

The Complete Technology Book on Bakery Products Baking Science with Formulation & Production (Biscuit, Bagel, Bread, Gluten-Free Bread, Rusk, Cookie, Cracker, Pie Crusts, Cakes with Production Process, Machinery, Equipment Details and Factory Layout)

Author:- NIIR Board of Consultants & Engineers

Format: paperback

Code: NI61

Pages: 488

Price: Rs.1875US\$ 150

Publisher: NIIR PROJECT CONSULTANCY SERVICES

Usually ships within **5** days

The Complete Technology Book on
Bakery Products

Baking Science with Formulation & Production

(Biscuit, Bagel, Bread, Gluten-Free Bread, Rusk, Cookie, Cracker, Pie Crusts, Cakes with
Production Process, Machinery, Equipment Details and Factory Layout) 5th edition

Bakery products refer to a wide range of baked goods that are typically made using flour as the main ingredient. These delicious treats come in various forms, such as cakes, cupcakes, bread, pastries, cookies, and more. They are usually made by combining flour with other ingredients such as sugar, butter, eggs, and flavorings, which are then baked to perfection. Bakery products have a universal appeal and are enjoyed by people of all ages and cultures. They are a staple in many households, providing a sweet and indulgent treat for special occasions or everyday enjoyment. The diversity of bakery products is vast, ranging from delicate pastries filled with creamy custard to crusty loaves of bread that make the perfect sandwich.

The global bakery products market size to be valued at USD 251.1 billion, expanding at a compound annual growth rate (CAGR) of 3.2%. Increasing consumption of ready-to-eat foods across the globe owing to hectic lifestyle is expected to fuel the product demand over the coming years. Growing preference for ethnic food along with the success of Thai and Mexican food in restaurants has resulted in increased demand for bakery products in Europe. The bakery industry has been experiencing significant growth and success in recent years. There are several reasons behind this booming industry. There has been a rise in consumer demand for healthier and high-quality baked goods. With the growing focus on wellness and clean eating, bakeries are now offering a variety of options that cater to different dietary needs, including gluten-free Bread.

This book consists of in-depth details about Bakery Products, Biscuit, Bagel, Bread, Gluten-Free Bread, Rusk, Cookie, Cracker, Pie Crusts, Cakes, Cupcakes, Doughnuts, Buns, Pizzas, and Icings with Production Process, Equipment Tools Information and also Factory Layouts.

Profitable and viable business opportunities exist in the Bakery products sector. As a result, creating your own business is a good way to get into it. To learn more about Bakery products industry in depth, read this book. It will assist you in figuring out how to establish your own

Bakery Business. Because of the increasing demand for Bakery products in today's market, it's a terrific method to earn money.

Contents

1. INTRODUCTION

- 1.1 History
- 1.2 Principles of Baking
- 1.3 Physical & Chemical Changes during Baking
 - 1.3.1 Formation and Expansion of Gases
 - 1.3.2 Trapping of the Gases in Air Cells
 - 1.3.3 Gelatinization of Starches
 - 1.3.4 Coagulation of Proteins
 - 1.3.5 Evaporation of Some of the Water
 - 1.3.6 Melting of Shortenings
 - 1.3.7 Crust Formation and Browning
- 1.4 Bakery Products Market

2. HOW TO START A BAKERY BUSINESS

- 2.1 10 Steps To Open A Successful Bakery Business
 - 2.1.1 Create a Bakery Business Plan
 - 2.1.2 Choose a Location for Bakery Business
 - 2.1.3 Get All Licenses Required to Open a Bakery Business in India
 - 2.1.4 Get Manpower Required to Open a Bakery
 - 2.1.5 Buy Equipment Needed to Start a Bakery Business
 - 2.1.6 Design the Display Area of Bakery Business
 - 2.1.7 Install a POS & Billing Software in Bakery
 - 2.1.8 Do Right Marketing & Branding of Bakery Business
 - 2.1.9 Decide on the Staff Uniform of Employees
 - 2.1.10 Partnering with Online Food Aggregators

