India is one of the leading Herbs producer and exporter in the world. Several meticulous researches were conducted and experimented with herbs. They arrived at more precise conclusions about the usefulness of diverse plants and herbs that are utilized in different fields like medicine, cosmetics, perfumes and so on. The Ayurveda healing is completely based on herbs, which have definite medicinal importance or significance. In the primeval times, the Indian sagacious held the view that ayurveda herbs are the only resolution to treat numeral health related problems and diseases. Herbal products are replacing the synthetics products because of its harsh nature. Herbal products are in huge demand in the developed world for health care for the reason that they are efficient, safe and have lesser side effects. Growing herbs is easy to do, and people continue to turn their love for gardening into successful businesses growing and selling fresh cut herbs, herb plants, and other herb related products.

The book makes an attempt to provide information on cultivation and utilization of herbs. The book also contains the described process of the cultivation of medicinal herbs, spices etc with photograph and diagrams. This book also describes about the role of perfumery, analysis of essential oils and flavors, recent development of some natural products and more.

This book covers the comprehensive information on herbs cultivation & their utilization. We hope that this book will be very helpful for new Entrepreneurs, Herb Growers, professionals & research Institutions.

Contents

1. MEDICINAL PLANTS-PRIORITIES IN INDIAN MEDICINES
   Medicinal Plants Based Drug Industry
   Medicinal Plants Based Drug Industries in Indian systems of Medicine
   Plant Parts Extract and Galenicals
   Essential Oils from Plants
   Phytopharmaceuticals
   India's Strength in Medicinal Plant Wealth
   Priorities in Research on Medicinal Plants & Diverse Studies
   Antiprotozoal Drugs from Plants
Antiulcer Drugs from Plants
Antirheumatic Plant
Antidiabetic Plants
Antiasthmatic Plants
Antiviral Plants
Hepatoprotective Plants
Fertility Control by Plants
Anti-Cancer Drugs from Plants
Plant for Urinary Stones
Plants as sedatives/tranquillizers
Plant Laxatives
Pitfalls in Plant-Drug Research and Implications
Herbal Drug/Intellectual Property Rights (IPR)
Herbal Drug Trade
Herbal Medicines-Medicinal Marvel or Money Spring Malarkey
Sociopolitical,Economical & Ethical Issues in Medicinal Plants Research
Herbal Drug Development
Standardization of Herbal Drugs
2. MEDICINAL PLANTS IN ORAL HEALTH CARE IN INDIA
INTRODUCTION
Use of Medicinal Plants for Dental Care
Plants Useful as Chewing Stick
3. CHAMOMILE CULTIVATION
INTRODUCTION
Description of the Plant
Genetics
CULTIVATION
Soil and Climate
Propagation/Nursery
Transplantation, Irrigation and Weeding
Cropping Sequence
Pests and Diseases
Manures and Fertilizers
Harvesting
Collection of Seeds
Yield
Drying and Storage
Distilation
Yield and Characteristics of the Oil
Uses
Specification of the Drug
4. KALMEGH, ANDROGRAPHIS PANICULATA CULTIVATION
INTRODUCTION
Description of the Plant
Genetic Improvement
CULTIVATION
Climate
Soil
Propagation
Transplanting
Manure and Fertilizer
Irrigation
Interculture
Harvesting
Diseases and Pests
Chemical Constituents
Uses
5. CORIANDER CULTIVATION
INTRODUCTION
Description of the Plant
CULTIVATION
Soil and Climate
Propagation
Irrigation
Harvesting
Pests and Diseases
Distillation
Yield
Chemical Constituents
Uses

6. BHUMYAMALAKI PHYLLANTHUS AMARUS CULTIVATION
INTRODUCTION
Description of the Plant
CULTIVATION
Soil and Climate
Propagation
Transplanting
Weed Control
Fertilizers and Manures
Irrigation
Harvesting
Cultivar
Chemistry
Extraction
Traditional Medicinal Uses
Pharmacology/Clinical Trials
Drug Preparations from P. Amarus Available in Markets

7. QUINGHAOSU ARTAMISLA ANNUA CULTIVATION
Introduction
Description of the Plant
Soil and Climate
Propagation
Weed Control
Fertilizers and Manures
Harvesting
Chemistry and Uses
Distillation

