



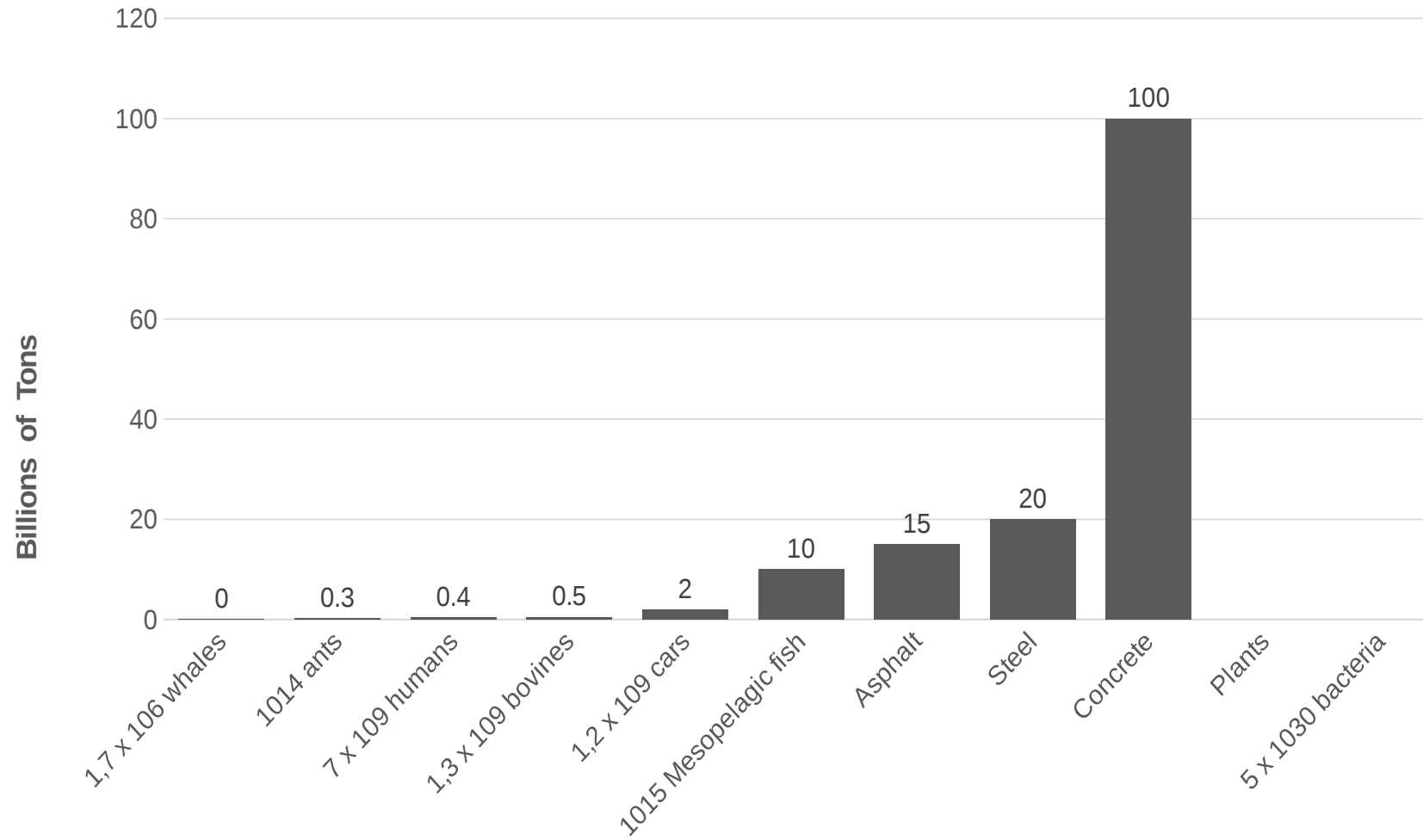
WHERE SCIENCE SERVES NATURE

A close-up photograph of vibrant green corn leaves, with several water droplets visible on their surfaces. The leaves are layered, creating a sense of depth and texture. The background is a soft, out-of-focus green.

THE NEW VALAGRO LINE OF MICROBIAL-BASED SOLUTIONS

OVERVIEW

Approximate quantity of target oriented, live, evolution derived vs artificial matter

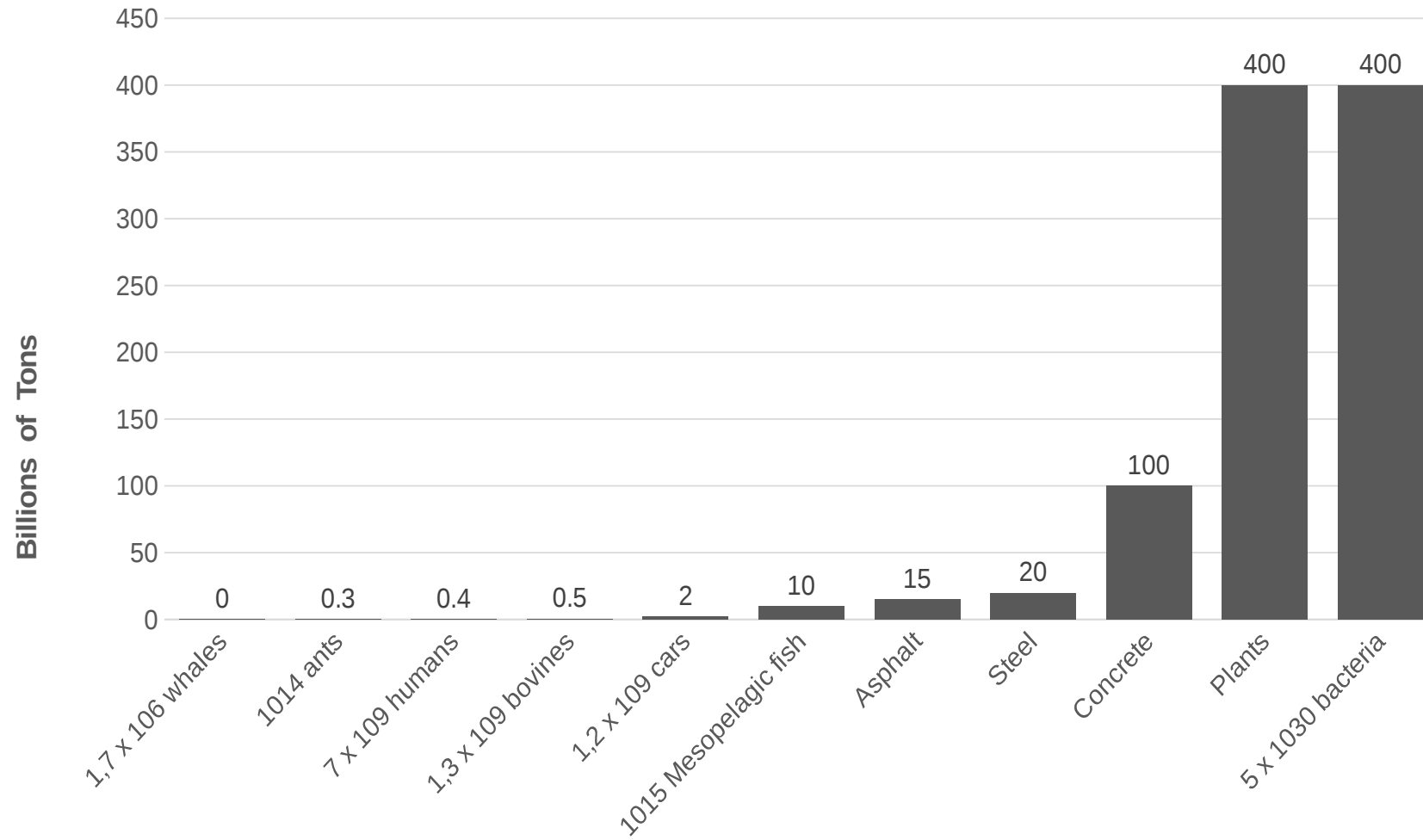


Max Tegmark – “Life 3.0”

Strictly
confidential



Approximate quantity of target oriented, live, evolution derived vs artificial matter



bacteria

Max Tegmark – “Life 3.0”

Strictly
confidential



The new portfolio: umbrella and brand names

BIOSTIMULANTS

HEIKO *root*

HEIKO *seed*

BIOFERTILIZERS

HYORO *P^{LG}* LUS

HYORO *P^L* LUS

HYORO *MY⁺*

BIOCONTROL

FLOREZEN

TRICOZEN

- We finally have a line

BIOSTIMULANTS

BIOFERTILIZERS

BIOCONTROL



- We finally have a line

BIOSTIMULANTS

BIOFERTILIZERS

BIOCONTROL

stimulation



solubilization



protection



1

- We have targets

We know
where we want
to get

2

Biofertilizers (WW)

Source: Global Markets Insights

Value: **2** bUSD

Source: Market Data Forecasts

2

Biofertilizers (**India**)

Source: Global Markets Insights

Value: **3.2** b INR

Source: Market Data Forecast

2

Source: Global Markets Insights

Pesticides (**India**)

