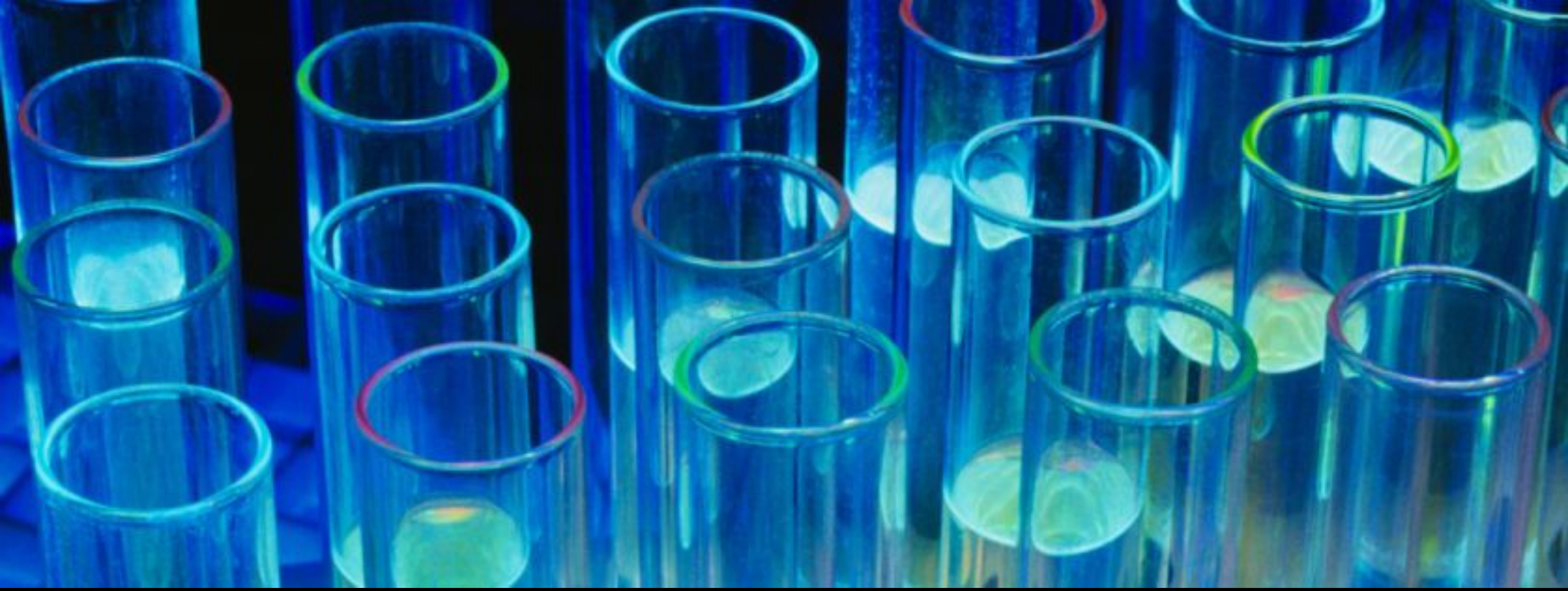

Microbes are revolutionalizing the green industry and we're hear to make sure you are a part of it!