8. ERGOT CULTIVATION
INTRODUCTION
History
The Ergot Fungus
Cultivation
Ergot Alkaloids
Uses

9. BELLADONNA CULTIVATION
INTRODUCTION
Description of the Plant
Distribution
CULTIVATION
Soil and Climate
Raising of Nursery
Fertilizer Application
Irrigation
Interculture
Harvesting and Drying
Disease and Pests
Chemical Constituents
Uses
10. SOUTH AMERICAN MARIGOLD (TAGETES MINUTA)
INTRODUCTION
Botanical Description of the Plant
Genetic Improvement
Agrotechnology
Soil and Climate
Propagation
Weed Control
Fertilizers and Manures
Intercropping
Irrigation
Harvesting
Crop Rotations
Diseases
Uses
Distillation
Chemistry
Distillation Unit Design Available
11. EUCALYPTUS CITRIODORA CULTIVATION
INTRODUCTION
Description of the Plant
CULTIVATION
Soil and Climate
Preparation of Land
Propagation
Nursery
Transplanting
Weeding
Manures and Fertilizers
Harvesting
Pest and Diseases
Distillation
Yield
Chemical Constituents
Use
12. ROSEMARY CULTIVATION
Introduction
Description of the Plant
CULTIVATION
Soil and Climate
Propagation
Transplanting, Interculture and Fertilizer Application

Irrigation
Harvesting
Pests and Diseases and their control
Distillation
Oil content and Yield
Chemical Constituents
Uses

13. DUBOISIA CULTIVATION
INTRODUCTION
Botany
Soil and Climate
Cultivation
Preparation of Land
Raising the Nursery
Transplanting
Irrigation
Fertilizers Application
Pests and Diseases
Harvesting
Yield
Active Constituents and Uses

14. MANDOOKPARNI-GUTUKOLA CENTELLA ASIATICA
CULTIVATION
INTRODUCTION
Botanical Description
CULTIVATION
Land Preparation
Varieties
Planting
Fertilizer
Irrigation
Weed Control
Harvesting
Post Harvest Processing
Yield
Chemistry
Uses

