

Award Winning Growers Use!



MICROBE
Life
HYDROPONICS



MICROBE Life HYDROPONICS

MADE IN THE USA 

 Hydro or Soil  Aquaponics Safe



From the makers of MICROBE-LIFT®

 **Ecological
Laboratories** INC.

Providing Environmental Solutions Since 1976

MicrobeLifeHydro.com



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An Introduction to Superior Technology

With over two decades of laboratory and field research targeting **non-chemical, microbial plant enhancement**, MICROBE Life™ bioformulations are designed specifically to **improve plant processes** from top to bottom—from the foliar level through the rhizosphere—through improvements in foliar photosynthesis and root zone biological functions.

A true breakthrough in modern microbiology.

MICROBE Life Understands Plants

As science gains a better understanding about how plants really work, it is clear that the conventional emphasis on soil chemistry and NPK fertilizers has significant problems, most notably in:

1. input costs
2. soil toxicity and reduced biological activity in soil
3. disease-prone plants
4. water contamination



A New Frontier in Plant Technology

Universities & soil scientists worldwide:

- are now focusing on biological solutions for better, cleaner and more sustainable methods for growing crops and ornamentals.
- confirm that plants have a mutually beneficial relationship with many microorganisms that capture the sun's energy and provide nutrients essential to plant growth.

MICROBE Life microbes:

- include a diversity of bacteria with photosynthetic microorganisms at the First Trophic Level of the The Soil Food Web.
- play an essential role in seed germination and plant growth, vigor and yield, and represent the foundation in recycling energy to plant required materials.

Plant Enhancement Technology

Many of the MICROBE Life bioformulations contain an environmentally diverse consortium of beneficial microorganisms, including:

- Phototrophs
- Autotrophs
- Heterotrophs
- Chemotrophs

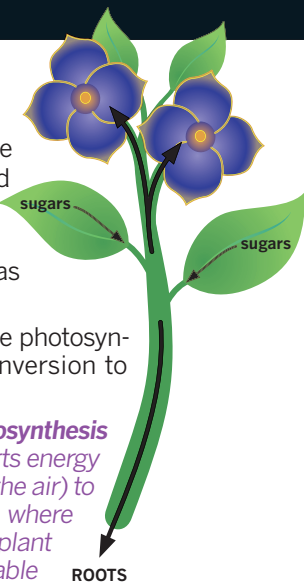
The proprietary microbes in many of the MICROBE Life bioformulations have highly specialized capabilities to meet plant needs and are active in all environments associated with plant growth.



Plant Structure

- Like humans and animals, plants have a **circulatory system** which carries food and oxygen to plant tissues and then carries wastes away.
- The circulatory system is referred to as the **Phloem** and the **Xylem**.
- **MICROBE Life** bioformulations enhance photosynthesis and assist in the biological conversion to available plant energy!

*Plant processes start at the top with **photosynthesis** and the **carbon cycle**. The **phloem** transports energy (captured from the sun) and carbon (from the air) to the root zone—known as the **rhizosphere**, where it is biologically converted to available plant energy via soil biology. These plant available materials, minerals and water are then carried to all parts of the plant through the **xylem** (which has one-way flow) and the **phloem** (which has two-way flow).*



Photosynthesis & Root Zone Enhancement

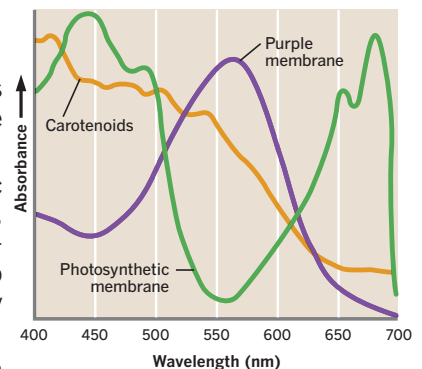
Plants require light energy & soil biology to function & grow

- Through modern microbiology, new, one-of-a-kind **MICROBE Life** bioformulations *improve* foliar and rhizosphere processes to include *increased* capture of light and its conversion to available plant energy, while *establishing, increasing and restoring* essential root zone biological processes.
- **MICROBE Life** bioformulations *improve* photosynthesis and uptake of plant carbon nutrients and minerals within the rhizosphere, **improving plant processes** and **providing a reduction in plant exudates**, allowing plants to focus their energy on growth, yield and color, resulting in a reduction of disease pressure, improved root and shoot development and a reduction of chemical inputs.

MICROBE Life bioformulations are a technological breakthrough in biology once thought impossible to achieve!

Increased Energy from Light

- Plant chlorophyll captures only a narrow portion of the visible light spectrum.
- **MICROBE Life** photosynthetic bacteria, with its carotenoids, purple membrane and photosynthetic membrane, absorb portions not absorbed by plant chlorophyll.



- The photosynthetic bacteria activity complements the energy absorption of the plant, optimizing utilization of the energy from light.

No other product technology offers or provides these valuable photosynthetic functions!

