Bakery Manufacturing Process.

Manufacture of Bread, Biscuit, Cake, Cookies, Muffins
Baking is a food cooking method that uses prolonged dry heat by convection, rather than by thermal radiation. Heat is gradually transferred "from the surface of cakes, cookies and breads to their centre. As heat travels through it transforms batters and dough into baked goods with a firm dry crust and a softer centre".
Bakery products have become essential food items of the vast majority of population. The present day consumer looks for new bakery products, better appeal, taste and convenience from bakery foods. Bakery industry has also an important role in popularizing wheat in non-wheat consuming region of the World.

With good planning and access to good staff, raw materials and markets, setting up a bakery can represent an excellent enterprise opportunity.
The book is invaluable reading for those starting their own baking business or any baker looking to improve their existing business in order to increase profits.

The book covers various aspects related to different bakery products with their manufacturing process and also provides contact details of raw material, plant and machinery suppliers with equipment photographs and their technical specifications.
It provides a thorough understanding of the many new developments shaping the industry and offers detailed technical coverage of the manufacturing processes of bakery products. It examines the nature of bakery products, the role of the ingredients in determining their quality, processing methods and their control. Various bakery products covered in the book are wheat ingredients, other grain ingredients, shortenings, emulsifiers, antioxidants, water and salt,
different types of breads and biscuits, cakes, buns, icings, production of cookie and cracker, spices, flavours, colors, leavened and unleavened products, air-leavened products, chemically leavened bread and rolls, chemically leavened sweet goods, Yeast-leavened plain bread, rolls, dough, preservation of bakery products, milk and egg ingredients, fruits, vegetables, nuts and many more.
Food Mixer, Cookie Extruder, Rotary Oven, Biscuit Sandwiching Machine, Tunnel Gas Oven, Flour Mixer, Cookies Rotary Moulder, Bun Divider Moulder, Planetary Mixer, Spiral Mixer, Pillow Packing Machine, Oil Spray Machine are the various equipments described in the book with their photographs and technical specifications. The book aims to provide comprehensive information on different types of bakery products. The book is aimed for food technologist, scientists, research scholars, as well as for new entrepreneurs and those who are engaged in this industry.
Table of Contents

1. Ingredients Made From Wheat
   Introduction
   Wheat
   Commercial Wheat Varieties
   Composition of Wheat
   Lipids
   Utilization of Wheat
   Determining the Quality of Wheat
2. Other Grains Ingredients

Introduction
Durum
Special Quality Considerations
Utilization
Rye
Chemical Physical Characteristics
Triticale
General Characteristics
Quality, Composition, and Nutritional Factors
Utilization
Rice
Structure and Composition
Quality Factors
Use of Rice in the Baking Industry
Millet
Varieties and Distribution
Structure of the Seed
Food Uses
Corn
Structure and Composition
Quality Factors
Traditional Food Products From Corn
Oats
Classification
Structure and Composition
Barley
Description of Plant and Seed
Utilization of Barley
Structure and Composition of Barley Kernels
Quality Factors

3. Shortenings, Emulsifiers and Antioxidants
Introduction
The Chemistry of Fats and Oils
Shortenings From Natural Sources
Animal Fats and Oils
Vegetable Shortenings
Quality Assurance of Fat and Oil Products
Tests
Specifications
Emulsifiers
Lecithin
Monoglycerides and Deglycerides
Other Food Emulsifiers
Antioxidants
Synthetic Antioxidants
Natural Antioxidants
Fat Substitutes and Replacements

4. Water and Salt
Introduction
Water
Regulations Affecting Potable Water
Water Treatment
Effects of Water Impurities on Bakery Products
Water Treatment Methods Used by Bakeries
Analyses of Water
Salt
Salt in the Human Diet
Containers and Storage
Types of Salt
Salt with Additives
Salt Substitutes in Bakery Products
Analytical Methods