15. SAPOGENIN BEARING SPECIES OF YAMS AND THEIR
CULTIVATION
INTRODUCTION
Botany
Soil and Climate
Propagation
Propagation by Seeds
Propagation by stem cutting
Propagation from tuber pieces
Field Preparation and Planting
Provision of Support
Interculture
Fertiliser Application
Irrigation
Pests and Diseases
Harvesting
Chemistry & Uses
16. PERIWINKLE CULTIVATION
INTRODUCTION
Description of the Plant
Soil and Climate
Propagation
Manure and Fertilizers
Weeding
Irrigation
Harvesting
Yield
Pests and Diseases
Active Constituents and Uses
17. SENNA (CASSIA ANGUSTIFOLIA) CULTIVATION
INTRODUCTION
Description of the Plant
Improved Varieties
Soil
Climate
Land Preparation
Sowing
Manuring and Fertilization
Irrigation
Weeding and Interculture Operations
Harvesting
Yield
Pest and Diseases
Active Constituent and Uses
Extraction of Sennosides
18. Cultivation of Lentinus Edodes-An Important Medicinal
Mushroom
Cultivation
Materials and Substrates
Diseases, Pests and Control
19. CULTIVATION OF KAEMPFERIA GALANGA L.
INTRODUCTION
Botany
Crop Improvement
Crop Management
Extraction of Essential Oil
Physico-Chemical Properties of Oil
Utilisation
20. CULTIVATION OF SWEET MARJORAM
INTRODUCTION
Floristics and Crop Improvement
Floristics
Ex. Dittany
Studies on Floral Biology
Flowering Anthesis and Pollen Studies
Crop Improvement
Evaluation of Germplasm
Crop Production and Management
Soil and Climate
Propagation
Nursery Raising
Vegetative Propagation
Studies on Nutrient and Spacing
Use of Growth Regulators
Crop Rotation/Sequencing and intercrops
Irrigation and Interculture
Insect Pests and Diseases
Harvesting Production of Essential Oil and Yield
Chemistry of Oil
Influence of Harvesting stage on the odour values of essential oil
Production of Essential Oil
Yield
21 CULTIVATION OF MATRICARIA CHAMOMILLA
INTRODUCTION
Uses
Soil and Climate Requirements
Cultivation
Botanical Characters
Propagation
Crop Growth
Irrigation
Manures and Fertilizers
Weed Control
Harvesting
Fresh Flower and Oil Yield
Seed Collection and Storage
Drying Fresh Flowers
Distillation
Effect of Growth Regulators
Diseases and Pests
Chemical Composition
Chamomilla Waste
Ray and Disc Florets
Roots of Matricaria Chamomilla
Analytical Methods
22 CULTIVATION OF SPICES
INTRODUCTION
Black Pepper
Climate
Soil
Varieties
Production of Rooted Cutting
Cultural Practices
Standards
Planting
Under Planting
Soil Fertility and Nutrient Management
Irrigation
Inter-and Mixed-Cropping
Bush Pepper
Diseases
Pests
Harvesting
Cardamom
Varieties
Propagation
Nursery
Mainfield Planting
Diseases
Pests
Clove
Climate and Soil
Varieties
Planting Material
Planting
Manuring
Diseases
Pests
Nutmeg
Cultural Practices
Manuring
Diseases
Pests
Cinnamon
Cultural Practices
Manuring and Processing
Diseases
Pests
Ginger
Varieties
Cultural Practices
Diseases
Pests
Turmeric
Varieties
Cultural Practices
Diseases
Pests
23 PLANTAGO OVATA FORSK. CULTIVATION
Cultivation
Plant Morphology
Chromosome Complement
Breeding System
Diseases
Processing
Chemical Constituents and Characteristics of the Seed
Utility
Toxicity
Improvement
Wild Allies
24 PYRETHRUM CULTIVATION
INTRODUCTION
Description of the Plant
CULTIVATION
Oil Content and Oil Yield
Diseases and Pests
Chemical Constituents and Uses
29 PATCHOULI CULTIVATION
INTRODUCTION
Botany
Soil and Climate
Cultivation
Preparation
Raising the Nursery
Transplanting
Irrigation
Fertiliser Application
Interculture
Pests and Diseases
Root-Knot
Leaf Blight
Harvesting
Drying
Distillation
Oil Content and Oil Yield
Storage
Chemical Constituents
Uses
29 CULTIVATION OF DAVANA
INTRODUCTION
Description
Description of the Plant
Soil and Climate
Nursery
Transplanting, Irrigation and Weeding
Manures and Fertilizers
Harvesting
Pests and Diseases
Distillation
Oil Content and Yield
Chemical Constituents and Uses
30 CULTIVATION AND UTILIZATION OF AMMI MAJUS
Description of the Plant
Harvesting
Yield
Pests and Diseases
Extraction of Xanthotoxin
Essential Oil
Uses
31 ROSE CULTIVATION
INTRODUCTION
Description
CULTIVATION
Climate
Soil
Propagation
Transplanting
32 CULTIVATION OF GERANIUM
INTRODUCTION
Description of the Plant
Soil and Climate
Propagation
Transplanting, Irrigation and Weeding
Manures and Fertilizers
Intercropping
Harvesting
Pests and Diseases
Distillation
Oil Content and Yield
Chemical Constituents and Uses
33 CULTIVATION OF MUSKDANA
Description of the Plant
Cytology
Climate
Soil
Seed Sowing
Fertilizers
Irrigation
Weeding
Harvesting
Pests and Diseases
Leaf Hooper (Amrasca biguttula)
Leaf Roller (Sylepta derogata Feb.)
Spotted Ball Worm (Erias fobia Stoll/Erias vittella (F)
Thrips
Uses
Distillation & Separation of Aromatic Principales
Properties of Essential Oil
34 CULTIVATION OF POGOSTEMON
PATCHOULI FOR ITS OIL
Botany
Soil and Climate
CULTIVATION
Preparation of Land
Propagation and Transplanting
Irrigation
Fertilizers Application
Harvesting
Drying
Distillation
Oil Yield
Physicochemical Properties of the Oil
Physiological Studies
Diseases and Pests
Uses
Adulterants

35 CULTIVATION OF PODOPHYLLUM HEXANDRUM
INTRODUCTION
Distribution and Habitat
Parts Used
Therapeutic Uses
Botanical Description
Seed Germination and Development of Seedlings
Germination is Epigaeous
Cultivation
Recommended Cultural Practices
Climate
Soil
Propagation
Manures and Fertilizers
Irrigation
Interculture
Harvesting and Processing
Expected Yield
Chemical Constituents and Demand in the World Market 332
Future Strategies

36 CULTIVATION OF HYOSCYAMUS
Distribution
Botany
Cytology and Genetics
Soil and Climate
Cultivation
Propagation
Transplanting
Irrigation
Fertilizer Application
Harvesting, Drying and Storage
Physiological Studies
Tissuecultures Studies
 Constituents
Diseases and Pests
Uses
Adulterants

