

Entrepreneur India

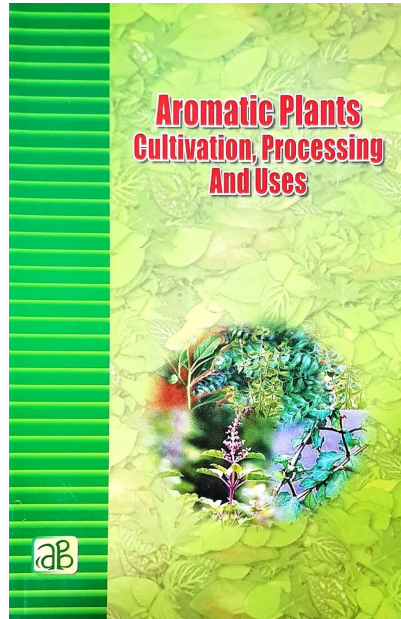
106-E, Kamla Nagar, New Delhi-110007, India.

Tel: 91-11-23843955, +91 9097075054

Mobile: +91-9097075054

Email: npcs.ei@gmail.com, info@entrepreneurindia.co

Website: www.entrepreneurIndia.co



Aromatic Plants Cultivation, Processing and Uses

Code	NI120
Format	paperback
Indian Price	₹975
US Price	\$100
Pages	504
ISBN	8178330571
Publisher	Asia Pacific Business Press Inc.

Description

Aromatic plants have essential or aromatic oils naturally occurring in them. They help heal mental ailments and other diseases. India is endowed with a rich wealth of

medicinal plants. Aromatic (Aroma Producing) plants are those plants which produce a certain type of aroma. Their aroma is due to the presence of some kind of essential oil with chemical constituents that contain at least one benzene ring in their chemical configuration. The chemical nature of these aromatic substances may be due to a variety of complex chemical compounds. These plants have made a good contribution to the development of ancient Indian material medica. In recent years, there has been a tremendous growth of interest in plant based drugs, pharmaceuticals, perfumery products, cosmetics and aroma compounds used in food flavors and fragrances and natural colors in the world. There is a definite trend to adopt plant based products due to the cumulative derogatory effects resulting from the use of antibiotic and synthetics and except for a few cultivated crops, the availability of plant based material is mainly from the natural sources like forests and wastelands. There is a need to introduce these crops into the cropping system of the country, which, besides meeting the demands of the industry, will also help to maintain the standards on quality, potency and chemical composition. During the past decade, demand for aromatic plants and its products has attracted the worldwide interest, India being the treasure house of biodiversity, accounts for thousands of species which are used in herbal drugs. 90% of herbal industry requirement of raw material is taken out from the forests.

Some fundamentals of this book are botanical description of the plant, genetic improvement, harvesting, intercropping, transplantation, irrigation and weeding, vanilla cultivation in India, commercial cultivation of vanilla, distillation of herbage for essential oil, effect of growth hormones, jasmine crop improvement & agrotechniques, efforts for new variety of *Jasminum auriculatum*, essential oils of agarwood, *Cinnamomum tamala* leaves, *Eucalyptus citriodora* and *Caultheria fragrantissima*, past and future of sandal wood oil industry, by product development from turmeric and ginger rhizomes, isolation of essential oils and its flavour profile etc.

This book contains most of the important aspects related to aromatic plants. It is being published for those who are interested in growing, processing and trading of aromatic plants.

Tags

Aromatic plants cultivation India, Cultivation of aromatic plants, Aromatic plants farming, Cultivation of aromatic crops, List of aromatic plants in India, Names of aromatic plants, Aromatic plants, Processing of Aromatic Plants, Extraction of essential oils from aromatic plants, Extraction of essential oils by steam distillation, Essential oil extraction methods, How Are Essential Oils Extracted?, Essential oils, Extraction of Volatile Oil from Aromatic Plants, Steam distillation procedure, How to extract plant oils by distillation?, How to extract oil from plants?, List of aromatic plants and their

uses, List of Important Aromatic Plants, Multiple Uses of Aromatic Plants, Commercial cultivation of aromatic plants