5. Products of Bakery Industries
Bread
Introduction
Market Potential
Raw Materials
Flour
Yeast
Water
Salt
Sugar
Bulk Solids
Flavourings
Enrichment
Bread Manufacture
Straight Dough Method
Sponge Dough Method (Semi-Automatic)
Make Up
Recipes for Breads
White Pan Bread
Milk Bread
Sweet Bread
Rice Bread
Closed Pan Bread
Sponge Dough
Final Dough
Make up and Baking of the Bread
Egg Bread
French Bread
Straight Dough Method
Raisin Bread
Whole Wheat Bread (Straight Dough Method)
Rye Bread
Rye Bread (Leay Sow)
Vienna Bread
Special Breads
Date-Nut Bread
Low Sodium Bread
Cheese Bread
Specification for Various Types of Breads
White Bread
Other Requirements
Mass of the Bread
Wheat Meal Bread
Other Requirements
Crust and Crumb
(a) Optional Ingredients
(b) Mould Inhibitors
Bread Improver
Requirements
Biscuits
Introduction
Biscuit Raw Materials
Cereals
Sweetener
Shortening
Milk
Leavening Agents and Nutrients
Miscellaneous Products
Market Potential
Statewise Units of Biscuits in Organised Sector
Manufacturing Process
Recipes for Various Types of Biscuits
Arrowroot Biscuit
Shell Biscuits
Digestive Biscuits
Honey Comb or Crimp Biscuits
Almond Fruit Biscuits
Walnut Biscuits
Soda Biscuit
Coconut Biscuits

www.entrepreneurindia.co
Nice Biscuits
Saltish Biscuits
Marie Biscuits
Ester Biscuits
Sandwich Type Biscuits
Cheese Biscuits
Rice Biscuits
Corn Flour Biscuits
Coffee Biscuits
Victoria Biscuits
Edinburg Biscuits
Snow Drop Biscuits
Luncheon Biscuits
Special Combination Wheat Biscuits
Simple All Purpose Biscuits
Soojee Biscuits
Special Nut Biscuits
Directions
Corn Flour Coconut Biscuit
Chocolate Vanilla Biscuit
For Icing
Peppermint Cream Biscuits
Biscuit Coatings
White Coating
Dark Chocolate Coating
Lemon Coating
Orange Coating
Malt Milk Coating
Few Points for Making Good Biscuits
Cookies
Basic Ingredients
Bonding Materials or Toughers
Tenderizing Materials
Floors
Shortening
Sugar
Lecithin
Milk
Eggs
Rotary Moulded Cookie
Cutting Machine Cookie
Wire Cut Cookie
Spread of the Cookies
Equipments For the Manufacture of Cookies
Wire Cut Machine
Stamping and Rotary Cutting Machines
Rotary Moulded Cookies
Formula for Sugar Wafer Butter
Processing of Sugar Wafer
Coatings for Cookies
Coatings for Cookies Enrobing
Vanilla Coating
Dark Chocolate
Dark Cocoa
Coconut
Peanut Coating
Pie Fillings
Fruit Fillins
Apple Pie Fillings
Banana Cream Starch-Based Gel Filling
Strawberry Flavoured Fillings
Cream Style Fillings
Pie Crusts
The Flour
The Shortening

www.entrepreneurindia.co
Shortening
Salt
Yeast Food
Formulas for Soda Crackers
Fermentation
Manufacturing
Absorption
Salt
Sugars
Amylolytic Enzymes
Cakes
The Flour
Soft Straight Flour
Sugar
Shortening
Egg
Milk
Formulation Guidelines
Cake Processing
Common Faults in Cakes
Texture Defects
Defects of Crust Appearance
Too Low Volume
Irregular or Coarse Grain
Various Types of Cakes
Corn Flour Cake
Fruit Cake
Rece Cake
Petha Cake
Maize Floor Cake
Cream Cake
Cheese Cake
Sponge Cake
White Layer Cakes
Rich White Layer Cake
Universal Cake Mix
Yellow Layer Cake
Chocolate Cake
Devil's Food Cake
Chiffon Cake
Layer Cake
Pound Cake
Hard Rolls
Soft Rolls
Vienna (Kaiser) Rolls
Make up of the Rolls
Hamburger Rolls
Make up and Baking of the Rolls
Buns
Bath Buns
Saffron Buns
Cross Buns
German Buns
Sweet Crumb Buns
Round Shaped Filled Bun
Dough
Syrup Wash
Braid Buns
Square Buns
Figure 8 Shaped Buns