**There is an ocean
outside we have to
explore**

2

Source: Global Markets Insights



- The **GEAPOW**ER approach will make the difference

3

field sampling

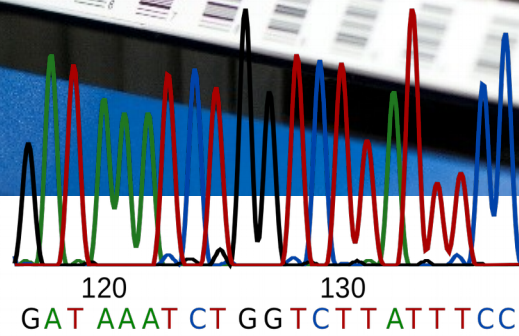


Pigeon pea from Cheryal village



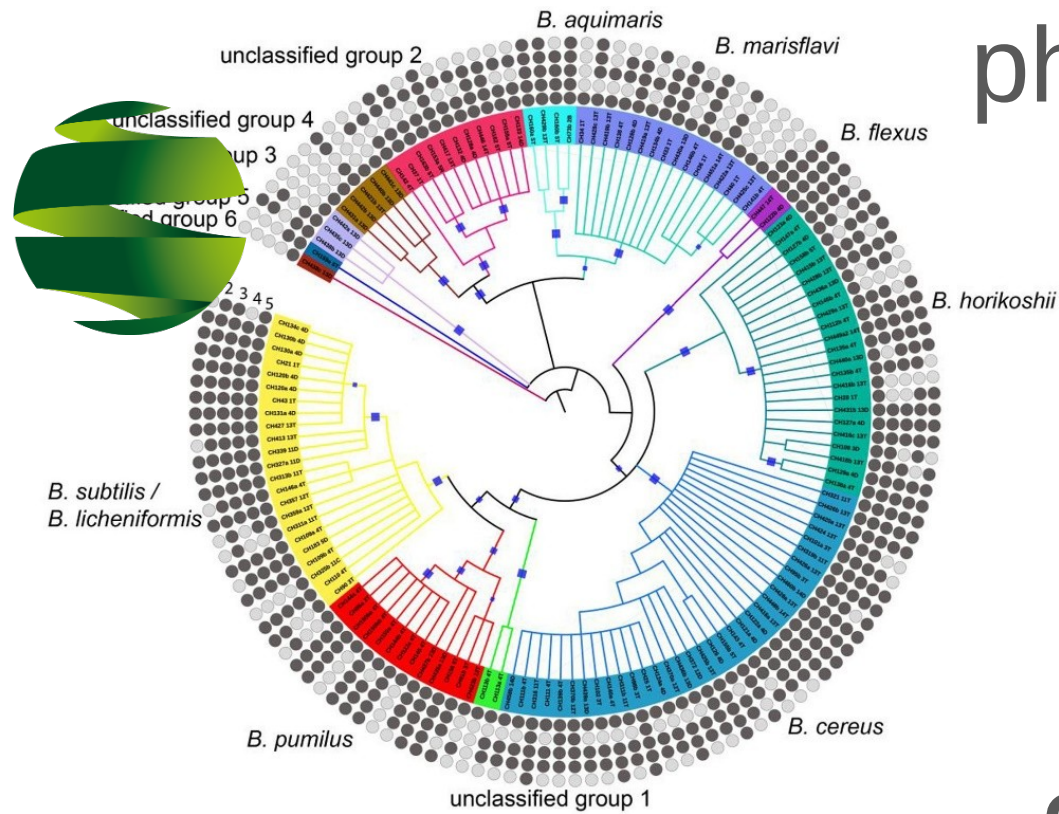
3

DNA extraction



DNA sequencing

3



phylogenetic analysis

SAFE DEPOSIT

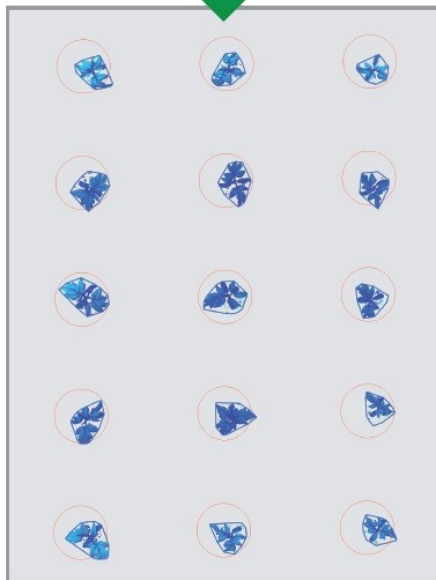
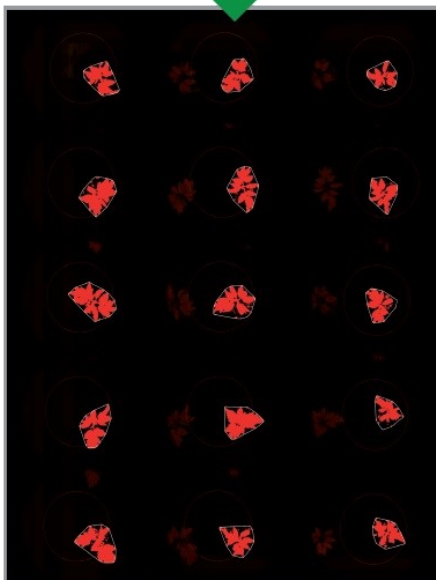
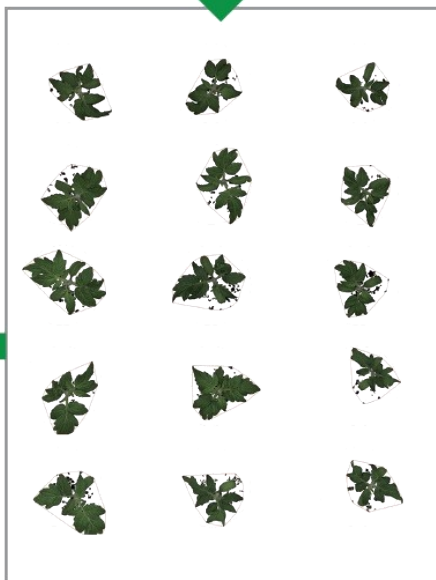
3

NCMR
राष्ट्रीय सूक्ष्मजीव संपदा केंद्र

NATIONAL CENTRE FOR MICROBIAL RESOURCE

NATIONAL CENTRE FOR CELL SCIENCE

Department of Biotechnology (DBT), Government of India
Member of WFCC | An IDA under the Budapest Treaty | DNR of MoEF



