

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

Author:- NPCS Board of Consultants & Engineers

Format: paperback

Code: NI213

Pages: 448

Price: Rs.1575US\$ 42.56

Publisher: NIIR PROJECT CONSULTANCY SERVICES

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

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

Wed, 11 Dec 2024 19:07:13 +0000