www.entrepreneurindia.co
Muffins, Nankhati and Pizza

Muffins
Bran Muffins
Whole Wheat Muffins
Nankhatai

Pizzas
Recipe for Pizza

Icings
Some Guidelines for Icing Preparation
Flavours Development in Icings
Fluffy Icings
Recipes for Various Types of Icing
Chocolate Icing
Butter Icing
Water Icings
Royal Icings
Icing Paste (General)
Vanilla Icing
Butter Scotch Icing
Butter Scotch Paste Icing
Banana Icing
Caramel Boiled Icing
Honey Macaroon Icing
Spice Cake Icing
Orange Icing
Orange Sumshine Icing
Chocolate Fudge Icing
Butter Cream Icing
6. Milk and Eggs Ingredients

Introduction
Ingredients Derived From Milk
Composition of Milk
Types of Milk Ingredients
Milk Protein Concentrate
Dairy Blends and Milk Replacers
Cheese
Quality Tests for Milk and Milk Products
Ingredients From Eggs
Functional Properties

www.entrepreneurindia.co
7. Fruits, Vegetables and Nuts

Introduction

Nuts
Almonds, Almond Butter, and Almond Paste
Coconut Kernel Paste
Peanuts and Peanut Butter
Pecans
Poppy Seeds
Walnuts
Nut Substitutes and Defetted Nuts
Fruits
Dried Fruits
Candied or Glace Fruit
Canned Fruits
Frozen Fruits
Fruit Jams, Jellies and Preserves
Vegetables
Potatoes
Onions
Tomatoes
Carrots
8. Bakery Machinery and Equipment
Weighing Equipment
  Manual Scales
  Automatic Weighing Equipment
Liquid Measuring Equipment
Mixing
  Mixing Equipment
Dry Blenders
Ribbon Blenders
Tumbler with Agglomerate Breakers
Vertical Screw Mixer
Equipment Selection
Continous Pre-Mixing Equipment
Horizontal Dough Mixer

www.entrepreneurindia.co
Banbury Mixers
Miscellaneous Horizontal Dough Mixing Equipment
Mixing Mechanism
Vertical Planetary Mixers
Continuous Mixers
Temperature and Mixing
Make-up Equipment
Dividers
Effect of Dividing Action on Dough Properties
Divider
Rounders
Controlling and Adjusting the Rounder
Proofer
Tray Type Intermediate Proofer
Maintenance
Intermediate Proofers
Moulders
Moulders for Cookies
Biscuit Rolling Machine
Biscuit Cutters
Fermentation and Proofing Enclosures
Construction Details
Baking Equipments
Ovens
Chamber Type Oven
Draw Plate Oven
Reel Oven

www.entrepreneurindia.co
9. Spices, Flavors and Colors
Introduction
Coloring Additives
Uncertified Color Additives
Certified Color Additives
Natural and Artificial Flavors
Vanilla
Cocoa Products
Spices and Herbs
General Considerations
Spices Used in Bakery Products
Cinnamon

10. Cookie and Cracker Production
Ingredients Handling
Mixing
Dough Relaxation and Fermentation
Dough Machining and Forming
Dough Relaxing
Cutting Stage
Scrap Return
Salter of Sugar Sprinkling
Rotary Molding
Extruder-Dough Formers
Wire Cut
Rout Press
The Fruit Bar Co-Extruder
Baking
Direct-Fired Ovens, Gas Fired
Convection (Indirect) Ovens
Post Conditioning
Secondary Process
Icings
Enrobing
Sandwiched Cookies and Crackers
Biscuit Packaging