MICROBE Life Photosynthetic Technology:

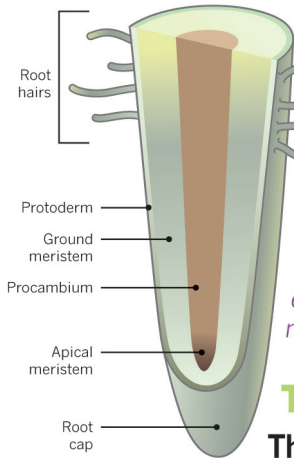
- **improves light energy** through an increase in chloroplast activity at the foliar level derived from **MICROBE Life** photosynthetic microorganisms. The resulting increased

capture of light improves the conversion of CO₂ to essential plant carbohydrates (improved carbon cycle), thereby reducing plant energy requirements.

- **improves plant processes** as phototrophs have the capability to achieve carbon conversion in foliar and rhizosphere bioprocesses specific to CO₂ and organic carbon utilization, providing increased plant energy, resulting in improved plant function and vigor.

Right Down to the Roots Builds Root Mass & Drives Root Functions

- Plants exude nutrients into the root zone to support the growth of beneficial microbes. With biological enhancement, less exudates are required, enabling the plant to use nutrients to increase root and shoot mass and yield, and enhance its own vigor.



- The beneficial microbes in **MICROBE Life** enhance mineral absorption, out-compete less desirable microbes and produce complex compounds, such as precursors to plant hormones that improve plant vigor.

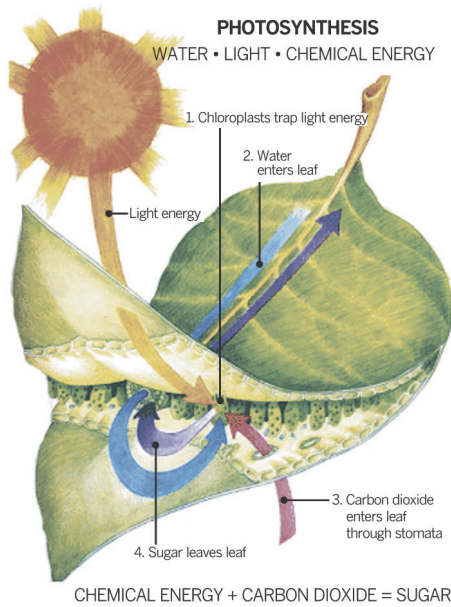
Like humans, a plant expending less energy on mere survival will spend more time enhancing its own vigor.

The Root of the Process

The microbes in **MICROBE Life** colonize roots & growth media to:

- assist in the conversion of exudates to useable materials
- convert minerals to more readily absorbable compounds
- outcompete less desirable microbes
- fix nitrogen at both the foliar level and root zone
- help eliminate waste and toxic compounds

MICROBE Life bioformulations promote plant stability, growth & yield!



Plants Require Essential Elements

Many **MICROBE Life** bioformulations incorporate **72 essential elements** from rare earth humates, assuring plant inorganic requirements.

Significant Plant Benefits

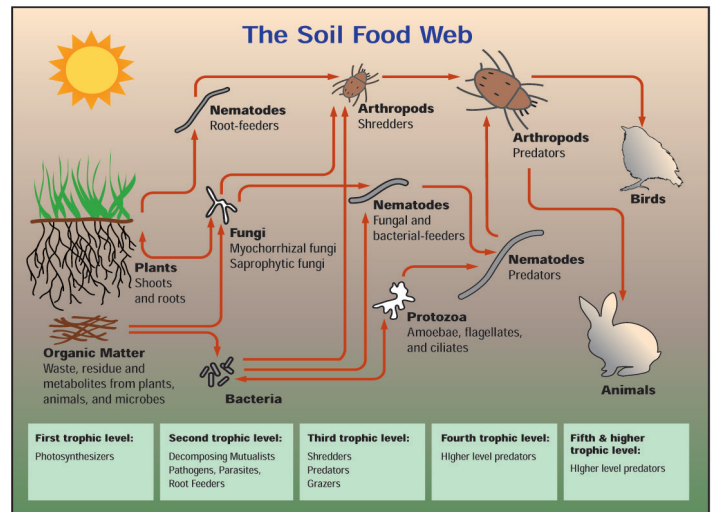
- Faster growth
- Vigorous plants
- Improved mineral and nutrient absorption
- Faster and increased bloom and yield

*Chemical inputs are, of course, not used in rainforests or old growth forests. They have natural biological activity supporting their growth. **MICROBE Life** bioformulations restore biological activity and improve photosynthesis, offsetting the harmful effects of chemical inputs and pollution.*

The Web MICROBE Life Weaves!

Certain **MICROBE Life** bioformulations represent the first 2 Trophic Levels of The Soil Food Web, considered the foundation of all soil biology and critical to improved soil values.

No other product incorporates this biodiversity!



See the relationship between photosynthesis and soil biology from the 1st to 5th levels and how these microbes contribute to the stability and development of the soil web structure.

Summary of MICROBE Life Technology

- Scientists and universities are placing more emphasis on biological solutions to plant growth as the conventional emphasis on soil chemistry and NPK fertilizers has significant problems.
- Designed specifically to improve plant processes from the foliar level to the rhizosphere, **MICROBE Life** bioformulations contain a diverse consortium of beneficial microorganisms and essential elements that enhance plant functions.
- **MICROBE Life** bioformulations increase photosynthesis, providing the plant with more energy as well as establishing, increasing and restoring essential root zone biological processes.
- By enhancing plant processes, **MICROBE Life** bioformulations allow the plant to conserve energy for growth, color and yield.