Content

1. Cultivation of Tagetes Minuta

Botanical description of the plant

Genetic improvement

Agrotechnology

Soil and climate

Propagation

Weed control

Fertilizers and manures

Irrigation

Harvesting

Intercropping

Crop rotations

Diseases

Distillation

Chemistry

Distillation unit design availability

2. Cultivation of Eucalyptus Citriodora

Description of the plant

Cultivation

Soil and Climate

Preparation of Land

Propagation

Nursery

Transplanting

Weeding

Manures and Fertilizers

Harvesting

Pests and Diseases

Distillation

Yield

Chemical Constituents

Uses

3. Cultivation of Rosmarinus Officinalis

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

4. Cultivation of Coriander Sativum

Description of the Plant
Cultivation
Soil and Climate
Propagation
Irrigation
Harvesting
Pests and Diseases
Distillation
Yield
Chemical Constituents
Uses
Economics of Cultivation

5. Cultivation of Lavender Species

Botany
Soil and Climate
Cultivation
Propagation
Propagation By Seeds
Transplantation
Fertilizer Application
Weeding
Regeneration
Harvesting
Distillation
Oil Content and Oil Yield
Chemical Constituents

Uses

Economics of Cultivation

6. Cultivation of Matricaria Chamomilla

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

Distillation

Yield and characteristics of the oil

Uses

Specification of the drug

Economics of cultivation

7. Vanilla World s second most expensive spice

Vanilla Flower

Vanilla Beans

Vanilla cultivation in India

Commercial Cultivation of Vanilla

Vanilla Extract and Flavourings

Commercial uses of Vanilla

Market for Vanilla

Exports grades and standards

8. Cultivation of Artemisia Annua

Description of the plant

Soil and climate

Propagation

Weed control

Fertilizers and manures

Irrigation

Harvesting
Chemistry and uses
Distillation
Economics of cultivation

9. Cultivation of *Mentha Arvensis*

Plant descriptors
Available cultivars of menthol mint
Choice of place for cultivation
Land preparation
Preparation of planting material
Production of suckers
Production of seedlings
Planting of suckers in the field
Fertilizer application
Irrigation and drainage
Interculture and weed control
Crop rotation
Intercropping
Harvesting
Yield
Storage of herbage
Pests and diseases
Insect pests
Diseases
Distillation of herbage for essential oil
Directly fired distillation tank
Design availability
Use of mint oil and its derivatives
Economics of cultivation

10. Cultivation of French Basil (*Ocimum Bacilicum* L.)

1. European Type
2. Reunion Type
3. Methyl Cinnamate Type
4. Eugenol Type

Botany
Soil and Climate
Field preparation
Propagation
(a) Raising of Nursery

(b) Planting
Irrigation
Fertiliser Application
Interculture
Harvesting and Yield
Agronomical Studies
Physiological Studies
Heavy metal tolerance
Effect of growth hormones
Mineral contents
Seed mucilage studies
Effect of photoperiodism
Biosynthesis of Eugenol
Tissue Culture Studies
Genetical Studies
Chemical Composition
Uses
Cosmetic
Food
Folk medicine
Ayurvedic Properties

11. Jasmine Crop improvement & agrotechniques

New varieties of jasmine
Arka Surabhi
Arka Arpan
Efforts for new variety of *Jasminum auriculatum*
for extraction of essential oil
Constituent of Jasmine essential oil
Agronomy
Plant protection
Water saving, labour saving low cost device for
propagation of plant cuttings
Details of the device
Required materials for the device
Detailed method
Economic viability of growing jasmine for essential oil

12. *Semecarpus Anacardium* L.f.

Introduction
Chemistry of Nuts

13. Himalayan Cedarwood Oil

Essential oil of Deodar (*Cedrus Deodara*)

Essential oil of *Juniperus Recurva* var. *Squamata* and other oils of *Juniperus* spp.

