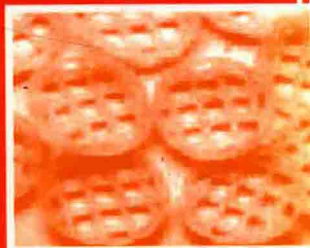



Snack Foods Processing



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Snack Foods Processing

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Preface

THE snack foods industry is a remarkable sector of the food industry. For many years, annual snack sales in the United States have compounded at several times the rate of population increase, thus indicating a vigorous and growing industry. It has evolved as part of the trend toward increased flexibility and mobility in daily living patterns as national affluence increased. Most of the “snacks” we know today have been developed or significantly modified in the United States. Yet, room still exists domestically for new snack ideas and processes. Moreover, U.S.-style snacks are being accepted in newly prosperous countries, where opportunities for additional development are plentiful.

This book is for people who want a technically based practical review of how snack foods are made. Individual motivations to learn differ and may include: a new job with a snack foods producer, transfer of a talented manager in a large corporation to the snacks division, or promotion of a worker from the production line to responsibilities with a broader scope. A technical sales specialist for a machinery, ingredients, packaging materials or services supplier may be assigned to call on snack producers. Some entrepreneurs may want to assess the technical requirements for making snacks, or selling supplies or services to snack processors. Also, researchers and quality control/assurance personnel need an overview of the interrelated technologies for identifying sources of product quality problems.

Savory snacks are emphasized in this book—salted, shelf-stable finger foods, including: potato and corn chips, alkali-cooked corn tortilla chips, pretzels, popcorn, extruder-puffed and dried/fried products, half-products, and animal-product snacks. Readers are also introduced to snacks of China, Japan and India.

Authors of the 24 chapters have extensive experience in their specialties, and range from pioneers to younger members of the industry. Their names, or their employers, already are familiar. Several consultants enrich the book by their experiences in snacks processing and snack-related technologies. Many have influenced development of various sectors of the industry. This book follows the Practical Short Course philosophy honed by 18 years of teaching technical processing of various products to domestic and international industry supervisors at Texas A&M University. Nearly 5,000 people have been trained through this program, many of whom have grown in responsibility and stature in their companies and the industry. We initially asked representatives of the major equipment and ingredient companies to teach what they would like prospective buyers to know about their type of equipment or ingredient when working with them—in a sense, to give the students a vocabulary and bring them to the “street smart” level of knowledge without disclosing proprietary secrets. As in the short courses, chapter authors use their company’s products as illustrations, but the vast majority are representative of multiple sources. Few secrets exist in equipment or supplies when discussing principles, although individual suppliers have their own techniques for gaining optimum performance from their product. The strength of suppliers as authors is that they typically see and solve many problems that would surface only occasionally, if at all, at any one location. Also, some have run commercial snack production lines for prolonged periods in addition to startups. Several bookshelves would be required to hold all that is known about savory snack foods but will never be published because of their proprietary nature and obligations of suppliers to keep their customers’ secrets. But, once the basic principles are understood, problems can be solved in several ways, some of which are described in this book.

Chapters are arranged in a chronological need-to-know basis. The status of the industry is reviewed, followed by important properties of major ingredients, including starch, potatoes, dry potatoes, dent corn; popcorn, oils and seasonings; succeeded by manufacturing equipment, including cookers, grinders, formers, fryers, seasoning applicators, packaging materials, and weigher-filler-sealers. Additionally, sections are included on sensory evaluation, and quality control—in specific chapters and throughout the book. Readers will notice that some overlap occurs between chapters, and authors differ in recommended processing conditions and equipment. This merely documents that snacks are made many different, successful ways in the real world.

The book dwells slightly on the histories of various snack foods industry companies, primarily to show that multibillion-dollar industries have been built starting with simple ideas and simple ingredients (potatoes, corn and rice). It may inspire individuals around the globe to focus on new ways of utilizing local crops and resources. Many U.S.-origin corn-based snack foods are gaining popularity throughout the world. Would-be overseas processors need help in developing reliable sources of good-quality raw materials.

