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Concepts of Bio-fertilizers

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Concept of biofertilizer

INTRODUCTION

Biofertilizer technology is not a new concept.

It involves inoculation of beneficial microorganisms that help nutrient acquisition by plants through fixation of nitrogen, solubilization and mobilization of other nutrients.

Multifarious advantages of biofertilizers leads to its wide applicability in sustainable agriculture.

Concept of biofertilizer

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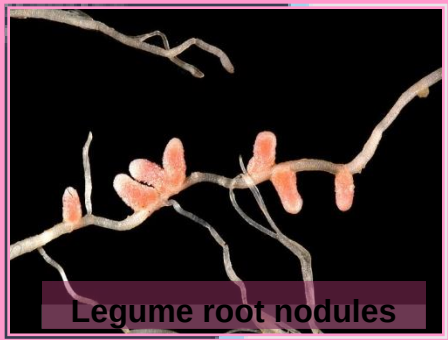


Legume root nodules

Rhizobium bacteria inside nodule

Biofertilizer concept goes back as early as 300 BC when our ancestors realized the importance of legume crops bearing nodules.

The perspective of biofertilizer came into existence through discovery of many organisms capable of nitrogen fixation, P-solubilization, P. mobilization, potash solubilization and micronutrient transformation in the soil.

The role of biofertilizers assumes special significance due to increased cost of chemical fertilizers and their ill effects on soil health

Concept of biofertilizer

Biofertilizers

The term biofertilizer refers to preparation containing live microbes which helps in enhancing the soil fertility either by fixing atmospheric nitrogen, solubilization of phosphorus or decomposing organic wastes or by augmenting plant growth by producing growth hormones with their biological activities.

Rhizobium Bacteria

Bacteria in root surface

Bacteria in root surface

Legume inoculation

Concept of biofertilizer

Advantages of Biofertilizers

- Renewable source of nutrients
- Sustain soil health
- Supplement chemical fertilizers.
- Replace 25-30% chemical fertilizers
- Increase the grain yields by 10-40%.
- Decompose plant residues, and stabilize C:N ratio of soil
- Improve texture, structure and water holding capacity of soil
- No adverse effect on plant growth and soil fertility.
- Stimulates plant growth by secreting growth hormones.
- Secrete fungistatic and antibiotic like substances
- Solubilize and mobilize nutrients
- Eco-friendly, non-pollutants and cost effective method

Concept of biofertilizer

BIOFERTILIZER ORGANISMS

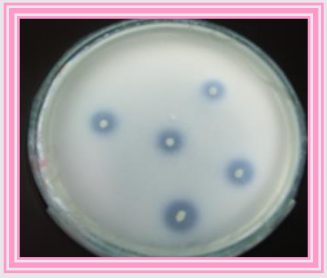

RHIZOBIUM

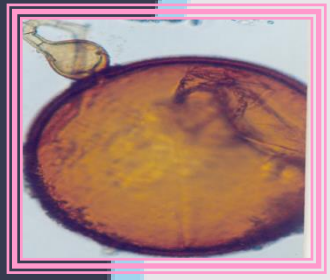
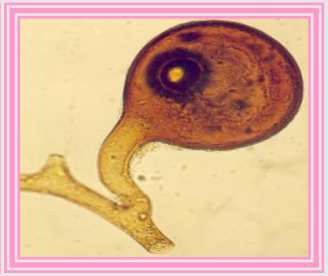
AZOTOBACTER



PSB

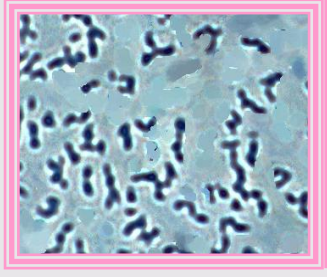
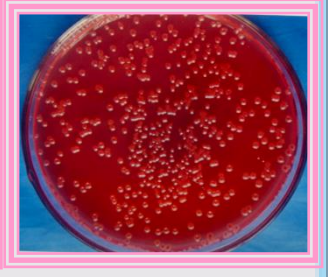
BLUE GREEN ALGAE



AZOSPIRILLUM

VA-MYCORRHIZA

Concept of biofertilizer

LET US SUM UP

Application of biofertilizer is not a new concept.

Importance of legume crop bearing nodules has significant role for improving soil fertility.

Soil harbours many beneficial microorganisms that help in nitrogen fixation, phosphate and other nutrient transformation in the soil for better crop growth.

Concept of biofertilizer

LET US SUM UP

The term biofertilizer refers to preparation containing live microorganisms, which helps in enhancing the soil fertility either by fixing atmospheric nitrogen, solubilization / mineralization of phosphorus and potassium or decomposing organic wastes or by producing plant growth substances.

The advantages of biofertilizers are many fold, sustain soil health, supplement chemical fertilizers, increase grain yield, secrete plant growth substances, solubilize and mobilize nutrients etc.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Thank you…