

BIO-ORGANIC CATALYST

THE POWER IN NATURE®

Using Phyto-C_3™ in the hydroponic production of salanova lettuce to reduce time to harvest by 20% and improve crop quality

Case study at Israeli hydroponic farm, using Phyto-C_3™, a biocatalyst produced by Bio-Organic Catalyst, Inc.

Report from Bio-Organic rep. In Israel
Eli HALPERIN GM of E H Green Products for the Environment LTD.

www.bio-organic.com

Introduction And Setup

In 2020, Mr. Golan Rotenberg, a specialist in hydroponic farming (www.rotenbergaa.com), conducted a study to determine the effects of Phyto-C_3™ on salanova lettuce in an Israeli hydroponic farm.

Phyto-C_3™ is a highly concentrated liquid biocatalytic agent that keeps irrigation lines and greenhouses free of scale and slime while also increasing soil and crop health. Phyto-C_3™ is completely safe and green. Phyto-C_3™ immediately increases oxygen transfer rates in water, increase dissolved oxygen levels, and dissolve FOGs.

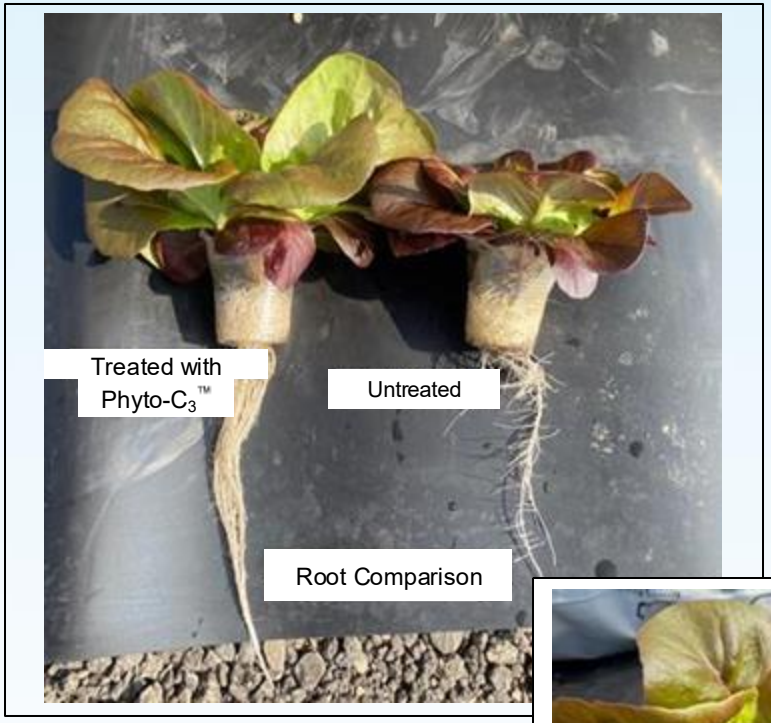
Various tests were performed to determine the optimal dosage of Phyto-C_3™. The optimal dosage was found to be 2ppm. The test was repeated twice with this dosage.

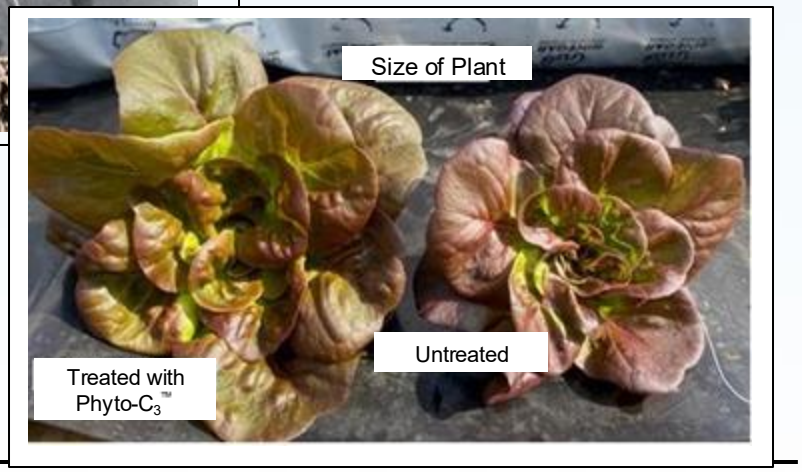
The crops tested were red salanova and green salanova lettuce.

Each test was in a pond measuring 117 square meters holding 30 cubic meters of growth solution.

