TECHNOLOGY OF BISCUITS, RUSKS, CRACKERS & COOKIES WITH FORMULATIONS (WAFER BISCUITS, CREAM SANDWICH BISCUITS, OAT CEREAL BISCUITS, LOW SUGAR BISCUITS, HIGH FIBRE BISCUITS, HERBAL BISCUITS, DOG BISCUITS AND OTHER BISCUITS)

MANUFACTURING OF INGREDIENTS USED IN BISCUITS MAKING

- Ingredients that should be dispersed before mixing commences
- Premixes
- Metering to the mixer
- Introduction
• Handling ingredients
• Manual weighing
• Bulk handling of dry materials
• Dedicated metering by weighing in
• Central metering by weighing in
• Loss in weight metering (weighing out)
• Bulk handling of liquid materials
• Weighing the mixer
• Metering of small ingredients
• Continuous metering

**TYPES OF DOUGH**

• Introduction
• Developed doughs
• Short doughs and batters

**TYPES OF DOUGH MIXER**

• Batch mixers
• Vertical spindle general purpose mixer
• High speed angled wing dough mixer
• High speed parallel bar hard dough mixer
• Vertical, detachable bowl, mixers,
• Advantages
• High speed general purpose mixer
• High speed general purpose mixer with sprag (rotor and stator principle)
• Disadvantages
• Horizontal high speed mixers
• Advantages
• Typical single shaft high speed mixers
• Typical Z blade twin bladed horizontal high speed mixer
• Disadvantages
• Size of batch mixers
• Continuous Mixers
• Automatic small batch mixers
• Advantages
• Disadvantages

**MIXING OF DOUGH TO PRODUCE BISCUITS**

• Dough consistency
• Hard doughs
• Puff doughs
• Short doughs
• Soft doughs and sponge batters

**HANDLING OF DOUGH**

• Removal from the mixer
• Standing the dough
• Semisweef dough
• Fermented cracker dough (Cream crackers and Soda crackers)
• Enzyme modified cracker doughs
• Short doughs
• Removal of dough from the tub

SHEETING, GAUGING AND CUTTING METHOD

• Overview
• General arrangement of a hard dough plant
• sheeting and gauging
• Dough feeding systems
• Pre-sheeter and dough feed arrangement
• Sheeters
• Three roll sheeter with pocket for scrap dough
• Gauging
• Three roll sheeter with roll to aid the metering of cutter scrap dough
• Optimum dough path through a gauge roll
• Dough piece cutting
• Dough relaxation arrangements
• Typical arrangement of dough feed conveyors between the final gauge roll and the cutter
• Cutting
• Typical rotary cutter arrangement
• Typical rotary cutter arrangement (single anvil roll)
• Typical rotary cutter arrangement (double anvil roll)
• Control of dough piece weight and shape
• Cutter scrap dough handling
• Transfers of dough pieces

DOUGH PIECE DECORATION TO PRODCE END PRODUCTS

• Decoration with salt, sugar, nuts etc.
• Printing
• Lye bath treatment

LAMINATING

• Principles and techniques of laminating
• Generalised Cracker Plant
• Types of Laminator
• Vertical Laminator with two sheeters and a continuous lapper
• Process control during laminating

ROTARY MOULDING

• Typical Rotary Moulding Plant
• The rotary moulding machine
• Cross section through a typical rotary moulder
• The formation of a dough piece
• Dough feeding to a rotary moulder

EXTRUDING AND WIRE CUTTING
• Principles and techniques of extrusion and depositing
• General description of dough extrusion machines
• General arrangement of wire cut machine
• The formation of dough pieces by wire cutting, rout press and coextrusion
• General arrangement of filled bar forming machine
• The formation of dough and batter pieces by depositing
• Dough piece weight control from extrusion machines

TYPES OF OVEN AND BAKING BANDS

• Introduction
• Direct fired ovens
• Indirect fired ovens
• Hybrid ovens
• Types of baking Bands
• Illustration of various types of oven conveyor and conveyor joint
• Types of oven band

HOW BAKING OVEN WORKS

• Development of biscuit structure and thickness
• Changes to the dough piece during baking
• Changes during baking
• Reduction of moisture content
• Expansion with temperature of dry air and air saturated with water vapour
• Colour changes
• Oven temperatures and heat transfer
• Baking of laminated crackers
• Baking of semisweet and non laminated cracker biscuits
• Baking of short dough biscuits

POST BAKING OPERATIONS

• The runout of the oven band and stripping biscuits from the band
• Detail of reject system before oven stripper conveyor
• Biscuit cutting
• Electronic, dielectric drying
• Oil spraying