A top-to-bottom solution designed specifically to improve nature's own processes.

MICROBE Life Photosynthesis Plus

What it is & What it does:



MICROBE Life/Photosynthesis Plus is a breakthrough in biology once thought impossible to achieve. By driving and accelerating the processes that contribute to overall plant vigor, **MICROBE Life/Photosynthesis Plus** will improve your plants' growth and yield.

MICROBE Life/Photosynthesis Plus is a novel culture consortium that contains stable microorganisms capable of improving plant conversion of carbon dioxide to available carbon to fuel plant requirements, and drives plant biology at both the foliar level and the root zone. **MICROBE Life/Photosynthesis Plus** rapidly establishes essential plant-supporting biology, even in a media void of organisms. Combined with its ability to improve the plants' own photosynthetic machinery and inhabit the root zone, **MICROBE Life** will help to accelerate and optimize plant functions.

MICROBE Life/Photosynthesis Plus can be combined, as needed, with **MICROBE Life/Nourish-L**, **MICROBE Life/Foliar Spray & Root Dip** and **MICROBE Life/Vegetable & Fruit Yield Enhancer**.

The **MICROBE Life** family offers an unparalleled microbial-based and humus-based product line of the highest quality, from a name you can trust. After all, **Ecological Laboratories, Inc.** has been around since 1976... and we're just getting started!

CONTROL vs. TREATED with ML/PHOTOSYNTHESIS PLUS

- Rapid seed germination
- Improved plant vigor
 - Increased yield
- Proven performance on thousands of commercial acres worldwide



Lettuce treated with **MICROBE Life** products show improved size, color & turgor over untreated heads.

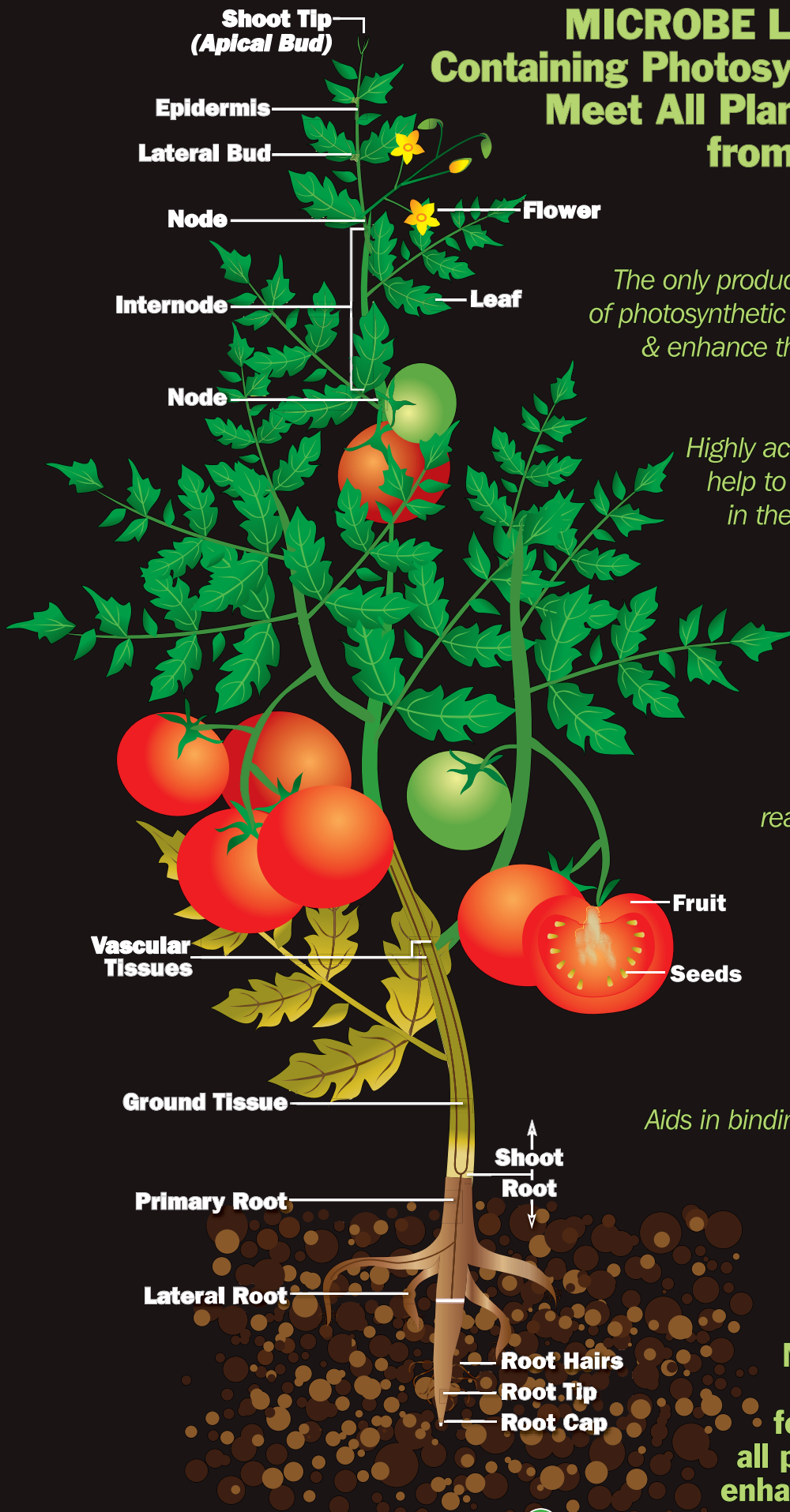
ROOTS... it all starts at the bottom!