3

The new portfolio: umbrella and brand names

BIOSTIMULANTS

HEIKO *root*

HEIKO *seed*

BIOFERTILIZERS

HYORO *P^{LG}* LUS

HYORO *P^L* LUS

HYORO *MY⁺*

BIOCONTROL

FLOREZEN

TRICOZEN

The new portfolio: umbrella and brand names

BIOSTIMULANTS

HEIKO root

HEIKO seed

stimulation



HEIKO *root*



HEIKO *seed*



HEIKO *root*

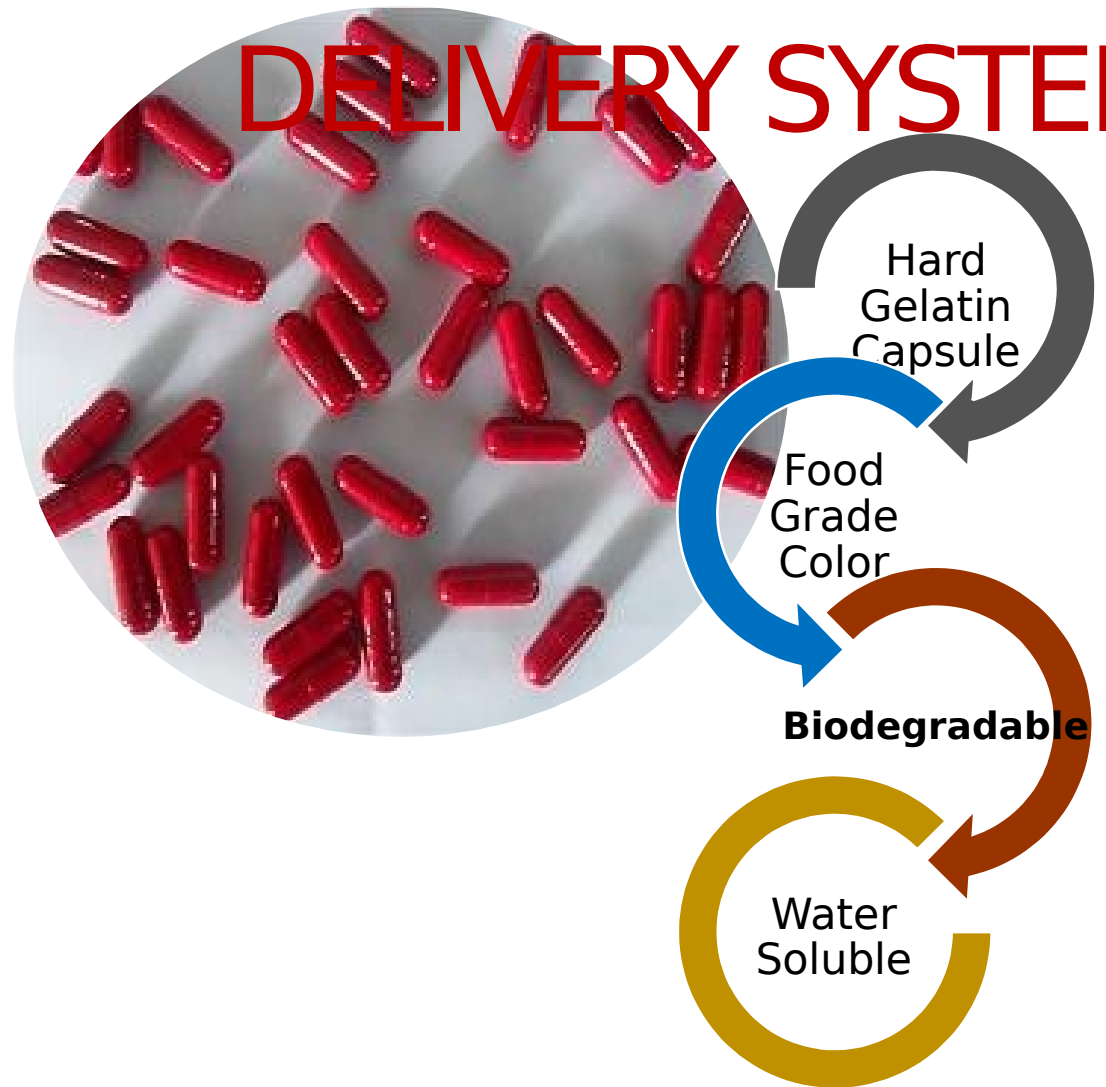


quick description
HEIKO root is a
**NOVEL MICROBIAL
DELIVERY SYSTEM**
produced through
multi-stage
fermentation, made
from **CONSORTIA OF
MICROORGANISMS**

HEIKO *root*



the easy-to-use
DELIVERY SYSTEM



HEIKO *root*



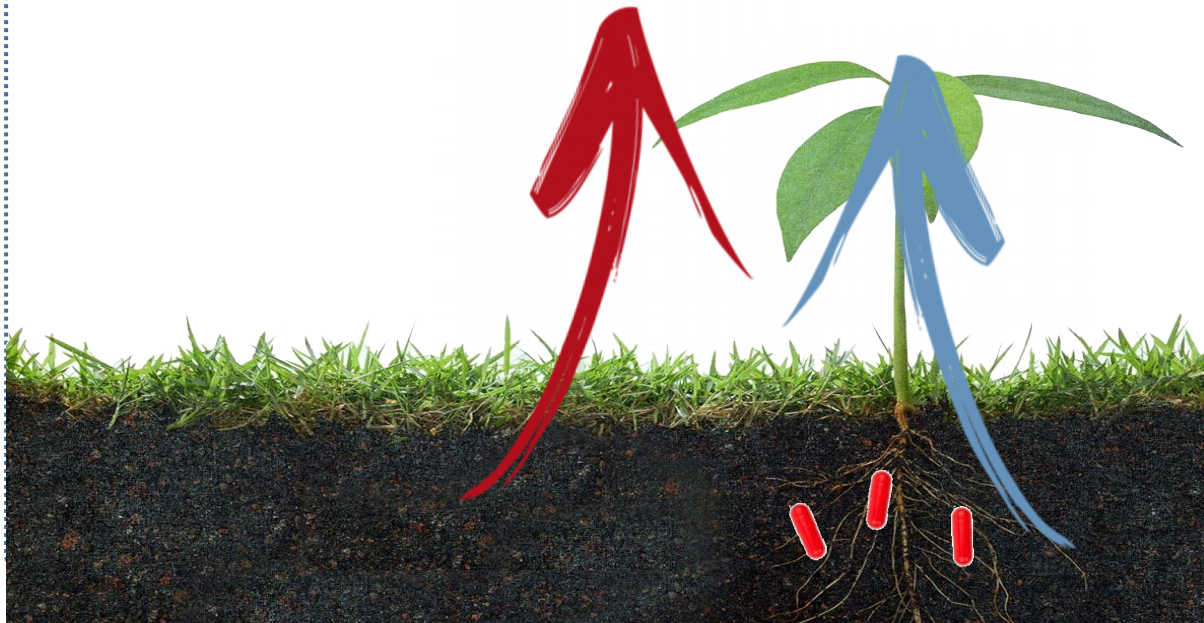
what it does
it

**INCREASES ROOT
GROWTH
and PROVIDES
STRONGER AND
FASTER VEGETATIVE
DEVELOPMENT**

Nursery & Plantlets: one capsule near to the seed or the root zone; **Vegetables:** 2-3 capsules/plant; **Big plants:** 10 caps per tree at the base.

For spray: dissolve in required quantity of water

HEIKO *root*





quick description

HEIKO seed is
**PROMOTER OF
GERMINATION**

HEIKO  *seed*



what it does
it **SPEEDS UP** and makes
EMERGENCE OF
SEEDLINGS UNIFORM,
increasing **GERMINATION**
PERCENTAGE.
HEIKO seed provides **FAST**
AND ROBUST GROWTH

Soil application (soil and overhead fertigation, drench):
dissolve 300g of HEIKO Seed in 150-200 liters of water and
apply uniformly on one acre crop.

HEIKO  **seed**



The new portfolio: umbrella and brand names

BIOFERTILIZERS

HYORO^{PLUS}_G

HYORO^{PLUS}_L

HYORO^{MY}₊

solubilization



HYORO^{PG}_{LUS}

HYORO^L_{LUS}

15

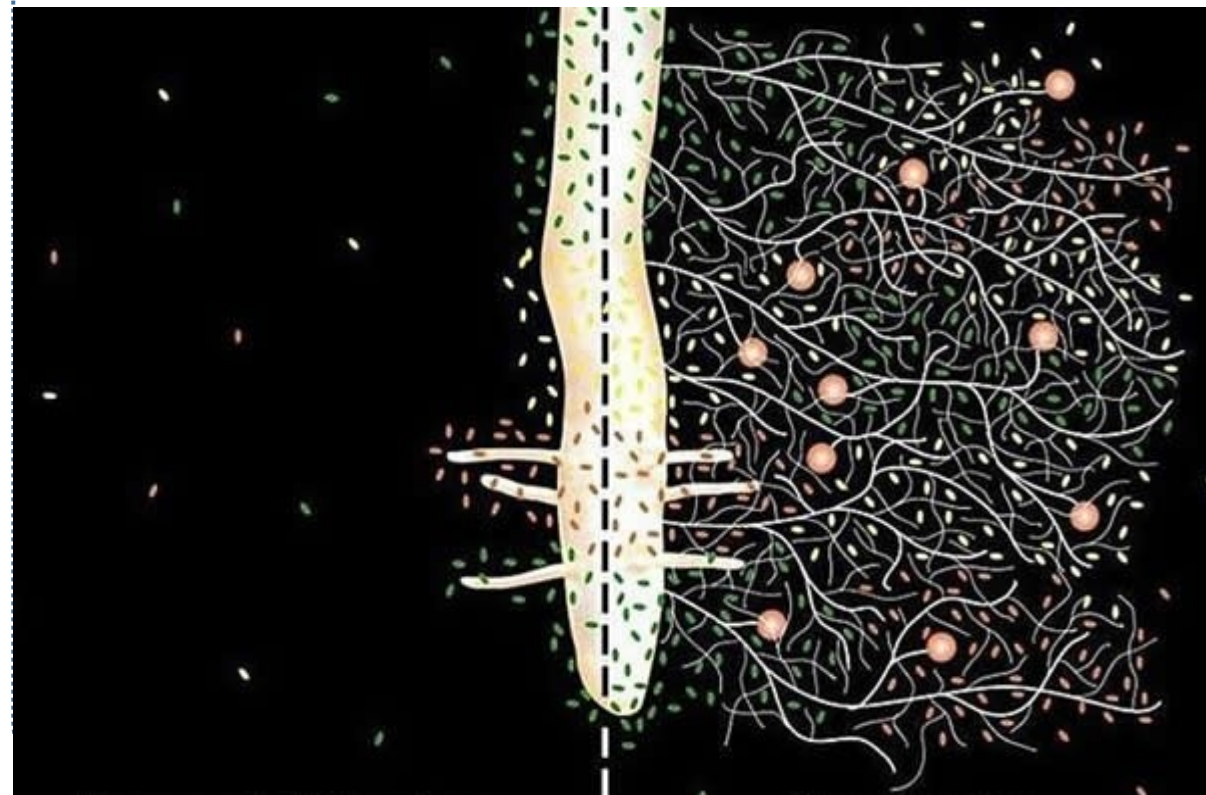
P

Phosphorus

30.974

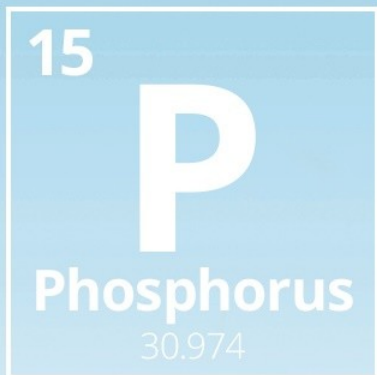


HYORO^{MY}₊



HYORO^{PG}
LUS

HYORO^L
LUS



quick description
high-performance
phosphorous
solubilisers, an
effective component of
a **SUSTAINABLE
APPROACH TO P-
NUTRITION**

HYORO^{PG}_{LUS}

HYORO^L_{LUS}

15

P

Phosphorus

30.974



HYORO^{PG}_{LUS}

GRANULAR

LIQUID

HYORO^L_{LUS}

HYORO Plus G Apply **4-8kg/acre**. It is suitable to all crops (arable & industrial crops, fruits & vegetables, nuts & plantation crops, ornamentals).

