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 contain 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

1. INTRODUCTION

2. CARBONATION AND FILLING
   Introduction
   Carbonation
   The nature and effects of carbonation
   Properties of carbon dioxide
   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/kieselgesol
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
Malolactic fermentation
Microbiological spoilage,
Sulphur dioxide addition

13. MICROBREWERY
The Brewing Process
Process of Brewing Beer
Brewery Equipments

14. SUGARCANE JUICE PROCESSING, PRESERVATION
AND AEROBIOTIC PACKAGING
Sugar Processing - Juice Extraction,
Clarification and Concentration
Nutritional Composition
Sugarcane Juice Extraction

15. SAMPLE PLANT LAYOUT

16. PROCESS FLOW DIAGRAMS (PFD)
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.


NPCS also publishes varies 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.