

The Complete Technology Book on Alcoholic and Non-Alcoholic Beverages (2nd Revised Edition)-(Fruit Juices, Sugarcane Juice, Whisky, Beer, Microbrewery, Rum and Wine)

Author: NPCS Board of Consultants & Engineers

Format: paperback

Code: NI209

Pages: 576

Price: Rs 2275 | US\$ 200

Publisher: NIIR PROJECT CONSULTANCY SERVICES

Shipping: 5 days

About the Book

Alcoholic Beverage contains more than a minimal amount of ethyl alcohol or ethanol. They are classified into three general classes called beer, wine, and spirit. Non-Alcoholic Beverages are considered as the non-alcoholic version of alcoholic beverages. Non-alcoholic beverages include drinks that contains less than 0.5% alcohol. Changing tastes and preferences of consumers and inclination toward consumption of convenience food and beverages have led to the rise in demand for non-alcoholic beverages in the last few years.

The global beverage market looks good with opportunities for alcoholic and non-alcoholic beverages. It is expected to reach in \$trillion and is forecast to grow at a CAGR of 3.0%. The major drivers for the growth of this market are growing urbanization, and disposable income. The non-alcoholic segment is expected to show above average growth. Consumer preferences, growing population, and health awareness are the major drivers.

Within global beverage industry, beer is expected to remain the largest segment by value. Acceptance of alcohol consumption by consumers, population base of the young generation, and increasing per capita income are the major driving forces that spur growth for this segment over the forecast period. The rapidly invading global culture is also ensuring a rising numbers of Beer Cafés and Microbreweries across the World. The major contents of the book are Grape Juice Processing, Apple Juice, Tropical Fruit Juices, Chemistry and Technology of Citrus Juices and By Products, Beer, Whisky, Rum, Table Wines, Carbonation and Filling, Flavouring and Emulsions, Microbrewery, Manufacturing Process, Process Flow Diagrams, Addresses of Plant & Machinery Suppliers and Photographs of Machineries.

It will be a standard reference book for Professionals, Entrepreneurs, Agriculturists, Agriculture Universities, Food Technologists, those studying and researching in this important area and others interested in the field of Alcoholic and Non-Alcoholic Beverages Products Manufacturing.

Contents

CONTENTS

1. INTRODUCTION

2. CARBONATION AND FILLING

Introduction

Carbonation

The nature and effects of carbonation

Properties of carbondioxide

Equilibrium pressure
Measurement of carbonation
Carbonation determination
Carbonators
Designs of carbonators
Air exclusion
Proportioners
Fillers and Filling Valves
Basic filling valve operation
Filling valve development and the
influence of ambient filling

3. FLAVOURINGS AND EMULSIONS

Flavourings
Legislation
Creation
Production
Emulsions
Manufacture
Application of Flavourings and Emulsions
Selection
Methods of use
Evaluations

4. GRAPE JUICE PROCESSING

History of Grape Juice Processing in North America
Grape Cultivars
The Chemistry of Grape Juice
Carbohydrates
Acids
Mineral content
Phenolic
Volatiles
Modern Grape Juice Processing
Harvesting/ripening
Stemmer/crusher operation
Hot-break process
De-juicing/pressing operation
Coarse filtration
Bulk storage and tartrate precipitation
Enzyme clarification
Polish (fine) filtration
Hot fill
Process Alternatives
Cold-pressing
Aseptic process
Concentration
Sulfur dioxide preservative

5. PROCESSING OF CITRUS JUICES

Introduction

Fruit Harvesting and Transport
Unloading and Storage of Fruit
Fruit Transfer from Storage Bins to Extractors
Juice Extraction and Finishing
Extractors
Finishing
Juice Processing for Pasteurized Single Strength
Juice Processing for Concentrate
Characteristics of 1950s evaporators
Modern evaporators for citrus fruit
Essence Recovery
Chilled Juice from Concentrate
Pulp Wash
Frozen Pulp Processing
Manufacture of Citrus Cold Pressed Oil
Manufacture of Livestock Feed from Citrus Peel
Peel dryer
Waste heat evaporator

6. APPLE JUICE

General Background
Juice extraction
Pomace disposal
Blending and packaging
Natural Style Juices
Clarified Juice and Concentrate
Enzyming
Pulp enzyming
Fining
Concentrates
Hazes and deposits
Authentication and Adulteration
Composition of Apple Juice
Sugars and sorbitol
Starch & pectin
Organic acids
Protein and amino acids
Polyphenols and colour
Minerals
Volatile components
Other flavour aspects
Microbiology
Food Tests
Test for the presence of pectin in clarified Juice
Test for the presence of starch
Test fining with gelatin
Test fining with gelatin/kieselsohl
Test for overfining