Agarwood and Oil Agarwood

Uses

14. Essential oils of Agarwood, *Cinnamomum Tamala* Leaves,

Eucalyptus Citriodora and *Caultheria Pragrantissima*

Distillation

Gaultheria

Eucalyptus

15. Past and Future of Sandal wood Oil Industry

Plantation and Harvesting

Disease Control

Distillation of Oil

Packing

Problems and their Solutions

Adulteration

Future Prospects

Kewda Industry in Orissa

16. Production Technology and Package of Practices in Chilli

Cultivated Species of *Capsicum*

Constraints in Chilli Production

Technologies Developed

Disease and Disease Management

Marketing in Chilli

Value Addition in Chilli

17. By Product Development from Turmeric and Ginger Rhizomes

Introduction

By Product Development in Turmeric

Curcumin

Turmeric Essential Oils

Isolation of Essential Oils and its Flavour Profile

By product Development in Ginger

Survey of Raw Material

Essential oils

Oleoresin

Gingerol in Ginger Oleoresin
Starch
Protein
Crude Fibre
Commercial Extraction of Ginger Oleoresin
Process Description for Oleoresins
Oleoresin Quality
Flavour Quality of Ginger Oleoresins
Essential Oils of Ginger
Profile of Flavour in Ginger Cultivars

18. Synthesis of 4 Acetyl 3, 7,7 Trimethylbicyclo [4, 1, 0] hept 3 ene and Related Compounds by Friedel Crafts Reaction on (+) ~ Car 3 ene

Results and Discussions

1. Synthesis of 4 acetyl 3, 7, 7 trimethylbicyclo [4, 1, 0] hept 3 ene and its position isomers (II).
2. Synthesis of 4 propionyl 3, 7, 7 trimethylbicyclo [4, 1, 7] hept 3 ene and its position isomers (III).
3. Synthesis of 4 Butyryl 3, 7, 7 trimethylbicyclo [4, 1, 0] hept 3 ene and its position isomers (IV).

Experimental

Fractionation of Turpentine Oil for Isolation of 3, 7, 7 Trimethylbicyclo [4, 1, 0] hept 3 ene ((+) Car 3 ene (I)).

4 Acetyl 3, 7, 7 trimethylbicyclo [4, 1, 0] hept 3 ene and its position isomers (II).

Separation of IIa, and IIc by Column Chromatography.

4 Acetyl 3, 7, 7 trimethylbicyclo [4, 1, 0] hept 2 ene (IIb)
3 Methylene 4 acetyl 7, 7 dimethylbicyclo [4, 1, 0] heptane (IIc)

4 Propionyl 3, 7, 7 trimethylbicyclo [4,1,0] hept 3 ene and position isomers (III).

Separation of IIIa, IIIb and IIIc by column Chromatography.

4 Propionyl 3, 7, 7 trimethylbicyclo [4, 1, 0] hept 3 ene (IIIa).

4 Propionyl 3, 7, 7 trimethylbicyclo [4, 1, 0] hept 2 ene (IIIb).

3 Methylene 4 propionyl 7, 7 dimethylbicyclo [4, 1, 0] heptane (IIIc).

4 Butyryl 3, 7, 7 trimethylbicyclo [4, 1, 0]

hept 3 ene and its position isomers (IV).

Sederation of IVa, IVb and IVc by column chromatography.

4 Butyryl 3, 7, 7 trimethylbicyclo [4, 1, 0] hept 3 ene (IVa).

4 Butyryl 3, 7, 7 trimethylbicyclo [4, 1, 0] hept 2 ene (IVb).

3 Methylene 4 Butyryl 7, 7 dimethylbicyclo [4, 1, 0]

heptane (IVc).

19. Free and Glycosidically bound

volatiles of Clove (*Eugenia caryophyllata*)

Experimental Procedures

Capillary Gas Chromatographic Analysis

Results

20. Cultivation of Spices

Black Pepper

Climate

Soil

Varieties

Production of Rooted Cuttings

Cultural Practices

Standards

Planting

Under Planting

Soil Fertility and Nutrient Management

Irrigation

Bush Pepper

Diseases

Pests

Harvesting

Cardamom

Mainfield Planting

Varieties

Propagation

Diseases

Pests

Cloves

Climate and Soil

Varieties

Planting Material

Planting

Manuring
Diseases
Pests
Nutmeg
Cultural Practices
Manuring
Pests
Cinnamon
Cultural Practices
Diseases
Manuring and Processing
Diseases
Pests

Ginger
Varieties
Cultural Practices
Diseases
Pests
Turmeric
Varieties
Cultural Practices
Diseases
Pests

