AN ISO 9001 : 2015 CERTIFIED COMPANY

The Complete Book on Onion & Garlic Cultivation with Processing (Production of Onion Paste, Flakes, Powder & Garlic Paste, Powder, Flakes, Oil) 2nd Revised Edition

FREE SAMPLE: contents and introduction of the 424-page book

Price: Rs 1,575 | US$ 42.56

Order the full book >

AN ISO 9001 : 2015 CERTIFIED COMPANY

Author: NPCS Board of Consultants & Engineers
Format: paperback
Code: NI290
Pages: 424
Price: Rs 1,575 | US$ 42.56
Publisher: NIIR PROJECT CONSULTANCY SERVICES
Shipping: 4 days

About the Book

Onion (Allium cepa L.) has been valued as a food and a medicinal plant since ancient times. It is also used indifferent forms of processed food, e.g. pickles, powder, paste, and ?akes, and it is known for its medicinal values.
Garlic belongs to the genus Allium, which comprises of approximately 600 known species distributed over the whole northern hemisphere. Characteristic for Allium species are herbaceous, perennial bulbous plants with a typical leek odour.
Onion and Garlic are the spice commodities used for flavouring the dishes. These are considered as valuable medicinal plants offer variety of medicinal properties. Onion & garlic are important commercial crops with versatile applications. The demand for the processed products is increasing day by day due to its convenience to handle and use. Onion & Garlic can be processed into a wide variety of products. As per the estimate, approximately 6.75% of the onion produced is being processed. Besides fulfilling the constant demand of domestic population, India exports 13 to 18 lakh tons of onion annually worth around Rs. 2200 crores of foreign exchange revenue. Similarly in case of garlic, the production increased from 4.03 lakh tons to 12.26 lakh tons.
In the world market, the demand for onion and garlic products is increasing as they are hygiene and easy to handle, able to avoid wastage. There are good prospects for these processed products to export to gulf countries and even Europe. Overall, global Garlic market continues to indicate a perceptible growth. After China, India is the second largest producer of onion and enjoys 19% share of the global onion production. Maharashtra and Karnataka are the chief onion producing states in India and contribute near about 45% of the total production of onion in India. Production of onion in India is about 15m tones a year.
Proper placement of onion & garlic products (like; onion pickle, onion chutney, onion paste, garlic oil, garlic paste, garlic powder, garlic flakes, onion flakes, onion powder) in the departmental stores, super markets, shopping malls backed-up by publicity is the key to success. It is also possible to have tie-up with exclusive restaurants, star hotels, renowned caterers for their regular requirements.

This handbook is designed for use by everyone engaged in the Onion & Garlic products manufacturing. Major contents of the book are Varieties of Onion, Onion Production, Onion Dehydration, Types of Garlic, Garlic

Growing, Garlic Dehydration, Onion Pickle, Onion Chutney, Onion Paste, Garlic Oil, Garlic Paste, Garlic Powder, Garlic Flakes, Onion Flakes, Onion Powder, Pest Species and Pest Control of Garlic and Onion, Integrated Weed Management, Packaging, Product Advertising and Sales Promotion, Marketing, Plant & Machinery Photographs, Addresses of Plant & Machinery Suppliers, Sample Plant Layouts etc.
It will be a standard reference book for professionals, entrepreneurs, food technologists, those studying and researching in this important area and others interested in the field of Onion & Garlic products manufacturing.