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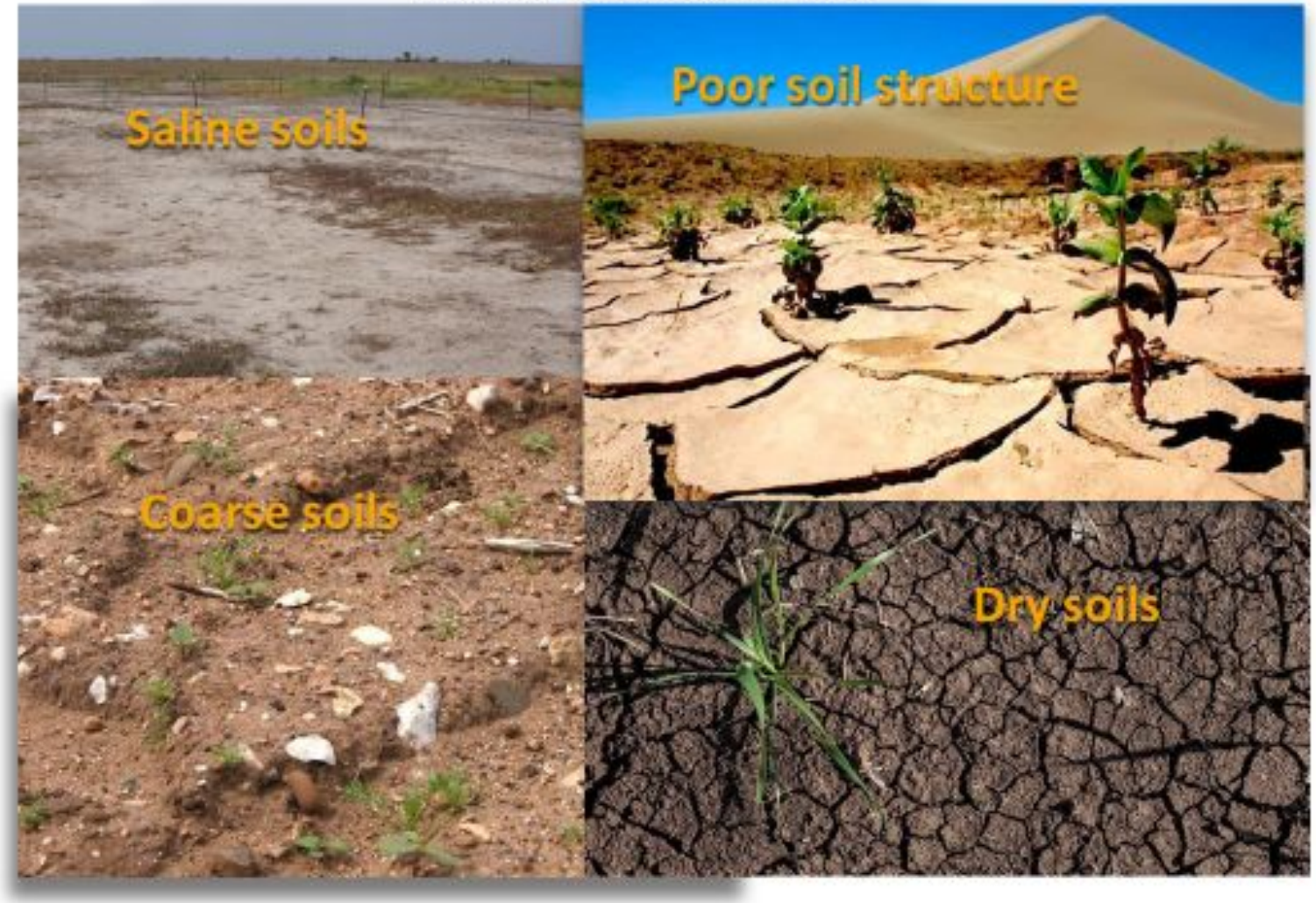
TREE, TURF & HORTICULTURAL SPECIALISTS

Common soil constraints for arborists & horticulturalists



Dryness, lack of water, overused soil…

Soil Engineering is about building your
“Biological Soil Bank”
with nutrients sequestered via organic matter & microbes. Using microbes to solubilize and mobilize nutrients that are locked up is vital and the landscapes you have been feeding for years have plenty of stored up potential!

Banner Sales offers a full range of complex microbes which will compliment your PHC programs with our custom blended cocktails.

EcoVam GXT Ultra SP

What is EcoVam made of?

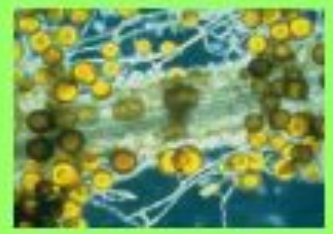
What does EcoVam do in the soil or to the plant?

Results from field trials!

Microbial inoculants

Beneficial fungi

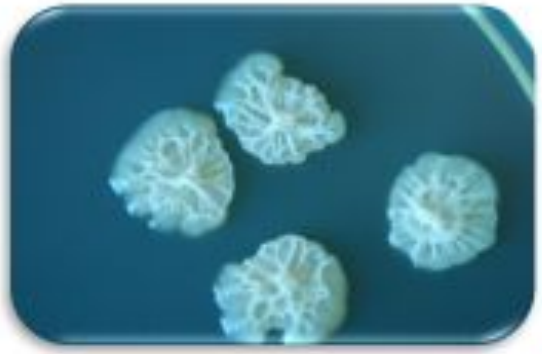
Trichoderma atroviride



Arbuscular mycorrhizal fungi

PSP
PLANT STIMULATING PEPTIDES

Beneficial Bacteria



EcoVam GXT Ultra SP Components

Trichoderma Altroviride MUCL 45632

Mycorrhiza (2 varieties)

Bacteria (6 varieties)

Peptides

Trichoderma atroviride MUCL 45632

Saprophytic fungus living in the rhizosphere and the soil with fast growth in a wide range of temperatures and soil pH conditions

- ***Root growth stimulation***
- ***Increases micronutrient uptake***
- ***Disease control***

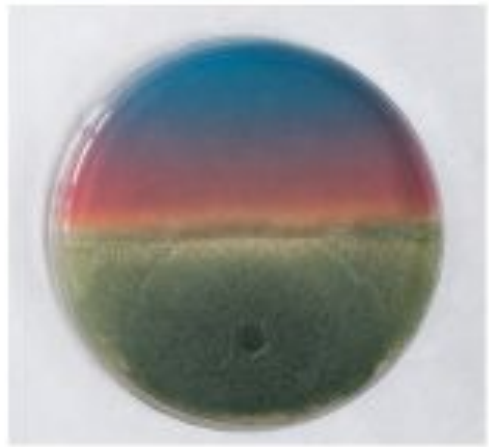
Peony trial

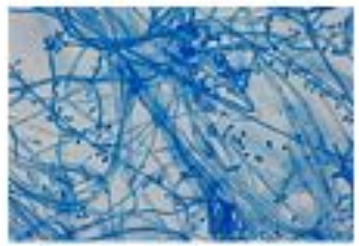
Control of soilborne diseases caused by *Armillaria mellea* in peony plants with applications of *Trichoderma atroviride*

