



BACTELIFE

CONSERVE WATER. IMPROVE SOIL. PARTNER WITH NATURE.

The Bactelife Story

Inspired by a passion for microbe-based solutions, Bactelife was founded amid critical water shortages and the high costs of traditional fertilizers. Our mission: to revolutionize agriculture with natural, water-efficient methods.

Innovation Driven

Crafting cutting-edge, eco-friendly agricultural solutions.

Science-Based

Leveraging Nanotech & Microbial sciences for healthier plants while reduced chemical use.

Farmers At Heart

Dedicated to devising solutions that enhance revenue streams for our farmers.



The Bactelife Story

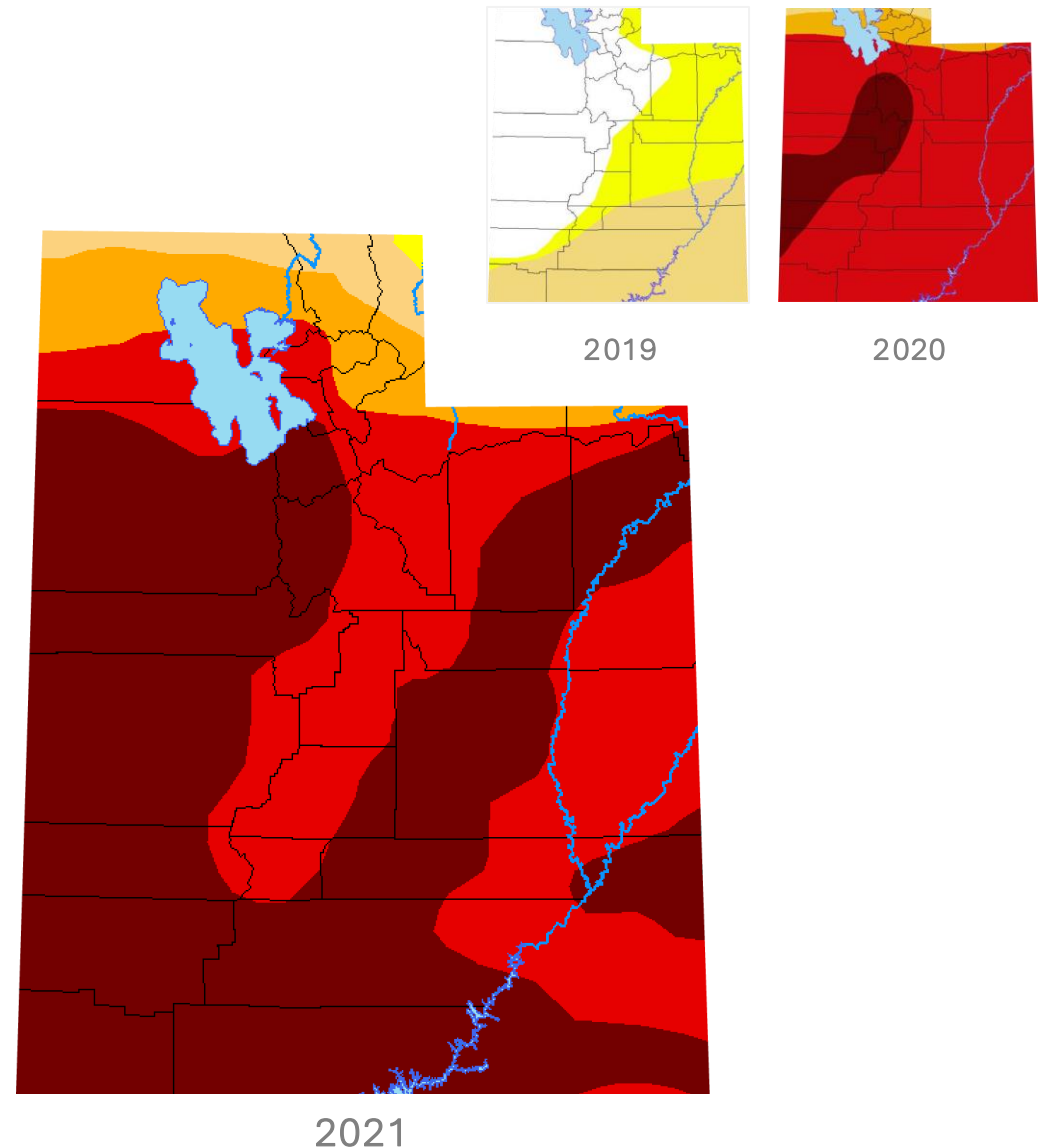
Utah Called for Help

Under the strain of unprecedented droughts and the global COVID-19 pandemic, Utah's agriculture sector grappled with supply chain disruptions and heightened environmental constraints on water usage. Numerous farms closed, governmental regulations intensified, and food security emerged as a pressing concern for our society.

Historic Drought

COVID 19

Food Security & Supply Chain Distribution



Sustainability

The Pain Point: Farms are at a critical junction, struggling to adapt to climate change and growing demands, while facing skyrocketing costs for essential inputs like fertilizers, which have seen prices increase by up to 400%.

Regulatory Challenges: Swiftly evolving environmental regulations outpace farmers' ability to adapt, risking farm closures and contributing to food insecurity.

Technological Solution Potential: Agricultural technologies offer a beacon of hope, aiming to optimize yields, promote sustainable practices, and enhance economic resilience for farmers globally.

We stand at a pivotal moment where the need for innovative agricultural solutions has never been greater. Ensuring food security, advancing environmental sustainability, and bolstering economic viability for farmers are critical challenges that demand our immediate attention and action.

Food Security

Increasing pressures stemming from population growth and evolving dietary patterns are placing strain on our food production capacities. Lessons garnered from the challenges encountered in supply chain management during the Covid pandemic further accentuate these strains.

Environmental Sustainability

Conventional farming methods contribute to soil degradation, water pollution, and biodiversity loss.

Economic Viability

Farmers face rising costs, market volatility, and regulatory hurdles, threatening their livelihoods and our food supply.