7. CHEMISTRY AND TECHNOLOGY OF CITRUS JUICES AND BY-PRODUCTS

Principal Citrus Cultivars

Origin of citrus
Commercial citrus regions
Citrus growing areas
Effect of frost
Effect of soil
Composition and Structure of Citrus Fruits and Juices of Various Cultivars
General relationship
Organic acids
Carbohydrates
Color pigments
Vitamins and inorganic constituents
Flavonoids
Lipids
Operational Procedures and Effects on Quality and Shelf Life of Citrus Juices
Outline of good manufacturing and processing procedures
Concentrate handling for reprocessing and/or Reconstruction
Sanitation or stabilization
Water for reconstitution use
Processing of chilled high and low pulp reconstituted orange juice
Finished product handling and storage
Citrus Juice Flavor Enhancement with Natural Citrus Volatiles
Components of citrus juice flavor
Citrus flavor enhancement technology
Citrus oils and aroma and their recovery
Pectic Substances and Relationship of Citrus Enzymes to Juice Quality
Effect of Time, Temperature and other Factors on Citrus Products

8. TROPICAL FRUIT JUICES

Introduction
Guava
Mango
Passionfruit
Pineapple
Other Tropical Fruits
Acerola
Banana
Kiwifruit
Lulo
Papaya
Soursop
Umbu
Tropical Fruit Juices in Europe Today
The Future

9. WHISKY

Introduction
History of Whisky Production
Outline of the Whisky-producing Process
Individual Operations
Raw materials
Mashing and cooking

Fermentation
Distillation
Maturation and ageing
Blending and colouring
Effluent disposal and spent grains recovery
Organoleptically Important Components of Whisky
Concentrations of organoleptically important compounds
Chemical nature of organoleptically important compounds
Contribution of compounds to organoleptic properties
Origin of organoleptically important compounds

10. BEER

Introduction
Historical Aspects of Brewing
Prehistoric and early historic
Brewing in Europe
Outline of the Brewing Process
Malting
Suitability of barley for brewing
the malting process
Kilning
Mashing
Brewing liquor
Mash-tun ingredients other than malt
Mashing systems
Enzymolysis in the mash tun
Sparging
Direct Conversion of Barley to wort
Wort Boiling and Cooling
General
Hops and hopping
Wort clarification and cooling
Fermentation
Brewing yeasts
Biochemical events during brewing fermentations
Physical behaviour of yeast
Fermentation systems
Beer Treatments
Maturation and conditioning
Haze prevention
Yeast removal
Pasteurization
Post-fermentation bittering
Beer Properties
Colour and clarity
Foam
Flavour and aroma
General composition and dietary value of beer
Beer Defects
Gushing
Microbiological spoilage

Oxidation flavour, stale flavour and other off-flavours
The State of the Industry
Types of beer brewed

11. RUM

Introduction
Production of Rum
Types of rum and the raw materials used
Pretreatment of the raw materials
Fermentation
Distillation
Maturing
Aroma Compounds of Rum and their Formation
Higher alcohols
Fatty acids
Esters
Phenolic compounds
Nitrogenous compounds
Sulphur-containing compounds
Lactones
Carbonyl compounds

12. TABLE WINES

Introduction
Some Economic Aspects of the History of Wine Making
Grapes
Must Treatment
Alcoholic Fermentation
Post Fermentation Operations
Microbiological Stabilization
Malo-lactic fermentation
Microbiological spoilage,
Sulphur dioxide addition

13. MICROBREWERY

The Brewing Process
Process of Brewing Beer
Brewery Equipments

14. SUGARCANE JUICE PROCESSING, PRESERVATION AND ASEPTIC PACKAGING

Sugar Processing - Juice Extraction,
Clarification and Concentration
Nutritional Composition
Sugarcane Juice Extraction

15. SAMPLE PLANT LAYOUT

16. PROCESS FLOW DIAGRAMS (PFD)

17. PHOTOGRAPHS OF MACHINERY WITH SUPPLIER'S CONTACT DETAILS

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.

NIIR PROJECT CONSULTANCY SERVICES

106-E, Kamla Nagar, New Delhi-110007, India

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