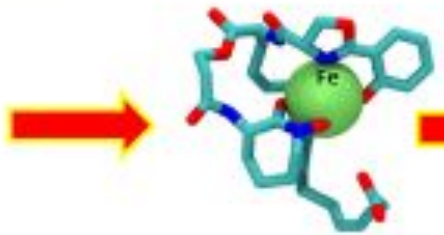
Trichoderma atroviride

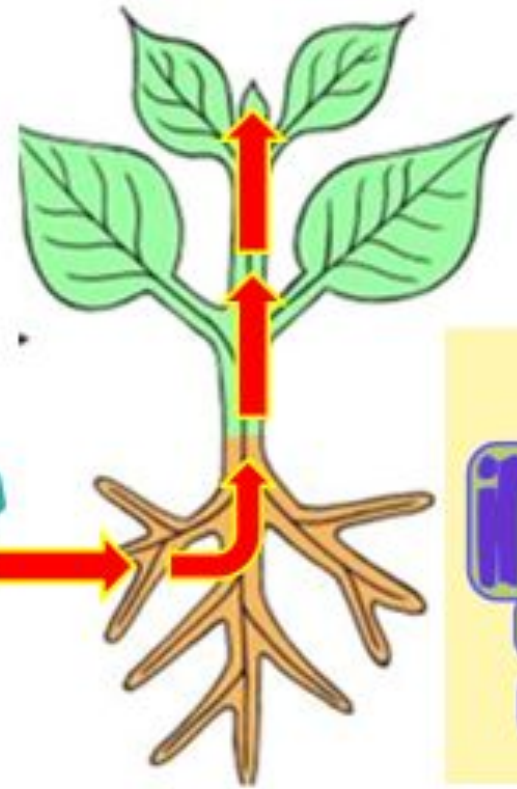
Trichoderma atroviride increases iron availability for plant uptake

Tichoderma release organic compounds ("iron carrier") in the rhizosphere able to solubilize iron in the soil

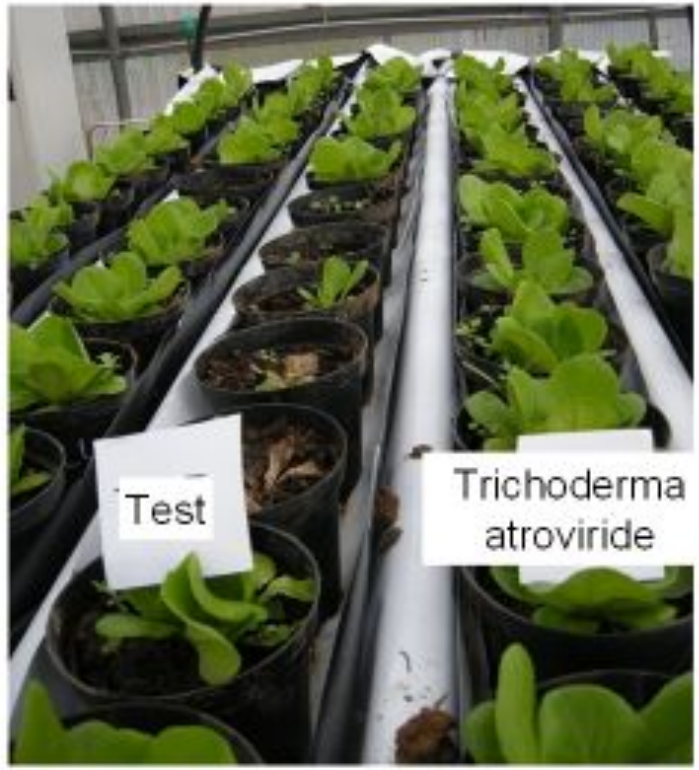








Lettuce trial



Trichoderma atroviride applied at transplanting reduced by 50% the mortality of plants in soil infested with soilborne pathogen *Sclerotinia* spp.