3. BAKERY INGREDIENTS

- 3.1 Introduction
- 3.2 Baking Powder
- 3.3 Baking Soda
- 3.4 Eggs
- 3.5 Fats and Oils
- 3.6 Flour
 - 3.6.1 Standard or Plain Flour
 - 3.6.2 Self-Raising Flour
 - 3.6.3 High Grade or “Strong” Flour
 - 3.6.4 Pastry Flour
 - 3.6.5 Wholemeal Flour
 - 3.6.6 Bleached Flour
- 3.7 Milk
- 3.8 Salt
- 3.9 Sugar
- 3.10 Yeast

4. SPICES, FLAVORS AND COLORS

- 4.1 Introduction

- 4.2 Coloring Additives
- 4.3 Uncertified Color Additives
 - 4.3.1 Carotenoids
 - 4.3.2 Caramel Colors
 - 4.3.3 Carmine
 - 4.3.4 Fruit and Vegetable Extracts
 - 4.3.5 Riboflavin
 - 4.3.6 Spices
 - 4.3.7 Titanium Dioxide
- 4.4 Certified Color Additives
- 4.5 Natural and Artificial Flavors
 - 4.5.1 Vanilla
 - 4.5.2 Cocoa Products
- 4.6 Spices and Herbs
 - 4.6.1 General Considerations
 - 4.6.2 Spices Used in Bakery Products
 - 4.6.2.1 Allspice
 - 4.6.2.2 Anise Seed
 - 4.6.2.3 Basil
 - 4.6.2.4 Caraway
 - 4.6.2.5 Cardamom
 - 4.6.2.6 Celery Seed
 - 4.6.3 Cinnamon
 - 4.6.3.1 Cloves
 - 4.6.3.2 Coriander
 - 4.6.3.3 Dill Seed
 - 4.6.3.4 Fennel
 - 4.6.3.5 Fenugreek
 - 4.6.3.6 Garlic
 - 4.6.3.7 Ginger
 - 4.6.3.8 Mace
 - 4.6.3.9 Mint
 - 4.6.3.10 Nutmeg
 - 4.6.3.11 Paprika
 - 4.6.3.12 Pepper
 - 4.6.3.13 Saffron
 - 4.6.3.14 Sesame Seed
 - 4.6.3.15 Turmeric
- 5. COOKIE AND CRACKER PRODUCTION
 - 5.1 Ingredients Handling
 - 5.2 Mixing
 - 5.3 Dough Relaxation and Fermentation
 - 5.4 Dough Machining and Forming
 - 5.5 Dough Relaxing
 - 5.6 Cutting Stage
 - 5.7 Scrap Return
 - 5.8 Salter or Sugar Sprinkling
 - 5.9 Rotary Molding
 - 5.10 Extruder-Dough Former
 - 5.11 Wire Cut
 - 5.12 Rout Press
 - 5.13 The Fruit Bar Co-Extruder
 - 5.14 Baking

- 5.15 Direct-Fired Ovens, Gas Fired
- 5.16 Convection (Indirect) Ovens
- 5.17 Post Conditioning
- 5.18 Secondary Processes
- 5.19 Icings
- 5.20 Enrobing
- 5.21 Sandwiched Cookies and Crackers
- 5.22 Biscuit Packaging

6. UNLEAVENED BAKERY PRODUCTS

- 6.1 Introduction
- 6.2 Pie Crusts
 - 6.2.1 General Considerations
 - 6.2.2 Types of Pie Crusts
 - 6.2.3 Baked Pies
 - 6.2.3.1 Ingredients and Formulation Principles
 - 6.2.3.2 Practical Formulas and Procedures
 - 6.2.4 Long-Flake Crust
 - 6.2.5 Short-Flake Crust
 - 6.2.6 Mealy Crust
 - 6.2.6.1 Variations
 - 6.2.6.2 Pate Brisée and Pate Sucrée
 - 6.2.6.3 Fillings and Washes
 - 6.2.7 Pressed Crumb Crusts
 - 6.2.8 Savory Pies
 - 6.2.9 Fried Pies
 - 6.2.10 Causes of Faults in Pie Crusts
- 6.3 Strudel, Phyllo and Egg Rolls
- 6.4 Unleavened Cookies

