



Pioneering Algae Metabolites for Agriculture

Distributed by BetterFedFoods LLC



<u>Disclaimer</u>: All the information, statements and data included here are based on management (or third party) estimates, opinions and projections. These have not been independently verified by third parties.



We manufacture algal metabolites for use as a liquid soil amendment for major crops



A technology that causes the proliferation of key microbes, not by feeding them, but by signaling them!



Farmers and the environment are facing real challenges due to chemical fertilizers

36B

47%

73%

36 billion tons of topsoil are eroded every year

Source: EC Joint Research Center¹

(1) https://www.globalsoilbiodiversity.org/blog-beneath-our-feet/2018/1/9/how-much-soil-is-lost-every-year

Cost of chemical fertilizers has risen 47% since 2020

Source: USDA-NASS²

(2) https://www.nass.usda.gov/Charts_and_Maps/graphics/data/prod1.txt

NPK causes **73%** of US nitrous oxide emissions

Source: US Energy Information Admin.3

(3)

https://www.eia.gov/environment/emissions/ghg_report/ghg_nitrous.ph

р



The Microbe's Best Friend!

(1) (1) (8)

Our liquid soil booster addresses these problems

May Improve Soil Fertility

May result in Better ROI for Farmers

Has Potential to Help the Environment

20x

8x

+100% soil microbes¹
+200% microbial diversity²

ROI of **8x-20x**³ + **20%** yield increase⁴

Organic, no NPK chemicals



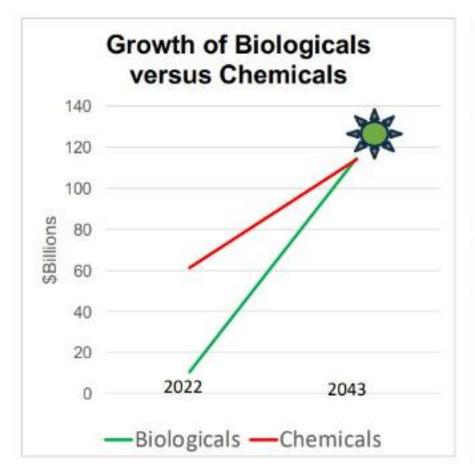
⁽¹⁾ https://truealgae.com/wp-content/uploads/2022/05/TrueSolum-Enhances-Mycorrhizal-Communities-in-the-Soil-052022.pdf

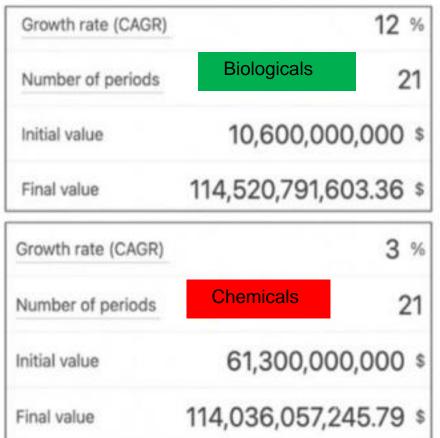
⁽²⁾ https://truealgae.com/wp-content/uploads/2022/03/TrueSolum-MoA-Azospirillum-sp-03152022.pdf

^{(3) &}lt;a href="https://truealgae.com/wp-content/uploads/2021/09/TrueSolum-Strawberries-Data-Sheet.pdf">https://truealgae.com/wp-content/uploads/2021/09/TrueSolum-Strawberries-Data-Sheet.pdf; https://truealgae.com/wp-content/uploads/2021/09/TrueSolum-Strawberries-Data-Sheet.pdf; https://truealgae.com/wp-content/uploads/2021/09/TrueSolum-Strawberries-Data-Sheet.pdf; https://truealgae.com/wp-content/uploads/2021/09/TrueSolum-Strawberries-Data-Sheet.pdf; https://truealgae.com/wp-content/uploads/2021/09/TrueSolum-Pepper-Data-Sheet.pdf; <a href="https://truealgae.com/wp-content/uploads/2021/09/TrueSol

⁽⁴⁾ https://truealgae.com/wp-content/uploads/2022/02/TrueSolum-Florida-Strawberry-Field-Trial-Summary-030122.pdf

TAM: \$10.6B now, \$114B in 21 Years





Source: Shane Thomas, Upstream Insights 1

(1) https://www.upstream.ag/p/upstream-ag-insights-february-6th



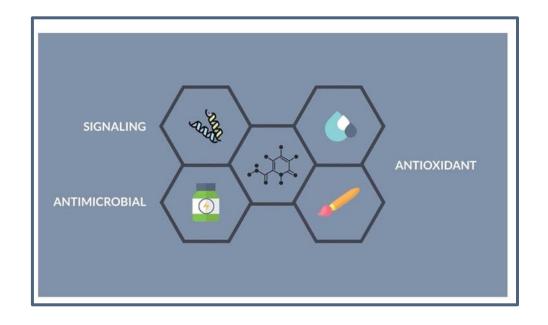


Our platform technology can create multiple metabolite combinations

- We capture useful metabolites expressed by the microalgae as it grows
- Patented in 4 countries, renewable, scalable, very low-energy production
- Low inputs costs result in 60% gross margins

What are Algae Metabolites?