EcoVam GXT Ultra SP Components

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Mycorrhiza (2 varieties)

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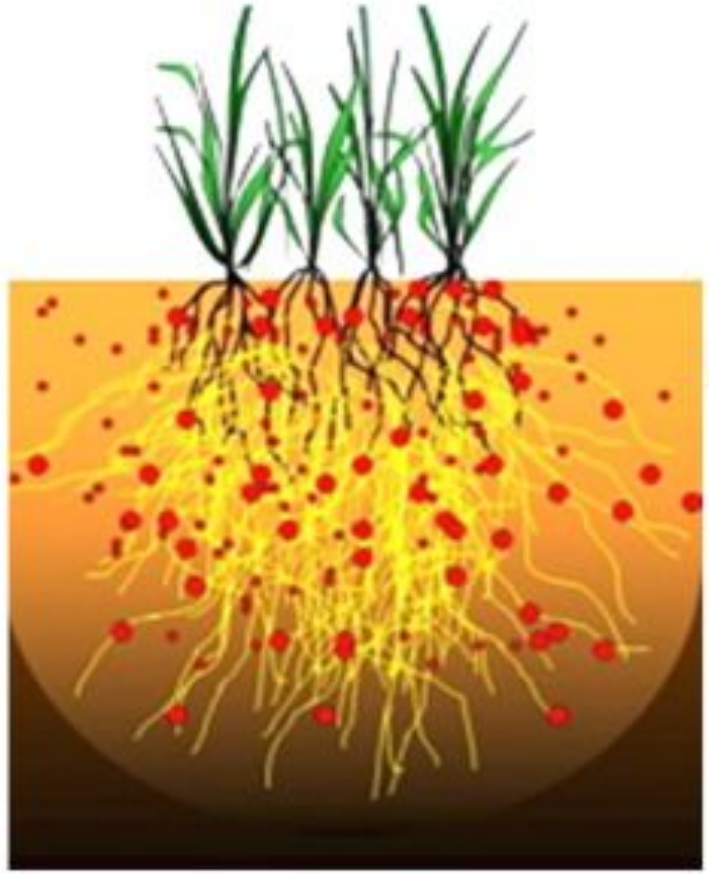
Peptides

Mycorrhizal fungi

Mycorrhizal fungi that colonize the plant's host root system and form a large network of plant associated extraradical hyphae greatly extending the volume of soil accessible to plant roots



- ***Increases nutrients & water uptake***
- ***Drought and salinity tolerance***
- ***Improves soil fertility***
- ***Increases product quality***

The ultimate symbiosis association: mycorrhizae

Mycorrhizae: characteristics

- IN VIVO vs IN VITRO production
  - Greater root development
- Unlocking nutrititional elements
- Better plant nutrition
  - Improvement of soil structure
- Rapid soil colonization by extra-radical hyphae

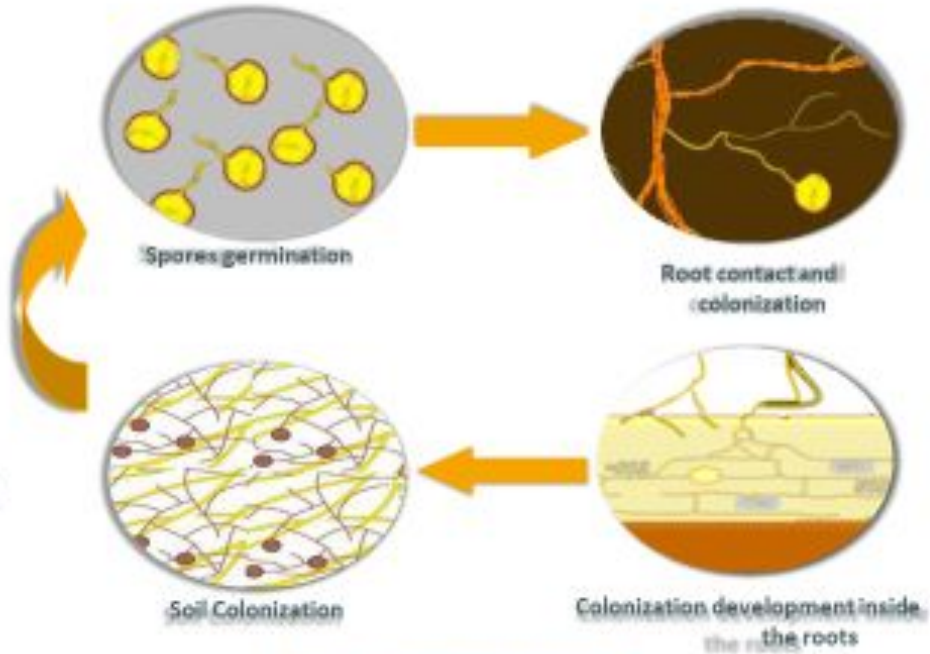


Photo of a mycorrhized root

Mycorrhizal industrial production

In Vitro Method

Culture medium

Inoculum of mycorrhizal fungi

Carrot root cells

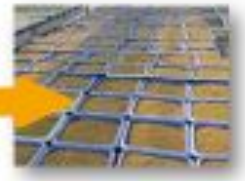
« Harvest » after some weeks

Advantage : Rapid and cheap

Inconvenient : spores are less mature, less resistant in real growing conditions

In Vivo Method

Sowing seeds (Alliaceae)



