

The Complete Book on Organic Farming and Production of Organic Compost (2nd Revised Edition)

Author: NPCS Board of Consultants & Engineers

Format: Paperback

ISBN: 9788194099529

Code: NI213

Pages: 448

Price: Rs. 1,575.00 **US\$** 42.56

Publisher: Asia Pacific Business Press Inc.

Usually ships within **5** days

Organic farming, composed of organic fertilizers as an integral virtue, continues to remain a lucrative bet for the expanding agricultural industry, in line with growing organic food appeal to consumers as a healthy and ethical choice.

Contents

Contents

1. INTRODUCTION TO ORGANIC FARMING

Indian Agriculture before the Green Revolution

The Green Revolution

Impact of Green Revolution on the Environment

Why Organic Farming?

2. SUSTAINABLE AGRICULTURE AND

ORGANIC FARMING The Background

Characteristics of Sustainable Agriculture

Definition of Sustainable Agriculture

Organic Farming

National Programme for Organic Production (Features)

3. CONCEPTS, DEFINITION AND COMPONENTS

Concept and Definition

Organic vs Natural Farming

Essential Characteristics of Organic Farming

Key Principles of Organic Agriculture Systems

Mixed Farming

Crop Rotation

Organic Cycle Optimization

Objectives Of Organic and Conventional Farming

Options in Organic Farming

Pure Organic Farming

Integrated Green Revolution Farming

Integrated Farming System

Management of Organic Farming

- Advantages of Organic Farming
- Barriers to Organic Farming
- Components Of Organic Farming
- Organic Manures
- Non-Chemical Weed Control Measures
- Biological Pest Management
- 4. ORGANIC MANURES, THEIR NATURE AND CHARACTERISTICS
- Farmyard Manure
- Compost
- Sheep and Goat Manure
- Poultry Manure
- Oil-Cakes
- Meal Group of Manures
- Sewage, Sludge and Sullage
- 5. LIVESTOCK AND HUMAN WASTES
- 6. AVAILABLE ORGANIC MATERIALS AND PLANT NUTRIENTS
- Livestock Wastes
- Crop Residues and Aquatic Weeds
- Rural and Urban Wastes
- Agro-industrial Wastes
- Fisheries and Marine Industry
- 7. ORGANIC FARMING IN RICE
- Objectives of Organic Farming
- Traditional Practices
- Aspects of Modern Agriculture
- Important Regulations for Organic Farming
- Nutrient Requirement
- Ecofriendly Management of Pests and Diseases in Rice
- Conservation of Native Natural Enemies to Enhance in Situ Biological Control in Rice
- Components of Eco-Friendly Disease Management
- Methods of Application
- Conclusion
- 8. PRODUCTION OF ORGANIC COMPOST
- Composting
- Importance Of Composting
- Maximizing the Nutrients Availability from Agricultural Compost
- Effect on Soil and Crop
- Method of Spreading Compost
- Rate of Application
- Time of Application
- Classification of Composting
- Kinetics of Composting
- Moisture Content
- Ingredients to Avoid
- Microbes Involved in Composting
- Design Criteria
- Type and Amount of Compost
- The Climate
- Availability of Land
- Handling
- Practical Method of Making Compost

Considerations in Building a Compost Heap
 Managing the Compost Heap
 Curing
 Practical Applications Composting
 Biogas Technology
 Composition of Slurry
 Slurry for Agriculture
 Transfer of Biogas Technology
 Growing of Mushrooms
 Conventional Types of Compost
 Compost Making and Spawning
 The Work Schedule
 Suggestions
 9. EFFECT OF ORGANIC FERTILIZERS IN PONGAMIA PINNATA
 Material and Methods
 Results and Discussion
 Summary
 10. ORGANIC FERTILIZER: A SUPPLEMENTARY NUTRIENT
 SOURCE FOR SUGARCANE
 Experiment and Results
 Azotobacter
 Azospirillum
 Phosphate Solubilizing Microorganisms
 Summary
 11. EFFECT OF ORGANIC FERTILIZER ON SORGHUM
 Material and Methods
 Results And Discussion
 Summary
 12. SIGNIFICANCE OF AZOSPIRILLUM AND PSEUDOMONTAS
 ON GROWTH OF ELUCINE CROCANA
 Material and Methods
 Results and Discussion
 Growth Attributes
 Yield Attributes
 Summary and Conclusion
 13. BIOMASS PRODUCTION OF ACACIA NILOTICA
 Material and Methods
 Results and Discussion
 Summary
 14. CHEMICAL COMPOSITION OF BANANA
 Material and Methods
 Phosphate Solubilizing Microorganism
 Mycorrhizal Inoculum
 Plant Material
 Treatment
 Results and Discussion
 Summary
 15. N-FIXING AND PHOSPHATE SOLUBILIZING
 BACTERIA
 Material and Methods
 Results and Discussion
 Summary
 16. ASYMBIOTIC ORGANIC FERTILIZERS OF