This book has two objectives:

- To provide new entrants with an introduction to the snack foods industry and its terminology, so they can confidently reach out for more information in communicating with suppliers and associates.
- To explain the technical interrelationships between the many materials and processes used in making the finished snack food, so managers, on-line supervisors and quality control/assurance personnel will better understand where to start in solving problems that arise.

The reader will benefit the most by: (1) reading through the book first for scope and interrelations; (2) returning for detailed reading of those sections that relate to the specific concern at hand; and (3) keeping the book on a nearby shelf as a reference of ingredients specifications and process operating conditions.

EDMUND W. LUSAS
LLOYD W. ROONEY

Acknowledgment

THIS book is dedicated to the chapter authors, without whose input it could not have materialized. Individuals who make their living in the snack foods industry were invited to summarize the important principles and critical requirements of their specialties. However, they also are among the busiest of people and the modern business day leaves no time for such writing. Editors can help but little, since ideas must come from those who solve problems first-hand. Each chapter is a gift of experience to later entrants to the industry, often written after regular work hours, in the evenings, while traveling, and sometimes during vacations—personal time that can never be replaced. We thank all for their generosity in participating. We also thank C. McDonough for her help with the graphics in this book.

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Table of Contents

Preface xiii
Acknowledgment xvii
List of Contributors xix

Section I: The Snack Foods Setting

1. OVERVIEW 3
EDMUND W. LUSAS

- 1. Introduction and Industry Scope 3
- 2. Past Innovations 8
- 3. Nutrition 12
- 4. Total Quality Management of Technology 15
- 5. References 27

2. THE SNACK INDUSTRY: HISTORY, DOMESTIC AND GLOBAL STATUS 29
JAMES A. McCARTHY

- 1. Introduction 29
- 2. History 29
- 3. The Domestic Snack Food Market 33
- 4. The Global Market 34
- 5. The Snack Food Association 34
- 6. References 35

Section II: INGREDIENTS AND GENERAL EQUIPMENT

3. Food Quality of Corn	39
L. W. ROONEY and E. L. SUHENDRO	
1. Introduction	39
2. Types of Corn	40
3. Corn Grades, Standards and Specifications	43
4. Corn Kernel Structure and Composition	45
5. Aflatoxins and Fumonisin	47
6. Genetically Modified Organisms (GMOS)	48
7. Food Corn Quality Attributes	49
8. Properties of Corn for Alkaline Cooking	58
9. Handling Food Corn	60
10. Industrial Dry Corn Milling	61
11. Dry Masa from Dry-Milled Corn Fractions	67
12. Sorghum Utilization in Snack Foods	68
13. Acknowledgments	69
14. References	69
4. ALKALINE-COOKED CORN PRODUCTS	73
CASSANDRA M. McDONOUGH, MARTA H. GOMEZ, LLOYD W. ROONEY and SERGIO O. SERNA-SALDIVAR	
1. Introduction	73
2. Traditional Corn Products	73
3. Ingredients	75
4. Preparing and Using Fresh Masa	78
5. Baked and Reduced-Fat Products	87
6. Preparing and Using Dry Masa Flours	88
7. Physicochemical Changes in Alkaline-Cooked Products	93
8. Quality of Alkaline-Cooked Products	106
9. Shelf Life of Corn Products	110
10. Acknowledgments	110
11. References	111
5. STARCHES FOR SNACK FOODS	115
DAVID P. HUANG and LLOYD W. ROONEY	
1. Introduction	115
2. Starch Granules	116
3. Definitions	122
4. Changes in Starch	124

- 5. Starch Ingredients for Savory Snack Foods 130
- 6. Selection of Starches 135
- 7. Conclusions 135
- 8. Acknowledgments 135
- 9. References 136

