Biofertilizers are seen as an important alternative technology, since the negative externalities of chemical fertilizers have become well known. The use of the latter has led to considerable environmental cost. Biofertilizers do not pollute the soil and do not disrupt the ecological balance, and hence are environment friendly. An increasing number of farmers are using biofertilizers, and the numbers of biofertilizer manufacturing units have also grown considerably. Organic farming system in India is not new and is being followed from ancient time. It is a method of farming system which primarily aimed at cultivating the land and raising crops in such a way, as to keep the soil alive and in good health by use of organic wastes (crop, animal and farm wastes, aquatic wastes) and other biological materials along with beneficial microbes (biofertilizers) to release nutrients to crops for increased sustainable production in an eco friendly pollution free environment. Organic farming has emerged as an important priority area globally in view of the growing demand for safe and healthy food and long term sustainability and concerns on environmental pollution associated with indiscriminate use of agrochemicals.

Going organic may be a clear way of getting back to basics and getting away from the havoc chemicals can wreak on our health and our environment but the basics themselves may not be so clear. This book provides the view of immense potential of biofertilizers as a supplementary nutrient source for the crops and covers all major types of bacterial fertilizers.

The major contents of this book is crop response to biofertilizers, nitrogen fixation, phosphate solubilising microorganisms, application and evaluation techniques, Bio Gas production, pest and disease management system in agriculture, production, promotion, quality control, marketing, future research planning, photographs and details of machineries, list of manufacturers and suppliers of biofertilizers and organic farming in directory section.

This book will be of use and interest to consultants, researchers, libraries, entrepreneurs, manufacturers of biofertilizer and for those who wants to venture in to this field.
1. INTRODUCTION TO BIOFERTILIZERS
   Concept of IPNM
   Integrated Plant Nutrient Management (IPNM)
   Biofertilizer Development
   Materials of Biological Origin
   Biofertilizers
   Classification
   Potential of Biofertilizers in Crop Production in Indian Agriculture
   Chemically fixed Nitrogen versus Biologically fixed Nitrogen
   Synergistic interaction between Biofertilizing Agents
   Biofertilizing agents and Plant Disease Control
   Brief account of beneficial Microorganisms
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   Azotobacter and Azospirillum
   Phosphate Solubilizing Microorganisms
   Vesicular Arbuscular Mycorrhizae (VAM)
   Azolla
   Blue Green Algae
   Plant Growth Promoting Rhizobacteria (PGPR)
   Status of Biofertilizer in India
   Thrust in Research and Development

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Multiplication of rhizobia : Root hair curling
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Genus - Azolla
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Conclusions and Future Outlook
Integrated Approach for Increasing Microbial Inputs
Economics of Biofertiliser Use

4. NITROGEN FIXING MICRO-ORGANISMS : ASYMBIOTIC
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5. PHOSPHATE SOLUBILIZING MICROORGANISMS : FUNGI AND BACTERIA
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Phosphate Fixation in Different Soils
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Phosphate Solubilization
Factors Affecting Phosphate Solubilization
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Other Mechanisms
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6. PHOSPHATE SOLUBILIZING MICRO-ORGANISM :
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Ectomycorrhizae
Systematics of Ectomycorrhizal Fungi and their Hosts
Morphology and Development of Ectomycorrhizae
Sources of Ectomycorrhizal Inoculum
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The introduction of seedling with established mycorrhizae
The deliberate introduction of spores, sporocarps or sclerotia
Mycelial inoculum derived from pure cultures of known mycobionts
Evaluation and Selection of Ectomycorrhizal Fungi
Rapidity and extent of mycorrhization
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Temperature tolerance
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Ease of pure culture formation
Ease and rapidity of production
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Natural inoculum: airbone spores
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Seedlings colonized by EM fungi
Fungal sporomata or sclerotia
Mycelial inoculum
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Evaluation and Selection of VAM fungi
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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
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Nonsymbiotic Nitrogen Fixation
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9. SIMPLIFIED ANAEROBIC DIGESTERS FOR BIOFERTILIZER
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DIRECTORY SECTION
MANUFACTURERS OF BIO-FERTILISERS AND ORGANIC FARMING

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