- Inhabits the root zone & vascular system of the plant
- Establishes the biological activity essential to all plant processes
- Enhances root development & conversion of root exudates to energy
- Improves uptake & transfer of nutrients & minerals
- Forms biofilms that retain nutrients & water
- Incorporates rare earth humates that provide essential carbon, minerals & elements



Plants grown in substrate (L) & rock wool (R) both exhibit superior root development with use of **MICROBE Life** products.

MICROBE LIFE PRODUCTS Containing Photosynthetic Bacteria Meet All Plant Requirements from Top to Bottom!



Photosynthesis

The only products to incorporate 2 strains of photosynthetic bacteria, which accelerate & enhance the photosynthetic process.

Biology

Highly active microbial formulations help to establish essential biology in the plant from top to bottom.

Carbon

Optimizes fixation of atmospheric CO₂ at the foliar level & converts nutrients, minerals & metals in the root zone to forms which are more readily available to the plant.

Nitrogen

Fixes atmospheric Nitrogen making nutrients more bioavailable at the root zone.

Nutrients

Aids in binding & transferring nutrients.

Minerals

Makes minerals more bioavailable to plants.

Microbe Life Products are designed & formulated to support all plant requirements & enhance plant processes.

MICROBE™ Life HYDROPONICS

CONTAINS
PHOTOSYNTHETIC
CULTURES

All Natural

Photosynthesis Plus

What it is: The culture consortium produced by Ecological Laboratories, Inc. that is used on tens of thousands of acres of crops worldwide is the foundation for our **Photosynthesis Plus** — a complete ecosystem in the bottle. The proprietary formulation and culture growth enhances product performance via selective adaptation, resulting in superior performance in aerobic, facultative, anaerobic and anoxic environments. It is shelf stable for two years.

What it does: Enhances plant functions at the foliar level and the root zone in both soil and soilless substrates. Enhances photosynthesis and biological function by allowing plants to capture and utilize radiant energy more efficiently. Speeds uptake and distribution of essential macro- and micronutrients required for all plant metabolic functions and growth. Promotes plant vigor and reduces input costs while increasing yields.

Use in addition to ALL nutrient and fertilizer programs for maximum yields. May be used for indoor and outdoor use with all hydroponic, NFT, drip, aeroponic, irrigation and liquid feeding systems, with all soilless media, including Coco Coir. Compatible with all fertilizer programs. Always check pH and CF levels.



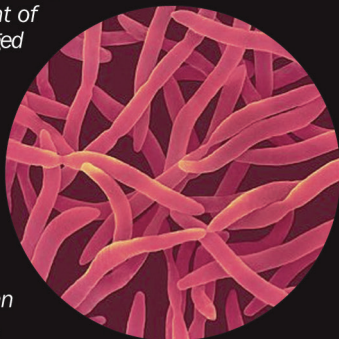
Please Note: Visit www.microbelifehydro.com to view the **Plus** products available in your state.

- 16 oz./473 mL PH21226
- 1 Gal./3.785 L. PH21228
- 5 Gal./18.9 L. Jug PH21772
- 32 oz./946 mL PH21227
- 2.5 Gal./9.5 L. Jug PH21383
- 30 Gal./113.6 L. Drum PH21773
- 55 Gal./208 L. Drum PH21774
- 275 Gal./1041 L. PH21775

MICROBE LIFE PHOTOSYNTHETIC ORGANISMS

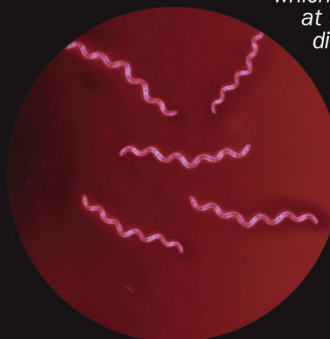
Rhodospseudomonas palustris

can modulate photosynthesis according to the amount of light available. Acknowledged by microbiologists to be one of the most metabolically versatile bacteria ever described, it has the ability to increase the level of light harvesting complexes to increase absorption in low light situations. *R. palustris* can fix carbon and nitrogen, providing a method to accelerate delivery of these key elements to the plant.



Rhodospirillum rubrum

possesses bacteriochlorophylls, which are most efficient at absorbing light at different wavelengths from chlorophyll a found in plants. This provides additional light energy to the plant.



INTRODUCING

The brand new Organic Photo Plus has different item #'s and pricing from the non-organic Photosynthesis Plus. Please use correct item #'s when placing your order!



MICROBE Life HYDROPONICS

CONTAINS PHOTOSYNTHETIC CULTURES

Hydro or Soil
Aquaponics Safe

All Natural Organic Photo Plus

Organic Photo Processes are Vital to Plant Life

All plants are live with cells requiring life-supporting essential elements provided through photosynthesis and soil root transfer via biology, i.e., carbon cycle, nitrogen cycle, phosphorous cycle and other critical reactions.

Organic Photo Plus - may provide enhancements essential to plant growth and stability, and promote plant vigor.

