

Organic Farming and Biofertilizer Production

Introduction

A Bio fertilizer (also bio-fertilizer) is a substance which contains living microorganisms which, when applied to seeds, plant surfaces, or soil, colonizes the rhizosphere or the interior of the plant and promotes growth by increasing the supply or availability of primary nutrients to the host plant. Bio-fertilizers add nutrients through the natural processes of nitrogen fixation, solubilizing phosphorus, and stimulating plant growth through the synthesis of growth-promoting substances. Bio-fertilizers can be expected to reduce the use of chemical fertilizers and pesticides. Bio-fertilizers provide "eco-friendly" organic agro-input.

Benefits of Bio-fertilizer

- *These are means of fixing the nutrient availability in the soil.*
- *Since a bio-fertilizer is technically living, it can symbiotically associate with plant roots. Involved microorganisms could readily and safely convert complex organic material into simple compounds, so that they are easily taken up by the plants. Microorganism function is in long duration, causing improvement of the soil fertility. It maintains the natural habitat of the soil. It increases crop yield by 20-30%, replaces chemical nitrogen and phosphorus by 25%, and stimulates plant growth. It can also provide protection against drought and some soil-borne diseases.*
- *Bio-fertilizers are cost-effective relative to chemical fertilizers. They have lower manufacturing costs, especially regarding nitrogen and phosphorus use.*

Bio-fertilizers are being essential component of organic farming are the preparations containing live or latent cells of efficient strains of nitrogen fixing, phosphate solubilizing or cellulolytic micro-organisms used for application to seed, soil or composting areas with the objective of increasing number of such micro-organisms and accelerate those microbial processes which augment the availability of nutrients that can be easily assimilated by plants. Biofertilizers play a very significant role in improving soil fertility by fixing atmospheric nitrogen, both, in association with plant roots and without it, solubilise insoluble soil phosphates and produces plant growth substances in the soil.

The increasing demand for the biofertilizers and the awareness among farmers and planters in the use of biofertilizers have paved way for the fertilizer manufactures and new entrepreneurs to get into biofertilizer production. Bio-fertilizers Demand is much higher than the availability. It is estimated that by 2020, to achieve the targeted production of 321 million tonnes of food grain.

Organic Farming is a method of farming system which primarily aimed at cultivating that land and raising crops in such a way as to keep the soil alive and in good health by use of organic wastes and other biological material along with beneficial microbes (biofertilisers) to release nutrients to crops for increased sustainable production in an eco-friendly, pollution-free environment.

India is an agro based country. So organic farming plays an important role in agro field. The popularity of organic farming is gradually increasing and now organic agriculture is practiced in almost all countries of the world, and its share of agricultural land and farms is growing. As the organic food market continues to expand, so do the opportunities for small farmers.

It is believed by many that organic farming is the much healthier and sustainable option. Although the health benefits of organic food are yet to be proven fully, consumers are willing to pay a higher premium for organic crops. Many farmers in India are shifting to organic farming due to the domestic and international demand for organic food.

Organic foods are produced through systematic farming methods that do not involve any usage of pesticides and harmful chemicals for production. India has around 4.2 Million hectares of land which is certified for organic farming. The emergence of organic farming is also creating a wide array of job opportunities. Increasing awareness towards nutritious and healthy food and changing lifestyle are surging the demand for organic food, particularly across the metro cities.

There is a good chance that India's organic opportunity could scale from \$500 million to about \$2 billion — approx \$1 billion catering to the domestic market and \$1 billion for export markets — by 2020.

This book gives a detailed process on manufacture of biofertilizers & organic farming. It contains chapters on biofertilizers, role of biofertilizer in crop production, production and distribution of biofertilizer, organic farming, method of organic farming, weed and pest management, and many more. This book will be very helpful to soil scientists, microbiologists, biologists, students, new entrepreneurs, fertilizer industry, organization engaged in biofertilizers production, training centres and to all those interested in the efficient use and recycling of wastes, resource management and sustainable farming.

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Contact us

Niir Project Consultancy Services

106-E, Kamla Nagar, Opp. Spark Mall,

New Delhi-110007, India.

Email: npcs.ei@gmail.com , info@entrepreneurindia.co

Tel: +91-11-23843955, 23845654, 23845886, 8800733955

Mobile: +91-9811043595

Fax: +91-11-23841561

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Niir Project Consultancy Services

**106-E, Kamla Nagar, Opp. Spark Mall,
New Delhi-110007, India.**

Email: npcs.ei@gmail.com , info@entrepreneurindia.co

Tel: +91-11-23843955, 23845654, 23845886, 8800733955

Mobile: +91-9811043595

Fax: +91-11-23841561

Website : www.entrepreneurindia.co , www.niir.org

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