KHARIF SORGHUM

Material and Methods

Results and Discussion

Summary

17. EFFECT OF AZOSPIRILLUM AND PHOSPHATE SOLUBILIZING CULTURE ON QUALITY OF SUGARCANE

Material and Methods

Treatment Details

Results and Discussion

Summary and Conclusion

18. ORGANIC NUTRIENT

Soil Populations and Processes

Use of Biofertilizers

Enrichment of Compost with Microbial Inoculants

Nitrogen Fixing Microbs

Rhizobium

Leguminous Plants / Rhizobiaceae Symbiosis

Azotobacter Inoculant

Azospirillum Inoculant

Blue-Green Algae Inoculant

Multiplication of BGA

Frankiaceae Symbiosis

Large Scale Inoculum Production

Significance Of BNF

Mycorrhiza

Roots as Sinks and Sources of Nutrients and Carbon in

Agricultural Systems

Importance of Mycorrhiza

Benefits to Plants

Other Roles in Ecosystems

Values of People

Mycorrhizal Interactions with Plants and Soil Organisms in

Sustainable Agroecosystem

Symbiosis

Root System Form

Soil and Site Factors Influencing Mycorrhizas

Characteristics Of Fungal Isolates

Host Plants

How Mycorrhizas Work

Nitrogen Transfer in Mycorrhizal Plants

Nitrogen Nutrition in Mycorrhizal Plants

Phosphorus Fertility

Future Thrusts

19. INDUSTRIAL WASTES AS SOURCES OF PLANT NUTRIENTS

Significance of Waste Recycling

Chemical Characteristics of Wastes and Utilization

Effect on Crops Yield and Soil Properties

Effect on Crop Yields

Pathogens and Health Hazards

Heavy Metals and Associated Problems

Effect on Soil Properties

Problems in Waste Utilization

Future Research Needs

20. USE OF BIO-INOCULANTS FOR RECYCLING OF BANANA WASTES

Material and Methods

Results and Discussion

21. ROLE OF ORGANIC FERTILIZER IN UPLAND CROP PRODUCTION

Nitrogen-Fixing Bacterial Inoculants

Phosphate Solubilizing Microorganisms

Vesicular-Arbuscular Mycorrhizae (Vam)

Plant Growth Promoting Rhizobacteria

Future Research Needs

Strategy for Successful Use of Biofertilizers

22. VARIETIES FOR ORGANIC FARMING

What is Organic Agriculture ?

Selection of Rice Varieties for Organic Farming

Weed Control

Soil Fertility

Insects and Diseases

Speciality Rices for Organic Farming

Varieties for Special Systems of Cultivation

23. BIOLOGICAL SUPPRESSION OF AQUATIC WEEDS

Biocontrol of *Salvinia Molesta* Mitchell (Fam. *Salviniaceae*)

Cyrtobagous *Salviniae* Calder and Sands (Fam. *Curculionidae*)

Biocontrol of *Eichhornia Crassipes* (Martius) Solms-Laubach (Fam. *Pontederiaceae*)

(x)

Neochetina Eichhorniae Warner (Fam. *Curculionidae*)

Neochetina Bruchi Hustache (Fam. *Curculionidae*)