7. PRODUCTS OF BAKERY INDUSTRIES

- 7.1 Bread
- 7.2 Raw Materials
 - 7.2.1 Flour
 - 7.2.2 Yeast
 - 7.2.3 Water
 - 7.2.4 Salt
 - 7.2.5 Sugar
 - 7.2.6 Bulk Solids
 - 7.2.7 Flavourings
 - 7.2.8 Enrichment
- 7.3 Bread Manufacture
- 7.4 Straight Dough Method
- 7.5 Sponge Dough Method (Semi-Automatic)
 - 7.5.1 Mixing and Fermentation
 - 7.5.2 Make Up
 - 7.5.3 Proofing and Baking
 - 7.5.4 Cooling, Slicing and Wrapping
- 7.6 Advantages and Disadvantages of Two Methods
- 7.7 Automatic Process to Manufacture Bread
- 7.8 Recipes for Breads
 - 7.8.1 White Pan Bread
 - 7.8.2 Milk Bread
 - 7.8.3 Sweet Bread
 - 7.8.4 Rice Bread

- 7.8.5 Closed Pan Bread
- 7.8.6 Egg Bread
- 7.8.7 French Bread
- 7.8.8 Rye Bread
- 7.8.9 Vienna Bread
- 7.8.10 Special Breads
 - 7.8.10.1 Date-Nut Bread
 - 7.8.10.2 Low Sodium Bread
 - 7.8.10.3 Cheese Bread
- 7.9 Specification for Various Types of Breads
 - 7.9.1 White Bread
- 7.10 Other Requirements
 - 7.10.1 Mass of the Bread
 - 7.10.2 Wheat Meal Bread
 - 7.10.3 Crust and Crumb
 - 7.10.4 Bread Improver
- 7.11 Biscuits
- 7.12 Biscuit Raw Materials
 - 7.12.1 Cereals
 - 7.12.2 Sweetener
 - 7.12.3 Shortening
 - 7.12.4 Milk
 - 7.12.5 Leavening Agents and Nutrients
 - 7.12.6 Miscellaneous Products
- 7.13 Manufacturing Process
- 7.14 Recipes for Various Types of Biscuits
 - 7.14.1 Arrowroot Biscuit
 - 7.14.2 Shell Biscuits
 - 7.14.3 Digestive Biscuits
 - 7.14.4 Honey Comb or Crimp Biscuits
 - 7.14.5 Almond Fruit Biscuits
 - 7.14.6 Walnut Biscuits
 - 7.14.7 Soda Biscuit
 - 7.14.8 Coconut Biscuits
 - 7.14.9 Nice Biscuits
 - 7.14.10 Saltish Biscuits
 - 7.14.11 Marie Biscuits
 - 7.14.12 Ester Biscuits
 - 7.14.13 Sandwich Type Biscuits
 - 7.14.14 Cheese Biscuits
 - 7.14.15 Rice Biscuits
 - 7.14.16 Corn Flour Biscuits
 - 7.14.17 Coffee Biscuits
 - 7.14.18 Victoria Biscuits
 - 7.14.19 Edinburg Biscuits
 - 7.14.20 Snow Drop Biscuits
 - 7.14.21 Luncheon Biscuits
 - 7.14.22 Special Combination Wheat Biscuits
 - 7.14.23 Simple All Purpose Biscuits
 - 7.14.24 Soojee Biscuits
 - 7.14.25 Special Nut Biscuits
 - 7.14.26 Corn Flour Coconut Biscuit
 - 7.14.27 Chocolate Vanilla Biscuit

