## 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 Jute & Coir Products (with Cultivation & Processing) 2nd Revised Edition

| | |
|---|---|
| **Code** | NI287 |
| **Format** | paperback |
| **Indian Price** | ₹1575 |
| **US Price** | $150 |
| **Pages** | 464 |
| **ISBN** | 9788194737988 |
| **Publisher** | NIIR PROJECT CONSULTANCY SERVICES |

## Description

Jute is a natural fiber popularly known as the golden fiber. It has gained its name as olden fibre due to its shiny brown colour. The fibre is affordable to all the consumers and is completely biodegradable. It is one of the cheapest and the strongest of all natural fibers and considered as fiber of the future. Jute is second only to cotton in world's production of textile fibers. Jute fibers are composed primarily of the plant materials cellulose and lignin. Jute is the name of the plant or fiber used to make burlap, hessian or gunny cloth.
Coir is a versatile natural fibre extracted from mesocarp tissue, or husk of the coconut fruit Generally fibre is of golden color when cleaned after removing from coconut husk; and hence the name ” The Golden Fibre”.

Both coir and jute are natural fibers and come from sustainable products. Coir comes from the husks of coconuts that were typically discarded. It is harvested by hand and soaked in water to soften the fibers, which are then woven together. Jute fiber comes from the stem of the jute plant and is the second most important vegetable fiber, after cotton, when it comes to production and use.

Global jute market on the basis of type, covering jute sack bags and jute shopping bags. Currently, jute sack bags dominate the market, accounting for the majority of the sales volume. Growing environmental awareness among the masses has also created an inclination toward natural and biodegradable products, like jute bags, over plastic bags. This, along with many government initiatives, is bolstering the jute industry. For instance, the Government of India has mandated the packaging of food grain and sugar in jute bags. Some of the key players operative in the market include Aarbur, Ashoka Exports, Hitaishi-KK, Howrah Mills Co. Ltd., Shree Jee International India Ltd. and Gloster Limited.

The growing demand for eco-friendly products in the market is where coir should fast step in. It is a lightweight, soilless growing medium made from the fibers which completely renewable and considered an excellent choice for environmental sustainability. The efforts support the market expansion for coir and the Asia Pacific hopes to further increase production by streamlining the fiber collection process to meet demand.

The Major contents of the Book are BIS Specifications, Jute: an eco-friendly opportunity for a sustainable Future, Green Marketing Of Jute and Jute Products, The Jute And Jute Textiles Industry, Jute Cultivation, Potentiality of coir for salient application, Coconut

Cultivation, Scheme for the Development of Coir Production Line, Step-by Step approach to start a Coir Industry, Coir Geotextiles, Eco-friendly and natural image of coir, Jute Yarn, Sutli& Hessian Cloth, Jute Twine (Jute Rope), Gunny Bags, Jute Garments, Jute Shopping Bags, Gunny Bags (Jute Bags) Manufacturing, Handmade Paper from Jute, Environment Pollution and Effluent Treatment of Jute, Coir Fibre, Coir Pith, Biomass Charcoal Briquetting from Jute and Coir Waste, Rubberized Coir Mattresses, Coir Pith for Absorption and Recovery of Oil from Contaminated Sites, Application of Coir in Agricultural Textiles, Manufacture of Coir Corrugated Roofing Sheet, Coir Machinery Manufacturers, Plant Layout & Process Flow Sheet and Machinery, Equipment and Product Photograph.
A total guide to manufacturing and entrepreneurial success in one of today's Jute &Coir Products industry. This book is one-stop guide to one of the fastest growing sectors of the Jute & Coir Products industry, where opportunities abound for manufacturers, retailers, and entrepreneurs. This is the only complete handbook on the commercial production of Jute & Coir Products. It serves up a feast of how-to information, from concept to purchasing equipment.

## Content

CONTENTS

2. BIS SPECIFICATIONS
Jute
Coir
3. JUTE: AN ECO-FRIENDLY OPPORTUNITY FOR A SUSTAINABLE FUTURE
Long-term Strategy

4. GREEN MARKETING OF JUTE AND JUTE PRODUCTS
Green Products
Jute – A Green Product
Jute Production in India
Objective
Research Methodology
Nature of Data
Source of Data
Sampling Technique
Analysis and Findings
Manufacturing of Jute & Co-Operative
Jute Mill
Jute Products Produced Co-Operative Jute
Jute Market Development and Promotion
Challenges of Jute Marketing
Scheme for Promotion of Jute
Diversification
1. Design & Development of Jute
Diversified Products
2. Scheme for helping NGOs and Women
Self-Help-Groups (WSHGs)
3. Scheme for Promotion of Jute
Diversification
4. Scheme for Commercialization of
Technology
5. Scheme for Setting up of Jute Parks for
the Diversified Sector