Orthogalumna Terebrantis Wallwork (Fam. *Galumnidae*)

24. WEED MANAGEMENT IN ORGANIC RICE

Development of Weed Control Methods

Problems from Chemical Weed Control

Weed Control in Organic Farming

A. Preventive Methods

B. Cultural Methods of Weed Control

C. Mechanical Methods

D. Biological Control of Weeds

Bioherbicides

Some Basic Principles for Weed Management in Organic Farming

25. PROCESSING AND VALUE ADDITION OF ORGANIC RICE

Quick Cooking Rice

Preparation of Instant Fried Rice

Instant Rice Noodles

Preparation of Dried Starch from Rice Soup

26. BIOTECHNOLOGICAL APPROACH IN ORGANIC RICE FARMING

Why Biotechnology ?

Important Benefits that have Emerged from the Transgenic Rice Research:

Food and Agriculture Organization (Fao) of Un Recommendation

27. CROP ROTATION AND RESIDUE RECYCLING IN ORGANIC RICE PRODUCTION

Major Rice Cropping Systems
 Crop Rotation in Organic Production System
 A Good Crop Rotation Programme Involves
 Legumes in Crop Rotation
 Green Manuring
 Crop Residues in Organic Rice Production
 28. BIOLOGICAL NITROGEN FIXATION
 Non-Symbiotic Nitrogen Fixation
 (xi)
 Features Favourable for Non-Symbiotic Nitrogen Fixation
 Nitrogenase
 Basic Requirements for Nitrogen Fixation
 Mechanism of Nitrogen Reduction
 Symbiotic Nitrogen Fixation
 Host Specificity
 Root Nodulation
 Mechanism of Nitrogen Fixation
 Nitrogenase
 Requirements for Nitrogen Reduction
 Assimilation of Ammonia
 Genetics of Nitrogen Fixation
 Nif -genes of Klebsiella Pneumoniae
 Nif-genes of Azotobacter
 Nif-genes of Anabaena
 Genetics of Legume - Rhizobium Nitrogen Fixation
 1. Rhizobial Genes
 2. Legume Nodulin Genes
 Overall Regulation of Genes
 Gene Transfer for Nitrogen Fixation
 1. Transfer of Nif-genes to Non-Nitrogen Fixing Bacteria
 2. Transfer of Nif-genes to Yeasts
 3. Transfer of Nif-genes to Plants
 4. Transfer of Nod genes
 5. Transfer of Hup genes
 29. WEED MANAGEMENT IN ORGANIC FARMING
 Cultural Methods Of Weed Control
 Tillage
 Tillage Combined With Irrigation
 Timing
 Seeding Rates and Cultivar Selection
 Cropping Systems
 Use of Animals
 Flooding
 Mulching
 Fire
 Composting
 Hoeing and Hand Weeding
 Farmer's Care
 (xii)
 Straw Disposal
 Biological Control of Weeds Using Insects
 Weed Suitability to Biological Control
 Classical Approach

Characteristics of Weeds and Problems
Weed Survey for Natural Enemies
Introduction of Natural Enemies
Use of Pathogens in Weed Suppression
Mycoherbicides
Parasitic Weeds
Management Strategies for Parasitic Weeds
Ecological Principles
Research Needs
30. PEST MANAGEMENT IN ORGANIC FARMING
Pest Management Methods
Biological Alternatives
Organically Acceptable Chemical Alternatives
Cultural Alternatives
Biological Control
Botanical Pesticides
Biological Control in Field Crops
Botanics for Storage Pest Control
Seed Treatment with Materials of Plant Origin for Insect Control
Active Principles
Cultural Practices/Ecological Methods
Optimum Site Conditions
Diversity Over Time
Diversity in Space
Habitant Enhancement
Role of Non-Crop Vegetation
Trap Crops
Constructed Traps
Plant Resistance to Pests
Traditional Practices for Pest Control
Other Management Practices
31. BIS SPECIFICATIONS
32. MACHINERY AND EQUIPMENTS
33. PLANT LAYOUT AND PROCESS FLOW SHEET

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.

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

Sat, 20 Apr 2024 05:46:19 +0530