- 7.14.28 Peppermint Cream Biscuits
- 7.15 Biscuit Coatings
 - 7.15.1 White Coating
 - 7.15.2 Dark Chocolate Coating
 - 7.15.3 Lemon Coating
 - 7.15.4 Orange Coating
 - 7.15.5 Malt Milk Coating
 - 7.15.6 Few Points for Making Good Biscuits
- 7.16 Cookies
- 7.17 Basic Ingredients
 - 7.17.1 Bonding materials or Toughers
 - 7.17.2 Tenderizing materials
 - 7.17.3 Floors
 - 7.17.4 Shortening
 - 7.17.5 Sugar
 - 7.17.6 Lecithin
 - 7.17.7 Milk
 - 7.17.8 Eggs
 - 7.17.9 Rotary Moulded Cookie
 - 7.17.10 Cutting Machine Cookie
 - 7.17.11 Wire Cut Cookie
 - 7.17.12 Spread of the Cookies
- 7.18 Equipments for the Manufacture of Cookies
 - 7.18.1 Wire Cut Machine
 - 7.18.2 Stamping and Rotary Catting Machines
 - 7.18.3 Rotary Moulded Cookies
- 7.19 Formula for Sugar Wafer Butter
 - 7.19.1 Processing of Sugar Wafers
 - 7.19.2 Coatings for Cookies
- 7.20 Coatings for Cookies Enrobing
 - 7.20.1 Vanilla Coating
 - 7.20.2 Dark Chocolate
 - 7.20.3 Dark Cocoa
 - 7.20.4 Coconut
 - 7.20.5 Peanut Coating
 - 7.20.6 Pie Fillings
 - 7.20.7 Fruit Fillings
 - 7.20.8 Apple Pie Fillings
 - 7.20.9 Cream Fillings
 - 7.20.10 Procedure
 - 7.20.11 Banana Cream Starch-based Gel Filling
 - 7.20.12 Strawberry Flavoured Fillings
 - 7.20.13 Cream Style Fillings
 - 7.20.14 Procedure
 - 7.20.15 Procedure
- 7.21 Pie Crusts
 - 7.21.1 The Flour
 - 7.21.2 The Shortening
 - 7.21.3 The Salt
 - 7.21.4 Sugar
 - 7.21.5 Flaky Crusts
 - 7.21.6 Mealy Crusts
 - 7.21.7 Processing