Fertilizer

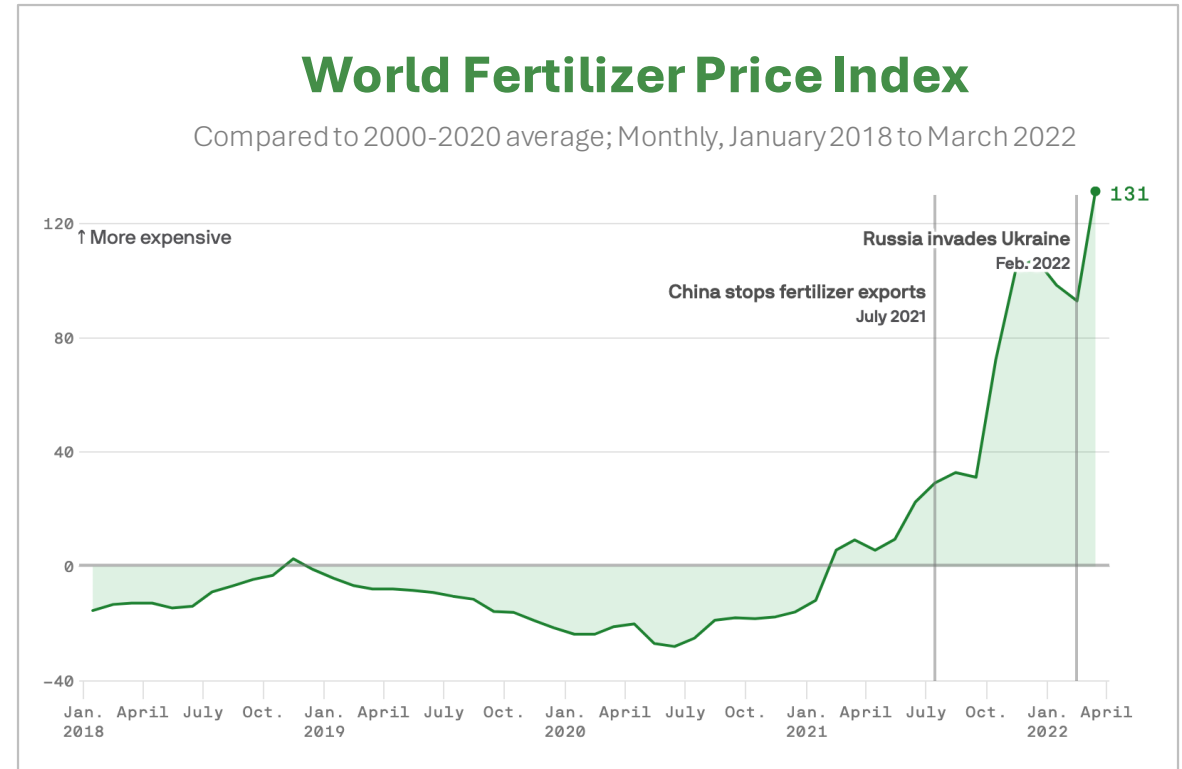
The World Echoed

The agricultural sector stands at a pivotal moment, contending with the challenges of climate change and escalating demands, all while grappling with soaring costs of vital inputs such as fertilizers, which have surged by as much as 400%.

Food Insecurity

Decreased Economic Viability

Low Environmental Sustainability



Data: International Food Policy Research Institute, NPK prices



Economics

40%-80% of fertilizer is wasted, causing environmental and economic issues. Bacteria-based solutions offer an alternative, aiming to improve crop yields and soil health. But farmers are hesitant—they don't know much about it, worry about costs, and aren't sure how to mix it with old methods. We'll make it simpler for them to try this eco-friendly option!

Lack of Trust & Awareness

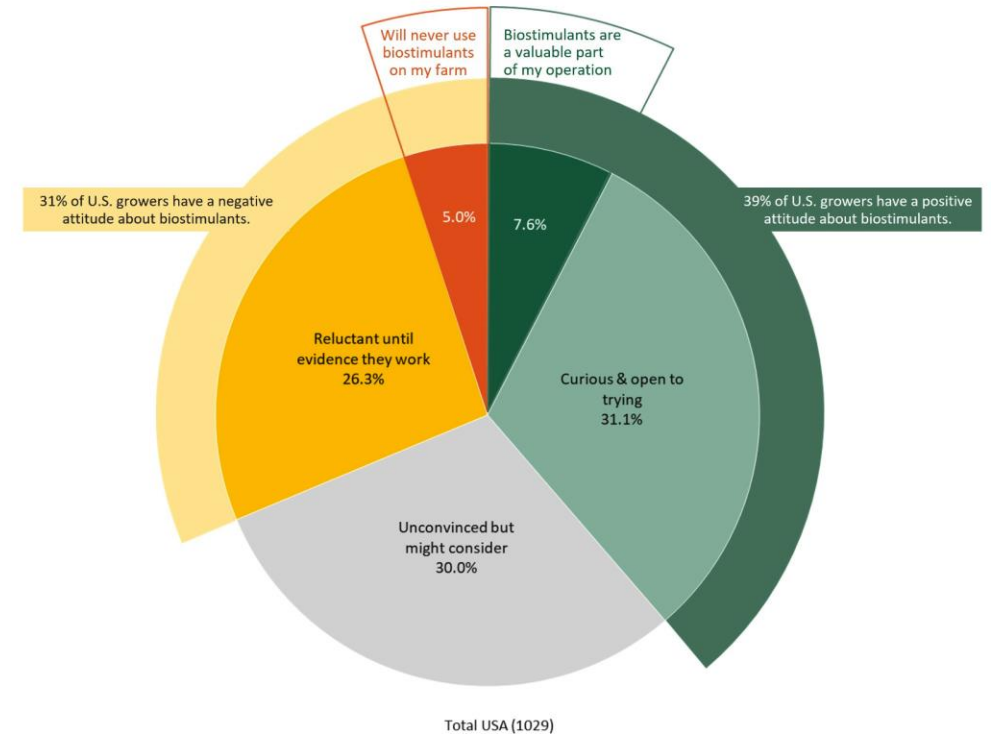
Many farmers are hesitant to adopt new technologies due to unfamiliarity and skepticism about their effectiveness and benefits.

Cost and ROI Concerns

The perceived high initial investment and uncertain financial returns deter farmers from implementing new solutions.

Implementation Concerns

Practical difficulties in integrating advanced technologies into existing farming practices, including technical complexities and lack of guidance or support.



Before Bactelife | Plants compete for resources, leading to waste

- 66% more pollution
- 40% more water loss
- Kills Soil Bacteria/Fungi
- Pesticide/Herbicide Dependent
- High Economic Loss
- High Environmental Loss

After Bactelife | Plants Connect to each other through microbes and increase access to nutrients and water by up to 700%!

