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Zymo Biogrow - Sustainable Biosolutions for Organic Farming

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Introduction

Organic farming is a crop production method respecting the rules of the nature. It maximizes the use of on farm resources and minimizes the use of off-farm resources. It is a farming system that seeks to avoid the use of chemical fertilizers and pesticides. In organic farming, entire system i.e. plant, animal, soil, water and micro-organisms are to be protected. Today, organic farming is the focus of much public attention and agricultural industry debate. To date, the rise of organic farming has been driven by small, independent producers and consumers

Harm done to nature by usage of artificial chemical fertilizers

- Leaching out of chemicals Polluting water basins and water sources like river, canals, lakes and seas Destroying micro-organisms and friendly insects that are beneficial to soil and plant life thereby destroying the ecology
- Making crops more susceptible to the attack of diseases by not enabling plants to become disease resistant naturally
- Reducing the soil fertility and thus causing irrepairable damage to the eco-system.

Effect of organic products/organic manures on soil characters

- Recent research suggests that organic agriculture results in less leaching of nutrients and higher carbon storage, less erosion and lower levels of pesticides in water systems.
- The organic matter after decomposition release macro- and micronutrients to the soil solution, which becomes available to the plants, resulting in higher uptake.
- Organic farming was capable of sustaining higher crop productivity and improving soil quality and productivity by manipulating the soil properties on long term basis.
- Organic and low-input farming practices after 4 years led to an increase in the organic carbon, soluble phosphorus, exchangeable potassium, and pH and also the reserve pool of stored nutrients and maintained relativity stable EC level.
- Normal composting takes a long time leading to considerable loss of organic materials as CO2 or does not contribute to the organic pool.
- The use of compost raised soil pH from 6.0 without compost to 6.5 with compost and reduced the broadleaf weed population by 29 per cent and grassy weed population by 78 per cent.
- Degradation of soil organic matter reduced nutrient supplying capacity, especially, on soils with high initial soil organic matter content in rice-wheat cropping system.
- Organic farming improved organic matter content and labile status of nutrients and also soil physicochemical properties. Addition of carbonaceous materials such as straw, wood, bark, sawdust, or corn cobs helped the composting characteristics of manure. These materials reduced water content and raised the C : N ratio. However, under Indian conditions, joint composting of the manure slurries with plant residues was more viable and profitable than its separate composting.
- Use of FYM and green manure maintained high levels of Zn, Fe, Cu, and Mn in rice-wheat rotation.
- The decline in soil reaction might be due to organic compounds added to the soil in the form of green as well as root biomass which produced more humus and organic acids on decomposition.

ZYMO BIOGROW

- **Zymo Biogrow –** A product from United Alacrity India (P.) Ltd., Chennai developed as Eco-sustainable organic input used during the vegetative stage of plant growth
- Eliminates use of Synthetic Fertilizers
- Manufactured from Bio-molecules and hence is scalable for large plantation use
- Contains mainly organic inputs, hence is eco-sustainable. Better qualities of produce and increased yield
- Enhances disease resistance. Enables soil-augmentation that leads to soil enrichment and the quality of soil improves with successive farm cycles
- Increases soil's Cation Exchange Capacity (CEC)

KEY PRODUCT FEATURES OF ZYMO BIOGROW:

- Acts as a Bio-catalyzer and Bio-simulator which enhances the physiological process converts complex organic compounds into simple compounds, so that plant can absorb them as nutrients
- A unique biological Plant Growth Promoter and Systemic Resistance Product
- Specifically designed to enhance soil fertility over a longer period of time such as Respiration, Cell Division, Photosynthesis, Cell elongation and Energy Transfer
- Made up of mostly organic Inputs and therefore completely Eco-sustainable to use
- Enables the plant to fix nitrogen from the atmosphere as a source of nutrient Increases Phosphorous content of the soil by solubilizing and releasing available phosphorous
- Economical to use and no residual side effects