5. THE JUTE AND JUTE TEXTILES INDUSTRY
Development and Regulatory Organizations in Jute Sector
(a) Organizations under Ministry of Textiles
Jute Manufactures Development Council (JMDC)
(b) Other Organizations supported by Ministry of Textiles in Jute Sector
International Jute Study Group (IJSG) Incentives to Jute Sector

(a) Extension of Duty Entitlement Pass Book (DEPB) Benefits to Jute Products
(b) Technology Up gradation Fund Scheme (TUFS)
(c) Jute Technology Mission Objectives of JTM are
(d) Non Plan Schemes of JMDC

6. JUTE CULTIVATION
Raw Jute Scenario
Botanical Description of Jute
Jute Growing Zones
Manures and Fertilizer Application
Varieties
Seed Rate and Sowing
Weed Management
Top Dressing of Fertilizer
Water Management
Harvest
Yield
Sowing Process of Jute
Harvesting Process of Jute Retting Practices
a. Retting Practices in India and Bangladesh
b. Retting Practices in China
c. Double Immersion/Single-Wash-Retting in China
d. Retting Practices in Indonesia
e . Retting Practices in Nepal
f. Retting Practices in Thailand
Extraction Practices
Single Stem Stripping
Stripping and Washing or Wash-Jerk-
Method
Indian Jute Industry at a Glance
Major Producers of Jute
Jute and Mesta in the National Economy
From Jute to Diversified Products

7. POTENTIALITY OF COIR FOR SALIENT APPLICATION
Introduction
Raw Material Availability & Traditional
Application
Swot Analysis of Coir Products

Value Addition Present Status Through
Collaborative Project Amongst IICT & CCRI
Value Addition Prospects
Scope of the Study
Potentials of Coir as Technical Textile
Fiber
Introduction
Coir as Technical Textile
Use of Coir as Agrotech
Use of Coir as Buildtech
Use of Coir as Clothtech
Use of Coir as Geotech
Use of Coir as Hometech
Use of Coir as Indutech
Use of Coir as Meditech
Use of Coir as Mobiltech
Use of Coir as Oekotech (Ecotech)

8. COCONUT CULTIVATION
Origin
Climate and Soil
Varieties of Coconut
Tall Varieties
Dwarf Varieties - Suitable for Tender
Coconut
Hybrid Varieties
Planting Material
Site Selection
Time of Planting
Spacing and Systems of Planting
Planting

9. SCHEME FOR THE DEVELOPMENT OF COIR PRODUCTION LINE
Coir Udyami Yojana
Scheme for the Development of Production
Infrastructure Under Coir Vikas Yojana
Skill Up gradation & Mahila Coir Yojana
Under Coir Vikas Yojana

10. STEP-BY STEP APPROACH TO START A COIR INDUSTRY
1. Identifying the Opportunity
2. Making a Product Choice
3. Process Selection
Machinery and Equipment
4. Arranging Finance
5. Filing of Udyog Aadhaar Registration
6. Construction of Building
7. Getting the Utility Connections
8. Getting 3M’s Right
Men
Machinery
Materials

11. COIR GEOTEXTILES
Coir Geotextiles for Strengthening Soft Soil Subgrade
Application of Geotextile Separation
Filtration
Reinforcement
Use of Coirgeotextiles in Unpaved Roads
Subgrade Separation and Stabilization
Typical Solutions
Geotextile Benefits
Base Reinforcement
Coir as a Suitable Geotextile Material aor Roads
Reinforcement
As Filter/Drainage Layer
Strength of Subgrade
Field Installation of Geotextile
Long Term Performance of Coir Geotextile
Methodology
Visual Evaluation
Coir Geotextile for Erosion Control
Universal Soil Loss Equation
Coir Geotextiles
Fuzzy Logic Results
Selection of Coir Geotextile
Coir Fibre and Its Application as Erosion

Control Mats
Mechanism of Erosion Control
Coir Geotextile for Construction of Roads in Rural Areas
Benefits
The Coir Geotextiles - Natural Solution to Natures Problem
Historic, Economic and Political Background
Coir Geo Textiles for Environmental Application
Types of Coir Bhoovastra
1. Open Weave Coir Bhoovastra
2. Geo Rolls and Vegetation Fascines
3. Non-woven Felts
Coir Needled Felt
4. Cocologs
5. Coir Fiber Beds (Cocobeds)
6. Coir Loop Fabric
7. Coir Cell Geo Textiles
Application of Coir Geo Textiles
a) For Soil Erosion Control
Site Preparation
Fixation
Laying
Vegetation & Seeding
Monitoring
b) Sub-base layer in Village/Rural Roads/ Reinforcement of Paved Roads
c) Application in the Waste Dumping Yards of Mines
Coir Pith Based Cyanobacterial Biofertilizers
Cyanobacteria
Coir Pith Degradation
Cyanopith and Cyanospray
Treatment of Textile Effluent
Treatment of Tannery Effluent
Field Trials
Benefits of Coir Pith for Cyanopith and Cyanospray

