

1. Record Nr.	UNINA9910141049703321
Titolo	Extrusion-cooking techniques [[electronic resource]] : applications, theory and sustainability // edited by Leszek Moscicki
Pubbl/distr/stampa	Weinheim, Germany, : Wiley-VCH, 2011
ISBN	1-283-14070-5 9786613140708 3-527-63408-8 3-527-63409-6
Descrizione fisica	1 online resource (236 p.)
Altri autori (Persone)	MoscickiLeszek
Disciplina	664.02
Soggetti	Food - Extrusion Extrusion process Processed foods Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Extrusion-Cooking Techniques: Applications, Theory and Sustainability; Contents; Preface; List of Contributors; 1 Extrusion-Cooking and Related Technique; 1.1 Extrusion-Cooking Technology; 1.1.1 Preparation of Raw Material; 1.1.2 Extrusion-Cooking; 1.1.3 Forming, Drying and Packing; 1.2 Quality Parameters; 1.3 Extrusion-Cooking Technique; 1.3.1 Historical Development; 1.3.2 Processing of Biopolymers; 1.3.3 Food Melting; 1.3.4 Rheological Considerations; 1.4 Modern Food Extruders; 1.4.1 Single-Screw Extrusion-Cookers; 1.4.2 Twin-Screw Extrusion-Cookers; 1.5 Concluding Remarks; References 2 Engineering Aspects of Extrusion 2.1 Mass Flow and Temperature Distribution in a Single-Screw Extruder; 2.1.1 The Theory of Mass Flow and Temperature Distribution; 2.1.2 Residence Time Distribution of the Material in the Extruder; 2.2 Energy Balance; 2.2.1 Components of Energy Balance; 2.2.2 Total Power Input to a Screw; 2.3 Mass and Heat Transfer in a Twin-Screw Extruder; 2.3.1 Heat Transfer; 2.3.2 Model by Yacu; 2.3.2.1 Solid Conveying Section; 2.3.2.2 Melt Pumping Section; 2.3.3 Model by van Zuilichem; References; 3 Raw Materials in the

Production of Extrudates; 3.1 Introduction
3.2 Structure-Forming Raw Materials and Additional Components
3.3 Physical and Chemical Changes in Vegetable Raw Materials During Extrusion-Cooking; 3.3.1 Changes in Starchy Materials; 3.3.2 Changes in Protein-Rich Materials; 3.3.3 Changes in Fibers; 3.3.4 Changes in Vitamins; 3.4 Nutritional Value of Extrusion-Cooked Foods; 3.5 Concluding Remarks; References; 4 Production of Breakfast Cereals; 4.1 Introduction; 4.2 Directly Extruded Breakfast Cereals; 4.3 Flaked Cereals; 4.4 Remarks on Operation; References; 5 Snack Pellets; 5.1 Introduction; 5.2 Methods of Snack Pellet Manufacturing
5.2.1 Production Stages
5.2.1.1 Initial Phase; 5.2.1.2 Extrusion and Forming; 5.2.1.3 Production of Short Forms; 5.2.1.4 Production of Laminated, Perforated and Spatial Forms; 5.2.1.5 Drying, Packing and Storage; 5.2.1.6 Toasting or Frying - Final Stage of Snack Production; References; 6 Crispbread, Bread Crumbs and Baby Food; 6.1 Production of Crispbread; 6.2 Production of Bread Crumbs; 6.3 Production of Precooked Flour, Instant Semolina and Baby Food; References; 7 Precooked Pasta; 7.1 Introduction; 7.2 Raw Materials Used in Pasta Processing; 7.3 Extrusion-Cooked Pasta-Like Products
7.3.1 Experimental Results
7.4 Conclusions; References; 8 Processing of Full Fat Soybeans and Textured Vegetable Proteins; 8.1 Introduction; 8.2 Extrusion-Cooking of Full-Fat Soybeans and Other Protein-Rich Vegetable Materials; 8.3 Production of Textured Proteins and Meat Analogues; References; 9 Extrusion Technique in Confectionery; 9.1 Introduction; 9.2 Sweets and Candy; 9.3 Creams and Pastes; 9.4 Gums and Jellies; 9.5 Other Products; 9.6 Concluding Remarks; References; 10 Pet Food and Aquafeed; 10.1 Introduction; 10.2 Market Development; 10.3 Feed Extruders; 10.4 Technology
10.4.1 Raw Materials and their Preparation

Sommario/riassunto

Offering an engineering perspective plus the latest information on the application of this rapidly expanding technique, this practical book covers the technology, engineering, materials and products, as well as economic and ecological aspects. In addition to the theory, it also utilizes case studies that can easily be put into industrial practice. Each step of the process is discussed in terms of sustainability, and all data complies with the EU and FTA environmental regulations. Invaluable reading for food chemists and technologists, process engineers, chemists in industry, agricultural
