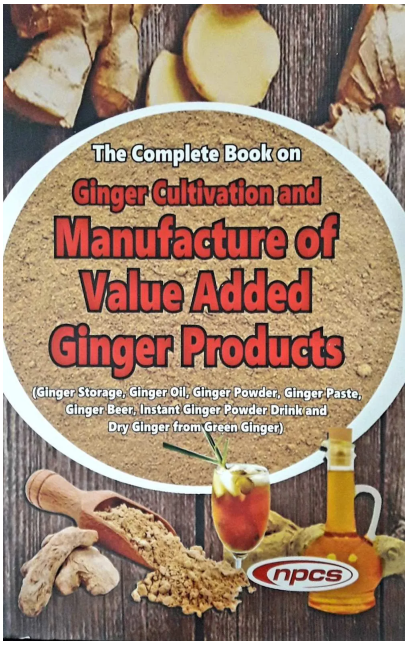
Entrepreneur India

106-E, Kamla Nagar, New Delhi-110007, India.
Tel: 91-11-23843955, +91 9097075054
Mobile: +91-9097075054
Email: npcs.ei@gmail.com, info@entrepreneurindia.co
Website: www.entrepreneurIndia.co



The Complete Book on Ginger Cultivation and Manufacture of Value Added Ginger Products (Ginger Storage, Ginger Oil, Ginger Powder, Ginger Paste, Ginger Beer, Instant Ginger Powder Drink and Dry Ginger from Green Ginger)

Code	NI308
Format	paperback
Indian Price	₹1575

US Price	$150
Pages	352
ISBN	9789381039854
Publisher	NIIR PROJECT CONSULTANCY SERVICES

Description

Ginger is the common name for Zingiber officinale, which was originally cultivated in China and now equally spread around the world. Ginger is a herb but is often known as a spice, with a strong distinct flavor that can increase the production of saliva. The part that is used as spice on the plant itself is the rhizomes or ginger root. This ginger root is traditionally used with sweet foods in Western cuisine being included in popular recipes such as ginger ale, gingerbread, ginger biscuits and ginger cake. It is also used in many countries as a medicinal ingredient which many believe in. Historically, ginger has a long tradition of being very effective in alleviating symptoms of gastrointestinal distress. In herbal medicine, ginger is regarded as an excellent carminative and intestinal spasmolytic. Modern scientific research has revealed that ginger possesses numerous therapeutic properties including antioxidant effects, an ability to inhibit the formation of inflammatory compounds, and direct anti-inflammatory effects.

India is the leading producer of ginger oil and dominates the ginger oil market with almost half shares out of total market. China is also known for ginger production and trade of ginger oil. Asia Pacific mainly exports ginger oil to North America and European markets.

Increasing number of health conscious consumers, and their demands for natural oils and extracts based products is the major factor driving growth for essential oils and in turn ginger oil market. Ginger is majorly used in spices and thus ginger oils and oleoresins are preferred to prepared dried spices as flavoring in food industry, because they are more stable, contamination free, cleaner and can be easily standardized by blending. Thus the growth of food industry and spices demand are another factors driving growth of ginger oil market. The growth of natural personal care products industry is another growth driver for ginger oil market.

The major content of the book are Ginger Cultivation, Farm and Forestry Production for Ginger, Diseases & Pest Management in Ginger, Medicinal Values of Ginger, Active Ingredients of Ginger, Pharmacological Activity of Ginger, Ginger Storage, Ginger Processing, Ginger Oleoresin, Ginger Oil, Ginger Beer, Ginger Powder, Ginger Paste, Instant Ginger Powder Drink, Ginger Candy, Dry Ginger from Green Ginger, Extraction

of Ginger Oleoresin from Ginger-Root Using Co2,Production of Ginger Rhizome by Shoot-Tip Culture, Extraction of Essential Oils from Ginger Rhizome Using Steam Distillation Method, Packaging and Labelling BIS Specifications, Good Manufacturing Practices, Sample Plant Layouts, Photoraphs of Machinery with Suppliers Contact Details.

This book will be a mile stone for its readers who are new to this sector, will also find useful for professionals, entrepreneurs, those studying and researching in this important area.