- Increases Production
- Enhanced Soil Health
- Less Water & Conventional Fertilizer Use
- Decreases Pollution
- Sustainable Pest Management





H₂ Horganix™



The Bactelife Solution

Increased Crop Productivity

Utilize 30-50% less conventional fertilizer and water, while substantially increasing yields.

Enhanced Soil Health

Enrich soil microbiomes for better nutrient cycling and water retention.

Sustainable Pest Management

Reduce reliance on synthetic pesticides through beneficial bacteria.



100% Water & Nitrogen Fertilizer

50% Less Water & No Conventional Fertilizer



TAM & SAM

185 Billion | 20.34 Billion

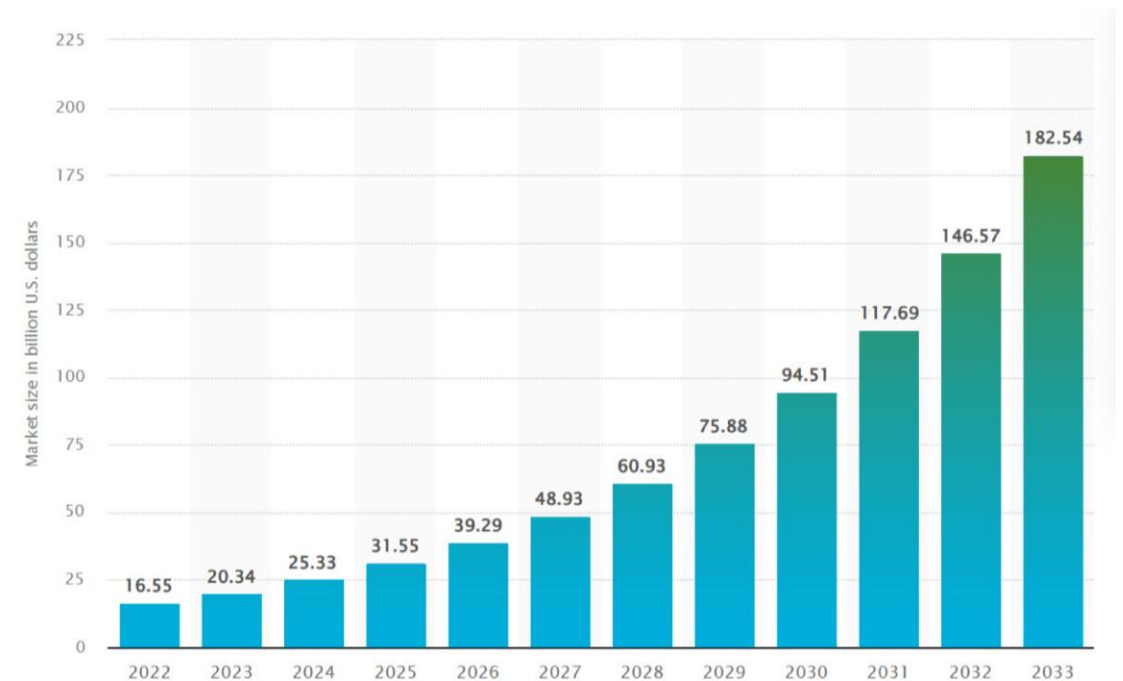
Vast Market Opportunity

“The global climate tech market was valued at 20.34 billion U.S. dollars in 2023, an increase of 23 percent from 2022. The market is expected to experience considerable growth over the next decade to reach 183 billion U.S dollars in 2033, registering a CAGR of 24.5% during the forecast period of 2023 to 2033. The growth in the climate tech market will be attributed to the increased awareness of the climate crisis and the growing urgency for providing solutions to mitigate climate change.”

- Statista.com

24.5% CAGR from 2023-2033

**Climate Tech Market Size Worldwide from 2022 to 2023,
With a Forecast to 2033 (in Billion \$USD)**



Competitors

Microbe Based Fertilizer | Nanotechnology Fertilizer Businesses

The Bactelife Difference

The **only** product to combine cutting-edge Nanotech with Beneficial Microbes

Unique Combination

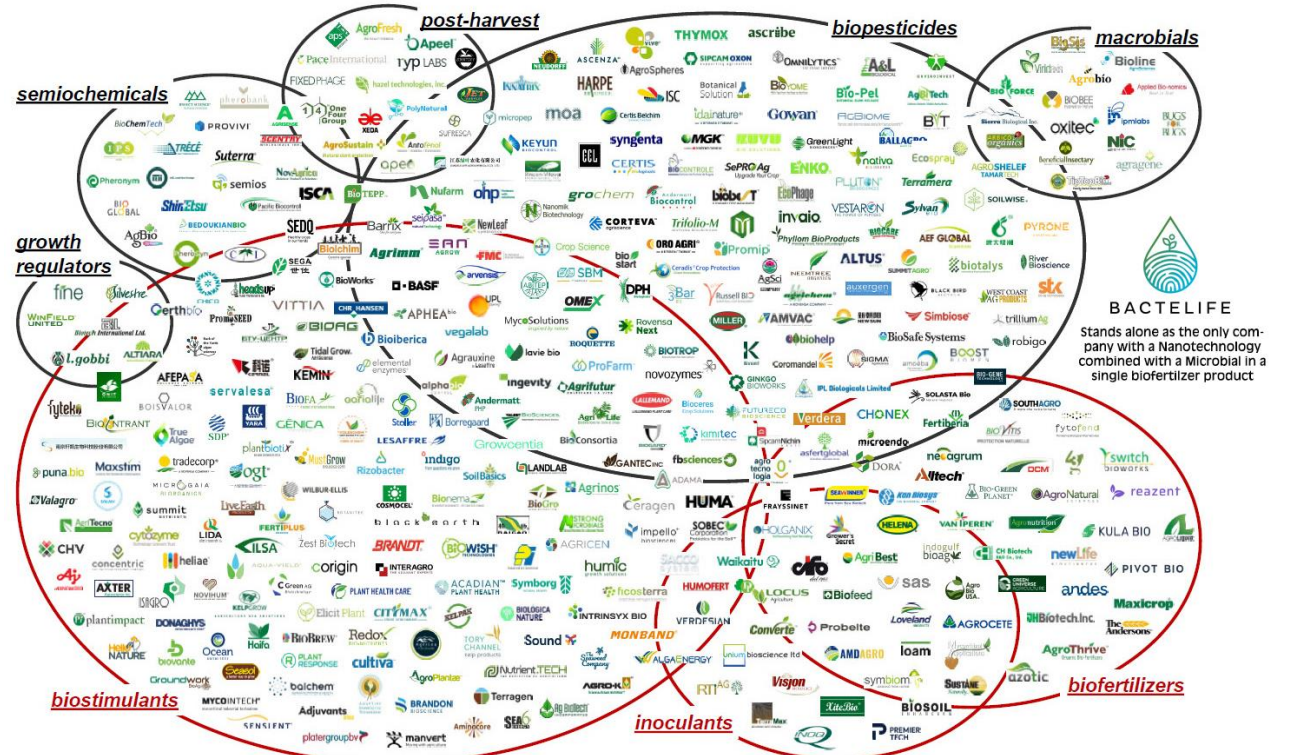
The first to merge biofertilizers with nanotechnology, enhancing efficiency and sustainability.