Organic Photo Plus - enhances biological function at the foliar and root substrate levels, transporting the sun's energy and speeding carbon to plants at much improved rates!

The culture in this product is fermented over six days, resulting in an ecosystem in a bottle. Ecological Laboratories, Inc. claims to be the only worldwide manufacturer of a photosynthetic bacterial ecosystem that is shelf-stable for 2 years. This same culture is used on tens of thousands of acres of food crops worldwide.

Ecological Laboratories, Inc. accepts no liability for damage or injury resulting from misuse or mishandling of this product. Please recycle the empty container.

Information regarding the contents and levels of metals in this product is available on the internet at <http://www.aapfco.org/metals.htm>



Please Note: Visit www.microbelifehydro.com to view the Plus products available in your state.

- 16 oz./473 mL PH21843 • 32 oz./946 mL PH21844
- 1 Gal./3.785 L. PH21845 • 2.5 Gal./9.5 L. Jug PH21846
- 5 Gal./18.9 L. Jug PH21847 • 30 Gal./113.6 L. Drum PH21848
- 55 Gal./208 L. Drum PH21849 • 275 Gal./1041 L. PH21850

ALL NATURAL Use in Addition to ALL Nutrient & Fertilizer Programs

- Promotes biological functions at both the plant's foliar and root substrate levels
- Enhances photosynthesis using CO2 to improve plant efficiency
- Utilizes the sun's energy and transports minerals and carbon to the plant at much improved rates
- Promotes plant vigor

Application Uses

Organic Photo Plus may be used indoors/outdoors as a foliar spray or added to solutions for all hydroponic, NFT, drip, aeroponic, irrigation and continuous liquid feeding systems.

Media Uses: Organic Photo Plus may be used with all soil and soilless media including Coco Coir, and is compatible with all nutrient programs.

- Always check for pH.

Directions and Dosage Rates

Shake well before using. Store in a cool dry place. Do not store in direct sunlight. For initial dose, add 2 oz. (60 ml) for every 5 gallons (19 L) of water. Thereafter add 1 oz. (30 ml) weekly for every 5 gallons (19 L) of water.

CONTAINS NON-PLANT FOOD INGREDIENTS GUARANTEED ANALYSIS

1% Bacterial Culture
99% De-ionized Water (inert ingredient)
100% Total

PHOTOSYNTHETIC BACTERIAL SPECIFICATIONS

Rhodospseudomonas palustris 1 x 10⁶ CFU/mL

Cautions

Keep out of reach of children. Follow directions carefully. Avoid contact with eyes. If contact occurs, flush eyes thoroughly with cold water.

MICROBE™ Life HYDROPONICS

Hydro
or Soil

Aquaponics
Safe

Verified Organic

Nourish-L containing Rare Earth Humates

Nourish-L is Registered for Organic Production by Washington State & registered for sale in 44 states. To view the **Nourish** products available in your state, visit www.microbelifehydro.com.

- 16 oz./473 mL PH21231
- 32 oz./946 mL PH21232
- 1 Gal./3.785 L. PH21233
- 2.5 Gal./9.5 L. Jug PH21371
- 5 Gal./18.9 L. Jug PH21776
- 30 Gal./113.6 L. Drum PH21777
- 55 Gal./208 L. Drum PH21778
- 275 Gal./1041 L. PH21779



What it is:

A unique, liquid conditioner derived from a highly decomposed organic humus deposit, unparalleled by any other source of humates. Contains natural carbon made up of marine animal carbon and vegetative carbon compounds, making it more complex and superior to Leonardite sources as well as an amazing wealth of Cypress lignin—a high-level food source for the beneficial fungi and bacteria—which strengthens plant cell walls and enhances nutrient absorption and water-binding capabilities. 100% Verified Organic to USDA standards.

What it does:

Enhances the ability of plants to absorb nutrients more efficiently, optimizing plant functions and facilitates greater results using less nutrients. Aids in micronutrient uptake, increases water retention and provides vegetative humic acids. Supplements water, mineral, carbon and essential element requirements.

*May be used with your regular nutrient and fertilizer program. Works with all growth media and soil and symbiotically with the microorganisms in **MLife/Photosynthesis Plus** and **MLife/Foliar Spray & Root Dip**.*

Please Note: Nourish-C is Registered for Organic Production in CA & OR. Additional catalogs are available featuring products approved for sale in those states.



To view video featuring Microbe Life Hydroponic product descriptions/explanations, go to:



YouTube.com/microbelifehydro



not all humates are created equal RARE EARTH HUMATES

- Enhance the activities of beneficial microorganisms, stimulating growth & proliferation; increase plant cell energy & accelerate cell division; stimulate plant enzymes; increase root system development & aid in photosynthesis.
- Chelate beneficial inorganic plant nutrients—especially iron & phosphorus—to a stable form available to plants & protect plants from harmful elements by making them insoluble.
- Improve water uptake by plants & act as a catalyst for fertilizer to increase nutrition in plant tissue.
- Contain organic based Humic Acid with marine & plant based humus which help plants to absorb nutrients more efficiently.
- Provide natural bioavailable carbon—the ultimate food source for your plant & for microorganisms—thus helping plants to resist environmental stress & disease.
- Include micro- & macronutrients in a wide range of essential organic-based building blocks & acids.
- Incorporate naturally occurring trace minerals providing an essential & complete minors mineral package.
- Are not Leonardite!

