and oils products for general use, specific applications, processes, nutritional contributions, and other functionalities have been successful due to the cooperative development efforts between fats and oil processors and food processors. Therefore, this text focuses on the formulation of fats and oils ingredients for food applications for food processor, foodservice, and household use.

Information and materials for this book have been gathered over the past 45 years from patents, trade journals, personal experience, and exposure to many of the industry's recognized leaders and other individuals who have taken a genuine pride in their work and the product produced.

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