11. Unleavened Bakery Products
Introduction
Pie Crusts
General Considerations
Types of Pie Crusts
Baked Pies
Long-Flake Crust
Short-Flake Crust
Mealy Crust
Pressed Crumb Crusts
Savory Pies
Fried Pies

www.entrepreneurindia.co
Causes of Faults in Pie Crusts
Strudel, Phyllo and Egg Rolls
Unleavened Cookies

12. Products Leavened Primarily With Water Vapor
Puff Pastry
Theoretical Considerations Affecting Layering
Practical Methods of Puff Pastry Production
Traditional Puff Pastry method
Automated Puff Pastry Production
Formin and Baking Puff Pastry
Trouble Shooting Puff Pastry
Crispbread
13. Air-Leavened Products
Introduction
Angel Food Cakes
General Considerations
Ingredients and Formulas
Procedures
Meringue Layer for Tortes
Foam Type Angel Food Cake
Continuous Mix Angel Food Cake
Cakes Made With Foams of Whole Eggs or Egg Yolks
Effects of Whole Eggs
Pound Cakes
Sponge Cakes
Chiffon Cakes
Cheese Cakes
Snow White California Cheese Cake
Fruit Cakes
Cookies

14. Chemically Leavened Bread and Rolls
Introduction
Chemical Leavening Systems
Effects of Air, Water Vapor, and Carbon Dioxide on Volume Characteristics of Chemical Leavening Systems
Function of Ingredients
Soda Breads
Buttermilk Bread
Irish Soda Bread
Irish Soda Bread
Boston Brown Bread
Chemically Leavened White Bread
Other Bread Varieties
Soda Biscuits
Scones
Muffins
Veggie Muffins

www.entrepreneurindia.co
15. Chemically Leavened Sweet Goods
Composition
General Rules For Developing Formulas
Layer Cakes
Examples of Cake Formulas
Processing Chemically Leavened Sweet Goods
Trouble Shooting Cake Faults
Cup-Cakes
Cake Doughnuts
Formulation and Processing
Doughnut Trouble Shooting
Cookies
Relationship of Formula to Processing Method
Ingredients
Representative Formulas

16. Yeast-Leavened Plain Bread and Rolls
Principles of Plain Bread and Roll Production
White Bread
French Bread
White Rolls
Wheat Bread
Two Traditional Bread Processing Schemes
Straight Dough Method
Sponge-and-Dough Method
Reaction During Mixing
Dough Development
Establishing Vesicle Size
Conditioning the Dough
Temperature Rise During Mixing
Fermentation
Bulk Fermentations
Proofing
Pan Proofing
Dividing and Rounding
Bread-Molding Processes
Roll-Forming Processes
Baking
Effect of Form and Size of the Dough Piece
Cooling and Depanning
Defects of the Crust
Defects in the Crumb
Defects of Volume
Defects of Taste or Odor
Defects in Shelf-Life

17. Doughs
Introduction
Continuous Processing of White Bread and Rolls
Principles of Operation
Formulating White Bread for Continuous Plants
Making Fermentation Processes More Efficient
Three Kinds of Sponge Replacement Systems Conditioning by Mechanical or Chemical Means Systems Relying Principally on Chemical Modification

18. Breads
Sour Dough Breads
Microflora of Sour Doughs
San Francisco (Pacific Slope) Sour Dough Bread
Sour Dough French Bread
Panettone
Sal-Rising Bread
Rye and Multi-Grain Breads
Multi-Grain Breads
Rye Bread
Rye Bread Formula and Process
Other Variety Breads
Breads with Vegetable Ingredients
Breads with Dairy Ingredients
Dietetic Bakery Products
Reduced Salt
Reduced Fat
Gluten-Free
"Diabetic" or Sugar-Free
Reduced Calorie
No Cholesterol

19. Yeast-Leavened Sweet Doughs
Plain and Roll-In Sweet Doughs
Ingredients
Formulas, General
Examples of Products
Almond Crumb Coffee Cake
Apple Filled Coffee Cakes
Yeast-Leavened Cookies
Fried Yeast-Leavened Cookie