INTRODUCTION TO WAFERS

THE WAFER OVEN OR WAFER BAKER

• Examples of water reeding patterns
• Examples of deep reeding patterns

WAFFER SHEET PRODUCTIO

BATTER MIXING

• Batter handling
• wafer Baking
• Plate gap setting
• Volume of batter
• Batter Viscosit
• Plate closure speed
• Steam venting
• Baking speed

SHEET HANDLING, CREAMING AND CUTTING

• Dry sheet handling
• Cream sandwiching
• Contact creaming of wafer sheet
• Film creaming of wafer sheet
• Wafer creaming
• Book building
• Cooling
• Cutting

CREAM SANDWICHING

• Types of creamed products
• Methods of cream application
• Sequence for forming a cream sandwich by stencilling
• Sequence for forming a cream sandwich by depositing and capping
• Sequence for forming a cream sandwich by extrusion and wire cutting
• Mixing and handling of creams
• Process control considerations
• Creamed biscuit cooling

CHOCOLATE AND CHOCOLATE FLAVOURED COATINGS

• Handling of chocolate and coatings
• Tempering of chocolate
• General arrangement of an enrober
• Enrobing biscuits
• Gamishing and decorating
• Moulding biscuits in chocolate
• Conditioning of biscuits and wafers before enrobing or molding
• Cooling of chocolate
• Handling and storage of chocolate biscuits

ICING OF BISCUITS

• Methods of apply icing
• Composition of the icing
• Drying of the icing

APPLICATION OF JAM, MARSHMALLOWS AND CARAMEL TOFFEE

• Water activity, Aw
• Jam and jelly
• Caramel
• Marshmallow

MANUFACTURE OF BISCUIT

• Methods

READY TO EAT OAT CEREAL BISCUIT

• Methods

LOW FAT LOW SUGAR SOFT DOUGH BISCUITS WITH FORMULAE

• Method
• Flow chart
• Physical characteristics of biscuits

HIGH FIBRE BISCUIT MANUFACTURE AND COMPOSITION

• Method
• Flow chart
• Evaluation of biscuits

METHOD FOR MAKING BISCUITS OF UNIFORM SIZE AND QUALITY

• Top plan view of the biscuit mold of the present method showing the multiple hexagon cutter placed therein
• Cross sectional view
• Cross sectional view showing the dough being cut into separate biscuit shapes
• Top plan view of an alternate embodiment of the method
• Top plan view of the alternate embodiment for a cutter
• Cross sectional view showing the cutter within the mold

HONEY BASED BISCUITS

• Unbaked biscuits

FORMULATION FOR THE ADMINISTRATION OF MEDICINAL SUBSTANCES

• Semi sweet biscuit enriched with calcium carbonate
• Digestive biscuit enriched with calcium carbonate
• Semi sweet biscuit containing an ion exchange resin
• Cream filling was prepared using a cream
• Low salt snack cracker
• Cream cheese filling containing gamma guanidinobutyramide
• Low salt snack cracker
• Semi sweet biscuits
• Medicated biscuit
• Nutritional composition of each cream biscuit

HERBAL BISCUITS FOR LACTATING MOTHERS
• Nutritive flours of Soyabean, Buckwheat, Moong, Wheat, Bazra, Bengal gram along with Carrot Juice in combination with many plants.
• Advantages

MANUFACTURE OF DOG BISCUITS

• Percentages ingredients Specific Ranges

PROJECT PROFILE ON BISCUITS MAKING

• Product and its applications
• Market potential
• Basis and presumptions
• Implementation Schedule
• Technical aspects
• Location
• Process of Manufacture
• Quality Control and Standards
• Pollution Control
• Energy Conservation
• Production Capacity
• Utilities
• Financial Aspects
• Fixed Capital
• Land & Building Amount
• Machinery and Equipment
• Pre operative Expenses
• Total Fixed Capital
• Recurring expenses per annum
• Personnel
• Raw Material including packaging materials
• Working capital
• Financial Analysis
• Sale Proceeds/Annual turnover
• Net Profit per year
• net Profit Ratio
• Rate of Return on Investment
• Annal Fixed Cost
• Break Even Point

ALMOND BISCUITS

• Ingredients
• Preparation

APPLE STRUDLE BARS

• Ingredients
• Preparation

BUTTERMLK BISCUITS
• Ingredients
• Preparation

PREPARATION OF RUSKS

• Food preparation method
• Schematic diagram showing the steps of the method
• Schematic side view of the resting conveyor
• Schematic plan view of the cutting machine
• Part sectional plan view of the rollers of the cutting machine
• Sectional view of one end of the rollers
• Respective perspective end views of the dough strips cut from the dough sheet
• Respective perspective end views of the dough strips cut from the dough sheet
• Respective perspective and end views of the final rusk products