The content of the pack is sufficient to be broadcasted on soils before seed sowing, after seed sowing, during transplantation of any crop, irrespective of soil types.

Ensure moisture in the soil at the time of application.

HYORO Plus L, **250-500 ml / acre** by fertigation. HYORO PLUS L is suitable to all crops (arable & industrial crops, fruits & vegetables, nuts & plantation crops, ornamentals) in the most diverse environmental conditions.

HYOROP^{PG}_{LUS}

HYOROP^L_{LUS}

15

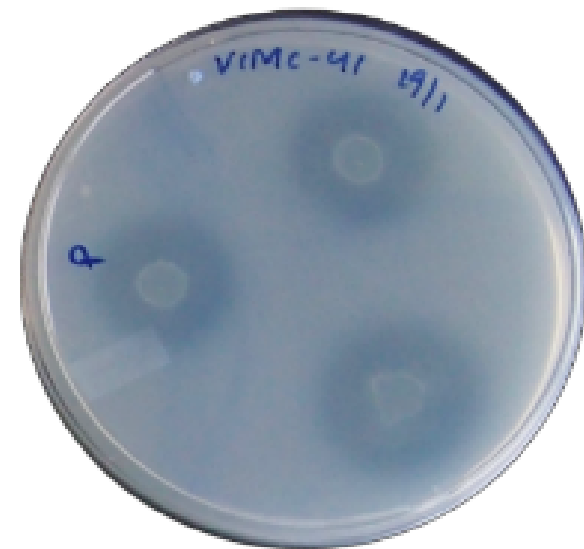
P

Phosphorus

30.974



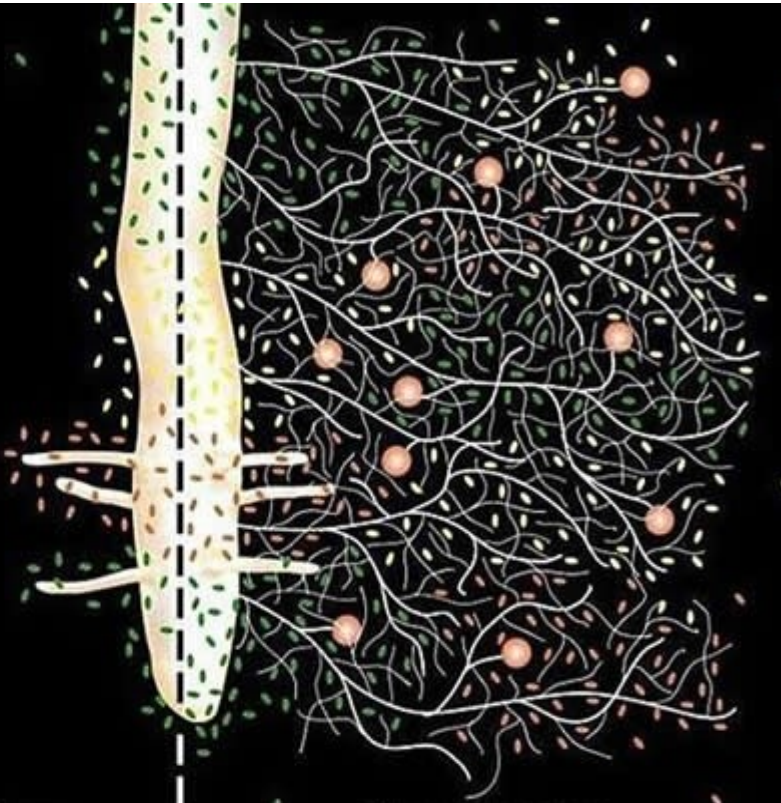
They are the
**UNIQUE
OUTCOME** of a
**RESEARCH
PROCESS** to
provide the
excellence as far as
Phosphorous
solubilisation is
concerned.