20. Preservation of Bakery Products
   Introduction
   Refrigerated Dough Products
   Freezing Preservation
   Freezing Equipment and Methods
   Freezing Doughs and Batters
   Freezing Baked Products and Adjuncts

www.entrepreneurindia.co
Heat Processing in Hermetically Sealed Containers
Modified Atmosphere Packaging
Chemical Preservation
Irradiation
Other Methods

21. Photographs of Machinery and Equipment
   Food Mixer
   Cookie Extruder
   Rotary Oven
   Pillow Packing Machine
   180° Layout Turning Machine
   Oil Spray Machine
   Biscuit Sandwiching Machine
Tunnel Gas Oven
Rotary Print Biscuit Forming Machine (Soft Biscuit)
Tunnel Electric Oven
Flour Mixer
Cookies Rotary Moulder
Bun Divider Moulder
Bread Moulder
Double Trolley Bakery Oven
Cookie Dropping Machine
Planetary Mixer
Spiral Mixer

22. Raw Material Suppliers
Starch
Bakery Chemicals

www.entrepreneurindia.co
Baking Enzymes
Baking Powder
Bread Improver
Cake Gel
Egg Powder
Flavouring Emulsion
Flexible Packaging
Glucose Lecithin
Plastic Crates
Milk Products
Wheat Gluten
Yeast

23. Machinery and Equipment Suppliers

www.entrepreneurindia.co
See more
https://goo.gl/Y6YQsk
https://goo.gl/9qmg6b
https://goo.gl/Vek8Yv
https://goo.gl/t9YniU
Visit us at:

www.entrepreneurindia.co
Take a look at NIIR PROJECT CONSULTANCY SERVICES on #StreetView

https://goo.gl/VstWkd
Locate us on Google Maps

https://goo.gl/maps/BKkUtq9gevT2
Who are we?

- One of the leading reliable names in industrial world for providing the most comprehensive technical consulting services

- We adopt a systematic approach to provide the strong fundamental support needed for the effective delivery of services to our Clients’ in India & abroad
What do we offer?

- Project Identification
- Detailed Project Reports/Pre-feasibility Reports
- Market Research Reports
- Technology Books and Directory
- Databases on CD-ROM
- Laboratory Testing Services
- Turnkey Project Consultancy/Solutions
- Entrepreneur India (An Industrial Monthly Journal)
How are we Different?

- We have two decades long experience in project consultancy and market research field
- We empower our customers with the prerequisite know-how to take sound business decisions
- We help catalyze business growth by providing distinctive and profound market analysis
- We serve a wide array of customers, from individual entrepreneurs to Corporations and Foreign Investors
- We use authentic & reliable sources to ensure business precision
Our Approach

- Requirement collection
- Thorough analysis of the project
- Economic feasibility study of the Project
- Market potential survey/research
- Report Compilation
Who do we Serve?

- Public-sector Companies
- Corporates
- Government Undertakings
- Individual Entrepreneurs
- NRI’s
- Foreign Investors
- Non-profit Organizations, NBFC’s
- Educational Institutions
- Embassies & Consulates
- Consultancies
- Industry / trade associations
Sectors We Cover

- Ayurvedic And Herbal Medicines, Herbal Cosmetics
- Alcoholic And Non Alcoholic Beverages, Drinks
- Adhesives, Industrial Adhesive, Sealants, Glues, Gum & Resin
- Activated Carbon & Activated Charcoal
- Aluminium And Aluminium Extrusion Profiles & Sections,
- Bio-fertilizers And Biotechnology
- Breakfast Snacks And Cereal Food
- Bicycle Tyres & Tubes, Bicycle Parts, Bicycle Assembling
<table>
<thead>
<tr>
<th>Sectors We Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Bamboo And Cane Based Projects</td>
</tr>
<tr>
<td>• Building Materials And Construction Projects</td>
</tr>
<tr>
<td>• Biodegradable &amp; Bioplastic Based Projects</td>
</tr>
<tr>
<td>• Chemicals (Organic And Inorganic)</td>
</tr>
<tr>
<td>• Confectionery, Bakery/Baking And Other Food</td>
</tr>
<tr>
<td>• Cereal Processing</td>
</tr>
<tr>
<td>• Coconut And Coconut Based Products</td>
</tr>
<tr>
<td>• Cold Storage For Fruits &amp; Vegetables</td>
</tr>
<tr>
<td>• Coal &amp; Coal Byproduct</td>
</tr>
</tbody>
</table>
Sectors We Cover

