1. Record Nr. UNINA9910789224703321

Titolo	The Technology of Extrusion Cooking [[electronic resource] /] / edited by N.D. Frame
Pubbl/distr/stampa	New York, NY : , : Springer US : , : Imprint : Springer, , 1994
ISBN	1-4615-2135-1
Edizione	[1st ed. 1994.]
Descrizione fisica	1 online resource (XI, 253 p.)
Disciplina	641.3 664
Soggetti	Food—Biotechnology Food Science
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	1 Operational characteristics of the co-rotating twin-screw extruder -- 1.1 Types of extruders -- 1.2 Process characteristics of the t.s.e. -- 1.3 Ancillary processes -- 1.4 Raw materials -- 1.5 Practical operation of the t.s.e.—start up, shut down and control -- 1.6 Glossary -- References -- 2 Raw materials for extrusion cooking processes -- 2.1 Introduction -- 2.2 Structure-forming raw materials -- 2.3 Raw materials acting as fillers in the extrudates -- 2.4 Raw materials as plasticisers and lubricants -- 2.5 Raw materials acting as nucleants for gas bubble formation -- 2.6 Raw materials acting as flavours -- References -- 3 Breakfast and cereal extrusion technology -- 3.1 Introduction -- 3.2 What is a breakfast cereal? -- 3.3 A closer look at the products -- 3.4 Breakfast cereal processes -- 3.5 Principles of cooking -- 3.6 Overview of cooking processes -- 3.7 Breakfast cereal processes: traditional and extrusion methods -- 3.8 Conclusion -- References -- 4 Snack food extrusion -- 4.1 Introduction -- 4.2 Ingredients -- 4.3 Equipment review -- 4.4 Direct expanded products -- 4.5 Co-extruded snacks -- 4.6 Indirect expanded products -- 4.7 Die and cutter design -- References -- 5 Petfood and fishfood extrusion -- 5.1 Introduction -- 5.2 Raw material characteristics and selection -- 5.3 Selection of hardware -- 5.4 Processing variables -- 5.5 Final product specifications -- 5.6 Evaluation of operational costs

-- 5.7 Conclusion -- References -- 6 Confectionery extrusion -- 6.1 Introduction -- 6.2 Processing -- 6.3 Flavours and other special ingredients for confectionery extrusion -- 6.4 Liquorice -- 6.5 Toffees, caramels and fudges -- 6.6 Boiled sweets -- 6.7 Sugar crust liqueurs -- 6.8 Pressed tablets -- 6.9 Creams, pastes and lozenges -- 6.10 Gums -- 6.11 Jellies -- 6.12 Cocoa and crumb -- 6.13 Chocolate -- 6.14 Reaction chamber products -- 6.15 Aerated confections -- 6.16 Chewing gum -- 6.17 Frozen confectionery -- 6.18 Croutons -- 6.19 Three-dimensional confections -- 6.20 Confections by half products -- 6.21 Other areas -- 6.22 Conclusion -- Acknowledgements -- References -- 7 Extrusion of brewers' hops -- 7.1 Introduction -- 7.2 Application of extrusion technology to the production of bitterness in beer -- 7.3 Development of extrusion technology in hop processing -- 7.4 Process chemistry—choice of alkaline salt -- 7.5 Composition and quality of extruded hops -- 7.6 Experimental brewing studies with extruded hops -- 7.7 Process development to commercial scale production -- 7.8 Conclusion -- References.

Sommario/riassunto

Extrusion cooking is a specialist area of food technology because of the complexity of the interactive effects which are inherent in the system. General predictive modelling is very difficult because ingredients are diverse and can vary considerably. Modelling tends to be product specifi- new product development tends to be by experimental designs and good fortune. The emphasis of this book is on the latest and potential applications of twin screw extrusion in food production, specifically co-rotating inter- meshing screw extruders. Of course, in order to develop products and maximise the extruder potential in terms of energy, product quality and output, an overall understanding of the material flow mechanism, barrel fill length and rheology is essential. The book aims to give explanations and general guidance with examples of screw design, configuration and operat- ing parameters for a variety of product categories. It is also intended to help production operators diagnose the symptoms of particular problems such as temperature control, quality variation, raw material inconsistency, etc. For the product development technologist there is more than one way to make a similar product. For example, equipment manufacturers recom- mend difficult methods for producing flaked corn. In addition, their machines may differ from each other in terms of screw design, power/ volume ratio, screw tip/barrel clearance, etc. , making scale-up more prob- lematic.