7.22 Formulations and Procedures for Pie Crusts

7.22.1 Long Flake Pie Crusts

7.22.2 Dough for Fried Peas

7.22.3 Fruit Pie Dough

7.22.4 Mealy Crust Dough

7.22.5 Fried Pies

7.22.6 Faults in Pie Crusts

7.23 Soda Crackers

7.23.1 Flour

7.23.2 Water

7.23.3 Shortening

7.23.4 Salt

7.23.5 Yeast Food

7.24 Formulas for Soda Crackers

7.24.1 Fermentation

7.24.2 Manufacturing

7.24.3 Absorption

7.24.4 Salt

7.24.5 Sugars

7.24.6 Amylolytic Enzymes

7.25 Cakes

7.25.1 The Flour

7.25.2 Sugar

7.25.3 Shortening

7.25.4 Egg

7.25.5 Milk

7.26 Formulation Guidelines

7.27 Cake Processing

7.28 Common Faults in Cakes

7.28.1 Texture Defects

7.28.2 Defects of Crust Appearance

7.28.3 Too Low Volum

7.28.4 Irregular or Coarse Grain

7.29 Various Types of Cakes

7.29.1 Ingredients

7.29.2 Process

7.29.3 Ingredients

7.29.4 Process

7.29.5 Ingredients

7.29.6 Process

7.29.7 Ingredients

7.29.8 Process

7.29.9 Corn Flour Cake

7.29.10 Process

7.29.11 Fruit Cake

7.29.12 Process

7.29.13 Rice Cake

7.29.14 Process

7.29.15 Yeast Cakes

7.29.16 Process

7.29.17 Petha Cake

7.29.18 Process

7.29.19 Maize Floor Cake

- 7.29.20 Process
- 7.29.21 Cream Cake
- 7.29.22 Process
- 7.29.23 Chocolate Cake
- 7.29.24 Directions
- 7.29.25 Cheese Cake
- 7.29.26 Directions
- 7.29.27 Sponge Cake
- 7.29.28 White Layer Cakes
- 7.29.29 Rich White Layer Cake
- 7.29.30 Universal Cake Mix
- 7.29.31 Process
- 7.29.32 Yellow Layer Cake
- 7.29.33 Yellow Layer Cake
- 7.29.34 Chocolate Cake
- 7.29.35 Devil's Food Cake
- 7.29.36 Chiffon Cake
- 7.29.37 Process
- 7.29.38 Layer Cake
- 7.29.39 Process
- 7.29.40 Pound Cake
- 7.29.41 Process
- 7.30 Hard Rolls
- 7.31 Soft Rolls
 - 7.31.1 Vienna (Kaiser) Rolls
 - 7.31.2 Make Up of the Rolls
 - 7.31.3 Hamburger Rolls
 - 7.31.4 Make Up and Baking of the Rolls
- 7.32 Buns
 - 7.32.1 Bath Buns
 - 7.32.2 Saffron Buns
 - 7.32.3 Cross Buns
 - 7.32.4 German Buns
 - 7.32.5 Sweet Crumb Buns
- 7.33 Round Shaped Filled Bun
 - 7.33.1 Dough
 - 7.33.2 Syrup Wash
 - 7.33.3 Braid Buns
 - 7.33.4 Square Buns
- 7.34 Figure 8 Shaped Buns
 - 7.34.1 Muffins, Nankhatai and Pizza
- 7.35 Muffins
 - 7.35.1 Bran Muffins
 - 7.35.2 Whole Wheat Muffins
- 7.36 Nankhatai
 - 7.36.1 First Method
 - 7.36.2 Second Method
 - 7.36.3 Third Method
- 7.37 Pizzas
 - 7.37.1 Recipe for Pizza
- 7.38 Icings
- 7.39 Some Guidelines For Icing Preparation
 - 7.39.1 Flavours Development in Icings

- 7.39.2 Fluffy Icings
- 7.40 Recipes for Various Types of Icing
 - 7.40.1 Chocolate Icing
 - 7.40.2 Butter Icing
 - 7.40.3 Water Icings
 - 7.40.4 Royal Icing
 - 7.40.5 Icing Paste (General)
 - 7.40.6 Vanilla Icing
 - 7.40.7 Butter Scotch Icing
 - 7.40.8 Butter Scotch Paste Icing
 - 7.40.9 Banana Icing
 - 7.40.10 Caramel Boiled Icing
 - 7.40.11 Honey Macaroon Icing
 - 7.40.12 Spice Cake Icing
 - 7.40.13 Orange Icing
 - 7.40.14 Orange Sumshine Icing
 - 7.40.15 Chocolate Fudge Icing
 - 7.40.16 Butter Cream Icing