Market Standout

While many focus on either biofertilizer or nanotechnology, Bactelife innovates by combining both, protected by intellectual property.

Superior Results

Our dual-action solution leads to up to 50% higher crop yields with less input, setting a new standard in agriculture.



Milestones Achieved

2023 completed two years of market testing in 18,000 acres of crops. We recently secured IP for our technology and completed our first \$1 million contract. Revenue from product sales funded a Utah Inland Port Location to provide a strategic advantage in supply chain access, manufacturing, and international sales and expansion in 2025.

Innovative Foundations

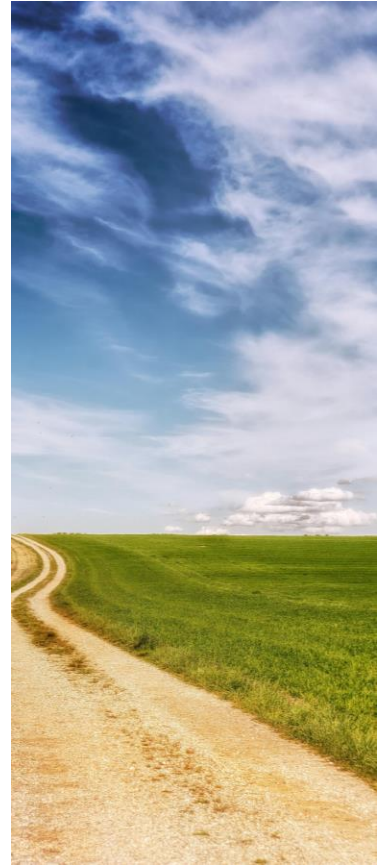
Secured essential ingredients and intellectual property for our groundbreaking nanotech and biofertilizer.

Strategic Location

Established a production facility at the Utah Inland Port, optimizing our supply chain and expanding global reach.

Grant Engagement

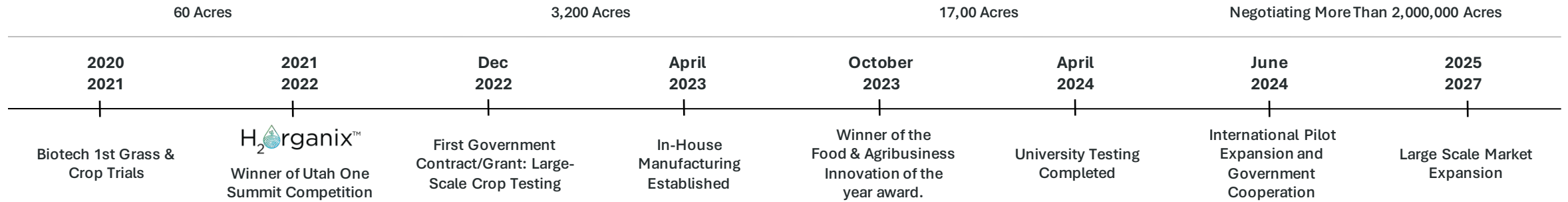
Actively participated in state grant opportunities, fueling research and showcasing our biofertilizers' efficacy and environmental benefits.





Milestones Achieved

Sales & Grant Engagement | University Studies | International Development



Grant Success

State of Utah | Governor's Office of Economic Development (GOEO)



Governor's Office of Economic Opportunity

Water Conservation and Improved Production

Bactelife Industries secured a \$1 million innovational grant from Air and Water, facilitated by the Governor's Office of Economic Development, to collaborate with farmers on water conservation efforts. Partnering with just 15 farmers across 12,500 acres of crops in Utah, Bactelife successfully preserved over 4.5 billion gallons of water while boosting farm production by an average of 25.5%. This synergy of water conservation and increased output resulted in an impressive \$10 return on investment for every dollar spent in Utah. Studies conducted by the University of Utah indicate the potential to further reduce water usage by 2-3 times compared to the achievements seen in the 2023 alfalfa and corn crops.

Crop Impact

Farmers reported increased yields, increased quality, and incorporated more regenerative agriculture practices.

Water Impact

Farmers conserved between 10-48% of their water. With more government support, more water conservation can be achieved.

Solution Value

99% cheaper than drip irrigation funded projects with an estimated ROI to the economy of \$10 million dollars.



University Testing- Alfalfa



Water Stress | Crop Performance

Utah State University

In 2023, Utah State University conducted trials of H2Organix at its Wellsville, Ut location. The tests aimed to assess H2Organix against crops with varying levels of water reduction: no reduction, 25% reduction, 40% reduction, and 50% reduction. Throughout the 2023 season, no fertilizer was applied, and irrigation was limited to just four events. Typically, farmers in the region use 42 to 48 inches of water per acre for crop cultivation. However, USU opted to utilize only 3.5 to 6.75 inches of water per acre for all alfalfa trials, marking an impressive 86-93% reduction in agricultural water usage compared to regional standards.