As Production
As Biofertilizers
Organic Farming with Self-Aerated Large-Scale Composted Coir Pith
Market of Organically Grown Food
Sustainability Factors of Organic Farming
Coir Pith
Coir Pith Composting Methods
New Method for Coir Pith Composting
Overall Biochemical Reaction of Composting and Rate of Product Formation
Composted Coir Pith Use for Organic Farming
Potential of Bio Composting of Coir Pith
Structure of Coir Pith
Materials and Methods
Culture Inoculum
Coir Pith and Biological Supplements
a. Azolla
Culture Conditions
Diversified Uses of Coir Pith and Coir Pith Organic Manure (C-POM)
(a) Growing Media
(b) As Amendment
(c) As a Substitute to Peat Moss
(d) As an Organic Fertilizer
(e) As a Base for Home/Vertical/Roof Garden
(f) As a Base for the Preparation of Cocolawn
Binderless Coir Wood
Introduction
Materials and Methods
Materials
Methods
Drying of the Materials
Sieving
Hot Pressing
Effect of Moisture
Effect of Temperature
Effect of Pressure and Cooling Under

Pressure

12. ECO-FRIENDLY AND NATURAL IMAGE OF COIR
Price and Performance of Improved
Products
Marketing Strategy
Supply
Promotional Programmes

13. JUTE YARN, JUTE SUTLI & HESSIAN CLOTH
Weaving Integrated Unit
Introduction
Uses & Applications
Properties
Manufacturing Process
Twin Cord Making
Twin Cord Softening Section
Manufacturing Process of Hessian Cloth
Process Flow Diagram
Detailed Manufacturing Process of Jute
Yarns & Other Jute Processing
Batching
Drawing
Roving
Spinning
Twisting
Reeling
Winding
Dressing and Beaming
Weaving
Looms
Finishing
Machinery Details and Specifications
1. Spinning Machine and Spreader
Details
Specifications
2. High Speed Automatic Electronic
Weaving Rapier Loom
Details
Specifications

3. Bale Opener
Details
Specifications

14. JUTE TWINE (JUTE ROPE), GUNNY BAGS
Properties of Jute
Manufacturing Process Jute Twine Cum
Gunny Bag
Basic Raw Materials Required
Basic Plant and Machineries Required
Process
Small Qualities of Jute Goods
Spinning
Twisting
Weaving
Manufacturing Process Flow Diagram
Machinery Details and Specifications
1. Spinning Machine
Details
Specifications
2. Twister Roller
Details
Specifications

15. JUTE GARMENTS
Introduction
Properties of Jute Garments
Uses of Jute Garments
Manufacturing Process of Jute Garments
Here Jute Garments Means
Basic Raw Materials Required
Basic Plant and Machinery Required
Manufacturing Process Flow Diagram
Machinery Details and Specifications
1. Weaving Machine
Details
Specifications
2. Drying Equipment
Details
Specifications

1. Sewing Machine
Quick Details
Specifications

16. JUTE SHOPPING BAGS
A. Modernisation of Production Processes
Introduction
Properties of Jute Shopping Bags
Uses & Applications
Manufacturing Process
Raw Material Required
Plant and Machinery Required
Process
Process Flow Diagram
Machinery Details and Specification
1. Sewing Machine
Quick Details
Specifications

17. GUNNY BAGS (JUTE BAGS) MANUFACTURING
Introduction
1. Hessian
2. Sacking
3. Canvas
Product Description
Uses and Applications
Application of Gunny Bags
1. Food Grains
2. Sugar
3. Cement
4. Fertilizers
5. Chemicals
Manufacturing Process
Inspection of Hessian Cloth
Set Making
Marking
Cutting
Stitching
Inspection of the Bags
Packaging

Process Flow-Sheet for the Manufacture of
Gunny Bags
Machinery details and specifications
1. Sewing Machine
Quick Details
Specifications

18. HANDMADE PAPER FROM JUTE
Introduction
Steps of Manufacturing Process
Machinery Details and Specifications
1. Jute Chopper and Cutter
Company details
2. Hydraulic Press Machine
Company details
3. Calendaring Machine
Company details
4. Cutting Machine
Company details

19. ENVIRONMENT POLLUTION AND EFFLUENT TREATMENT OF JUTE
Effluent Treatment Plant Equipment

20. COIR FIBRE
Coir
Coconut
Structure
Coir Fibre
Processing
Brown Fibre
White Fibre
Major Producers
Kerala Fibre
Bio-Softening and Bio-Bleaching/
Brightening of Coir Fibre
Short-Term Objective of the Softening
Process
Long-Term Objective of the Softening
Process
Biotechnological Process of Softening and

