The major food and beverage packaging materials—glass, metal, plastic, paper and paperboard—increasingly compete with each other in the battle over which type of container is optimal for a given application. Increasingly, food and beverage product innovators need to consider which packaging materials—or combination of materials, systems, pack designs and processes—will best serve the market and enhance brand value with due consideration of the sustainability credentials of the product and its packaging.

Now in a fully revised and updated second edition, the book provides a contemporary overview of the preservation and packaging of food and beverages. It focuses initially on the core issues of biodeterioration, product quality and shelf life, before discussing logistical packaging and the importance of integrating packaging with all the activities in a supply chain.

Each of the main packaging materials is then examined in depth, alongside the techniques of active packaging and modified atmosphere packaging (MAP). This new edition also addresses environmental and sustainability concerns. A new chapter discusses bioplastics, which continue to establish niche markets in the packaging of food and beverage products.

The contributors are an authoritative team close to the latest developments in food and beverage packaging technologies. This book will provide a resource for those in and associated with the food and beverage industry who need to know about the packaging needs of the products. It will help those in the manufacture of food and beverage products to understand how their products packaging needs are met in manufacture, storage, distribution and retailing. It will be useful to those who create and manufacture packaging materials and packaging products, for packaging engineers and for students studying packaging technology, food science and all packaging-related subjects.

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Also available
Packaging Research in Food Product Design and Development
H.R. Moscowitz, M. Reisner, J.B. Lawlor and R. Deliza

Technology of Bottled Water
Third Edition
Edited by N. Dege

Packaging for Nonthermal Processing of Food
Edited by J.H. Han

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Food and Beverage Packaging Technology

Second Edition

Edited by

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Mark Kirwan
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Preface

This book informs the reader about product preservation processes and techniques, product quality and shelf life, and the logistical packaging, packaging materials, machinery and processes, necessary for a wide range of packaging presentations and methods of distribution used for the production and marketing of food and beverage products. The role of packaging in enhancing the sustainability of the food and beverage supply system is also emphasised.

It is essential that those involved in packaging innovation and design have a sound understanding of the fundamental requirements for consumer safety, product protection, preservation, together with a broad appreciation of the multi-dimensional role of packaging. Business objectives may include:

- the launch of new products or the re-launch of existing products
- the provision of added value to existing products or services
- cost reduction in the supply chain
- improved sustainability credentials of a product and its packaging

This book sets out to assist in the attainment of these objectives by informing designers, technologists and others in the packaging chain about key food and beverage packaging technologies and processes. To achieve this, the following five principal subject areas are covered:

(i) Packaging innovation and design (Chapter 1).
(ii) Bio-deterioration and methods of preservation (Chapter 2).
(iii) Packaged product quality and shelf life (Chapter 3).
(iv) Logistical packaging for food marketing systems (Chapter 4).
(v) Packaging materials and processes (Chapters 5–10).

Chapter 1 introduces the subject of food and beverage packaging and its design and development. Strategically, packaging innovation can be an important source of competitive advantage for retailers and product manufacturers seeking to promote and differentiate their brands. Chapter 2 discusses bio-deterioration and methods of product preservation that are fundamental to conserving the integrity of a product and protecting the health of the consumer. Chapter 3 discusses packaged product quality and shelf life issues that are the main concerns for product stability and consumer acceptability. Chapter 4 discusses logistical packaging for food marketing systems – it considers supply chain efficiency, distribution hazards, opportunities for cost reduction and added value, communication, pack protection and performance evaluation. Chapters 5, 6, 7 and 8 consider metal cans, glass, plastics and paper and paperboard, respectively. Chapters 9 and 10 discuss active packaging and modified atmosphere packaging respectively – these techniques are used to extend/optimise the shelf life and/or guarantee quality attributes such as nutritional content, taste and the colour of many types of fresh, processed and prepared food and beverage.