- Small molecules expressed out of algae as it grows
- Functions include
 signaling, catalytic
 activity, defense, and
 interactions with other
 organisms



Signaling Beneficial Soil Microbes To Work

Azospirillum



+200%*
Natural Nitrogen Fixing
Cycles

Mycorrhizae

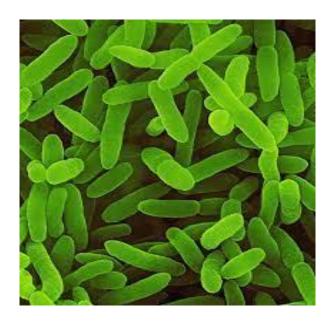


+100%*
Phosphorus and water Uptake

*Research done by Biome Makers. Please refer to the BetterFedFoods.com web site: https://www.truesolum.com/mode-of-action

https://static1.squarespace.com/static/63444e757848c71038592cbc/t/63483f5aa7281112561110e8/1665679196275/Glossary-of-Microbial-Terms-1.pdf https://truealgae.com/wp-content/uploads/2022/05/TrueSolum-Enhances-Mycorrhizal-Communities-in-the-Soil-052022.pdf

Pseudomonas



+300%*
Iron Uptake



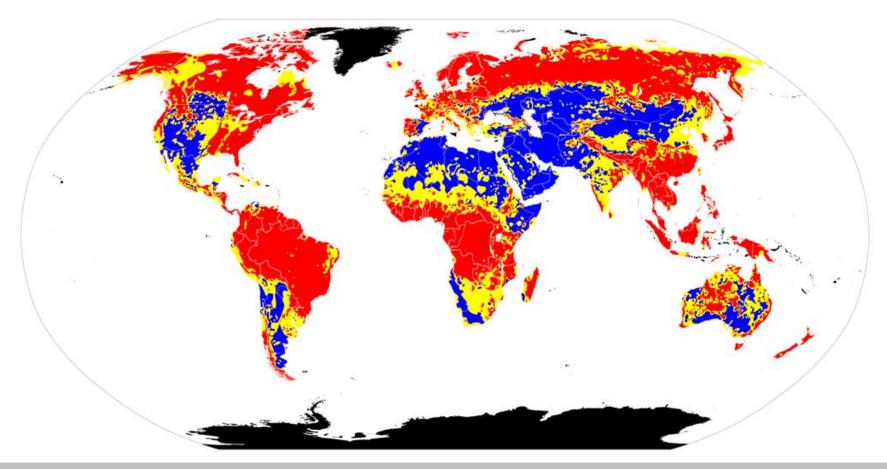
Impact on Nutritional Uptake in the Plants

Nutrient	%Increase	Benefit
P	22%	Phosphorus is the second most important key element after nitrogen as a mineral nutrient in terms of quantitative plant requirement. Phosphorus helps transfer energy from sunlight to plants.
Fe	24%	Iron is critical to the transfer of energy which fuels metabolic processes inside plants due to its function of accepting or releasing electrons.
Zn	22%	Zinc helps the production of a plant hormone responsible for stem elongation and leaf expansion. It regulates various metabolic activities.
Mn	17%	Manganese controls photosynthesis and several oxidation-reduction systems.
Mg	23%	Magnesium is a key element of chlorophyll, the green coloring material of plants, and is vital for photosynthesis. It also serves as an enzyme activator.
Ca	22%	Calcium is essential for root health, growth of new roots and root hairs, and the development of leaves. Calcium is also a component of cell walls.

Research done by 12 independent 3rd party field trials, Biome Makers, New Age Laboratories



IDC Prone Soils Around The World



Global variation in soil pH. Red = acidic soil. Yellow = neutral soil. Blue = alkaline soil. Black = no data.

Source: https://en.wikipedia.org/wiki/Soil_pH - Zinc, iron, copper and manganese show decreased availability at higher pH.



Iron Deficiency in Agriculture



30% of the 1.65B ha global farmland at risk for causing Iron Deficiency Chlorosis (IDC) in crops

Iron is critical for early plant growth and health

Source: https://pubmed.ncbi.nlm.nih.gov/11329018/ - One of the widest ranging abiotic stresses in world agriculture arises from low iron (Fe) availability due to high soil pH, with 30% of arable land too alkaline for optimal crop production.

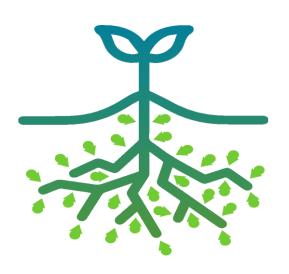




May Improve Iron Availability

May create better Iron Uptake by the Crops

Competitive Price



22%*

16%*

150%* increase in iron transporting siderophores

p=.03* statistically significant

Costs 16% less per acre than leading synthetic chelated Fe

Source: Research done by Biome Makers and New Age Laboratories

https://truealgae.com/wp-content/uploads/2022/03/TrueSolum-Increases-Bacteria-that-Improve-Fe-Assimilation-and-Zn-and-Mn-Transport-Equilibrium-030122-WP.pdf



Go to Market Strategy



Proof of Concept
Farmers and Distributors
Continuous

3rd Party Research
Universities and Laboratories
Continuous

B2B Sales
Ag Input Manufacturers
10+ On-going Trials



Return on Investment

- Great A has improved yield by 4 to 15% in corn across 3 trials in 2022
- Assuming 5% yield improvement
 - Cost to farmer: \$4/acre
 - Price of corn: \$5.50/bushel
 - Average yield in bushels: 172/acre
 - 5% = 8.6 additional bushels/acre
 - Extra revenue = \$47.30/acre







We are pioneering metabolites for agriculture

- \$10.6B addressable market growing 12%
- Reduced technology and PMF risk
- Product Gross Margin 60%¹
- Growing patent portfolio
- Can scale with more funding