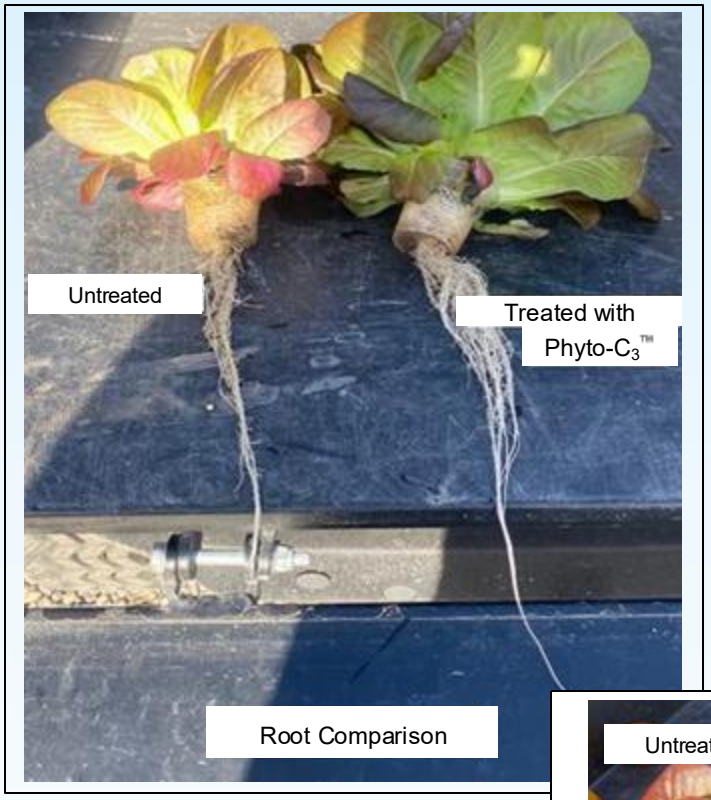
One pond contained Phyto-C_3™ in the water. One pond was a control, with no Phyto-C_3™.

Results After 6 Days





Results After 14 Days





Results At Harvest

With Phyto-C_3™

Plants are larger





Without Phyto-C_3™

Conclusions

- Phyto-C_3™ reduced time to harvest from 25+ days to 20 days.
- Phyto-C_3™-treated lettuce had brighter, thicker, better quality roots.
- Phyto-C_3™-treated plants were larger than the control group.
- Phyto-C_3™ raised the level of dissolved oxygen in the water.
- Phyto-C_3™ broke down calcium hydroxide and released 40+% more free calcium into the water than in the control ponds.

About Bio-Organic Catalyst, Inc.

Bio-Organic Catalyst, Inc. is a California company that has developed a breakthrough water treatment, currently being used in over ten countries, which helps solve major environmental problems in waste/water (nitrogen, organic pollution, H_2S, odors), agriculture (water demand, soil health, crop yields) and industry (effluent, emissions, fouling) in a simple and profitable way.

Our Bio-Organic Catalysts ("BOCs") are highly concentrated liquid biocatalytic agents that immediately increase oxygen transfer rates, increase dissolved oxygen levels, and dissolve FOGs.

This triggers beneficial effects wherever water is present, so there are surprisingly many useful applications, including pulp & paper, cooling towers, agriculture, anaerobic digestion, aquaculture, fire control, hydrocarbon remediation, commercial cleaning and many others.

BOCs are made from plant and mineral extracts, yeast fermentation by-products and a non-ionic surfactant.

BOCs are easy to use (just add to water), cost-effective (just 1 - 4 parts per million), increase operating profits (important for rapid large-scale adoption) and are completely safe and green.

About Phyto-C_3™

Phyto-C_3™ is a highly concentrated liquid biocatalytic agent that keeps irrigation lines and greenhouses free of scale and slime while also increasing soil and crop health. Phyto-C_3™ is completely safe and green. Phyto-C_3™ immediately increases oxygen transfer rates, increases dissolved oxygen levels, and dissolve FOGs.

This creates many benefits:

- **Reduce Water Use**: Phyto-C_3™ reduces water use up to 50%. Phyto-C_3™ increases crop yields and crop quality, so less water produces the same or increased yield.
- **Keep lines clean:** Phyto-C_3™ dissolves scale and slime in sand filters, irrigation lines, emitters and hydroponic systems.
- **Improve Soil Health**: Phyto-C_3™ enhances the soil microbiome, especially the aerobic microbes and AMF (Arbuscular Mycorrhizal Fungi) within the soil which are essential to its health. Phyto-C_3™ dramatically reduces the accumulation of salts and iron in soils. Phyto-C_3™ replaces the acids and bleaches that are usually used to clear lines. These chemicals can enter the soil, make it acidic and damage the soil microbiome.
- **Use Less Fertilizer / Water**: Phyto-C_3™ improves nutrient and water uptake by plants.
- **Increase Yields And Quality:** Phyto-C_3™ treated plants develop stronger roots, improved photosynthesis and improved overall health. This leads to increased crop yields together with enhanced crop quality.
- **Control Small Pests**: Applied as a foliar spray at 1:1000 dilution, Phyto-C_3™ breaks the chitin shells of mites on mites, white fly and other small pests, causing them to dry out and die.

Phyto-C_3™ is easy to use – simply add 2ppm to all the water, all the time.



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