HYORO^{MY+}

quick description

HYORO MY⁺ is the
Valagro solution for the
**SUPPLEMENT OF
MYCORRHIZAE TO
SOILS**



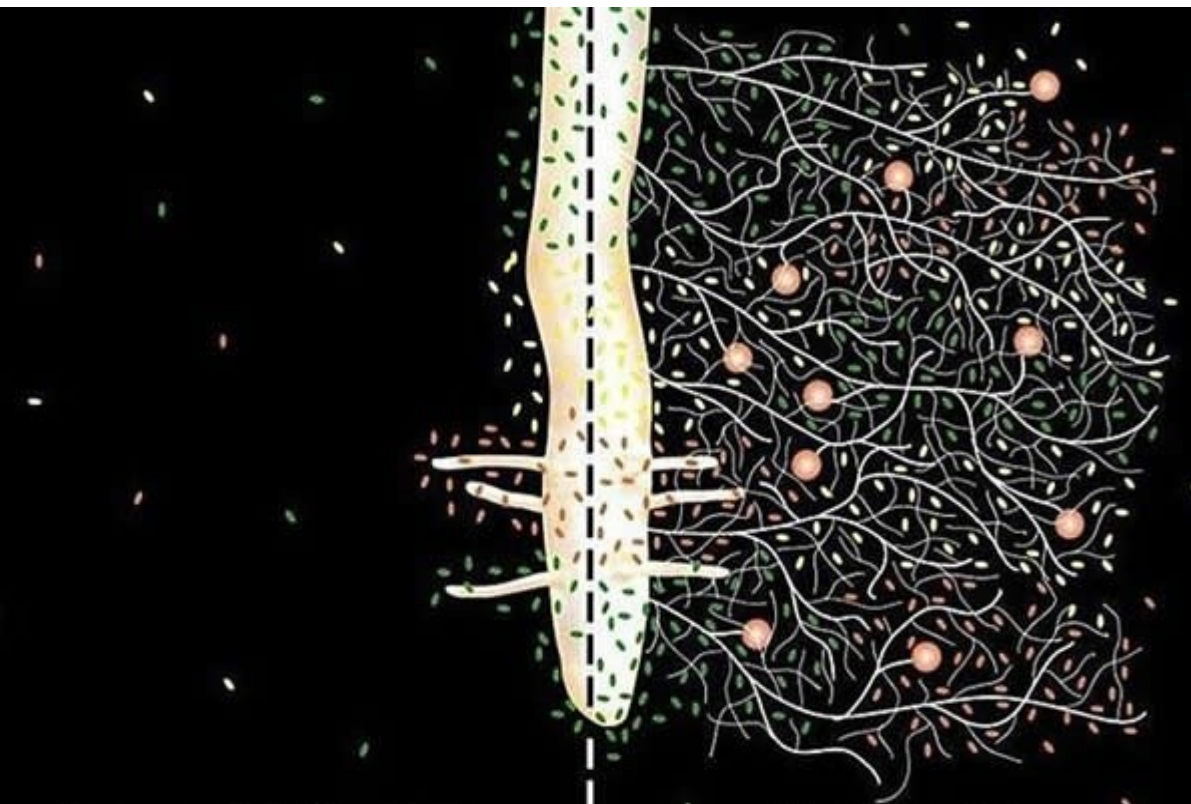
HYORO^{MY+}

what it does

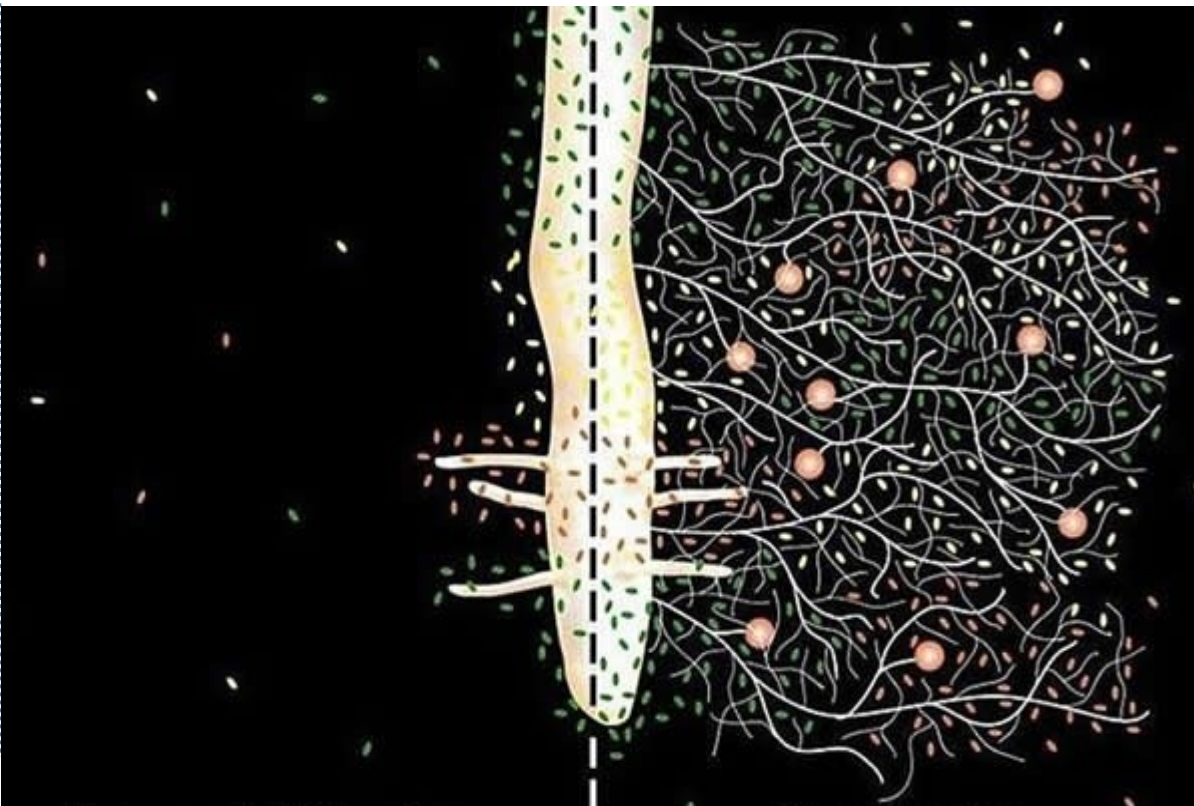
HYORO MY⁺ forms kilometres of filaments
as an **EXTENDED ROOT
SYSTEM** to

- enhance water and nutrient uptake
- optimize irrigation efficiency
- increase drought and other abiotic stress tolerance

4-8 kg/acre. Mix 4kg of HYORO MY⁺ with any moist soil/FYM and broadcast on 1 acre (row crops) or apply at the base of individual plant (horticulture crops).