Contents

1. INTRODUCTION OF ONION
Nutrition per Serving of Onions
Medicinal Value of Onion
Effect
Chemical Structure and Influences on Flavour
Uses
Culinary Uses
Non-Culinary Uses
Historical Use
2. VARIETIES OF ONION
Yellow Onions or Brown Onions
Red Onion
White Onion
Sweet Onions
Green Onions or Scallions
Pearl Onions
Phytochemical Properties of Onion
Health Benefits of Onion
Cardiovascular Benefits
Support for Bone and Connective Tissue
Anti-Inflammatory Benefits
Cancer Protection
Other Health Benefits
Diseases of Onion
Damping-Off
Purple Blotch (Alternaria Porri)
Onion Smut
Onion Smudge
Black Mould
Bacterial Brown Rot
Onion Yellow Dwarf
White Rot
Neck Rot
3. ONION PRODUCTION
Phases of Growth
Vegetative Phase
Bulbing Phase
Blooming Phase
Climatic Requirements
Soil
Site Selection and Planting

Cultivars
Onion Sets
Irrigation
Weed Control
Pest Management
Harvest
Curing
Storing
4. ONION DEHYDRATION
Dehydrated Onion
Onion Varieties Suitable for Dehydration
Uses of Dehydrated Onions
Dehydration Practices for Onion
Solar Drying
Convective Air Drying
Fluidized Bed Drying
Microwave Drying
Infra Red Drying
Vacuum Drying
Freeze Drying
Osmotic Dehydration
Onion Dehydration Process
Processing Steps
Power Production and Energy Requirements
5. GARLIC – AN INTRODUCTION
Uses
Culinary Uses
Spiritual and Religious Uses
Historical Use
Other Uses
Properties of Garlic
Chemical Structure
6. TYPES OF GARLIC
1. Softneck Garlic
2. Hardneck Garlic
Diseases of Garlic
Health Benefits of Garlic
Cardiovascular Benefits
Garlic and Cancer
Anti-Inflammatory Benefits Across Body Systems
Antibacterial and Antiviral Benefits
Garlic and Blood Pressure
Antioxidative Effects of Garlic
7. GARLIC GROWING
Climate
Land Preparation
Soil/Nutrients
Soil Fertility
Planting
Plant Development
Mulching

Irrigation and Labor
Pest Management
Weed Control
Harvest and Storage
Marketing
8. GARLIC DEHYDRATION
Drying
Methods of Drying
1. Hot Air Drying
2. Solar and Open Sun Drying
Experimental Setup
Design
Raw Material and Sample Preparation
Washing
Drying Process Flow Chart of Dehydrated Garlic
Equipment/Apparatus Used
Measurement of Variables
Air Temperature and Relative Humidity
Air Velocity
Solar Radiation
Initial Moisture Content (IMC)
Moisture Content during Drying Experiment
Equilibrium Moisture Content (E.M.C.)
Moisture Ratio (M.R.)
Drying Rate (D.R.)
Average Drying Rate (A.D.R.)
Quality Evaluation of Dehydrated Garlic
Rehydration Ratio, Coefficient of Rehydration
Comparison between Solar and Open Sun Drying
Freeze Drying
Fluidized Bed Drying
Dehydration Process
Dehydration Process Flow Diagram
Safety Precautions & Other Cares in Garlic Dehydration
9. ONION PICKLE
Introduction
Raw Material
Onion Pickle Manufacturing Process
Onion Pickle Process Flow Diagram
10. ONION CHUTNEY
Introduction
Manufacturing Process of Onion Chutney
Process Flow of Onion Chutney
11. ONION PASTE
Introduction
Nutrition Information of Onion Paste
Frozen Onion Paste
Manufacturing Process of Onion Paste
Process Flow of Onion Paste
12. GARLIC OIL
Introduction