8. CREAM ROLLS MAKING PROCESS

8.1 Ingredients

8.2 Making Process

9. CROISSANT MAKING PROCESS

9.1 Ingredients for the Croissant Dough

9.2 Other Ingredients

9.3 What is Laminated Dough?

9.4 Making Process

9.4.1 Making the Croissant Dough

9.4.2 Laminating the Dough

9.4.3 Dividing the Dough

9.4.4 Shaping the Croissants

9.4.5 Proofing and Baking

10. HOW TO MAKE CUPCAKES

10.1 History

10.2 Making Process

10.2.1 Prepare Ingredients

10.2.2 Combine Butter and Sugar

10.2.3 Add Eggs and Vanilla

10.2.4 Alternate Adding Dry and Wet Ingredients

10.2.5 Fill the Cupcake Liners

10.2.6 Bake and Cool Cupcakes

10.2.7 Frost and Decorate

10.3 Cupcake Kits

11. HOW TO MAKE DOUGHNUTS

11.1 History

11.2 Raw Materials

11.3 Making Process

11.3.1 Acquiring the Ingredients

11.3.2 Measuring the Ingredients

11.3.3 Mixing and Kneading

11.3.4 Resting the Yeast

11.3.5 Shaping the Doughnuts

11.3.6 Proofing

11.3.7 Frying

- 11.3.8 Glazing and Drying
- 11.3.9 Further Finishing and Sale
- 11.4 Quality Control
- 12. BAGEL PRODUCTION PROCESS
 - 12.1 Raw Materials
 - 12.2 Design
 - 12.3 Manufacturing Process
 - 12.3.1 Mixing the Ingredients
 - 12.3.2 Dividing the Dough
 - 12.3.3 Forming the Bagel Shape
 - 12.3.4 Proofing the Yeast and Stopping the Proofing
 - 12.3.5 Ready for Transport to the Stores
 - 12.3.6 Distribution to the Store
 - 12.3.7 Kettling
 - 12.3.8 Baking
 - 12.4 Quality Control
- 13. BISCUIT PRODUCTION
 - 13.1 Origin
 - 13.2 Fundamental Raw Materials Required for Biscuit Production
 - 13.3 Essential Equipment for Biscuit Factory Unit
 - 13.4 Biscuit Production Process
 - 13.4.1 Pre-Mixing
 - 13.4.2 Mixing
 - 13.4.3 Moulding
 - 13.4.4 Fermenting
 - 13.4.5 Baking
 - 13.4.6 Cooling
 - 13.4.7 Packing
- 14. GLUTEN-FREE BREAD PRODUCTION
- 15. RUSK MAKING PROCESS
 - 15.1 Ingredients Used in Preparation of Rusk
 - 15.2 Preparation of Rusk
 - 15.2.1 Sponge Preparation
 - 15.2.2 Dough Preparation
 - 15.2.3 Dividing & Moulding
 - 15.2.4 Proofing
 - 15.2.5 First Baking
 - 15.2.5.1 Rack Oven
 - 15.2.5.2 Tunnel Oven
 - 15.2.6 Depending & Cooling
 - 15.2.7 Slicing
 - 15.2.8 Second Baking
 - 15.2.8.1 Rack Oven
 - 15.2.8.2 Tunnel Oven
 - 15.2.8.3 Metal Detector
 - 15.2.9 Cooling & Packing
 - 15.3 Types of Packs for Rusk
 - 15.4 Plant & Machinery Required for Rusk Industry
 - 15.5 Shelf Life of Product
 - 15.6 Rusk Packaging
 - 15.7 Characteristics of Packaging Material
 - 15.8 Packaging
 - 15.9 Material of Packaging