Clay support

Inoculum of mycorrhizal fungi

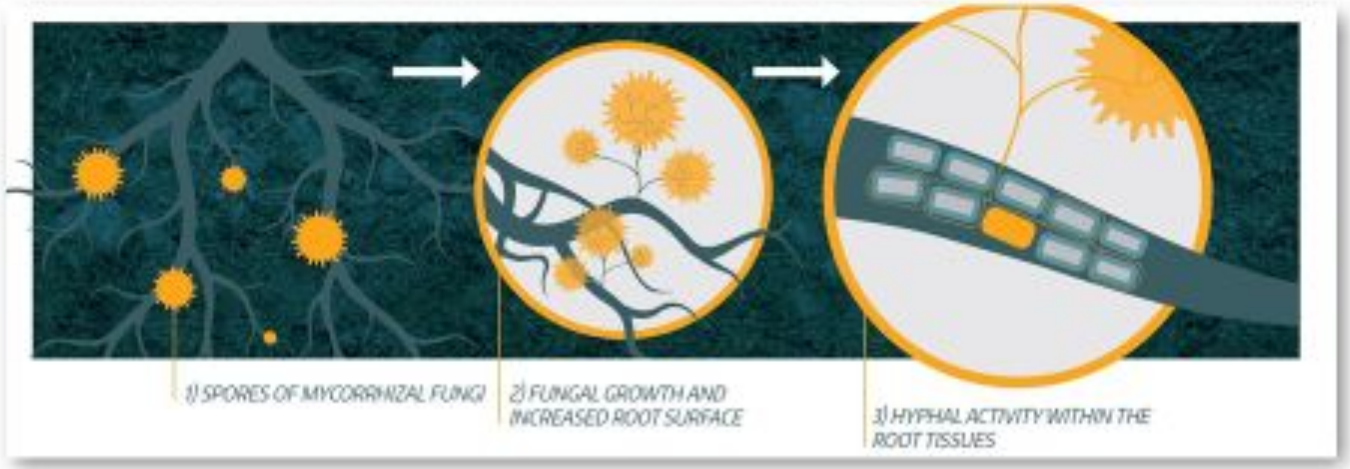
« Harvest » at plant maturaton stage

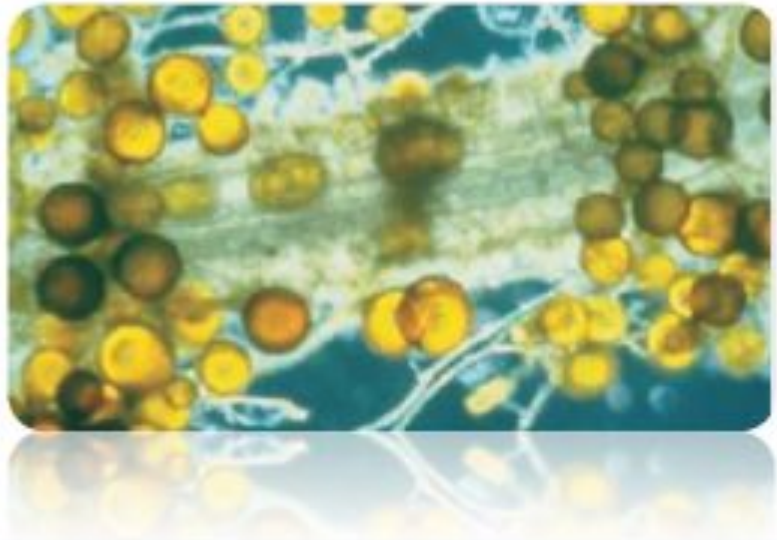
Advantage : natural multiplication process, propagules fully adapted to real conditions

Inconvenient : longer production process

In Vivo production, more complex, guarantees high quality of inoculation

Rapid soil colonization





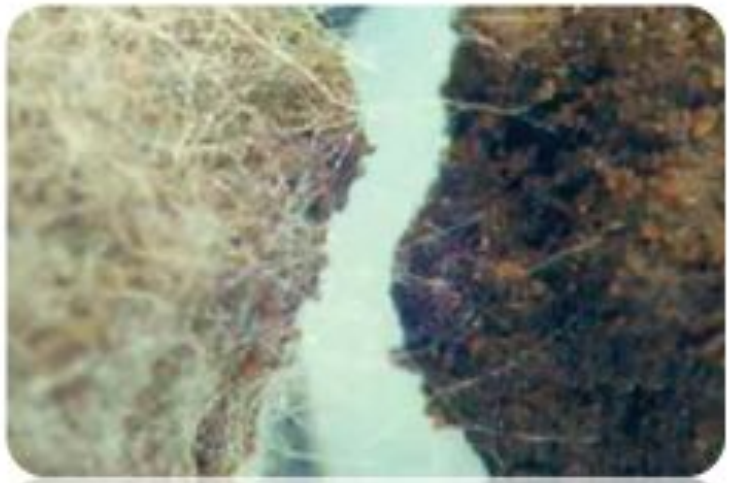
MYCORRHIZAL FUNGI colonize the plant roots and provide them with mineral elements and water they extract from soil through an **external net of hyphae**.