Alfalfa Testing Schedule

	Irrigation by Treatment by Water Turn (in)			
	100%	75%	50%	Target
6-May	0	0	0	0
22-May	1.25	0.9375	0.625	1.25
6-Jun	0	0	0	0
22-Jun	0	0	0	0
7-Jul	2.25	1.6875	1.125	2.25
22-Jul	0	0	0	0
8-Aug	1.75	1.3125	0.875	0
22-Aug	1.5	1.125	0.75	0
6-Sep	0	0	0	0
total	6.75	5.0625	3.375	3.5





Increased Nutrients- Alfalfa

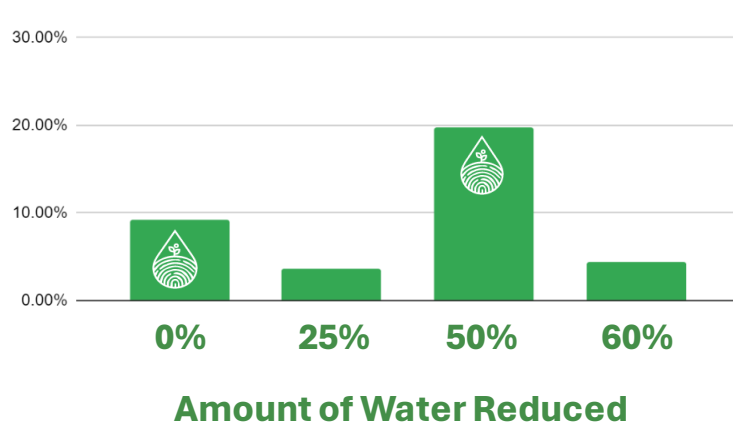
Superior Nutrition | 100% RFV Advantage

High Quality Crop Value

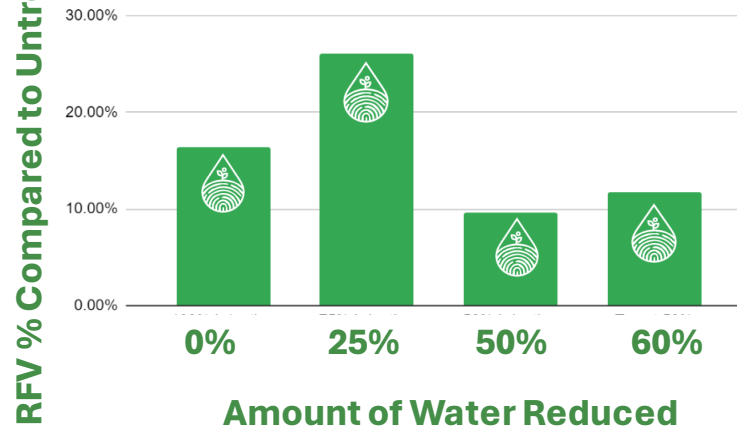
Throughout all stages of irrigation, H2Organix consistently displayed higher nutrient Relative Feed Value (RFV) values compared to untreated alfalfa. The findings suggest that RFV values have the potential to rise as the season advances in contrast to untreated alfalfa. RFV stands out as the primary indicator of value in alfalfa.

RFV % Compared to Untreated

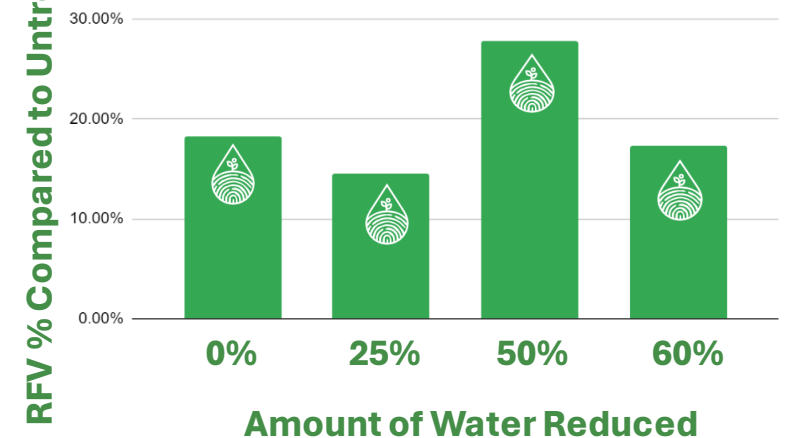
First Cutting



Second Cutting



Final Cutting



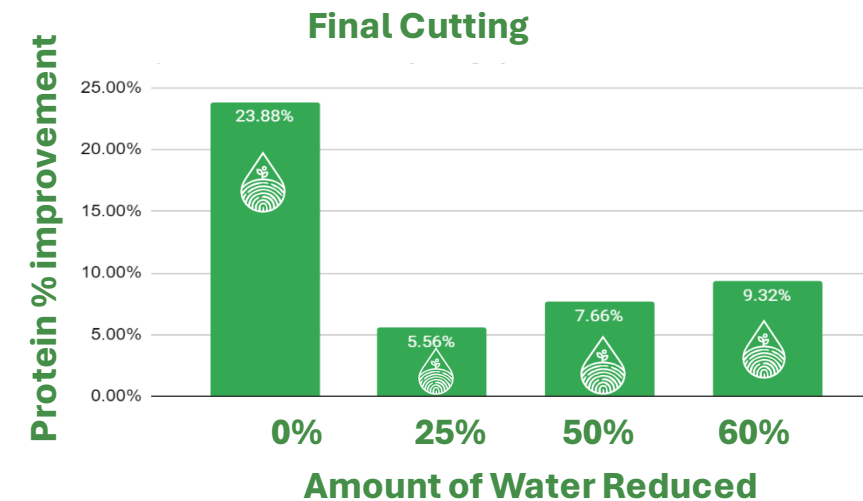
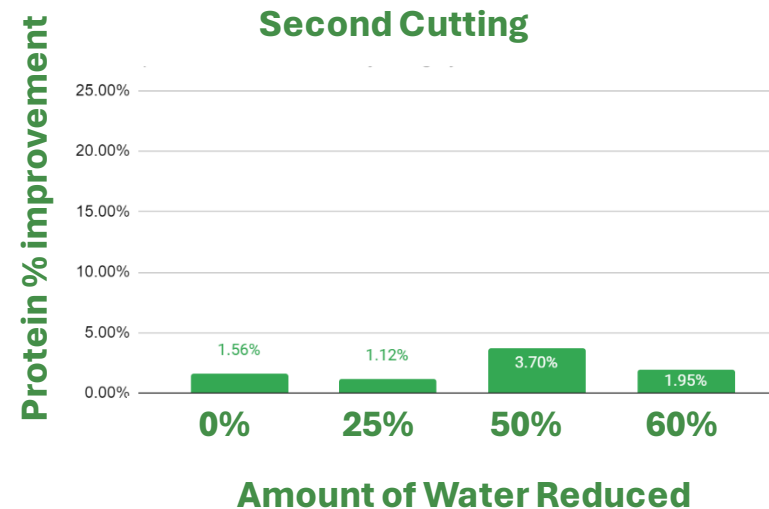
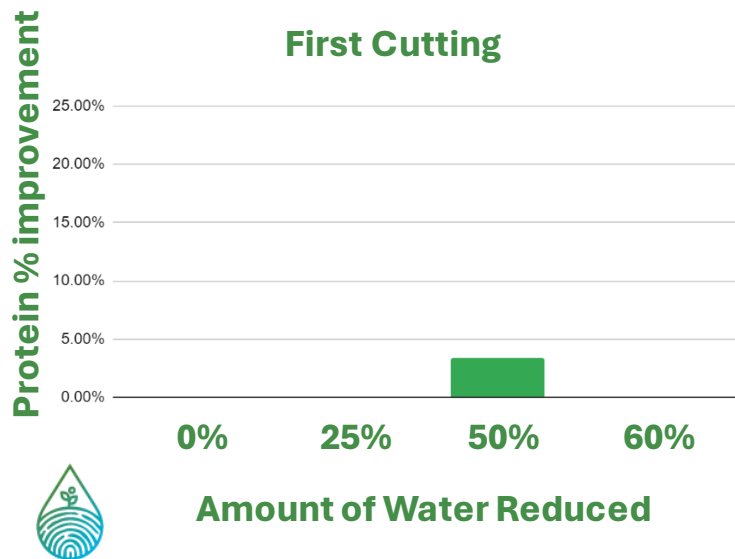