16. CHEMICALLY LEAVENED SWEET GOODS

16.1 Composition

16.2 General Rules for Developing Formulas

16.3 Layer Cakes

16.3.1 Examples of Cake Formulas

16.3.2 Processing Chemically Leavened Sweet Goods

16.3.3 Trouble Shooting Cake Faults

16.3.3.1 Volume too Low

16.3.3.2 Defects of Texture

16.3.3.3 Defects of Crust Appearance

16.3.3.4 Coarse or Irregular Grain

16.4 Cup-Cakes

16.5 Cake Doughnuts

16.5.1 Formulation and Processing

16.5.2 Doughnut Trouble Shooting

16.6 Cookies

16.6.1 Relationship of Formula to Processing Method

16.6.2 Ingredients

16.6.2.1 Basic Concepts

16.6.2.2 Specifications and Functions

16.6.3 Representative Formulas

16.6.3.1 Cutting Machine Cookies

16.6.3.2 Wire-Cut Cookies

16.6.3.3 Rotary Molded Cookies

16.6.3.4 Brownies Baked in Sheet Form

17. YEAST-LEAVENED PLAIN BREAD AND ROLLS

17.1 Principles of Plain Bread and Roll Production

17.1.1 White Bread

17.2.1 Wheat Bread

17.2 Two Traditional Bread Processing Schemes

17.2.1 Straight Dough Method

17.2.2 Sponge-and-Dough Method

17.3 Reactions During Mixing

17.3.1 Dough Development

17.3.2 Establishing Vesicle Size

17.3.3 Conditioning the Dough

17.4 Temperature Rise During Mixing

17.5 Fermentation

17.5.1 Bulk Fermentations

17.5.2 Proofing

17.5.3 Pan Proofing

17.5.4 Dividing and Rounding

17.5.5 Bread-Molding Processes

17.5.6 Roll-Forming Processes

17.6 Baking

17.6.1 Radiated Heat

17.6.2 Convected Heat

17.6.3 Conducted Heat

17.6.4 Summary of Heat Transfer

17.6.5 Effect of Form and Size of the Dough Piece

17.6.5.1 Hearth Breads

17.6.5.2 Pan Breads

17.6.5.3 Rolls

17.6.6 Cooling and Depanning

17.6.7 Defects of the Crust

17.6.7.1 Blistering of the Crust

17.6.7.2 Cracking of the Crust

17.6.7.3 Crust too Thick

17.6.7.4 Crust too Tough

17.6.7.5 No Shred

17.6.7.6 Shelling

17.6.7.7 Crust Color too Pale

17.6.8 Defects in the Crumb

17.6.8.1 Coarse Texture

17.6.8.2 Streaks or Hard Spots

17.6.8.3 Holes in the Bread

17.6.8.4 Dark or Dull Crumb Color

17.6.9 Defects of Volume

17.6.9.1 Inadequate Volume

17.6.9.2 Excessive Volume

17.6.10 Defects of Taste or Odor

17.6.11 Defects in Shelf-Life

18. DOUGHS

18.1 Introduction

18.2 Continuous Processing of White Bread and Rolls

18.2.1 Principles of Operation

18.2.1.1 Processing the Fermentation Mixture

18.2.1.2 Assembling and Mixing the Dough

Ingredients

18.2.1.3 Developing the Dough

18.2.1.4 Forming and Panning the Dough Piece

18.2.1.5 Present Status of Continuous Processing

18.2.2 Formulating White Bread for Continuous Plants

18.3 Making Fermentation Processes More Efficient

18.3.1 Three Kinds of Sponge Replacement Systems

18.3.1.1 Brews with no Flour

18.3.1.2 Broths Containing Flour

18.3.1.3 Dehydrated Ferments

18.4 Conditioning by Mechanical or Chemical Means

18.4.1 Systems Relying Principally on Chemical Modification

19. BREADS

19.1 Sour Dough Breads

19.1.1 Microflora of Sour Doughs

19.1.2 San Francisco (Pacific Slope) Sour dough Bread

19.1.3 Sour Dough French Bread

19.1.4 Panettone

19.1.5 Salt-Rising Bread

19.2 Rye and Multi-Grain Breads

19.2.1 Multi-Grain Breads

19.2.2 Rye Bread

19.2.2.1 Processing

19.2.2.2 Trouble Shooting

19.2.2.3 Examples of Formulas and Procedures

19.3 Rye Bread Formula and Process

19.3.1 Pumpernickel

19.4 Other Variety Breads

- 19.4.1 Breads with Vegetable Ingredients
 - 19.4.1.1 General considerations
 - 19.4.1.2 Potato Bread
- 19.4.2 Breads with Dairy Ingredients
- 19.5 Dietetic Bakery Products
 - 19.5.1 General Considerations
 - 19.5.2 Reduced Salt
 - 19.5.3 Reduced Fat
 - 19.5.4 Gluten-Free
 - 19.5.5 "Diabetic" or Sugar-Free
 - 19.5.6 Reduced Calorie
 - 19.5.7 No Cholesterol
- 20. YEAST-LEAVENED SWEET DOUGHS
 - 20.1 Plain and Roll-in Sweet Doughs
 - 20.1.1 Ingredients
 - 20.2 Formulas, General
 - 20.2.1 Straight Sweet Dough Formula and Procedure
 - 20.2.2 Sponge Sweet Dough Formula and Procedure
 - 20.2.3 Roll-in Sweet Dough Formula and Procedure
 - 20.2.4 Procedures
 - 20.2.4.1 Traditional Methods
 - 20.2.4.2 Other Methods
 - 20.3 Fruited Rolls and Stollen
 - 20.3.1 Stollen Formula and Procedure
 - 20.4 Doughnuts and Other Fried Goods
 - 20.4.1 General Formulas
 - 20.4.2 Ingredient Specifications and Functions
 - 20.4.3 Procedures
 - 20.4.3.1 Mixing
 - 20.4.3.2 Fermentation
 - 20.4.3.3 Make-up
 - 20.4.3.4 Proofing
 - 20.4.3.5 Frying
 - 20.4.3.6 Finishing
 - 20.4.4 Variations
 - 20.5 Danish Pastry
 - 20.5.1 History
 - 20.5.2 Experimental Studies
 - 20.5.3 Ingredients and Formulas
 - 20.5.4 Procedures
 - 20.5.5 Examples of Products
 - 20.5.6 Almond Crumb Coffee Cake
 - 20.5.7 Apple Filled Coffee Cakes
 - 20.6 Yeast-Leavened Cookies
 - 20.6.1 Fried Yeast-leavened Cookie
- 21. PACKAGING OF BAKERY PRODUCTS
 - 21.1 What are the Best Packaging Materials for Bakery Products?
 - 21.2 What Material Should Use For Bakery Product Packaging?
 - 21.2.1 Brown Paper
 - 21.2.2 Parchment Paper
 - 21.2.3 Metallized Films
 - 21.2.4 Polypropylene Films
 - 21.2.5 Plastic Sheeting

