

The Complete Book on Jatropha (Bio-Diesel) with Ashwagandha, Stevia, Brahmi & Jatamansi Herbs (Cultivation, Processing & Uses)

Author: NIIR Board of Consultants and Engineers

Format: paperback

Code: NI176

Pages: 592

Price: Rs 1500 | US\$ 150

Publisher: NIIR PROJECT CONSULTANCY SERVICES

Shipping: 5 days

About the Book

Jatropha proves to be a promising Biofuel plantation and could emerge as a major alternative to diesel thus reducing our dependence on oil imports and saving the precious Foreign Exchange besides providing the much needed energy security. Jatropha oil displacing conventional fossil fuel makes the related project fully eligible. The Jatropha plantation primarily focuses cultivated green biodiesel as an alternate source of fuels that can propel engines, generators and transportation as well as power generation in the future and replace existing sources. The main factor that makes the major difference is the cost of the bio fuel that it can be made cheaper than the petro diesel and on a long term basis without affecting the operational economics.

Ashwagandha (also called as, Indian Ginseng), Stevia a natural non caloric sweetener, Brahmi (brain tonic) and Jatamansi are the important herbs which have very good medicinal values. Ashwagandha increases the count of white blood cells and prepares the body to produce antigens against various infections and allergies. It is also considered as a tonic for the heart and lungs as its regular intake controls the blood pressure and regulates the heartbeat. It has a strong nourishing and protective effect on the nervous system. Ashwagandha has been used as a sedative, a diuretic, a rejuvenating tonic, an anti inflammatory agent, aphrodisiac and an immune booster. It is especially beneficial in stress related disorders such as arthritis, hypertension, diabetes, general debility, etc. It has also shown impressive results when used as stimulants for the immune system. It is considered as an adaptogen that stimulates the immune system and improves the memory. Stevia also known as the sweet leaf which is an all natural sweetener, derived from a plant called stevia rebaudiana. It has no calories, no carbohydrates, and it has a glycemic index of zero, which makes it the sweetener of choice for many diabetics all over the world. The herbs are carefully nurtured and harvested at only certain times of the year. Stevia comes in many forms; stevia supreme, stevia ultimate stevia, stevia liquid stevia, fruit flavoured stevia and many more. Brahmi is used as a herbal brain tonic, to rejuvenate the body, as a promoter of memory and as a nerve tonic. It improves memory and helps overcome the negative effects of stress. It is unique in its ability to invigorate mental processes whilst reducing the effects of stress and nervous anxiety. Brahmi induces a sense of calm and peace. Brahmi has gain worldwide fame as a memory booster and mind alertness promoter. Jatamansi has the power to promote awareness and calm the mind. It is a very useful herb for palpitation, tension, headaches, restlessness and is used for promoting awareness and strengthening the mind. It aids in balancing the body of all three Ayurvedic doshas. This herbs sedative properties increase awareness, as opposed to valerian that dulls the mind. Aromatic, antispasmodic, diuretic, emmenagogue, nervine, tonic, carminative, deobstruent, digestive stimulant, reproductive some of the properties of Jatamansi herb.

This book is describes about the medical properties, important uses and applications, cultivation, chemical constituents, harvesting and post harvesting, yield and other properties of herbs like safed mulsi, brahmi, jatamansi, ashwagandha, senna, shatavari and more. This book also deals with biodiesel, biofuel and petro

crops : an alternative to conventional fuels, the potential of jatropha curcas in rural development and environment protection, prospects of expanding market for use of jatropha oil, jatropha: potential as insecticide/pesticide etc.

The present system of medicine is gradually gaining popularity mainly because of less or no toxic or side effects of herbal drugs. So, these herbs have very good future prospects globally. This book contains cultivation, processing and uses of Jatropha, Ashwagandha (*Withania somnifera*), Stevia rebaudiana, Brahmi (*Bacopa monnieri*) and Jatamansi (*Nardostachys Jatmansi* DC.). This book will prove to be an invaluable resource for researchers, technocrats, agriculturist, agriculture universities etc.