Unlocking nutrititional elements

Mycorrhizal symbiosis increases the **uptake of nutrients** from the soils especially those that are more immobile such as phosphorus, zinc, and copper. It promotes the uptake of nutrients present in forms that are not available to the plants.

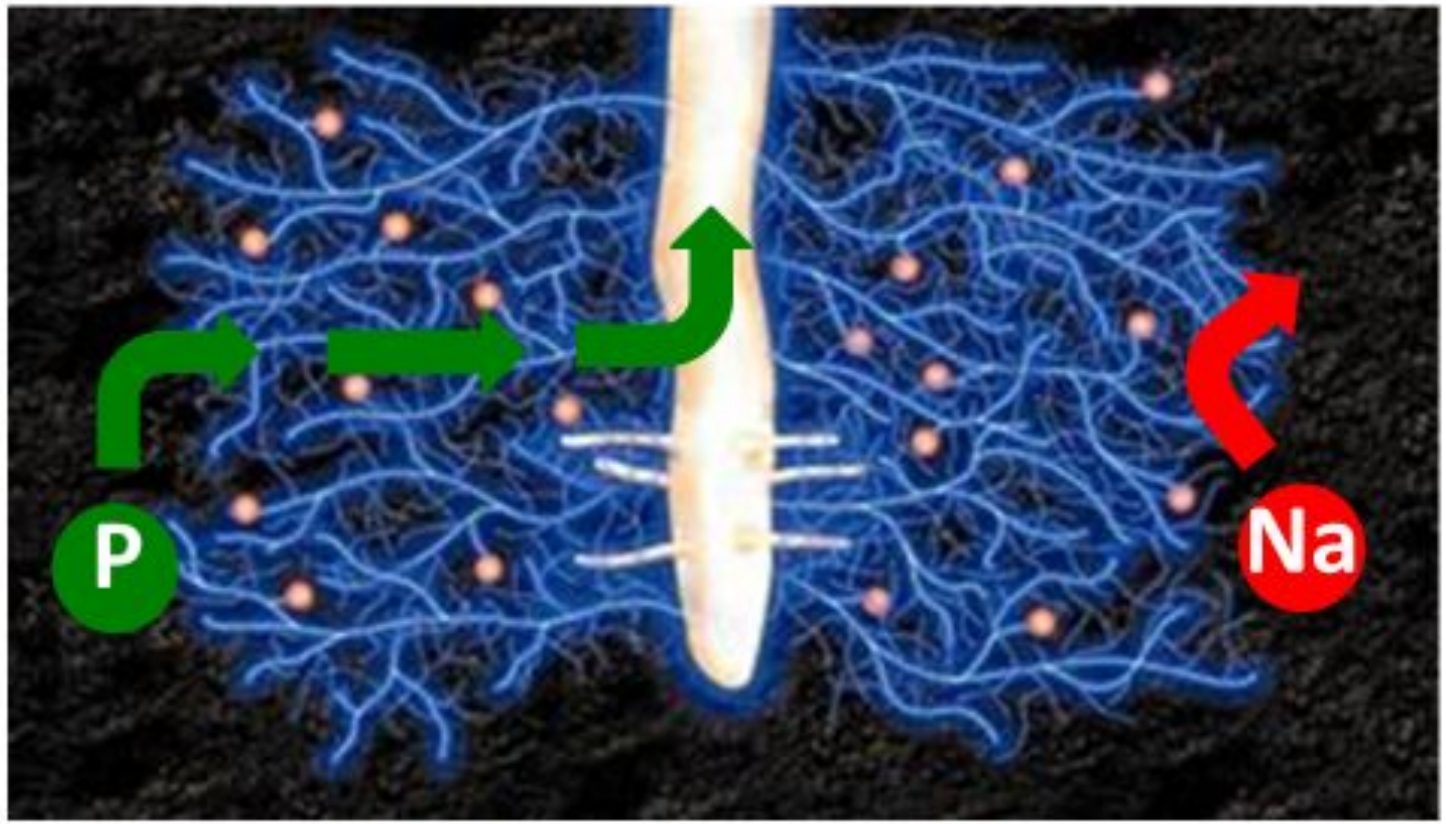
Please watch the video on FB hiips://www.facebook.com/ITALPOLLINA/videos/1084884955203775 / or download it from the e-mail

Improvement of soil structure



Mycorrhizae have the ability to improve soil structure by realizing into the soil a glycoprotein called '**glomalin**'.
Glomalin act to **bind mineral particles together**, improving soil structure.
Good **soil structure** is **important** to allow air and water into the **soil** which are vital for healthy plant growth. It will improve drainage and **reduce soil erosion** caused by excess surface run-off.