21.2.6 Metalized Mylar Bags
21.2.7 Custom Food Paper
21.3 Techniques for Packaging of Bakery Products
21.3.1 Flexible Packaging
21.3.1.1 Wrapping Styles
21.3.1.2 Endfold Wrapping
21.3.1.3 Pillow Pack Wrapping
21.3.1.4 Packing for Odd-sized Biscuits
21.3.2 Modified Atmosphere Packaging (MAP)
21.3.3 Shelf Life of Packaged Bakery Goods
21.4 Transport and Storage
21.5 Packaging Equipment
21.6 How Does it Work?

21.6.1 Wrapping Equipment
21.6.2 Bagging Equipment
21.6.3 Wire Twist-Tie Closure
21.6.4 Plastic-Clip Closure

22. FOOD SAFETY REGULATIONS AND STANDARDS

22.1 Introduction to FSSAI

22.1.1 Highlights of the Food Safety and Standard Act, 2006

22.1.2 Establishment of the Authority

22.2 FSSAI Registration & Licensing Process

22.2.1 FSSAI Registration is done Online on the FSSAI

Website through Food Safety Compliance System (FoSCoS)

22.2.2 FSSAI License - Two Types - State FSSAI License and Central FSSAI License

22.2.3 Sanitary and Hygienic Requirements for Food Manufacturer/Processor/Handler

22.3 Labelling Standards (Regulation 2.5 of FSS)

30. BIS STANDARDS

32. FACTORY LAYOUT AND PROCESS FLOW CHART & DIAGRAM

33. PHOTOGRAPHS OF PLANT AND MACHINERY WITH SUPPLIERS CONTACT DETAILS

- Flour Sifting Machine
- Sugar Grinder
- Spiral Mixer
- Dough Moulder Machine
- Cookie Making Machine
- Dough Sheeter Machine
- High Speed Slicer
- Baked Goods Cooling Tunnel
- Automatic Cookie Dropping Machine
- Rotary Oven
- Biscuit and Cookie Extruder
- Tunnel Ovens
- Bakery Foods Packaging Machine
- Dough Divider
- Planetary Mixer
- Cream Biscuit Sandwiching Machine
- Laminator Machine
- Biscuit Packaging Machine
- Rusk Packaging Machine
- Bread Packing Machine
- Rotary Biscuit Cutting Machine

About NIIR

NIIR PROJECT CONSULTANCY SERVICES (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. NPCS is manned by engineers, planners, specialists, financial experts, economic analysts and design specialists with extensive experience in the related industries.

Our various services are: Detailed Project Report, Business Plan for Manufacturing Plant, Start-up Ideas, Business Ideas for Entrepreneurs, Start up Business Opportunities, entrepreneurship projects, Successful Business Plan, Industry Trends, Market Research, Manufacturing Process, Machinery, Raw Materials, project report, Cost and Revenue, Pre-feasibility study for Profitable Manufacturing Business, Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Business Opportunities, Investment Opportunities for Most Profitable Business in India, Manufacturing Business Ideas, Preparation of Project Profile, Pre-Investment and Pre-Feasibility Study, Market Research Study, Preparation of Techno-Economic Feasibility Report, Identification and Section of Plant, Process, Equipment, General Guidance, Startup Help, Technical and Commercial Counseling for setting up new industrial project and Most Profitable Small Scale Business.

NPCS also publishes various process technology, technical, reference, self employment and startup books, directory, business and industry database, bankable detailed project report, market research report on various industries, small scale industry and profit making business. Besides being used by manufacturers, industrialists and entrepreneurs, our publications are also used by professionals including project engineers, information services bureau, consultants and project consultancy firms as one of the input in their research.

Our Detailed Project report aims at providing all the critical data required by any entrepreneur vying to venture into Project. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line.

NIIR PROJECT CONSULTANCY SERVICES, 106-E, Kamla Nagar, New Delhi-110007, India.
Email: npcs.india@gmail.com **Website:** NIIR.org

Tue, 24 Jun 2025 03:08:13 +0000