Content

1. INTRODUCTION
History and Origin of Ginger
Processing of Ginger
Peeling
Drying
Storage
Bleached Ginger
Transplanting Technology for Reduction of Seed
Cost
Technology
Manuring
Irrigation
Inter Cultivation
Inter Cropping and Crop Rotation
Uses of Ginger
Best Ways to Use Ginger
Bioactive Components of Ginger
Metabolism of Ginger
Properties
Applications of Ginger
Ginger Health Benefits
1. Stroke and Heart Disease
2. Indigestion and Nausea
3. Malabsorption
4. Compromised Immunity and Respiratory
Function
5. Bacterial Infections
Healing Properties

Cosmetic Uses of Ginger
Nutritional Value of Ginger
Nutrient Profile for Ginger
2. GINGER CULTIVATION
Climate and Soil
Soil for Ginger Farming
Varieties
Planting Season
Preparation of Land
Manures and Fertilisers
Mulching
Crop Nutrition
Nitrogen
Potassium
Phosphorus
Calcium
Earthing up
Growth Regulators
Harvesting and Curing
Production Technology
Seed Size
Seed Rate
Seed Treatment
Planting
Spacing
Depth of Planting
Crop Rotation
Storage of Seed Rhizomes
Alternate Method of Ginger Production
3. FARM AND FORESTRY PRODUCTION FOR GINGER
Uses and Products
Botanical Description
Brief Botanical Description
Distribution
Environmental Preferences and Tolerances
Climate
Soils
Growth and Development
Agroforestry and Environmental Services
Propagation and Planting

Cultivation
Special Horticultural Techniques
Advantages and Disadvantages of Growing in Polycultures
Pests and Diseases
Susceptibility to Pests/Pathogens
Preventing and Treating Problem Pests and Diseases
Disadvantages of this Crop
Potential for Invasiveness
Commercial Production
Postharvest Handling and Processing
4. DISEASES & PEST MANAGEMENT IN GINGER
Diseases
1. Soft Rot or Paheli: Pythium Aphanidrematum
Management
2. Dry Rot: Fusarium and Pratylenchus Complex
Management
3. Leaf Spot/Blight: Phyllostricta Zingiberi
Management
4. Bacteri al Wi l t or Prem Rog: Ral stoni a Solanacearum
Integrated Pest and Disease Management for Ginger
5. MEDICINAL VALUES OF GINGER
Active Compounds in Ginger
Anti-Inflammatory & Anti-Oxidant
Nausea
Digestion
Cholesterol
Cancer
Anti-Bacterial
Migraines
Drug Interactions
Malabsorption
Bacterial Diarrhea
Anticarcinogenic Activities of Ginger
Therapeutic Health Benefits of Ginger
Ginger as Growth Promoter
Osteoarthritis
Use of Ginger as a Traditional Medicine

Role of Ginger and Its Constituents in Prevention and Treatment of Gastrointestinal Cancer
Gastric Cancer
Pancreatic Cancer
Liver Cancer
Colorectal Cancer
Cholangiocarcinoma
Clinical Studies of Ginger against GI Cancer
Ayurveda Health Benefits of Ginger
Trikatu for Weak Digestion
Dry Ginger is Hot and Warms the Lungs and Dries Cold Phlegm
Fresh Ginger Warms the Stomach and Promotes Digestion and Absorption
Fresh Ginger to Disperse Cold, and to Treat Colds and Coughs
Ginger Root Contraindicated in Pitta Elevation
Ginger Root in Ayurvedic Churnas
6. ACTIVE INGREDIENTS OF GINGER
Introduction
Chemical Structure of Active Constituents
Mechanism of Action of Ginger in Diseases Management
7. PHARMACOLOGICAL ACTIVITY OF GINGER
Introduction
Pharmacology
Antiemetic Effects
Anti-Inflammatory Effects
Antioxidant Effects
Cardiovascular Effects
Gastrointestinal Effects
Antitussive Effects
Immunomodulatory Effects
Lipid Effects
Weight Loss Effects
Antiarthritic Effect
Antimicrobial Activities
Radio Protective Activity
Antigenotoxic Activity
Mutagenicity
8. GINGER STORAGE

Types of Ginger
Composition of Ginger
Ginger Storage Process
Controlled Temperature and Humidity Storage
9. GINGER PROCESSING
Introduction
Forms of Ginger
Processing Dried Ginger
Making Dried Ginger
Quality Assurance of Dried Ginger
Grading
Grinding
Packaging
Storage
Ginger Oil Distillation
Advantages of Ginger Dehydration
1. Enhance Ginger’s Value
2. More Cost-Effective
3. Wide Application
Hot-Air Circulation Drying Technology
Process Flow Sheet
10. GINGER OLEORESIN
Uses
11. GINGER OIL
Introduction
Solubility
Chemical Composition
Uses and Application
Packing and Marking
Manufacturing Process
Preparation of Raw Material
Cleaning
Milling
Soaking
Loading or Charging
Bleaching of Ginger
Practice of Distillation
Steam Distillation
End of Distillation
Treatment of the Volatile Oil
Treatment of the Distillation Water