Mycorrhiza acts as biofilter for toxic elements



Greater root development: examples in wheat and fruit trees

Greater root development: example in vegetables and ornamental plants

EcoVam GXT Ultra SP Components

Trichoderma Altroviride MUCL 45632

Mycorrhiza (2 varieties)

Bacteria (6 varieties)

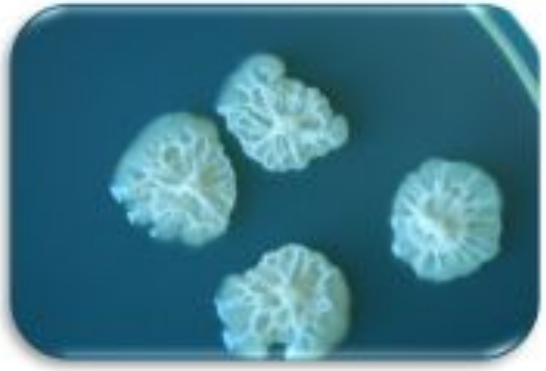
Peptides

Beneficial bacteria

Bacillus licheniformis

Advantages

- Auxin production
- Phosphorus solubilization
- Root protection
- Promote anti-oxidant activity in plants



Bacillus methylotrophicus

Advantages

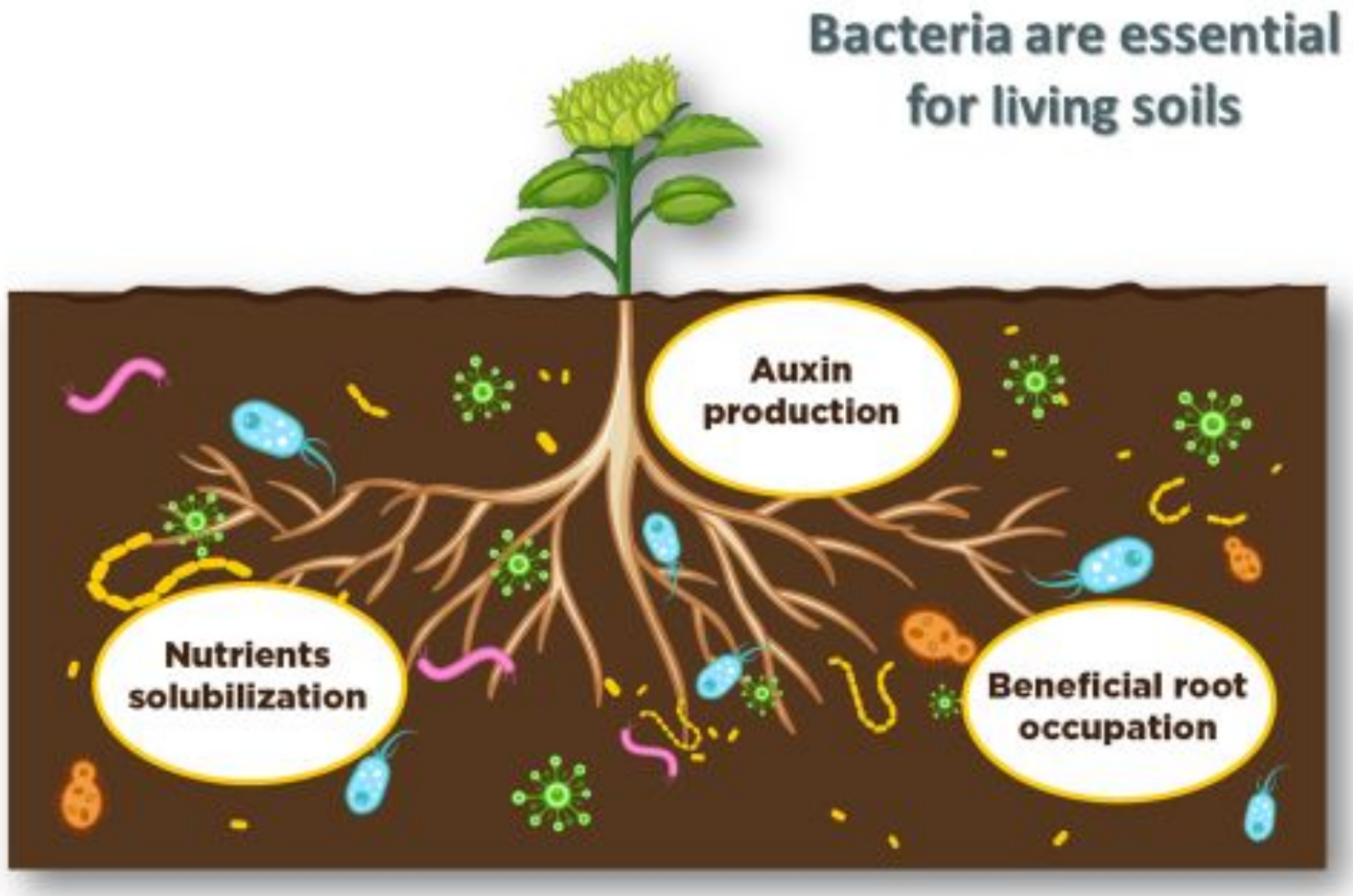
- Phosphorus solubilization
- Siderophore production (involved in the iron nutrition)
- Root colonization