HOMEMADE RUSK RECIPES

• Method
• Contains egg
• Cake Rusk

PROCESS FOR THE MANUFACTURE OF DRY BAKED PRODUCTS

• Crispbread Products
• Sandwich Product (filled product) Prepared of bands
• Coated Product prepared of Bands
• Seasoned Product Prepared of Bands (seasoning mix applied by coating)
• Other Applications
• High fibre coated product
• High Fibre filled Product
• High Fibre, Seasoned Snack product
• Coated Thin Crispbread with Milk Chocolate Coating Containing Salatrim Light Fat
• Ingredients
• Filled Thin Crispbread (Sandwich product) with Cheddar Filling with Salatrim Light Fat and Polydextrose
• Seasoned Thin Crispbread

CRACKERS MANUFACTURE

• Process for Making Filled Crackers
• Based on 100 ponds of wheat flour, the ingredients
• Cracker Recipes
• Cheddar commeal Crackers
• Banana Crackers
• Coffee Crackers

PREPARATION OF COOKIES

• Process for preparing cookies

METHOD FOR PREPARING A CUP SHAPED COOKIE
• A cup shaped cookie having a configuration in accordance with the present method
• An additional cookie configuration which is slightly elongated from the spherical shape
• Top view of the cookie configuration
• Upper and lower molds utilized to prepare cup shaped cookies in accordance with the present inventive method
• Cross section taken along the lines
• Alternate embodiment of upper and lower baking molds with cooked batter there between

COOKIES CONTAINING PSYLLIUM

• Method of making
• Method of treatment
• Peanut butter cookie
• Peanut butter cookie

REDUCED SUCROSE COOKIE DOUGH

• Sugar free chocolate chip cookie Dough Maltitol Polydextrose
• Process
• Sugar Free Chocolate Chip Cookie Dough Maltitol Slubilized Maltitol
• Process
• Sugar Free Oatmeal Cookie Dough Lactitol: Sorbitol: Polydextrose
• Process
• Sugar Free Peanut Butter Cookie Dough Maltitol Sorbitol Polydextrose
• Process
• Sugar Cookie Recipes
• Butterscotch Cookies
• Ingredients
• Method
• Almond Crescent Cookies
• Ingredients
• Method

BISCUITS MAKING MACHINES

• Dough Mixer
• Rotary Moulder (Hard Dough)
• Rotary Cutter/Laminator (Soft Dough)
• Biscuit baking Oven
• Cooling Conveyor & Stacking Machine
• Biscuit Packaging Machines

PLANT ECONOMICS OF BAKERY & BISCUIT EQUIPMENT FABRICATION

• Plant and Machinery
• Fixed Capital
• Raw Materials
• Total Working Capital/Month
• Total Capital Investment
• Turn Over/Annum

PLANT ECONOMICS OF BISCUIT (ASSORTED) AUTOMATIC PLANT
• Plant Economics of Biscit (Assorted) Automatic Plant
• Plant and Machinery
• Fixed Capital
• Raw Materials
• Total Working Capital/Month
• Total Capital Investment
• Turn Over/Annum

PLANT ECONOMICS OF BAKERY INDUSTRY

• Retail bakery boom
• Bakery as your career
• Plant Economics of Bakery Industry
• Plant & Machinery
• Fixed Capital
• Raw Materials
• Total Working Capital/Month
• Total Capital Investment
• Turn Over/Annum

PLANT ECONOMICS OF BAKERY, NAMKEEN AND CONFECTIONERIES

• Plant & Machinery
• Fixed Capital
• Raw Materials
• Total Working Capital/Month
• Total Capital Investment
• Turn Over/Annum

PLANT ECONOMICS OF BAKERY UNIT (PASTRIES, BREAD, BUNS AND CAKE, ETC)

• How to Start a bakery
• What type of bakery do you want to start
• Learn more about them
• What supplies Do I need
• Taking your bakery online
• final Things to Consider when starting a bakery
• Plant Economics of Bakery Unit (Pastries, Bread, Burns and Cake, etc)
• Plant and Machinery
• Fixed Capital
• Raw Materials
• Total Working Capital/Day
• Total Capital Investment
• Turn Over/Day

PLANT ECONOMICS OF BISCUIT UNIT (PINEAPPLE) AUTOMATIC PINEAPPLE BISCUIT MAKING PLANT

• Plant & Machinery
• Fixed Capital
• Raw Materials
• Total Working Capital/Month
• Total Capital Investment
- Turn Over/Annum

**PLANT ECONOMICS OF COOKIES MAKING (BAKERY INDUSTRY)**

- Plant & Machinery
- Fixed Capital
- Raw Materials
- Total Working Capital/Month
- Total Capital Investment
- Turn Over/Annum