Types of Endo- & Ecto-Mycorrhizal Plants

90% of plants are Endomycorrhizal Plants

- Most green, leafy plants & most commercially produced plants
- Shrubs & foliage plants (except for Rhododendron, Azalea & Heath)
- Berries (except for blueberries, cranberries & lingon berries)
- Nut Trees (except pecan, hazelnuts & filberts)
- Flowers & vegetables (except Brassica & beets)
- Cultivated grasses (except weedy grasses)
- Fruit Trees including tropical fruits, many wetland/aquatic species (except rushes & horsetails).

5% of Plants Ectomycorrhizal Plants

- Mainly Conifers & Oaks, more woody plants.

5% form other relationship types or are "Non-mycorrhizal."

MICROBE™ Life HYDROPONICS

CONTAINS PHOTOSYNTHETIC CULTURES

Hydro or Soil
Aquaponics Safe

Foliar Spray & Root Dip with Ecto- & Endomycorrhizal Fungi

What it is:

Specifically created for foliar applications, root dips and root drenches, this supplement to **ML/Photosynthesis Plus** and **ML/Nourish-L**, combines the high concentration of photosynthetic cultures with natural, rare earth humates and essential elements for improved plant biology.

What it does:

Enhances metabolism plus increases chlorophyll and nutrient availability. Works well with all nutrient/fertilizer programs and all soil and soilless media.

- 16 oz./473 mL PH21348 • 32 oz./946 mL PH21349
- 1 Gal./3.785 L. PH21350 • 2.5 Gal./9.5 L. Jug PH21373
- 5 Gal./18.9 L. Jug PH21784 • 30 Gal./113.6 L. Drum PH21785
- 55 Gal./208 L. Drum PH21786 • 275 Gal./1041 L. PH21787

Not registered for organic production.



MICROBE™ Life HYDROPONICS

CONTAINS PHOTOSYNTHETIC CULTURES

Hydro or Soil
Aquaponics Safe

Vegetable & Fruit Yield Enhancer

with Endomycorrhizal Fungi

What it is:

A highly active and balanced blend of microbes and humic substances that combines photosynthetic cultures and essential elements. Formulated specifically to enhance the yield of vegetables and fruit by aiding the plant's ability to absorb nutrients more efficiently.

What it does:

Speeds seed germination, root development and shoot outgrowth while increasing nutrient value, enhances overall plant vigor and yield.

Please Note:

You can visit www.microbelifehydro.com to view the **Root Dip** and/or **Vegetable & Fruit Yield** products available in your state.

Not registered for organic production.

- 16 oz./473 mL PH21345 • 32 oz./946 mL PH21346
- 1 Gal./3.785 L. PH21347 • 2.5 Gal./9.5 L. Jug PH21372
- 5 Gal./18.9 L. Jug PH21780 • 30 Gal./113.6 L. Drum PH21781
- 55 Gal./208 L. Drum PH21782 • 275 Gal./1041 L. PH21783



MICROBE™ Life HYDROPONICS

Hydro or Soil **Aquaponics Safe**

All-in-One contains essential primary & secondary nutrients

What it is:

A specialized formula of micro- and macro-nutrients for vegetables and plants.

What it does:

Specially formulated for vegetables and plants of all types. Use this low analysis supplement once or twice weekly for larger, brighter, faster blooms and stronger roots.

Not registered for organic production.

- 16 oz./473 mL PH21363 • 32 oz./946 mL PH21364
- 1 Gal./3.785 L. PH21365 • 2.5 Gal./9.5 L. Jug PH21366



MICROBE™ Life HYDROPONICS

Hydro or Soil **Aquaponics Safe**

Vitamins & Amino Acids in a Buffered Solution

What it is:

Contains a blend of all of the essential micronutrients and minerals required by many fruits, vegetables and plants, which may not be present in your current nutrient program.

What it does:

Vitamins—comprising organic compounds made by combining basic elements—will help your plants flourish as long as you know what you are giving them and why. Amino Acids—the true building blocks of all proteins and required by plants throughout all stages of growth—are helpful when plants are under stress. Amino Acids act as chelating molecules of essential nutrients during all stages of plant development.

Not registered for organic production.

- 16 oz./473 mL PH21367 • 32 oz./946 mL PH21368
- 1 Gal./3.785 L. PH21369 • 2.5 Gal./9.5 L. Jug PH21370



MICROBE™ Life HYDROPONICS

Aquaponics
Safe

pH UP

What it is:

Formulated with R/O and UV sterilized water and combines two pH adjusters for buffered effectiveness. Contains three electrolytes to help maintain osmotic balance.

What it does:

Safely *increases* pH in nutrient solutions. Will not harm plants.

- 16 oz./473 mL PH21398 • 32 oz./946 mL PH21399
- 1 Gal./3.785 L. PH21400 • 2.5 Gal./19 L. Jug PH21401



MICROBE™ Life HYDROPONICS

Aquaponics
Safe

pH DOWN

What it is:

Formulated with R/O and UV sterilized water and combines two pH adjusters for buffered effectiveness. Contains three electrolytes to help maintain osmotic balance.

What it does:

Safely *lowers* pH in nutrient solutions. Will not harm plants.