Bacillus megaterium

Advantages

- Phosphorus solubilization
- Nitrogen fixation

Our friends: the bacteria



EcoVam GXT Ultra SP Components

Trichoderma Altroviride MUCL 45632

Mycorrhiza (2 varieties)

Bacteria (6 varieties)

Peptides

Plant Stimulating Peptides

Ready to Use - Right Structure - Right Balance

BANNER
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TREE, TURF & HORTICULTURAL SPECIALISTS

Plant Stimulating Peptides

HELLO NATURE is one of the worlds largest producers of biostimulants for agriculture based on 100% vegetal protein hydrolysates. Starting from raw vegetal materials of the highest quality and through an exclusive proprietary manufacturing process , **HELLO NATURE** offers a wide range of biostimulants of vegetal origin.

PSP's are produced using **HELLO NATURE's** Proprietary Double-Enzymatic Process (PDEP) to produce protein hydrolysates containing a high concentration of amino acids in soluble Plant Stimulating Peptide chains.

PSP's, unlike free amino acids, have a more prominent, assured, and natural biostimulant effect. These peptides are made available to the plant at the right balance and in ready-isomer-form for the plant to quickly absorb and utilize.

PSP's strength originates from the innovative production process that preserves even the weakest amino acids in the peptide chain (such as Tryptophan) and maintains the peptides' composition unaltered.

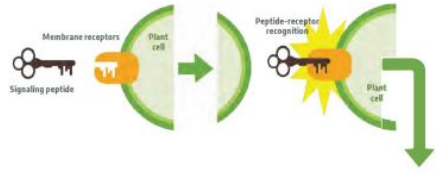
HELLO NATURE's Vegetal Protein Hydrolysate (VPH) biostimulants contain amino acids in soluble peptide form with less than 4% free amino acids. Only the highest quality, Non-GMO plant-derived proteins are utilized in our proprietary production process. Our VPH biostimulants have been proven to consistently enhance nutrient uptake and abiotic stress tolerance of agricultural and horticultural crops. And they have been found to reliably improve carbon and nitrogen metabolism, growth, yield, and fruit quality.

Aminogram Guaranteed.

There are 18 interdependent amino acids essential for plant growth.
The absence of one can block the synthesis of others.
Italpollina guarantees the presence of these 18 amino acids in our Vegetal Protein Hydrolysate biostimulant products.

Amino Acids **Peptide** Protein

Peptides are chains formed by 2 to 50 amino acids.



Improvement of lateral root development
Enhancement of nutrient uptake and assimilation
Increase of stress resistance of the plant
Activation of cell response

Benefits of Plant Stimulating Peptides

· **Increases Plant Growth & Vigor**
- Creates Larger Root Mass
- Increases Chlorophyll Content and Improves Photosynthesis
- Provides Precursors to Plants' Hormone Biosynthesis
- Intensifies Beneficial Microbial Activity

· **Reduce Crop Stress**
- Mitigates the Negative Impact of Environmental and Pesticide Stress on Crops

· **Improved Plant Nutrition**
- Increases nutrient absorption through leaf and root
- Boosts Nitrogen conversion within plant

Ready to Use - Right Structure - Right Balance

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Results and Programs!

Ornamental Plants Field or Container Grown

Timing	Chemical Type	Products	Rate / acre	Unit	Coverage	Control
Planting						
	Soil Applied Drench	EcoVam GXT Ultra SP	1 to 2	lb	Acre	Preplanted with the plant
	Mixed with Media	EcoVam GXT Ultra Gran	1 to 3	Lb	Cu Yd	Mixed with soiless media
2 Week After Planting						
	Foliar	Trainer	1 to 2	pt	Acre	Foliar applied
4 - 6 Week Intervals For First Season						
Up to 6 Applications	Foliar	Trainer	1 to 2	pt	Acre	Foliar applied
Season 2						
	Soil Applied Drench	EcoVam GXT Ultra SP	1 to 2	lb	Acre	Booster to Begin Year 2
	Foliar	Trainer	1 to 2	pt	Acre	Foliar Applied


GROTA
3in1
POWDER
Premium Plant Starter Blend
Perfect For Blending With Soil
Don't Plant Without It!

Competitive Brand on the 2nd from right.

EcoVam GXT Ultra SP on middle left

Another competitor on far left

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TREE, TURF & HORTICULTURAL SPECIALISTS

Do what others wish they could do!

Deep root fed with Banner's Custom Cocktail:

- 18-3-6 w/Humic + Peptides
- Vegamin Plus
- EcoVam GXT Ultra SP
- Bio Rush 0-0-2

For heart stopping results,
TEAM UP WITH BANNER SALES!