Contents

1. BIO DIESEL - JATROPHA CURCAS

Business Opportunities

2. BIODIESEL, BIOFUEL AND PETRO CROPS : AN ALTERNATIVE TO CONVENTIONAL FUELS

Introduction

Background

R&D Program and Major Achievements

Development of Biodiesel Crops like Jatropha Curcas

Evaluation of Petro Crops: Euphorbs

Evaluation and Improvement of Guayule (*Parthenium Argentatum*)

3. LIST OF IMPORTANT GOVERNMENT AND PRIVATE INSTITUTE/SCIENTIST ENGAGED IN RESEARCH AND DEVELOPMENT OF JATROPHA

4. TREE DESCRIPTION

Leaves

Flowers

Fruits

Seeds

Roots

5. THE POTENTIAL OF JATROPHA CURCAS IN RURAL DEVELOPMENT AND ENVIRONMENT PROTECTION

Introduction

Objectives of the Workshop

Production of Jatropha curcas

Jatropha curcas as an Energy Source

Other products of Jatropha curcas

Costs and Returns

Expected Output

6. JATROPHA : THE WONDER OIL BEARING TREE!

Introduction

Botanical Features

Ecological Requirement

Interesting History and Future of the Plant

Uses of Jatropha curcas

Jatropha : As ornamental Plant

Jatropha: As a fence
Jatropha curcas: As a potential oil crop
Jatropha oil: As raw material for industrial use
Jatropha: Potential as medicinal plant
Jatropha bark: As raw material for dye
Jatropha- For enrichment of soil
Jatropha: As potential feed stoke
Jatropha: Potential as insecticide/pesticide
Jatropha: As non conventional energy crop
Jatropha: As profitable agro forestry crop
Cultivation
Soils
Climates requirements
Spacing and seeds rate
Propagation
Inter-Cultivation
Irrigation
Expected Yield
Prospects of expanding market for use of Jatropha oil
Jatropha oil as an alternative to diesel
Diesel engine test for Jatropha oil
Jatropha oil; as alternative to kerosene as fuel

7. BIO DIESEL

What is Bio Diesel?
This fuel is called Bio-Diesel
The Advantages of Bio Diesel
The Process
The Technology
The Cost
International Laws and regulation
Biodiesel Scenario In India
Bio Diesel Experiments
Conclusion

8. GUJARAT OLEO CHEM TO EXPAND BIO-DIESEL PRODUCTION CAPACITY

Up to promote Jatropha seed oil farming

9. JATROPHA: THE BIO-FUEL PLANT

Introduction
Uses
Leaves, Bark & Roots
Seeds & Oil
Folk Remedies
Bio-Fuel
General Cultivation
Origin and Distribution
Cultivation
Description of the plant
Description of the species
Varieties

Seed rate and spacing
Field preparation and Planting
Inter-cultivations
Plant Protection
Jatropha Oil
Harvesting and yield
Post harvest processing
Project Profile

10. TRANS-ESTRIFICATION BIODIESEL PROCESS

Ingredients
Manufacturing Process
Process in Detail
Quantity of methanol to be used
Glycerine

11. CENTRE FOR JATROPHA PROMOTION: GROWING DIESEL FUEL PLANT: CULTIVATION FOR BIO DIESEL PRODUCTION

Breaking the cycle of poverty
Can diesel be “cultivated”?

12. BIODIESEL IN INDIA

Field Trials of Biodiesel
Economics of Jatropha Biodiesel
Target of biodiesel production
Raw Material (Jatropha curcas seed and oil)
Biodiesel Work in India
Work-Done In India
Indian Railways

13. OIL EXTRACTION - OIL EXPELLERS FOR JATROPHA SEEDS

14. BIODIESEL PROJECT 10 KI PER DAY

Introduction
Product Description and Uses
How is Biodiesel made?
Biodiesel Benefits
Description
Applications
Standards
Transport information
Personal protection
Consumer Safety
Alternative Fuels Incentives and Laws
Market Survey and Demand Supply Position
Raw Materials and Suppliers
Manufacturing Process Description
Project Implementation Schedule
Power Requirement
Utilities Specifications
Market and Selling Arrangements

Salient Features and Project Highlights

Basis and Presumptions

Manpower and Organization

15. PLANT OF 1000 LITERS PER DAY

Background

Description

Brief Process Description

Plant of 1000 liters per hour. (24 Kilo Liters per day)