- 16 oz./473 mL PH21402 • 32 oz./946 mL PH21403
- 1 Gal./3.785 L. PH21404 • 2.5 Gal./9.5 L. Jug PH21405



MICROBE™ Life HYDROPONICS

Larvae Control

BMC Biological Mosquito Control

What it is:

All natural, Biological Mosquito Control is an E.P.A. registered, biological larvicide that is ideal to prevent mosquitoes & fungus gnats from breeding.

What it does:

Quickly controls insect larvae within 24 hours, killing developing mosquitoes before they become breeding, biting adults, including those which may transmit West Nile Virus and Equine Encephalitis, and those which may transmit Heartworm Disease to dogs and cats.

- 2 oz Please give me this info
- 6 oz Please give me this info
- 1 Gallon Please give me this info

— E.P.A. REGISTERED —



MICROBE™ Life HYDROPONICS

Highly Concentrated Dechlorinator + Complete Water Conditioner

What it is:

A full-function water conditioner that will neutralize chlorine, destroy chloramines, while adding essential electrolytes and alkalinity boosters (acid neutralizing). Formulated with R/O and UV sterilized water.

What it does:

Removes chlorine (up to 4mg/L total) and destroys chloramines.

- 16 oz./473 mL PH21359
- 32 oz./946 mL PH21360
- 1 Gal./3.785 L. PH21361
- 2.5 Gal./9.5 L. Jug PH21362

BMC1G4 is not for sale, distribution or use in New York state and Texas. BMC2 (2 oz. size) not available in New Mexico

Aquaponics
Safe

CALIFORNIA
REGISTERED



ATTENTION AQUAPONIC GROWERS! Keep Your System Cycled!



Aquaponics
Safe

Microbe-Lift/ Nite-Out II

Specially Formulated for Rapid Ammonia and Nitrite Reduction

One of the most important aspects of aquaponics is the role of beneficial bacteria in the nitrogen cycle. Ammonia (NH₃) is excreted by fish, and also results from the breakdown of uneaten food and dead plant matter. This ammonia can quickly reach levels toxic to fish. Ammonia is naturally controlled by nitrifying bacteria. Nitrosomonas sp., converts ammonia to nitrite (NO₂), which is also toxic to fish, and Nitrobacter sp. then converts the nitrite (NO₂) to nitrate (NO₃) which is used by plants as fertilizer. Since both ammonia (NH₃) and nitrite (NO₂) can cause stress, or even be deadly to fish, we want this "cycle" to take place as quickly as possible.

If left on its own, the system will take weeks or even months for enough bacteria to be established to do the job. We quickly establish a balanced, cycled system by adding ML Nite-Out II which contains the necessary nitrifying bacteria. For best results, the Nite-Out II should be added to the water along with Photosynthesis Plus when fish are introduced. The Photosynthesis Plus contains bacteria that will help support the nitrifying bacteria. It also contains nitrogen fixing bacteria that help plants utilize the nitrates which result from the cycle.

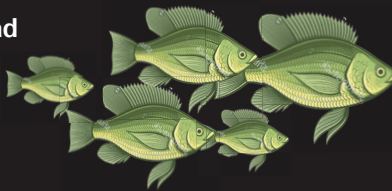


- 8 fl. oz. (236 mL) (NITEH08) Treats up to 480 gal. (1,814 L)
- 16 fl. oz. (473 mL) (NITEH16) Treats up to 950 gal. (3,596 L)
- 64 fl. oz. (1.893 L) (NITEH64) Treats up to 3,840 gal. (14,515 L)
- 1 gal. (3.785 L) (NITEHG1) Treats up to 7,600 gal. (28,769 L)

Please Note: Not all products are available in all states. Please check with your distributor for availability and/or visit www.MicrobeLifeHydro.com

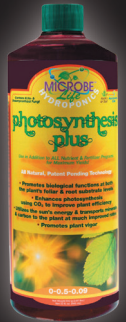
Microbe Life AQUAPONICS Cycle Chart

Fish waste plus uneaten food protein & dead plant matter are broken down by biology in the water, resulting in ammonia.



STEP #1: Add Microbe Life Hydroponics Photosynthesis Plus

Photo Plus speeds the processing of fish waste and uneaten food by adding a select group of microbes that increase the rate of organic breakdown.



SPEEDS THE BREAKDOWN OF WASTE, REMOVES TOXIC AMMONIA AND NITRITE CONVERTING THEM TO NITRATE USED BY PLANTS AS FOOD.

HELPS CREATE A CLEAN, CLEAR, HEALTHY AQUAPONICS SYSTEM FOR FISH AND PLANTS

STEP #2: Add Microbe-Lift/ Nite Out II

Provides the necessary nitrifying bacteria (nitrosomonas and nitrobacter) required for biological nitrification, and assures the continued removal of toxic ammonia (NH₃).



Microbe Life Hydroponic/Photo Plus

Already added in step 1, contains nitrogen fixing bacteria which help plants use the nitrates produced during the nitrification process as food. For a complete list of benefits for your plants, see the full listing for Photosynthesis Plus on page 6.



Nitrobacter sp. ← **Nitrosomonas sp.** ←

Converts nitrite to nitrate.

Converts ammonia to nitrite.