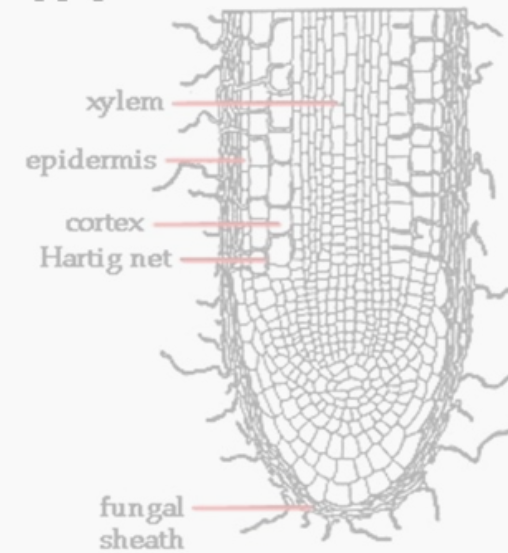


HYORO^{MY+}

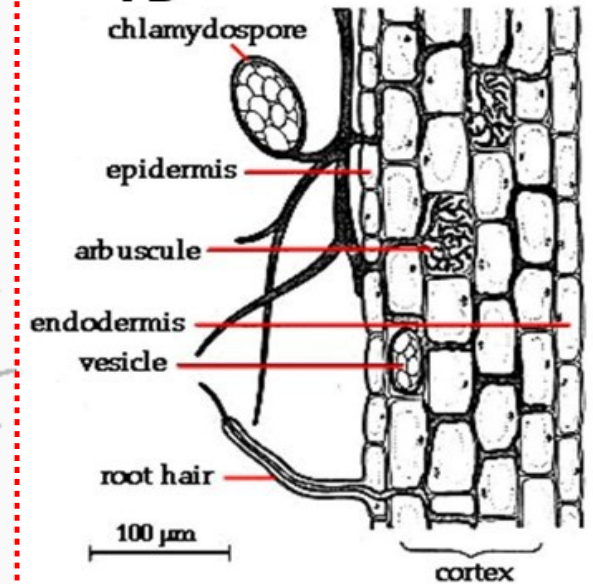


Concept 1: HYORO MY⁺ consists of ENDOMYCORRHIZAE

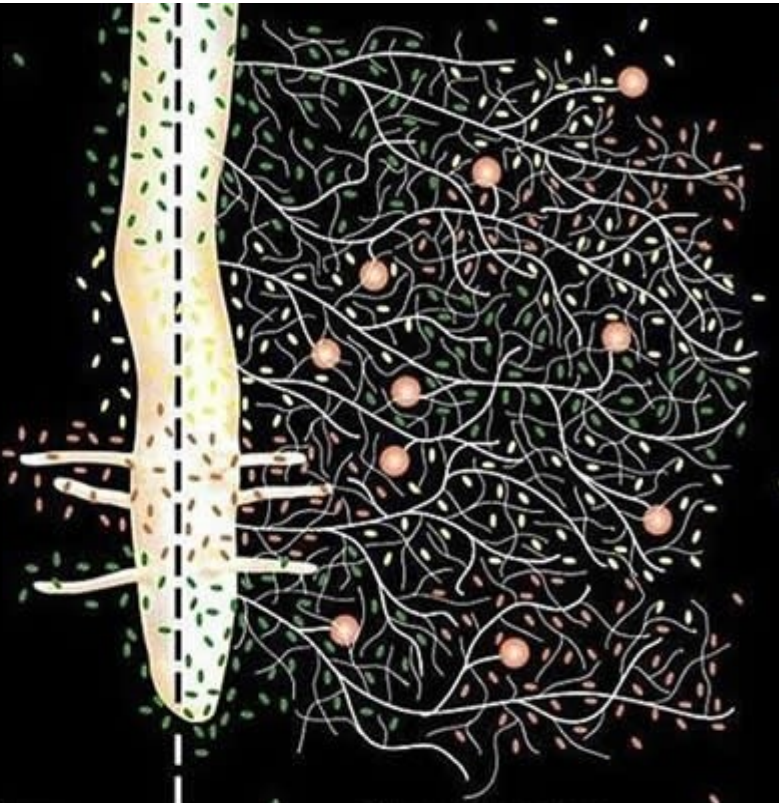
1A Ectomycorrhizae



1B Endomycorrhizae



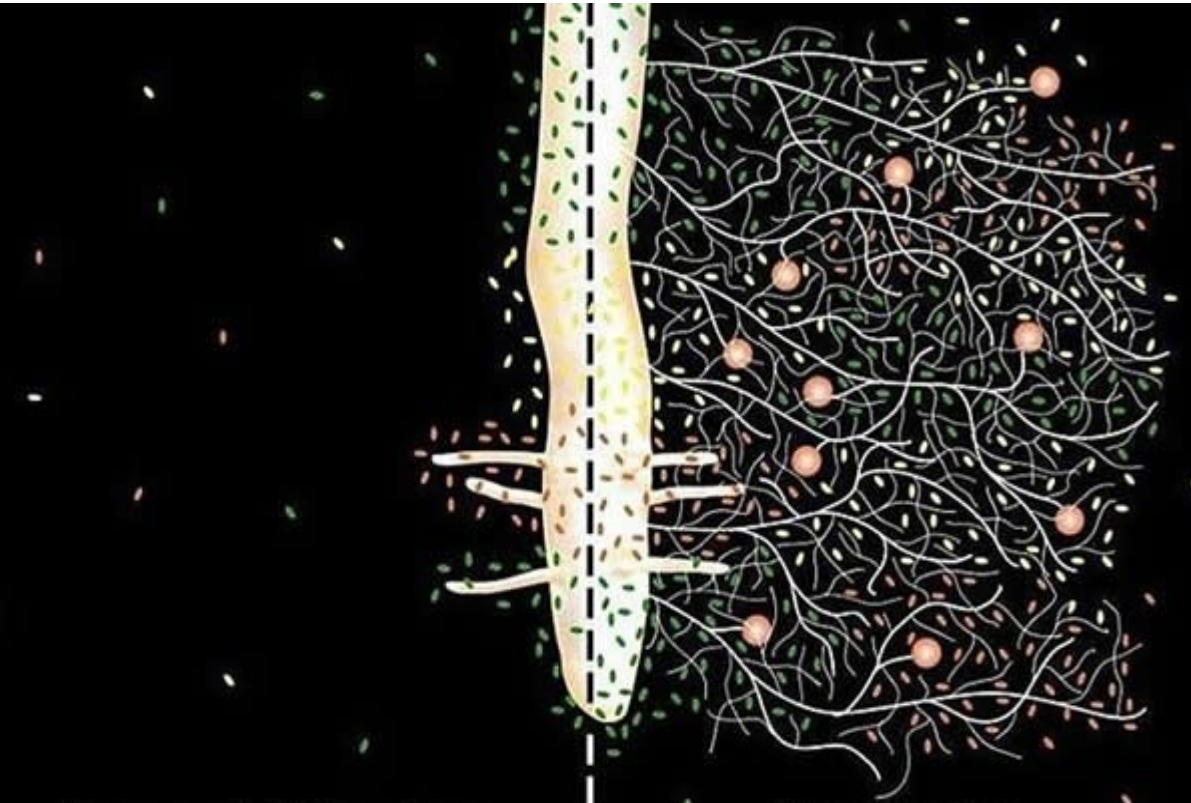
HYORO^{MY+}



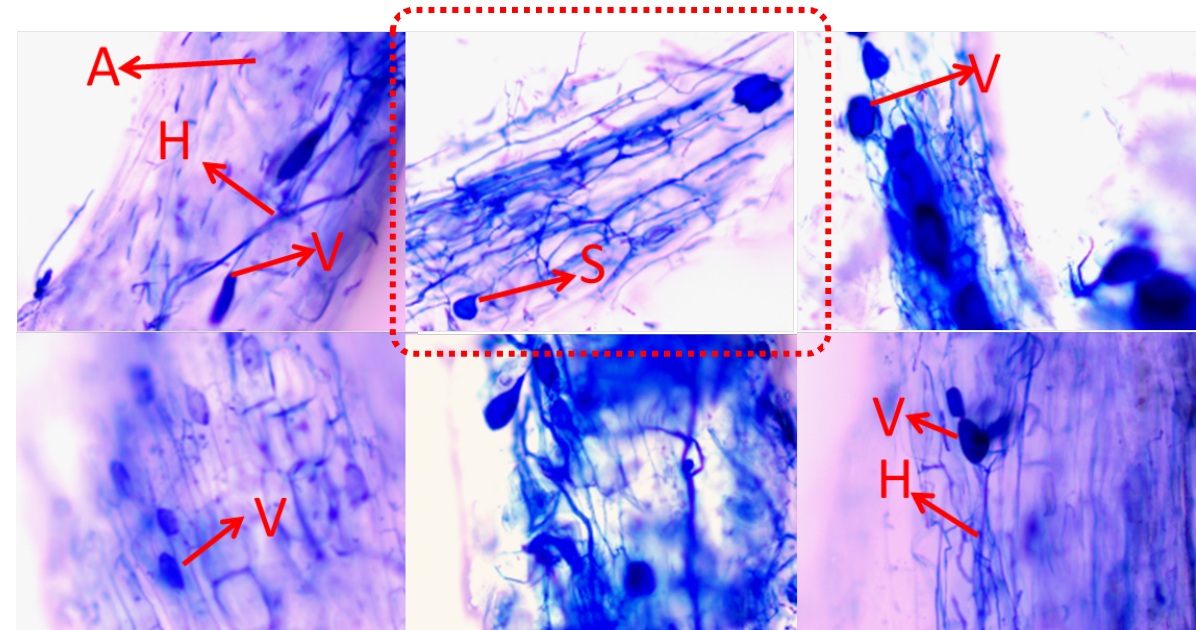
Concept 2: HYORO MY⁺ is a complete formulation to make the solution MORE EFFECTIVE