Improved Protein- Alfalfa

Highest Quality | Growing Value

Increased Value as Season Progressed

University testing demonstrated that initial symbiotic relationships begin modestly but rise in value over the course of the season. By season's end, crops treated with H2Organix consistently outperformed untreated crops by 5-24% compared to untreated alfalfa.



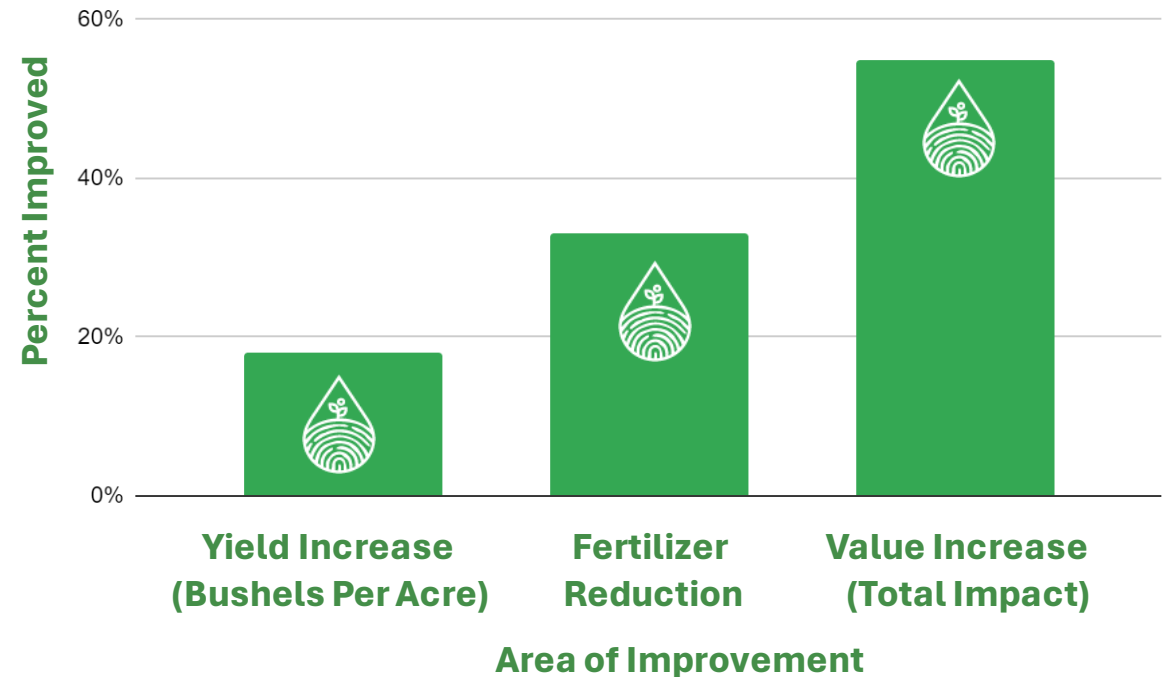
Large Scale Corn

Reduced Fertilizer | Increased Yield

Exceeded all Expectations.

Farmer historically struggled to achieve a yield of over 175 bushels of corn per acre due to uncooperative soil and water issues. Despite trying various minerals and agricultural practices to promote even growth in the fields, success remained elusive. Seeking a solution, the farmer consulted with a fertilizer specialist who conducted tests on the corn prior to the final treatment. The specialist advised against applying the last fertilizer application as the tests revealed sufficient fertilizer levels to sustain the crop until harvest. Following this recommendation, the farmer experienced an increase in yield, a rise in bushel value, and a reduction in fertilizer usage. As a result, adopting H2Organix yielded a remarkable return on investment, with \$19.20 gained for every dollar spent.

Corn: 2022 Utah 300 Acre Farm



University Testing - Corn



Water Stress | Crop Performance

Utah State University

In 2023, Utah State University conducted trials of H2Organix at its Wellsville, Utah location. The tests aimed to compare H2Organix against crops with varying levels of water reduction: no reduction, 25% reduction, 40% reduction, and 50% reduction. No fertilizer was applied in 2023, and irrigation was limited to four events throughout the entire growing season. In a region where farmers typically use 42 to 48 inches of water per acre for crop cultivation, USU opted to utilize between 3.375 and 11.25 inches of water per acre for all corn trials. This marked a substantial regional reduction in water usage for agriculture, ranging from 63-89%.