Garlic Oil manufacturing Methods
Manufacturing Process
Removal of Undesired Material
Washing of Bulbs
Peeling
Crushing of Bulbs
A Steam Distillation
a. Hydrodistillation
b. Direct Steam Distillation
Advantages of Direct Steam Distillation
Disadvantage of Direct Steam Distillation
Inspection and Analyzing
Packing and Dispatching
Heart Diseases
Cholesterol Levels
Process Flow Diagram
Diabetes
Bodily Aches and Pains
Skin Problems & Other Infections
Other Ailments
13. GARLIC PASTE
Introduction
Manufacturing Process of Garlic Paste
Process Flow of Garlic Paste
14. GARLIC POWDER
Introduction
Uses of Garlic Powder
Manufacturing Process of Garlic Powder
Process Flow Diagram (Garlic Powder)
15. GARLIC FLAKES
Introduction
Manufacturing Process of Garlic Flakes
16. ONION FLAKES
Introduction
Properties of Onion Flakes
Uses of Onion Flakes
Manufacturing Process of Onion Flakes
Plant & Machinery Required
Raw Material Required
17. ONION POWDER
Introduction
Varieties of Onion Powder
Chemical Specification
Nutritional Information
Uses of Onion Powder
Meat Rubs
Bloody Maty Drinks
Spice Mixes
Dressings
Manufacturing Process of Onion Powder
Process Flow Diagram

Health Benefits of Onion Powder
Low in Fat and Calories
Potassium
Magnesium
Calcium
Low in Sodium
18. PEST SPECIES AND PEST CONTROL OF GARLIC AND ONION
(a) Indirect Pests of Garlic
Removal of Scapes
Weed Control
Insects
Onion Thrips
Onion Maggot
Armyworms
Wireworms
Nematodes
Diseases
Pink Root
Botrytis
Rust
Viruses
Pest Control
Disease Management
Onion and Garlic
Damping Off Symptoms
Management
Cultural Methods
Biological Method
Chemical Methods
Purple Blotch
Symptoms
Management
(i) Cultural Methods
(ii) Host Plant Resistance
(iii) Biological Methods
(iv) Chemical Methods
Stemphylium Leaf Blight
Symptoms
Management
Cultural Methods
Host Plant Resistance
Chemical Methods
Colletotrichum Blight/Anthracnose/Twister Disease
Symptoms
Management
Cultural Methods
Host Plant Resistance
Chemical Methods
Fusarium Basal Rot/Basal Plate Rot (Fusarium Oxysporum F.sp Cepaae).
Symptoms
Management

Cultural Methods
Host Plant Resistance
Biological Methods
Chemical Methods
White Rot (Sclerotium cepivorum Berk)
Symptoms
Management
Cultural Methods
Biological Methods
Chemical Methods
Pink Root (Phoma (Pyrenochaeta) Terrestris, Fusarium Solani)
Symptoms
Management
Host Resistance
Cultural Methods
Chemical Methods
Black Mold (Aspergillus Niger Van Tieghem. A. Fumigatus (Green Mold) and A Alliaceus)
Symptoms
Management
Cultural Methods
Chemical Methods
Bacterial Rots
Symptoms
Management
Viral Diseases (Transmitted by Various Aphid Species or Mechanically to Onion)
(i) Onion Yellow Dwarf Virus
Symptoms
Management
(ii) Iris Yellow Spot Virus
Symptoms
Management
Onion and Garlic
Thrips
Management
Cultural
Planting Date
Mulching
Irrigation
Barriers
Biological Control
Plant Resistance
Botanicals
Chemical
Maggot (Delia Antique)
Symptoms:
Pest Management
Cultural
Chemical Control
Army Worms (Spodoptera Exiguo, S.litura) and Helicoverpa Armigera Hubner
Pest Management
Bulb Mite (Rhizoglyphus Robini Claparede)