 **PLANTS** 
ALGAE
 **MICROBIALS**

HYORO_{MY}⁺

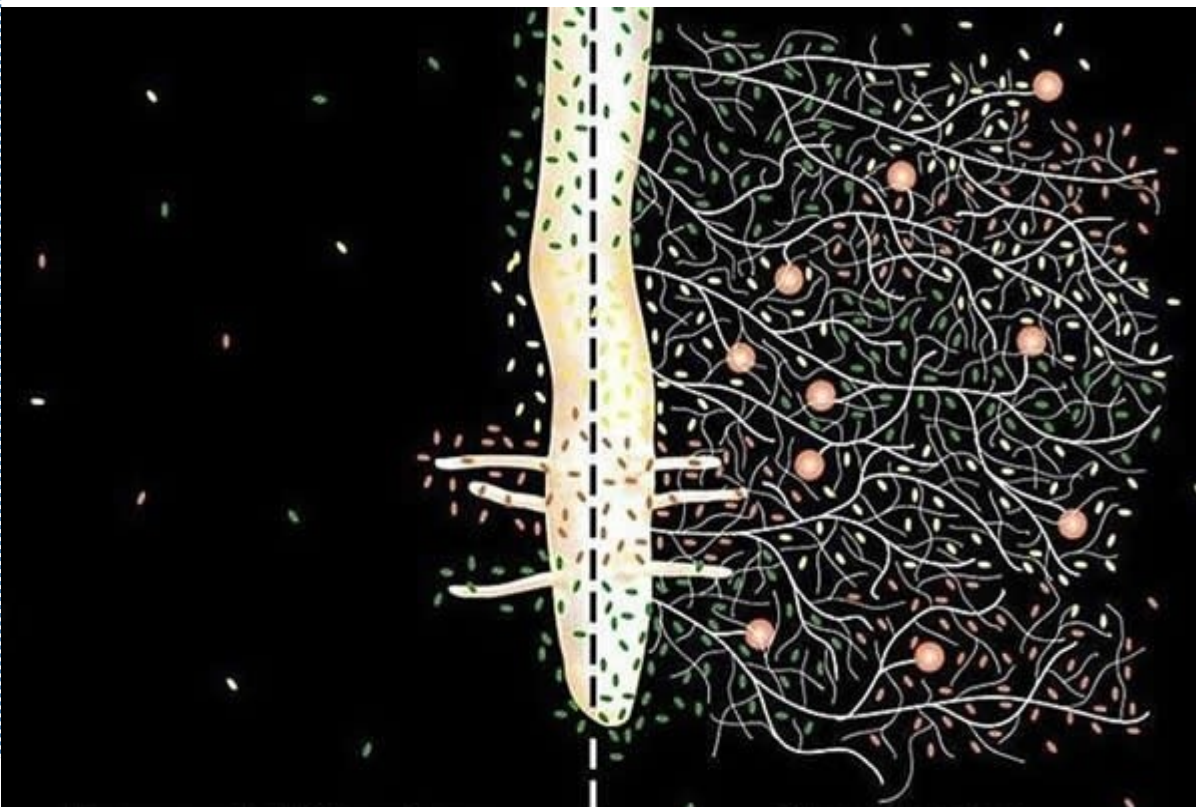


Concept 3: we do guarantee the n. of
VIABLE SPORES/g

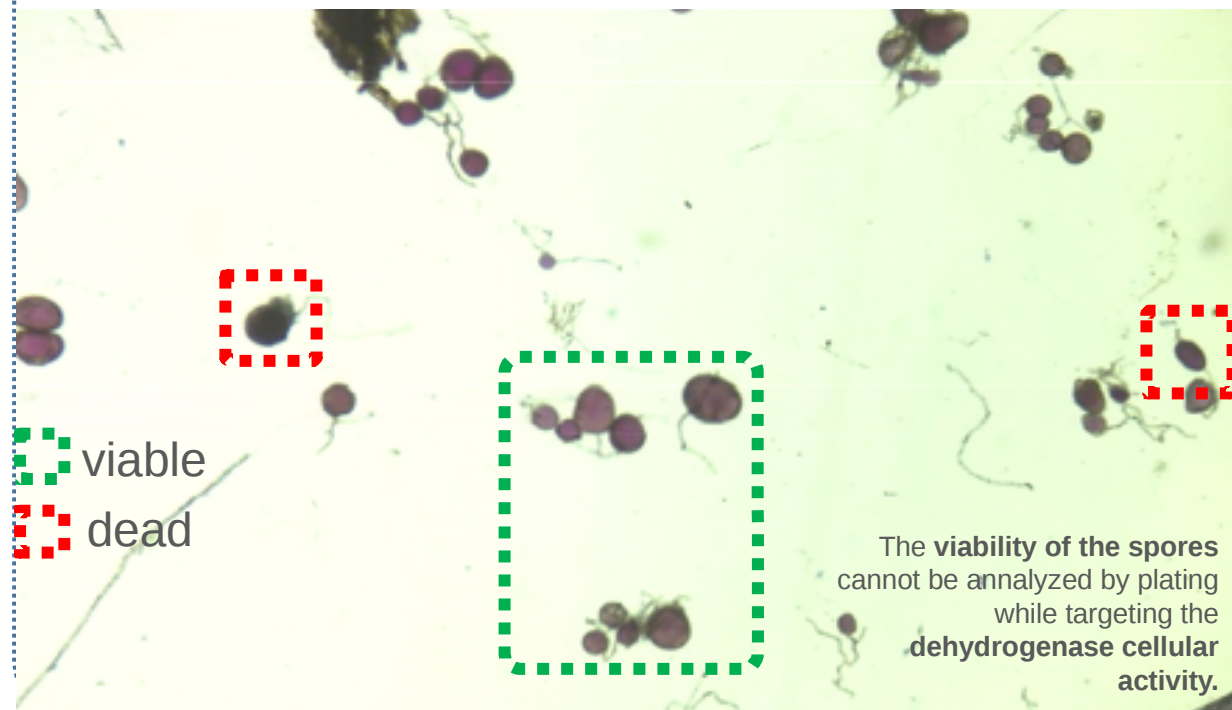


H-Hyphae, A-Arbuscules, V-Vesicles, S-Spores

HYORO_{MY}⁺

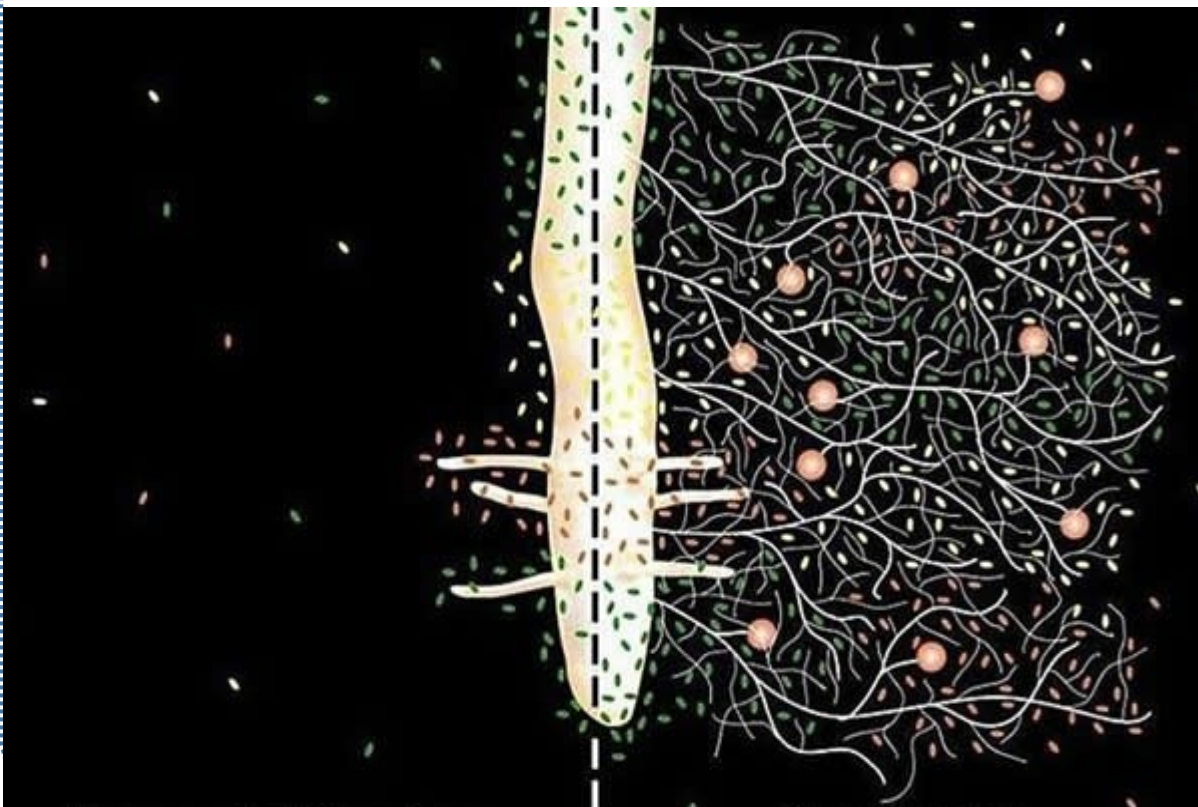


Concept 3: we do guarantee the n. of
VIABLE SPORES/g

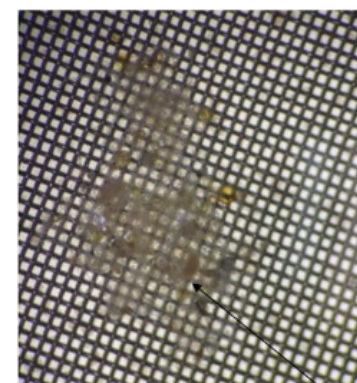


The **viability** of the spores
cannot be analyzed by plating
while targeting the
dehydrogenase cellular
activity.

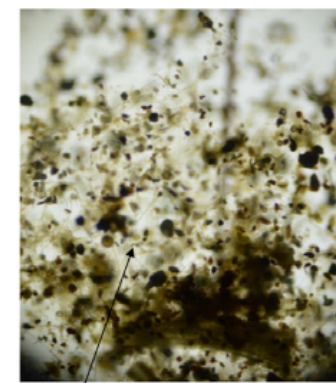
HYORO_{MY}⁺



Concept 3: we do guarantee the n. of
VIABLE SPORES/g

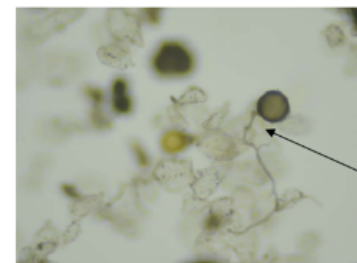


5-22661



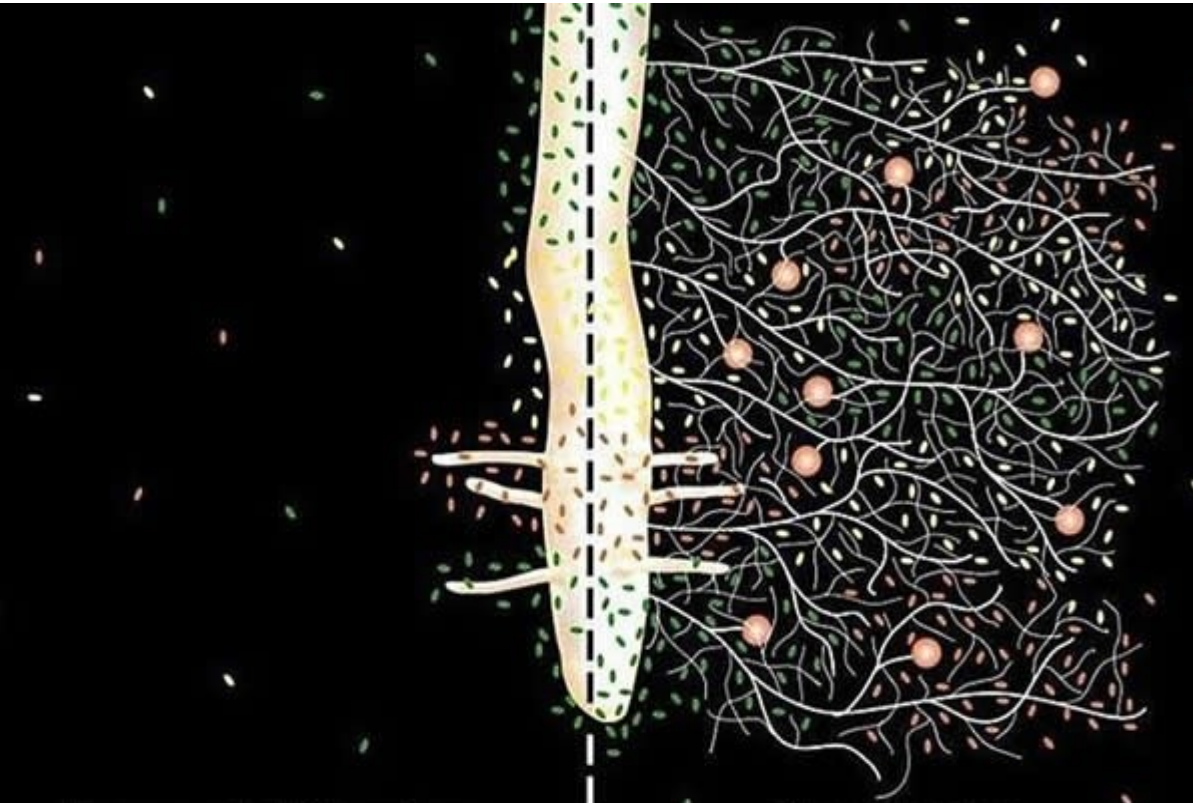
5-22662

Mycelium produced from the spores



Germinated spore

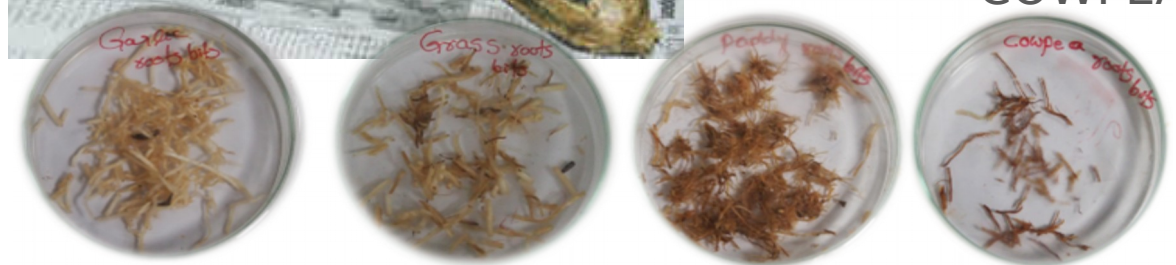
The **viability of the spores** cannot be analyzed by plating while targeting the **dehydrogenase cellular activity**.