Let your customers know that you are a member of #TeamMLHydro! Hook your shop up with a Window decal or Mural of our Brand like these stores below!



EZ Grow, Coventry, RI, has their main window representing Microbe Life Hydro.



Full Scale Soil and Hydro, Fresno CA has this awesome Microbe Life Hydro mural on their wall!

Want more info on how to make this happen in your store?

**Contact Duffy:
mlhsales@ecologicallabs.com**

CONNECT WITH US!

See growers using Microbe Life Hydroponics Products in Action! Search the following popular #'s!

POPULAR HASHTAGS

#MicrobeLife

#TeamMLHydro

#MicrobeLifeHydro

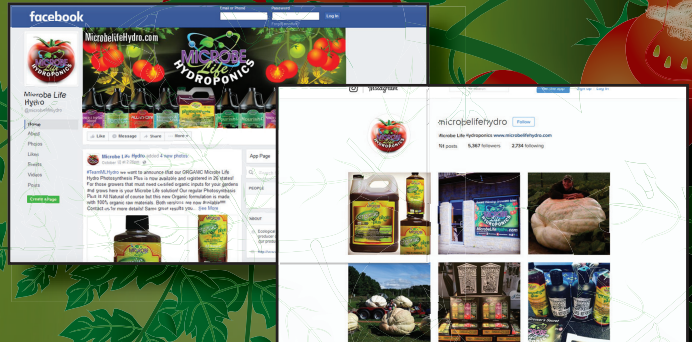
#PhotosynthesisPlus

#MicrobeLifeHydroponics

See Our Amazing Results On

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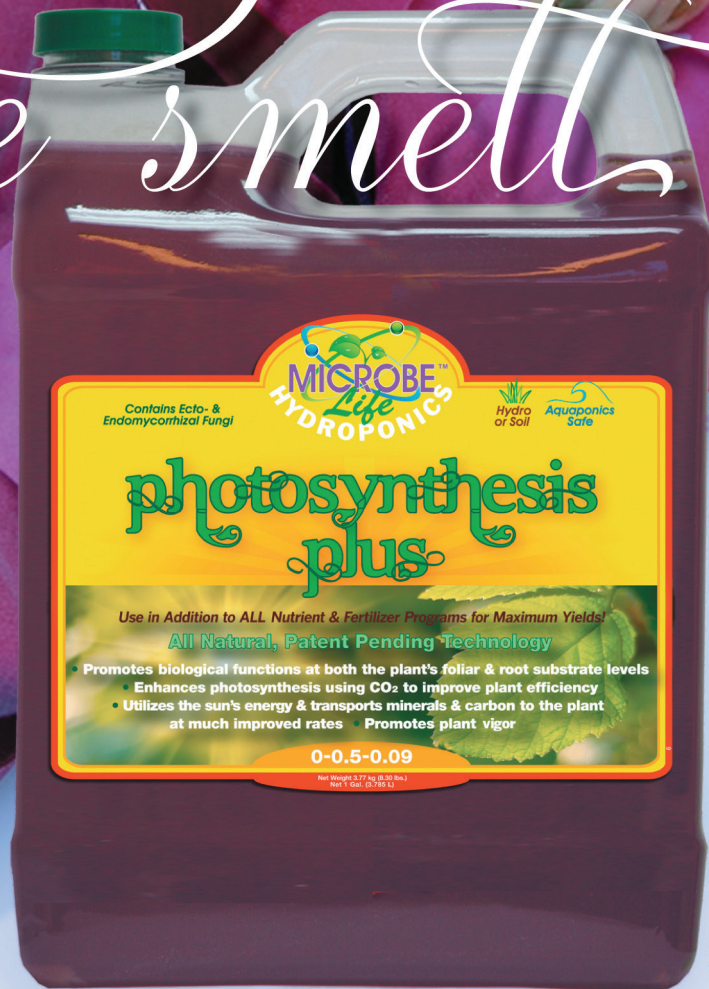


Our state of the art laboratory in Cape Coral, FL,
Birthplace to all the Microbe Life Hydroponic Products

MicrobeLifeHydro.com

The Science & Success Behind

the smell



All Natural

- Enhances photosynthesis & biological function by allowing plants to capture & utilize radiant energy more efficiently
- Speeds uptake & distribution of essential macro- & micronutrients required for all plant metabolic functions & growth
 - Promotes plant vigor
 - Reduces input costs while increasing yields

Why buy a product that smells like rotten eggs? Because it's simply the best product on the market!

When you open a bottle of **MICROBE LIFE Photosynthesis Plus** there is a 'rotten egg' smell. The smell is attributable to the natural production of hydrogen sulfide by sulfate-reducing bacteria acting as part of the ecosystem of organisms. This provides a source of energy for the purple sulfur bacteria in the product, and, as a metabolic inhibitor, acts like an anesthesia to put the bacteria to sleep, preserving the product. That's why our *live* bacteria have the longest shelf life in the container and on the market! The odor is totally harmless and dissipates within seconds. When you pour **MICROBE LIFE** in, the hydrogen sulfide flashes off and dilutes in the water, allowing the bacteria to wake up and become active again. So, why try a product from a copycat?!

Often Imitated. Never Duplicated.



Manufactured by the maker of MICROBE-LIFT®

Ecological Laboratories INC.

Providing Environmental Solutions Since 1976

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