



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, stevita ultimate stevia, stevita 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, Start up Business Opportunities, entrepreneurship projects, Successful Business Plan, Industry Trends, Market Research, Manufacturing Process, Machinery, Raw Materials, project report, Cost and Revenue, Pre-feasibility study for Profitable Manufacturing Business, Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Business Opportunities, Investment Opportunities for Most Profitable Business in India, Manufacturing Business Ideas, Preparation of Project Profile, Pre-Investment and Pre-Feasibility Study, Market Research Study, Preparation of Techno-Economic Feasibility Report, Identification and Section of Plant, Process, Equipment, General Guidance, Startup Help, Technical and Commercial Counseling for setting up new industrial project and Most Profitable Small Scale Business.

NPCS also publishes various 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.

NIIR PROJECT CONSULTANCY SERVICES, 106-E, Kamla Nagar, New Delhi-110007, India. **Email:** npcs.india@gmail.com **Website:** NIIR.org