Management
Eriophyid Mite (Aceria Tulipae Keifer)
Management
Red Spider Mite (Tetranychus Cinnabarinus)
Management
19. INTEGRATED WEED MANAGEMENT
Weed Characteristics
Monitoring
Herbicides
Preventing Weeds
Crop Rotation
Cover Crops
Cover Crop Residues as Mulch.
Cover Crops as Living Mulch.
Stale Seedbed Preparation
Soil Solarization
Sanitation and Composting
Weed Problems
Yellow Sweetclover and White Sweetclover.
Seedling
Mature Plant
Nutsedge
Seedling
Young Plant
Mature Plant
Annual Bluegrass
Collar
Mature Plant
Dodder
Seedling
Mature Plant
Seeds
20. BUREAU OF INDIAN STANDARDS
Objectives
Quality Policy
Product Certification
Process of Setting Standards
Indian Standards for Onion
Indian Standards for Garlic
21. THE NATIONAL BUREAU OF AGRICULTURAL COMMODITY AND FOOD STANDARDS (ACFS)
Mission
Responsibilities
Structure
Notification of the National Committee on Agricultural Commodity and Food Standards
Thai Agricultural Standard Garlic
1. Scope
2. Quality
3. Sizing
4. Tolerances
5. Packing and Presentation
6, Marking and Labelling

7. Contaminants
8. Pesticide Residues
9. Hygiene
10. Methods of Analysis and Sampling
Annex A: Garlic Illustration
Annex B: Unit
Thai Agricultural Standard Onion
1. Scope
2. Quality
3. Sizing
4. Tolerances
5. Packing and Presentation
6. Marking and Labelling
7. Contaminants
8. Pesticide Residues
9. Hygiene
10. Methods of Analysis and Sampling
Annex A: Onion Illustration
Annex B: Unit
22. PACKAGING
Packaging, Flexible
Introduction
Forms of Flexible Packaging
Manufacturing Techniques
Uses and Types of Flexible Packaging
Industrial Packaging
Metal Cans
Raw Materials for Can-Making
Steel
Aluminium
Can-Making Processes
Two-Piece Cans (Drawn Cans)
Single Drawn Cans
Drawn and Redrawn Cans (DRD)
Drawn and Wall-Ironed (DWI) Cans
Drawn and Ironed Cans (DI)
Three-Piece Cans
End-Making Processes
Coatings, Film Laminates and Inks
Container Handling
Storage and Distribution
Glass Containers
Attributes of Food Packaged in Glass Containers
Glass and Glass Container Manufacture
Melting
Container Forming
Design Parameters
Surface Treatments
Hot End Treatment
Cold End Treatment
Low-Cost Production Tooling

Container Inspection and Quality
Thermal Processing of Glass Packaged Foods
Glass Pack Design and Specification
Concept and Bottle Design
23. PRODUCT ADVERTISING AND SALES PROMOTION
Advertising
Advertising Mediums
Sales Promotion
Objectives of Sales Promotion
Different Chennels for Sales Promotions
1. Consumer Promotions
2. Trade Promotions
24. MARKETING
Functions of Marketing
Promotional Techniques
The Product Concept
Some Characteristics of Market Segmentation
Organization for New-Product Development
Developing New Products
Planned Obsolescence
Product Line Relationships
Product Features
The Sales Process
25. PLANT & MACHINERY PHOTOGRAPHS
26. ADDRESSES OF PLANT & MACHINERY SUPPLIERS
27. SAMPLE PLANT LAYOUTS

Get the full book

This sample shows only the contents and introduction. The full book has every chapter.
Price: Rs 1,575 | US$ 42.56
Delivery: Shipped within 4 working days of payment
Order online: niir.org/books/onion-garlic-processing-handbook/ **WhatsApp:** +91 9097-075-054

Planning a unit? NPCS project reports:

- Garlic Oil project report
- Garlic Powder project report
- Onion Powder project report
- Dehydrated Onion project report

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, Market Research, Manufacturing Process, Machinery, Raw Materials, Project Feasibility, Investment Opportunities, Technical Consultancy and Startup Help.

NPCS also publishes process technology books, technical books, startup books, directory, business database, detailed project reports and market research reports.

Our Detailed Project Report aims at providing all the critical data required by entrepreneurs for starting new business ventures.

AN ISO 9001 : 2015 CERTIFIED COMPANY

Email: npcs.india@gmail.com **Website:** https://www.niir.org/

Scan to order the full book on niir.org