Integrated Organic Farming Handbook

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Organic agriculture has grown out of the conscious efforts by inspired people to create the best possible relationship between the earth and men. After almost a century of neglect, organic agriculture is now finding place in the mainstream of development and shows great promise commercially, socially and environmentally. Integrated organic farming is a commonly and broadly used word to explain a more integrated approach to farming as compared to existing monoculture approaches. It refers to agricultural systems that integrate livestock and crop production and may sometimes be known as Integrated Bio systems. It denotes a holistic system of farming which optimizes productivity in a sustainable manner through creation of interdependent agri-eco systems where annual crop plants (e.g. wheat), perennial trees (e.g. horticulture) and animals (including fishes where relevant) are integrated on a given field or property .This concept of organic farming is based on following principles: 1. Nature is the best role model for farming, since it does not use any inputs nor demand unreasonable quantities of water.2. The entire system is based on intimate understanding of nature's ways of replenishment. The system does not believe in mining of the soil of its nutrients and do not degrade it in any way. 3. The soil in this system is considered as a living entity 4. The soil's living population of microbes and other organisms are significant contributors to its fertility on a sustained basis and must be protected and nurtured, at all cost. 5. The total environment of the soil, from soil structure to soil cover is more important and must be preserved.
Integrated Organic farming is a method of farming system, which primarily aims at cultivating the land and raising crops in such a way, so as to keep the soil alive and in good health. It is the use of organic wastes (crop, animal and farm wastes, aquatic wastes) and other biological materials, mostly produced insitu- along with beneficial microbes (bio fertilizers) to release nutrients to crops, which connotes the ‘organic’ nature of organic farming. It is also termed as organic agriculture. In the Indian context it is also termed as ‘Javik Krishi’. We have compiled all the relevant information regarding integrated organic farming in this book. This is first book of its kind which contains reliable details related to organic farming, green manuring, biological nitrogen fixation, uses of vermiculture bio-tech, organic fertilizers for flooded rice ecosystem, biological pest management, press mud as plant growth promoters, bio fertilizer for multipurpose tree species, rice- fish integration, response of crops to organic fertilizer and many more.
The book is very useful for farmers, agriculture, universities, consultants and research scholars.

MYCORRHIZAE
Mycorrhizal Types and Their Structural and Nutritional Features
Ectomycorrhizae
Mechanism of ECM Formation
Morphology and Structure
Synthesis of Mycorrhiza
Cutural Study
Vesicular Arbuscular Mycorrhiza
Introduction
Evolution
Taxonomy
Classification
Distribution
Lifecycle
Reproduction
Sexual Reproduction
Asexual Reproduction
Method of Inoculum Production of VAM
Some Important Steps in Production of VAM
Host Plant/Growth Medium
Fertilizations/Micronutrients
Chemical Application
Control of Fungal Pathogens
Plant-Vesicular Arbuscular Mycorrhizal Fungal Interactions
Vam and Soil Biota
Control of Root Diseases
Endomycorrhiza and Plant Disease
Ectomycorrhizal Fungi and Tree Diseases
Mechanism of Disease Control
Outlook
8. APPLICATION AND EVALUATION
Different Methods for Biofertilizer Inoculation
Seed Inoculation
Top Dressing of Biofertilizers
Granular Biofertilizers
Solarisation of FYM/Compost
Granular Biofertilizer Mixed with Seed
Broadcasting of Granular Biofertilizers
Frequency of Inoculation
Liquid Inoculation of Biofertilizers
Methods of Application of Liquid Inoculation
Drenching By Sprayers
Application in Root Zone
Culture Pellet
Methods of Application of Other Biofertilizers
Blue Green Algae
Azolla
As Green Manuring
Azolla Dual Cropping
Azotobacter
Preparation and Use of Azotobacter Inoculant
Application
Azospirillum

Mycorrhizae
Endomycorrhizae
Ectomycorrhizae
Techniques for Isolation of Vesicular Arbuscular Mycorrhizal Fungi (VAMF) from Soil in Laboratory
Gerdemann and Nicolsion Technique
Sutton and Barron Flotation Technique
Method for Examination of Mycorrhizal Infection in Root Samples
Foliar Biofertilizer
Humar
Humic Acid
Introduction
Application
Soil
Foliar
Seed Treatment
Soil Benefit
Root
Seeds
Plants
Precautions
Different Media Used to Study Biofertilizer
I. Growth Media for Rhizobium
Media for Testing Nodulating Ability of Rhizobium
Jenson's Plant Nutrient
II. Isolation Of Frankia
III. Selective Media For Blue Green Algae
IV. Selective MEDIA For Azotobacter
V. Selective Media for Azospirillum
VI. Selective Media for Phosphate solubilizing organisms
VII. Selective Medium for isolation of Pseudomonas fluorescens, a biocontrol agent (Subba Rao, 1986).
VIII. Selective medium for isolation of Trichoderma - an antagonistic fungus.
9. BIOLOGICAL PEST MANAGEMENT
Cultural Control
Sanitation
Tillage
Application of Manures and Soil Amendments
Habitat Diversification
Crop Rotation
Trap Cropping
Intercropping
Strip Farming
Time of Planting
Water Management
Crop Competition
Physical and Mechanical Control
Manual Control
Burning
Solarization
Flooding
Biological Control
Conservation of Biodiversity

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