Concept 4: everything is followed by FIELD ASSESSMENTS



washed roots
of GARLIC,
GRASS,
PADDY and
COWPEA



BIOCONTROL

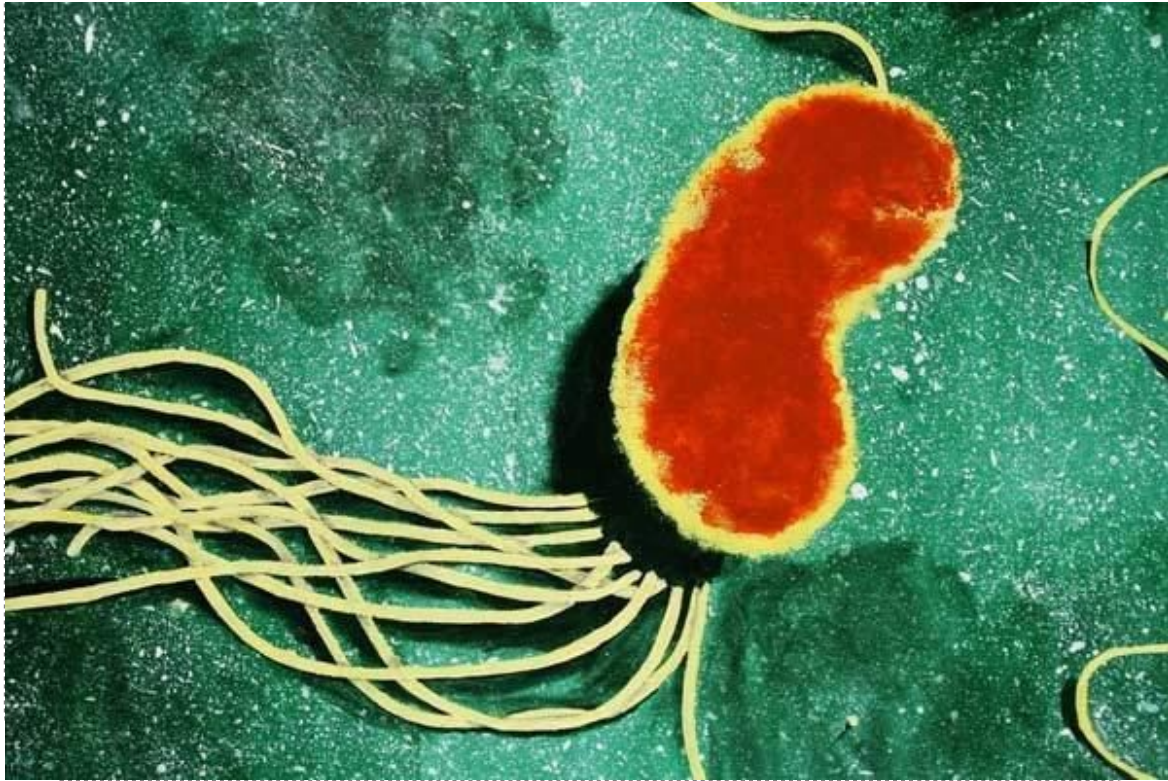
FLOREZEN

TRICOZEN

protection



FLOREZEN



*Pseudomonas
fluorescens 1% (WP)*

FLOREZEN



Targets PESTS & DISEASES

Crop	Target plant disease	Target plant pathogen/pest
Carrot	Root knot nematode Bacterial soft rot	<i>Meloidogyne incognita</i> <i>Erwinia carotovora</i>
Okra	Root knot nematode Vascular wilt	<i>Meloidogyne incognita</i> <i>Fusarium oxysporum</i> f.sp. <i>vasinfectum</i>
Tomato and Brinjal (Eggplant)	Root knot nematode Bacterial wilt	<i>Meloidogyne incognita</i> <i>Ralstonia solanacearum</i>

FLOREZEN



APPLICATIONmethod

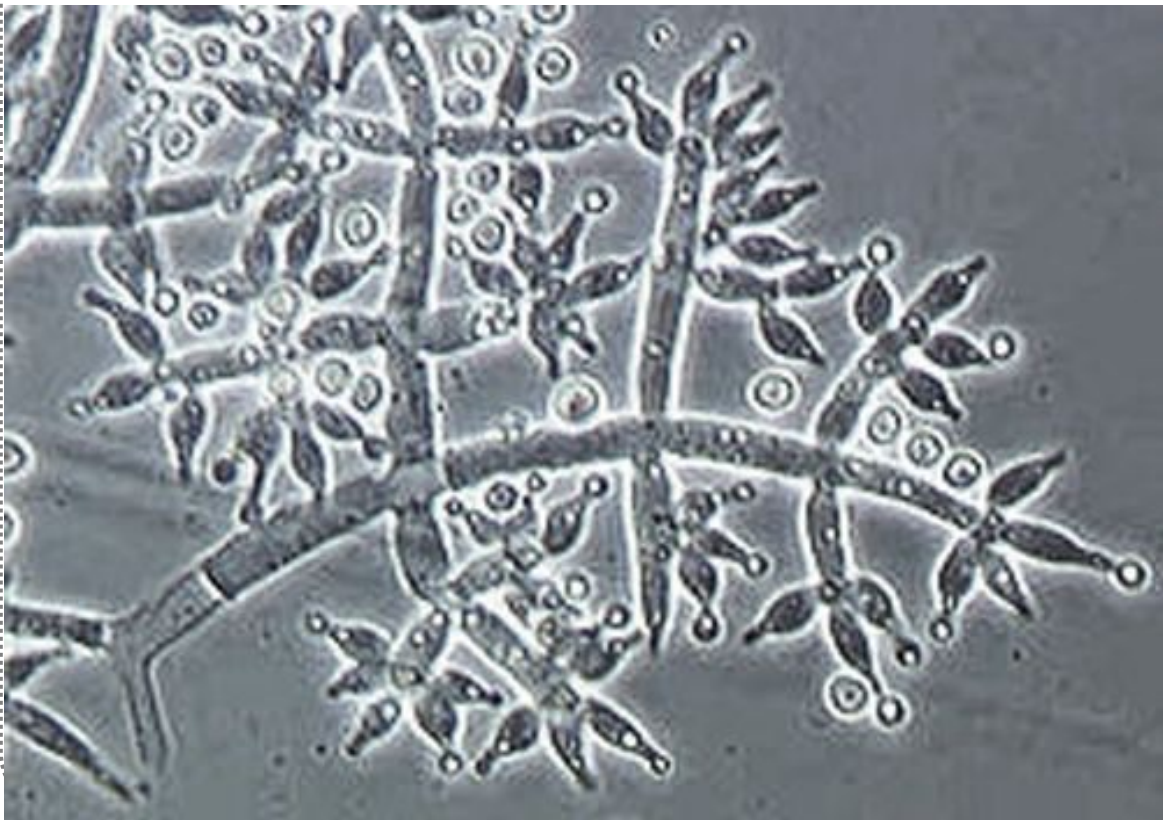
- Seed application: 20gm/kg seed
- Nursery treatment: 50gm/sq.mt
- Soil application: 5 MT/ha of enriched FYM*

*Enriched FYM (Farm Yard Manure): add 1 kg of Florezen to 1 MT of FYM or compost to enrich it. FYM added with this biopesticide should be left under shade for a period of 15 days, maintaining optimum moisture and in between it should be mixed thoroughly at an interval of days for proper enrichment of FYM with this bioagent.

Equipment used in application: seed treatment drums and foliar sprayers like knapsack sprayer, compressor knapsack sprayer, compressor knapsack battery sprayer, ASPEE-HTP power sprayer.

Re-entry: immediately after sowing of treated seeds and seed bed and main field treatment.

TRICOZEN



Trichoderma harzianum
1% (WP)

TRICOZEN



Trichoderma harzianum 1.0% WP (Strain No. IIHR-TH-2 Accessions No. ITCC6888)

Tomato	Root-knot nematode Wilt causing fungi (Fusarium)	Treat the seed with trichoderma Harzianum 1% WP @ 20 gm/kg of seeds & treat the nursery beds with the trichoderma harzianum 1% WP @ 50gm/sq.m and apply Trichoderma Harzianum 1% WP @ 5kg/ha enriched FYM* @ 5tons /hectare to the soil before transplanting.
Brinjal	Root-knot nematode Wilt causing fungi (Fusarium)	Treat the seed with trichoderma Harzianum 1% WP @ 20 gm/kg of seeds & treat the nursery beds with the trichoderma Harzianum 1% WP @ 50gm/sy.m and apply Trichoderma Harzianum 1% WP @ 5kg/ha enriched FYM* @ 5tons /hectare to the soil before transplanting.
Carrot	Root-knot nematode Root rot (Sclerotium rolfsi)	Treat the seed with trichoderma Harzianum 1% WP @ 20gm/kg of seeds and apply trichoderma Harzianum 1% WP @ 5kg/ha enriched FYM* @ 5tons/hectare to the soil before sowing.
Okra	Root-knot nematode Wilt causing fungi (Fusarium)	Treat the seed with trichoderma Harzianum 1% WP @ 20gm/kg of seeds and apply trichoderma Harzianum 1% WP @ 5kg/ha enriched FYM* @ 5tons/hectare to the soil before sowing.

everyone is looking at **INDIA**



WIN THE GLOBAL CHALLENGE TOGETHER



Where science serves nature



Follow us on | www.valagro.com |    