- Copper & Copper Based Projects
- Dairy/Milk Processing
- Disinfectants, Pesticides, Insecticides, Mosquito Repellents,
- Electrical, Electronic And Computer based Projects
- Essential Oils, Oils & Fats And Allied
- Engineering Goods
- Fibre Glass & Float Glass
- Fast Moving Consumer Goods
- Food, Bakery, Agro Processing
Sectors We Cover

- Fruits & Vegetables Processing
- Ferro Alloys Based Projects
- Fertilizers & Biofertilizers
- Ginger & Ginger Based Projects
- Herbs And Medicinal Cultivation And Jatropha (Biofuel)
- Hotel & Hospitality Projects
- Hospital Based Projects
- Herbal Based Projects
- Inks, Stationery And Export Industries

www.entrepreneurindia.co
Sectors We Cover

- Infrastructure Projects
- Jute & Jute Based Products
- Leather And Leather Based Projects
- Leisure & Entertainment Based Projects
- Livestock Farming Of Birds & Animals
- Minerals And Minerals
- Maize Processing (Wet Milling) & Maize Based Projects
- Medical Plastics, Disposables Plastic Syringe, Blood Bags
- Organic Farming, Neem Products Etc.
Sectors We Cover

- Paints, Pigments, Varnish & Lacquer
- Paper And Paper Board, Paper Recycling Projects
- Printing Inks
- Packaging Based Projects
- Perfumes, Cosmetics And Flavours
- Power Generation Based Projects & Renewable Energy Based Projects
- Pharmaceuticals And Drugs
- Plantations, Farming And Cultivations
- Plastic Film, Plastic Waste And Plastic Compounds
- Plastic, PVC, PET, HDPE, LDPE Etc.
Sectors We Cover

- Potato And Potato Based Projects
- Printing And Packaging
- Real Estate, Leisure And Hospitality
- Rubber And Rubber Products
- Soaps And Detergents
- Stationary Products
- Spices And Snacks Food
- Steel & Steel Products
- Textile Auxiliary And Chemicals
Sectors We Cover

- Township & Residential Complex
- Textiles And Readymade Garments
- Waste Management & Recycling
- Wood & Wood Products
- Water Industry (Packaged Drinking Water & Mineral Water)
- Wire & Cable
NIIR PROJECT CONSULTANCY SERVICES

106-E, Kamla Nagar, New Delhi-110007, India.
Email: npcs.india@gmail.com , info@niir.org
Tel: +91-11-23843955, 23845654, 23845886
Mobile: +91-9811043595
Website :
www.niir.org
www.entrepreneurindia.co

Take a look at NIIR PROJECT CONSULTANCY SERVICES on #StreetView

https://goo.gl/VstWkd
Follow us

- [https://www.linkedin.com/company/niir-project-consultancy-services](https://www.linkedin.com/company/niir-project-consultancy-services)
- [https://www.facebook.com/NIIR.ORG](https://www.facebook.com/NIIR.ORG)
- [https://www.youtube.com/user/NIIRproject](https://www.youtube.com/user/NIIRproject)
- [https://plus.google.com/+EntrepreneurIndiaNewDelhi](https://plus.google.com/+EntrepreneurIndiaNewDelhi)
- [https://twitter.com/npcs_in](https://twitter.com/npcs_in)
- [https://www.pinterest.com/npcsindia/](https://www.pinterest.com/npcsindia/)
THANK YOU!!!

For more information, visit us at:

www.niir.org
www.entrepreneurindia.co