37 CULTIVATION LIQUORICE (GLYCIRRHIZA GLABRA L.)
Soil and Climate Requirements
Preparation of Land
Propagation
Harvesting
Regeneration
Interplantation
Yield
In Vitro Multiplication
Diseases and Pests
Flowering and Seed Setting
Cytogenetical Studies
Quality and Specification
Substitutes
Important Chemical Constituents of Liquorice
Processing
38 CULTIVATION OF BRAHMI BACOPA MONNIERI
INTRODUCTION
Plant Description
CULTIVATION
Soil and Climate
Land Preparation
Varieties
Transplanting
Fertilizer
Irrigation
Weed Control
Pest
Harvesting
Post Harvest Technology
Yield
Chemistry
Uses
39 LAVENDER CULTIVATION
INTRODUCTION
Botany
Soil and Climate
Propagation
Propagation by Seeds
Propagation Through Vegetative Means
Transplantation
Fertilizers Application
Weeding
Regeneration
Harvesting
Distillation
Oil Content and Oil Yield
Chemical Constituents
Uses
40 ASHWAGANDHA (WITHANIA SOMNIFERA)
CULTIVATION
INTRODUCTION
Description of the Plant
Cultivars
CULTIVATION
Soil and Climate
Land Preparation
Seed Rate and Sowing
Thinning and weeding
Irrigation
41 LEMONGRASS CULTIVATION
Method of Lemongrass Cultivation
Preparation of Land
Need of Manure
Seeds for Sowing Lemongrass or Planting Material
Time of Sowing
Method of Sowing
Need of Irrigation
Need of Roeing and Weeding
Reaping of Crop
Oil Extraction from Leaves
Various Species/Kinds of Lemongrass
Profits from Lemongrass Cultivation
Where to Contact for Selling of Lemongrass Oil
42 Menthol Mint Cultivation
Present Situation
Various Species of Menthol Mint:
Preparation of Field for sowing Mentha
Method of Sowing Mentha
Irrigation
Manure and Fertilizer
Control
Method of Cropping
Cutting of Crops
Main Insects Causing Damage to Mentha Crop
Production of Oil from Mentha Leaves
Future of Mentha Oil
Present Market Situation of Mentha Industry
and its future Possibilities
The Suppliers of Mentha Seeds
Machinery/Equipment for mentha
43 PRODUCTION OF OIL FROM CITRONELLA GRASS
Agriculture Technique for Cultivation of Citronella
Preparation of Land
Planting Material/Seeds for Citronella Cultivation
Method of Sowing
Main Species of Citronella
Need of Water for Citronella Crop
Main Diseases & Insects in Citronella Crop
Reaping of Crops
Distillation of Leaves
Profit Obtained from Citronella Crop
Obtainging Planting Material
Palmrose or Rosegrass
44 A ROLE OF PERFUMER IN INDUSTRY
45 ADVANCES IN THE ANALYSIS OF ESSENTIAL OILS AND FLAVOURS
Gas Liquid Chromatography
Capillary and Chiral Gas Chromatography
Preparative Gas Chromatography
Column Chromatography
Thin Layer Chromatography
Supercritical Fluid Extraction (SFE)/Fractionation
Techniques Ancillary to Gas Chromatography
Identification Techniques
Retention Indices
Mass Spectrometry
Multidimensional GC-MS
HRGC-FTIR
High Pressure Liquid Chromatography
Chemical Transformation
Techniques Ancillary to Liquid Chromatography
Ultra Violet and Infra Red Spectroscopy
Nuclear Magnetic Resonance
Detection of Synthetics in Natural Oils by Isotopes Analysis
Isotope Analysis by MS
Isotope Analysis by NMR
Intelligent Sensor Technology

46 UTILIZATION OF LIGNO-CELLULOSIC
WASTE OF ESSENTIAL OIL INDUSTRY
Cymbopogon Marc
Mentha Marc
Utilisation of Woody Stems of Eucalyptus Citriodora

47 RECENT DEVELOPMENTS OF SOME
NATURAL PRODUCTS
Monoterpenes Iridoids
Valtrats
Saponins
Sataver
Centella Asiatica
Horse Chestnut
Sterols
Sitosterol (Beta-Sitosterols)
Guggul
Cardenolides
Asclepias Curassavica
Pueraria Tuberosa
ALDALOIDS FLAVONOIDS
Aristolochia Indica
Silybum Marianum
Gingko Biliba
Adhatoda Vasica
MISCELLANEOUS
Allium Cepa (Onion)
ADAPTOGENS
Ginseng
Withania Somnifera (Ashwagandha)
Titnospora Cordifolia (Guduchi Giloe)
ANTICANCER DRUGS
VINCA ALKALOIDS
Podophyllotoxin
Maytansinoids
Ellipticine
Gossypol
Taxol
Camptothecins
Bryostanins
Acetogenins
ANTI-AIDS AGENTS
Castanospermine
Hypericin
Cornosolic Acid
Forskolin
Artemisinin (Quinghaosu)
Echinacea Species

PRODUCTION OF SECONDARY METABOLITES IN PLANT TISSUE CULTURE
Biotransformation or Precursor Feeding
Immobilization of Plant Cells
Elicitation
Induction of Hairy Roots Using Agrobacterium Rhizogenes
Use of Tools of Molecular Biology
Concluding Remarks

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.