

# *Handbook of Food Products Manufacturing*

Edited by

**Y. H. Hui**

Senior Scientist, Science Technology System, West Sacramento, California

## **Associate Editors**

**R.C. Chandan, S. Clark, N. Cross, J. Dobbs,  
W.J. Hurst, L.M.L. Nollet, E. Shimoni, N. Sinha,  
E.B. Smith, S. Surapat, A. Titchenal, and F. Toldrá**



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*Handbook of Food  
Products Manufacturing*



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# Preface

It is obvious that professionals from the government, industry, and academia need reference books on the manufacturing of food products. Publishers serve this market by publishing three categories of books:

1. Books on the principles of food processing with or without a discussion of manufacturing selected food commodities. The discussion of the manufacturing of specific food products, if included, is usually limited to a representative few.
2. Books on the processing of one category of food products, for example, bakery, seafood, poultry. There are hundreds of such books in the market.
3. Multivolume reference books such as handbooks and encyclopedia covering all areas of food science, technology, and engineering, including the manufacturing of selected food products. Obviously, the number of food products included is also limited.

The cost and the relative need of multivolume reference books in food science, technology, and engineering make the purchase of books under the third group unrealistic and prohibitive for many libraries and personal bookshelves. The *Handbook of Food Products Manufacturing* is designed to fill the gap in the above book categories in terms of relative cost and coverage. It is presented in two volumes and has the following profiles:

- Covers the manufacturing of selected food products and the process of development of selected food products from specific food ingredients.
- Supplements many food processing texts already in the market.
- Serves as a general reference treatise of a reasonable size and cost that will provide information on manufacturing of some food products and topics of related interest.

One can appreciate the difficulty of this task from the simple observation that books with the same coverage are not common. The editors of this proposal, with the help of professionals from academia, government, and industry, hope to achieve these objectives. However, it is important to emphasize the following premises:

1. The coverage is not entirely comprehensive if one considers the wide spectrum of food products in the market. Additionally, scientific and technological advancement in food processing will always outpace publishing.
2. Several factors determine the selection of topics coverage:
  - i. Some products are popular for many consumers.
  - ii. Some products are seldom covered in other books on similar topics.
  - iii. Expertise of members of the editorial team.
  - iv. Availability of chapter contributors in terms of time, background, expertise, etc.
3. Since this is a general reference text, the depth of coverage is limited to competencies associated with general users rather than specialists.

Based on the above premises, these two volume texts cover the following chapters:

- Fifty-four chapters on the direct manufacturing of specific food products. These chapters cover: bakery, beverages, cheese, confectionery, fats and oils, fruits, meats, milk and dairy products, poultry, seafood, and vegetables.
- Thirty-two chapters on the use of specific food ingredients to develop food products new or otherwise. These chapters cover products development from many known food ingredients. The products to be developed cover traditional foods (food flavors, bakery, fruit juices, milk and dairy products, and poultry products) and new foods (fresh-cut fruits, functional foods for consumers, and medical foods for treating and preventing diseases).
- Five chapters on the recent development of food flavors in view of the role of food flavors in all aspects of food manufacturing. These chapters cover extraction, distillation, biotechnology, and other topics.
- Five chapters on legal requirements in the United States for food classification and manufacturing of food products such as good manufacturing practice (GMP), hazard analysis and critical control points (HACCP), and establishment inspection.

Although this book is relevant to many professions, it will probably be most useful to:

1. Undergraduate and graduate students for research for classroom assignments or preliminary research investigation for potential topics.
2. Professionals from industry, government, and academia interested in topics peripheral to their specialties.
3. Small start-up food manufacturing companies looking for potential products for development.

From the above list of potential users it is obvious that this book is uniquely designed for private or public libraries, small or large. This work is the result of the combined efforts of nearly 200 professionals from industry, government, and academia worldwide. They represent more than 35 countries with diverse expertise and background in the science and

technology of food manufacturing and food products development. An international editorial team of 13 members from five countries led these experts. Each contributor or editor was responsible for researching and reviewing subjects of immense depth, breadth and complexity. Care and attention were paramount to ensure technical accuracy for each topic. In sum, this volume is unique. It is our sincere hope and expectation that it will serve as an essential reference on the manufacturing of food products, for professionals in government, industry, and academia.

The editorial team wishes to thank all the contributors for sharing their expertise throughout our journey. We also thank the reviewers for giving their valuable comments on how to improve the contents of each chapter. All these professionals made this book possible. We trust that you will benefit from the fruits of their labor.

We know firsthand the challenges in developing a book of this scope. What follows are the difficulties in producing the book. We thank the editorial and production teams at John Wiley, Inc. and Techset Composition Ltd., Salisbury, UK, for their time, effort, advice, and expertise. You are the best judge of the quality of this work.

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