Corn Testing Schedule

Irrigation by Treatment by Water Turn (in)

2023	100%	75%	50%	Target
6-May	0	0	0	0
22-May	0	0	0	0
6-Jun	1.5	0	0	0.75
22-Jun	0	0	0	0
7-Jul	2	1.5	1	1
22-Jul	3	0	0	1.5
8-Aug	2.5	1.875	1.25	1.25
22-Aug	2.25	1.6875	1.125	2.25
6-Sep	0	0	0	0
total	11.25	5.0625	3.375	6.75



Corn Production

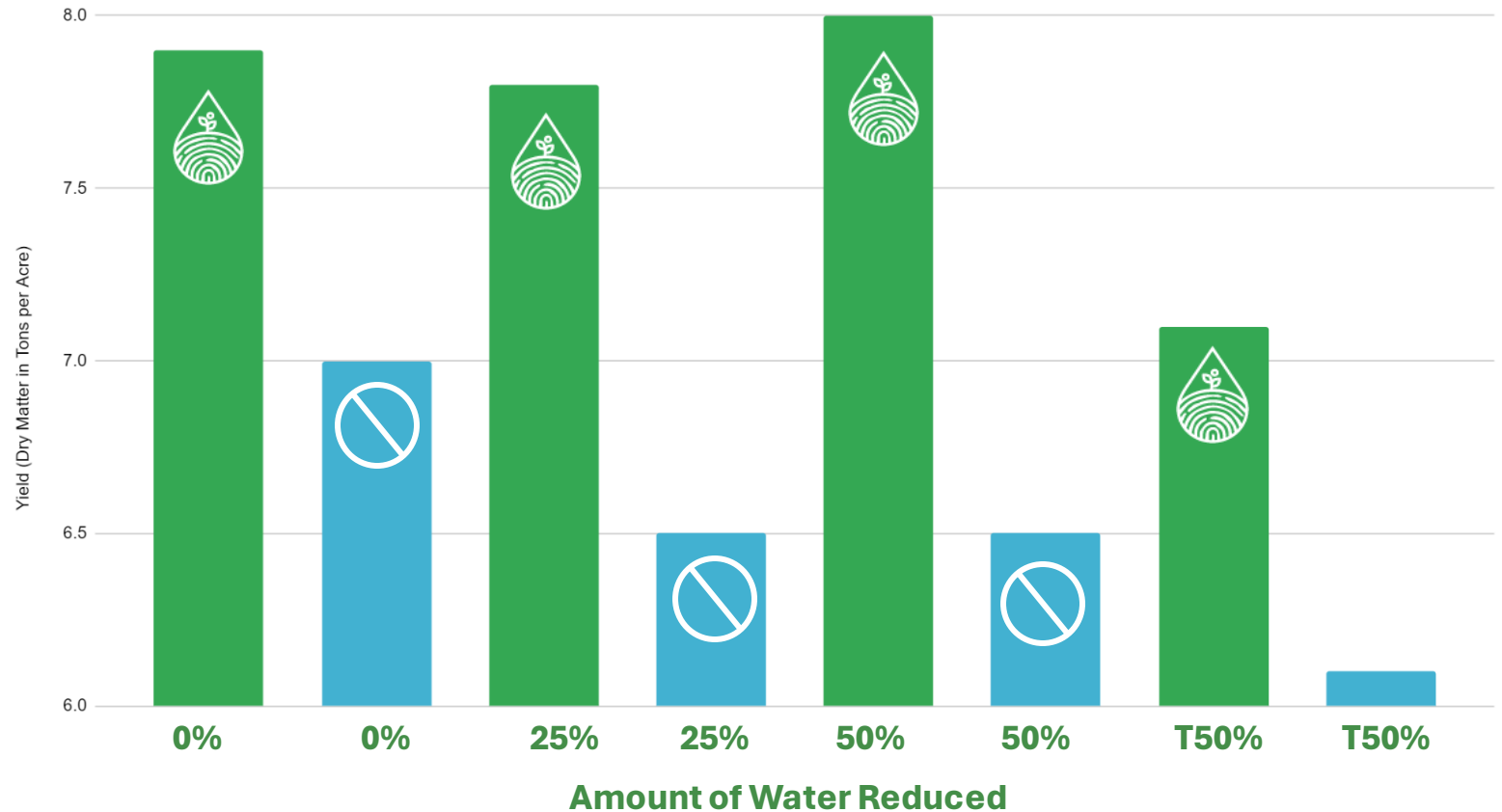
Water Reduction | High Yield

Tonnage When Water is Scarce

Across all scenarios, from no water reduction to a reduction of over 50%, corn treated with H2Organix consistently showed higher yields with reduced water usage. In every water reduction category tested in 2023, treated corn exhibited the capacity to sustain or enhance yield with less water.