21. *Bunium persicum* (Boiss.) Fedtsch Botany,
Conservation Strategies and Cultivation
Botanical Description of Plant
Climate and Distribution
Reasons and Remedies for Dwindling Population of
B. persicum in Nature
Phenotypic Variability
Climate
Soil Type
Preparation of Land
Plantation`
(i) Plantation Through Seeds
(ii) Plantation Through Tuberos Roots
Spacing
Method of Plantation
Manuring
Weeding

Irrigation
Harvesting
Intercropping
Pests and Diseases of Kala Zira Crop
Experimental Studies for the Propagation of
Planting Material Under Laboratory Conditions
Regeneration Through Tissue Culture
Economics of the Crop
Conclusion

22. Essential Oils of Artemisia species in Kashmir Himalaya

Artemisia moorcroftiana Wall
Artemisia laciniata Wild
Artemisia salsoloides Will
Artemisia persica Boiss
Artemisia vestita Wall
Conclusion

23. Cultivation and Utilization of Kaempferia galanga L.

Botany
Crop Improvement
Crop Management
Extraction of Essential Oil
Physico chemical Properties of Oil
Utilisation

24. Cultivation and Improvement of Sweet Marjoram

Floristics and Crop Improvement
(i) Floristics
(ii) Studies on Floral Biology
(iii) Crop Improvement
Crop Production and Management.
(a) Soil and Climate
(b) Propagation
(c) Studies on Nutrient and Spacing
(d) Use of Growth Regulators
(e) Crop Rotation/Sequencing and Inter crops
(f) Irrigation and Inter culture
(g) Insect Pests and Diseases
(h) Harvesting, Production of Essential Oil and Yield
(i) Chemistry of Oil

25. Cultivation of Davana for Essential Oil

Introduction

Botany

Floral biology

Climate

Soil

Nursery raising

Transplanting

Manures and fertilizers

Irrigation

Interculture

Growth regulator application

Plant protection

Insect pests

Diseases

Harvesting

Distillation

Yield and Oil content

Chemical Constituents

Physico chemical characteristics of davana

26. Essential Oil of Hyptis Suaveolens Poit

Antimicrobial Efficacy of the Essential Oil of H. suaveolens

(ii) Phytotoxic Behaviour of the Oil

(iii) Chemical Constituents of the Oil

Conclusions

27. Tagetes minuta (Wild Marigold)

An Economic Crop for Hilly Regions

Introduction

Crop Management

Harvesting and Distillation

Quality Evaluation

Uses of Tagetes Oil

Research Needs

28. Present Status of Jamrosa A Review

Cultivation

Areas Under Cultivation and Marketing Prospects

29. Cultural Practices of CKP 25

(Lemongrass) under Irrigated conditions

Introduction

Effect of Date of Plantings

Effect of Different Spacing Combinations

Effect of Nitrogen Levels

Recommendations

30. Development of New Cultivars of Cymbopogons as Source of Terpene Chemicals

31. Indian Cymbopogons Botany, Agrotechnology, Utilization, Constraints and Future Scope

Botany

Morphology

Taxonomic Position

Distribution

Cytological Studies

*Chromosome Number

*Cytogenetics

*Reproduction

Agrotechnology

Age of Plantation

Manures and Fertilizers

Irrigation

Weed Control

Harvesting

Genetic Improvement

Utilization

Essential Oils

Major Research and Development Constraints

Conclusion and Scope for Future Work

32. Growth and Performance of Cymbopogon citratus Stapf., the West Indian Lemongrass and Cymbopogon pendulus (Nees ex Steud.) Wats., the Jammu Lemongrass in West Bengal)

Result and Discussion

Intraspecific Variation:

Interspecific Variation:

33. Indian Turpentine Oil as a Raw Material for Terpene Chemicals

Production of Oil of Turpentine

Utilization of Oil of Turpentine

Constituents of Oil of Turpentine and their Derivatives

34. Cultivation of Musk Mallow in Jammu

Introduction

35. Morpho Economic Features of Burma Citronella (*Cymbopogon winterianus* Jowitt)

Introduction

Discussion

36. Oxidation of γ Terpinene and Isolongifolene with t Butyl chromate

Oxidation of terpinene (I)

Oxidation of isolongifolene (VI)

37. Scope for Commercial Cultivation of Aromatic Plants in Upper Pulney Hills

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.