6. OILS AND INDUSTRIAL FRYING 137

DON E. BANKS and EDMUND W. LUSAS

- 1. Introduction 137
- 2. World Oil Supply 138
- 3. Oil Chemistry 143
- 4. Oil Extraction and Refining 162
- 5. Oil Processing 167
- 6. The Frying Process 173
- 7. Selection of Frying Oils 180
- 8. Frying Oil Management 195
- 9. References 199

7. HOT AIR DRYERS 205

ROBERT SUNDERLAND

- 1. Introduction 205
- 2. Fundamentals of Drying 207
- 3. Psychometric Charts 214
- 4. Sizing a Drying System 218
- 5. Selecting a Dryer 220
- 6. Reference 223

Section III: Snack Foods Preparation and Dedicated Equipment

8. POTATOES AND POTATO CHIPS 227

WILBUR A. GOULD

- 1. Potato Production 227
- 2. Potato Analysis and Composition 231
- 3. Potato Chip Manufacture 235
- 4. Suggested Reading 245

9. USE OF DRIED POTATOES IN SNACK FOODS 247

VELDON M. HIX

- 1. Introduction 247
- 2. History of Fabricated Potato Snacks 247
- 3. Dried Potato Ingredients for Fabricated Potato Snacks 252

4. Other Potato Snack Ingredients	258
5. Future of Fabricated Potato Snacks	258
6. References	259
10. TORTILLA CHIP PROCESSING	261
SURENDRA P. MEHTA	
1. Introduction	261
2. Processing Steps	262
3. Corn Cooking and Soaking	262
4. Washing and Draining	264
5. Grinding Equipment	267
6. Reconstitution of Dry Masa Flour	268
7. Masa Feeding/Pumping/Presheeting	270
8. Sheetting/Cutting	271
9. Baking	272
10. Conditioning/Equilibration	274
11. Frying	275
12. Process Flowchart	278
13. Raw Materials	278
11. SNACK FOODS FROM FORMERS AND HIGH-SHEAR EXTRUDERS	281
OCTAVIAN BURTEA	
1. Introduction	281
2. History of Corn Snacks Processing Equipment	282
3. Corn Chip Processing	290
4. Extruded Bake-Type Snacks	300
5. Extruded Fry-Type Snacks	308
6. References	314
12. SNACK FOODS FROM COOKING EXTRUDERS	315
GORDON HUBER	
1. Introduction	315
2. Formula	316
3. Hardware	321
4. Software (Conditions)	341
5. Extruded Products	352
6. New Developments: Future of Snack Foods Extrusion	365
7. References	367

13. PERFECT PRETZEL PRODUCTION	369
E. TERRY GROFF	
1. The Pretzel: A Snack Food with 800 Years of History	369
2. Types of Pretzels	369
3. Formulation	371
4. Processing	373
5. Problems in Pretzel Manufacture	382
6. References	384
14. POPCORN PRODUCTS	385
CHARLES CRETORS	
1. Introduction	385
2. Raw Popcorn Selection and Preparation	388
3. Popping Methods	396
4. Home Preparation of Popcorn and Equipment	398
5. Commercial Processes for Fresh Popcorn	399
6. Industrial Processes for Packaged Popcorn	401
7. Commercial and Industrial Flavorings and Applicators	410
8. Popcorn Packaging	417
9. Relative Nutrition	418
10. Marketing of Popcorn	419
11. References	420
15. SNACK FOODS OF ANIMAL ORIGIN	421
PETER J. BECHTEL	
1. Introduction	421
2. Jerky Products	425
3. Shelf-Stable Sausage Stick Snacks	428
4. Other Dried Meat Products	429
5. Pork Rind Products and Expanded Products	431
6. Pickled Snack Foods	433
7. Dairy- and Egg-Based Snack Foods	433
8. Dried and Marinated Fish and Shellfish Snacks	434
9. References	435
16. RICE-BASED SNACK FOODS	439
SHIN LU and TSE-CHIN LIN	
1. Introduction	439
2. Rice Milling	439