Commercial Conditions

Oil Expeller Manufacturers

16. EQUIPMENT FOR DECENTRALISED COLD PRESSING OF OIL SEEDS

Introduction

General advice for a complete oil mill

Influences on product quality in decentralised oil mills

Pre-treatment of the seed

Parameters of the press

Examples of a complete oil mill

Oil seed expeller

Equipment for pre-treatment of the seed

Overview manufactures of cold pressing oil expeller

Oil expeller manufactures

Purification of plant-oil

Filter equipment manufactures

Standardisation of cold pressed Rape Seed Oil

Fuel for Plant Oil Adapted Diesel Engines

17. Stevia

Shelf Life

Botanical Trait and Constituent

History

Application and Benefits

Growing Stevia in Home Garden

Process for Extraction and Grades

Sweetvia Produced by Stevia Co.inc., USA

Liquid Concentrates

Grades Internationally Available

Safety

Regulations

FDA, USA Investigation on Stevia

Important Players

Global Scenario

Economics

Recommendation

Artificial Sweeteners Scenario

Acesulfame K

Aspartame

Sucralose

Xylito

18. ASHWAGANDHA

Introduction

Folklore Uses of Ashwagandha (*Withania somnifera*)

Ashwagandha in Vedas

Cultivation

Agronomical perspectives

Genetics and Crop Improvement

Physiological Manipulations

Cell and Tissue Culturing

Genetic engineering

Chemical Constituents of Ashwagandha (*W. somnifera*)

Pharmacognosy

Root

Leaf

Stem

Floral Parts

Histology of Floral Parts

Corolla

Androecium

Gynoecium

Fruit

Seed

Embryology

Seedling anatomy

Concluding Remarks

International Occurrence

Concluding Remarks

19. BRAHMI

Regional Names

Medicinal Properties & Uses

Cultivation & Propagation

Soil and Climate

Land Preparation

Transplanting

Manure/Fertilizer

Irrigation

Weeding

Harvesting/Post-harvesting

Chemical Constituents

Major Constituents

Other Constituents

Active Constituents

Analytical Profile

Bacoside A Solution

Calibration Curve

Test Solution

Procedure

Yield

Substitute/Adulterants

Home Remedy

Dose

Important Formulation

20. JATAMANSI

Regional Names

Distribution

Medicinal Properties & Uses

Cultivation

Soil and Climate

Nursery raising and Planting

Manure/Fertilizer

Irrigation and Weed Control

Harvesting/Post-harvesting

Chemical Constituents

Major Constituents

Other Constituents

Active Constituents

Analytical Profile

Substitute/Adulterants

Home Remedy

Dose

Important Formulation

21. SAFED MUSLI

Regional Names

Distribution

Medicinal Properties & Uses

Cultivation & Propagation

Soil and Climate

Nursery Raising and Planting

Manure/Fertilizer

Irrigation

Weeding

Harvesting/Post-harvesting

Chemical Constituents

Yield

22. SARPAGANDHA

Regional Names

Distribution

Medicinal Properties & Uses

Cultivation & Propagation

Soil and Climate

Nursery Raising & Planting

Manure/Fertilizer

Irrigation

Weeding

Harvesting/Post-harvesting

Chemical Constituents

Major Constituents

Other Constituents

Active Constituents

Yield

Home Remedy

Dose

23. SENNA

Regional Names

Distribution

Medicinal Properties & Uses

Cultivation & Propagation

Soil and Climate

Land Preparation

Nursery Raising and Planting

Thinning and Weeding

Manure/Fertilizer

Irrigation

Harvesting/Post Harvesting Operation

Chemical Constituents

Major Constituents

Other Constituents

Active Constituents

Yield

24. SHATAVARI

Regional Names

Distribution

Medicinal Properties & Uses

Cultivation & Propagation

Soil and Climate

Land Preparation

Nursery Raising and Planting

Weeding

Irrigation

Manure/Fertilizer

Harvesting/Post Harvesting

Chemical Constituents

Major Constituents

Other Constituents

Active Constituents

Analytical Profile

Solvent System

TLC Plates

Derivatization

Scanning

Standard Solution

Sample Preparation

Calibration Curve

Estimation of Shatavarin IV in the drug

Yield
Substitutes/Adulterants
Home Remedy

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/>