Bleaching/Brightening
Enzymes Used
Preparation of Media
Molasses Broth Medium
Potato Dextrose Broth Medium
Crude Enzyme Preparation
Treatment of Dry Husk
Results
Improvement in Softness of Dry Husk

21. COIR PITH
Introduction
Application of Coir Pith
Special Features of Coir-Pith
Uses of Coir Pith Blocks
Role of Our Coir Pith Blocks
Manufacturing Process of Coir Pith
Raw Materials
Harvesting and Husking
Retting
Defibering
Finishing
Process Flow Diagram
Machinery Details and Specifications
1. Coir Pith Baling Machine
Details
Specifications
Block Specifications
Machine Specifications
Hydraulic Power Unit
2. Coir Pith Machine
Details
Technical Specifications
Features
Contact Details
3. Crusher
Company Details
4. Industrial Screener
Details
Machine Specifications

Company Details

22. BIOMASS CHARCOAL BRIQUETTING FROM JUTE AND COIR WASTE
Introduction
What is Charcoal?
What can be Briquetted?
What is Biomass Charcoal Briquetting?
Biomass Charcoal Briquette Production
Raw Materials Required
Process in Manufacturing
1. Biomass collection
2. Carbonization Process
I. Briquettes Drying Stage
II. Initial Carbonization Stage
III. Comprehensive Carbonizing Stage
(temperature 300~6500C)
3. Briquetting
Steps for Manufacturing
Process Flow diagram
Machinery Details and Specifications
Company Details

23. RUBBERIZED COIR MATTRESSES
Introduction
Types & Structure of Coir Fibre
Uses and Applications
Properties of Coir
Physical Properties of Coir Fibre
Chemical Properties (Composition)
Advantages of Rubberized Coir Mattresses
Manufacturing Process
Embedding of Coir Fibres
Combing
Leveling
1. Dispersion
2. Solution Preparation
Process Flow Diagram
Production Details of the Product
Machinery Details and Specifications
1. Coir Mattresses Machine
Key Features of Machine

Types of Different Width of Production of by
Machine
Space Required
Power Required
Contact Details

24. COIR PITH FOR ABSORPTION AND RECOVERY OF OIL FROM CONTAMINATED SITES
Introduction
Process
Methodology
Performance Result of the Screw Press

25. APPLICATION OF COIR IN AGRICULTURAL TEXTILES
Introduction
Properties
Uses of Coir in Agricultural Textiles
Erosion Control Blankets for Controlling
Slope Erosion
Mulch Blankets
Basket Liners
Bio-Rolls
Roof Greening Mats
Grow Sticks
Coco Logs
Grow Media

26. MANUFACTURE OF COIR CORRUGATED ROOFING SHEET
Introduction
(1)Physical Properties of Coir Fibre
(2)Chemical Properties (Components of
Coir Fibre)
Materials and Methods for the
Manufacture of Coir Corrugated Sheets
1. Coconut Coir Non-Woven Felt
2. Woven Bamboo Mat
3. Resin
Raw Materials for Resin Manufacture
Novolacs

Applications
Test Methods to Assess the Quality of Cardanol
4. BOPP Film as Releasing Agent
5. Preservative Chemicals
Batch Resin Reactor or Resin Kettle
1. Preparation of Phenol Formaldehyde Resin
Flow Chart for Preparation of PF Resin
2. Preparation of Phenol Cardanol Formaldehyde Resin
Flow Chart for Preparation of PCF Resin
Phenol-Methanol Polymerization of Resin
Consolidation of Non-Woven Coir Felt
Construction of coir and bamboo mat for Corrugated Sheet
Machinery/Equipment
Significant Aspect in Manufacture of Coir Felt Corrugated Sheet
Moisture Content of Coir Felt and Mats
PCF Resin Adhesive Formulation [for bonding]
Requirement of PCF Resin
Impact of Resin Quality
Glue Application on the Coir Felt and Bamboo Mat
Balance and Drying of Resin Coated Mats
Assembly of Coir Felts/Mats
Hot Pressing
Dimensioning and Finishing of Coir Corrugated Sheets
Test Performed on Coir Felt Corrugated Sheets
List of Machinery and Equipment
List of Raw Materials
Suppliers and Manufacturers of Plant Machinery
1. Automatic Corrugated Roofing Sheet Machine
Quick Details
Specifications

Company Details
2. FRP Roofing Sheets Making Machine
Quick Details
Specifications
Technology Parameter
Company Details

27. COIR MACHINERY MANUFACTURERS

28. PLANT LAYOUT AND PROCESS FLOW SHEETS

29. MACHINERY, EQUIPMENT AND PRODUCT PHOTOGRAPHS

## 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.