Manufacturing Process Flow Diagram
Rectification of Essential Oils
Problems Relating to Steam Distillation
Environment Pollution and Effluent Treatment
12. GINGER BEER
Ginger Beer
Root Beer
Ancient Root Beer Heritage
Best Ginger Beers
13. GINGER POWDER
Introduction
Properties
Uses of Ginger Powder
Manufacturing Process of Ginger Powder
Process Flow Sheet
14. GINGER PASTE
Properties of Ginger Paste
Uses of Ginger Paste
Chemical & Physical Specification of Ginger
Manufacturing Process
Process Flow Diagram
15. INSTANT GINGER POWDER DRINK
Introduction
Etymology
Chemistry
Uses
Culinary Use
Ginger Acts as a Useful Food Preservative
Regional Use
Properties
1. Citric Acid
2. Measurement
3. Sodium Benzoate
Manufacturing Process
16. GINGER CANDY 201
Ginger Candy
Flow Chart of Technology/Process
17. DRY GINGER FROM GREEN GINGER
Introduction
History
Uses and Application

Composition of Dry Ginger
Manufacturing Process
Process of Manufacture
Ginger not Divested of Cork
Ginger Clivested of Cork
Grinding
Progress Flow Sheet
18. EXTRACTION OF GINGER OLEORESIN FROM GINGER-ROOT USING CO2
Environmental Significance
Equipment Descriptions
Necessary Information and Simulation Hints
19. PRODUCTION OF GINGER RHIZOME BY SHOOT-TIP CULTURE
Introduction
Field Study
Effect of Tissue Cultured Rhizomes of Ginger
20. EXTRACTION OF ESSENTIAL OILS FROM GINGER RHIZOME USING STEAM DISTILLATION METHOD
Overview of Ginger
Physical Properties of Ginger
Usage of Ginger
Usual Methods of Obtaining Ginger Essential Oil
Steam Distillation
Problem Statement
Separation Processes
(i) Absorption
(ii) Distillation
(iii) Liquid-Liquid Extraction
(iv) Leaching
(v) Membrane Processing
(vi) Crystallization
(vii) Adsorption
(viii) Ion Exchange
• Purification
• Concentration
• Fractionation
Extraction
Distillation
21. PACKAGING AND LABELLING

Functions of Packaging
22. BIS SPECIFICATIONS
23. GOOD MANUFACTURING PRACTICES
1. Storage of Raw Materials
2. Tempering/Thawing of Frozen Materials
3. Processing
Post-Processing Handling
i) Facility Design
ii) Sanitation
iii) Employees
Material Handling
4. Storage of Finished Product
5. Loading and Shipping
Management of Hygiene Aspects
Environmental Monitoring
Temperature Monitoring
Design and Facilities
i) Principles and Concepts of GMP
ii) Establishment: Design and Facilities
Location
Equipment
Premises and Rooms
Equipment – Design
Equipment
Facilities
Control of Operations
i) Control of Food Hazards
ii) Key Aspects of Hygiene Control Systems
iii) Incoming Raw Material Requirements
iv) Packaging
v) Water
vi) Management and Supervision
vii) Documentation and Records
viii) Recall Procedures
Establishment: Maintenance and Sanitation
i) Maintenance and Cleaning
ii) Cleaning Procedures and Methods
iii) Pest Control Systems
iv) Waste Management
v) Monitoring Effectiveness
vi) Establishment : Personal Hygiene

vii) Transportation
viii) Product I nf ormati on and Consumer Awareness
ix) Training
24. SAMPLE PLANT LAYOUTS
Agro Processing Workflow
25. PHOTOGRAPHS OF MACHINERY WITH SUPPLIERS CONTACT DETAILS
Ginger Paste Making Machine
Ginger Slicer Machine
Ginger Washing and Peeling Machine
Paste Filling Machine
Steam Jacketted Vesssel
Ribbon Blendor
Pulverizer
Bucket Elevator
Powder Dryer Machine
Boiler
Oil Storage Tank
Pneumatic Conveying System
Material Handling Conveyors
Air Compressor
R.O. Plant
Distillation Units
Fruit Pulper
Liquid Filling Machine
Drum Type Blancher
Fruit Mill
Spray Machine
Weighing Machine
Packaging Machine
Ginger Oil Extraction Machine
Ginger Slicer
Pollution Control Equipment
Reverse Osmosis System
Pump
Hammer Mill
Redler Conveyors
Oil Filter Machine
Blending Tanks
Sealing Machine

Carton Packaging Machine
Pouch Packaging Machine

About Niir

NIIR Project Consultancy Services (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. Its various services are: Pre-feasibility study, New Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Preparation of Project Profiles and Pre-Investment and Pre-Feasibility Studies, Market Surveys and Studies, Preparation of Techno-Economic Feasibility Reports, Identification and Selection of Plant and Machinery, Manufacturing Process and/or Equipment required, General Guidance, Technical and Commercial Counseling for setting up new industrial projects and industry. NPCS also publishes various technology books, directories, databases, detailed project reports, market survey reports on various industries and profit making business. Besides being used by manufacturers, industrialists, and entrepreneurs, our publications are also used by Indian and overseas professionals including project engineers, information services bureaus, consultants and consultancy firms as one of the inputs in their research.