H2Organix Compared to Untreated Corn





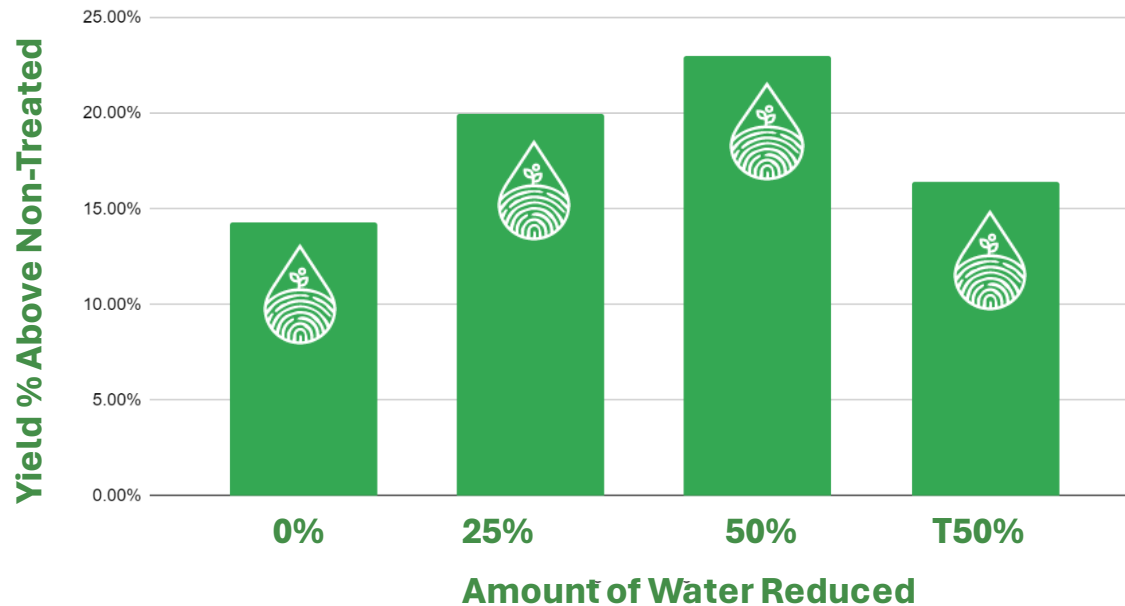
University Testing - Corn

Superior Performance | Less Water

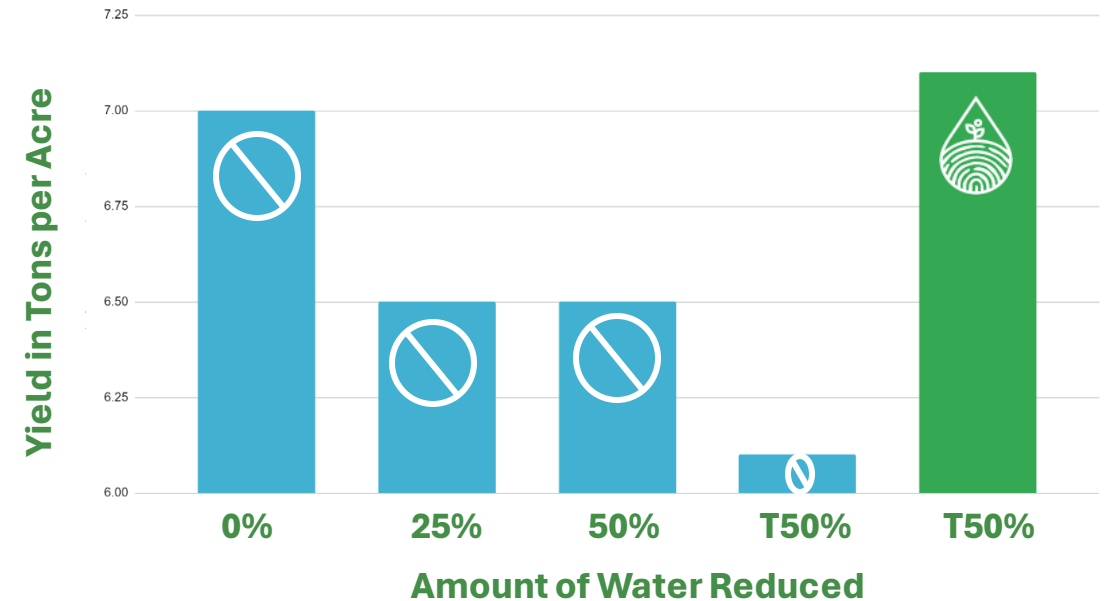
Making tonnage stretch with less water.

In every category, treated corn yielded higher. Even with a 50% reduction in water, H2Organix corn outperformed untreated corn with no water reduction.

Higher Yields in Every Category



Outperformed Untreated Corn with 50% less water



Grass

90% less water | Reduce Carbon Footprint

A new approach to lawn value

2021 trials showcased the capability to slash water usage by up to 90%, eliminate harsh chemicals, and enhance grass health. Across 130 lawns, it demonstrated effectiveness in reducing fertilizer needs, eliminating dry spots, pathogen damage, and pet stains. Expansion in 2022 impacted 2,000 lawns in Northern Utah. Preliminary testing conducted by the University in 2023 confirmed the product's ability to reduce water and fertilizer requirements by 30-50%. Lawns treated with Bactelife required watering only 0-2 times over 45 days, with better quality than lawns watered 7-8 times over the same period. As of 2024, pilots are underway in golf courses and properties with extensive grass areas, with the aim of achieving market readiness by 2025.



Untreated



Treated



July 20th



August 12th

University Testing - Grass



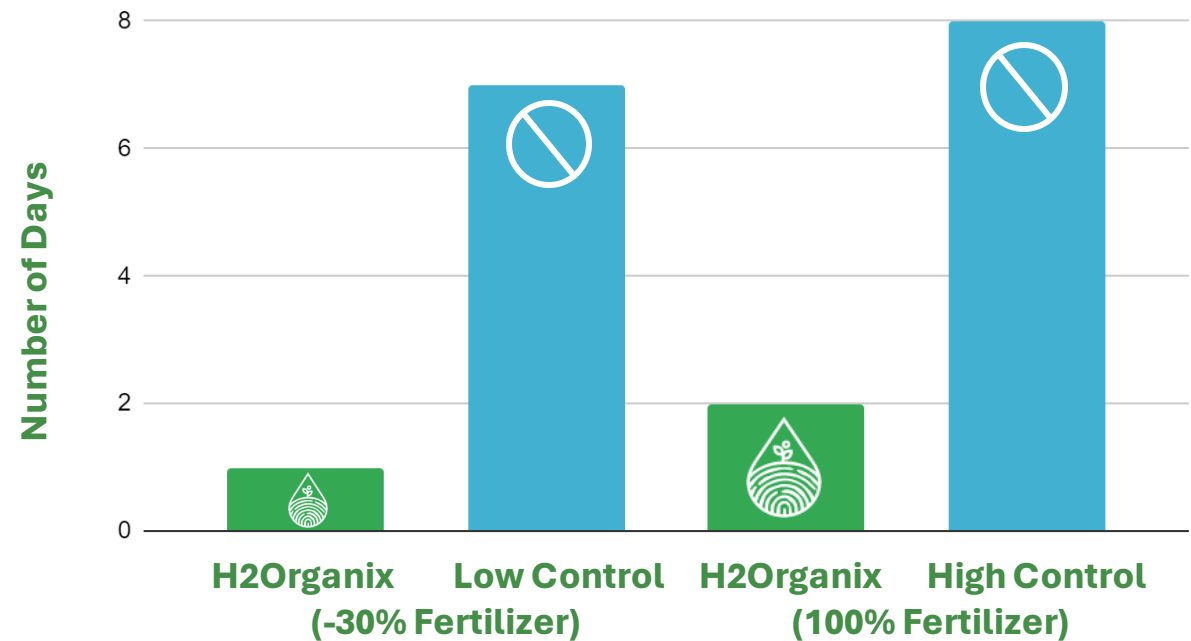
Water Reduction | Reduced Fertilizer

How Low Can You Go?

Water and fertilizer management are primary concerns for golf courses and municipalities. Utah State University devised a fertilizer and water stress assessment, which monitored the overall visual health of each test plot. For plots where visual health fell below 50%, 0.5 inches of water was added each time. During peak heat months, from July 11th to August 22nd, grass treated with H2Organix utilized 75-86% less water and up to 33% less fertilizer. Moreover, treated grass exhibited a 44-200% better response to irrigation compared to untreated grass, effectively enhancing grass health in high temperature climates.



Peak Summer Heat: Total Irrigations



Potato

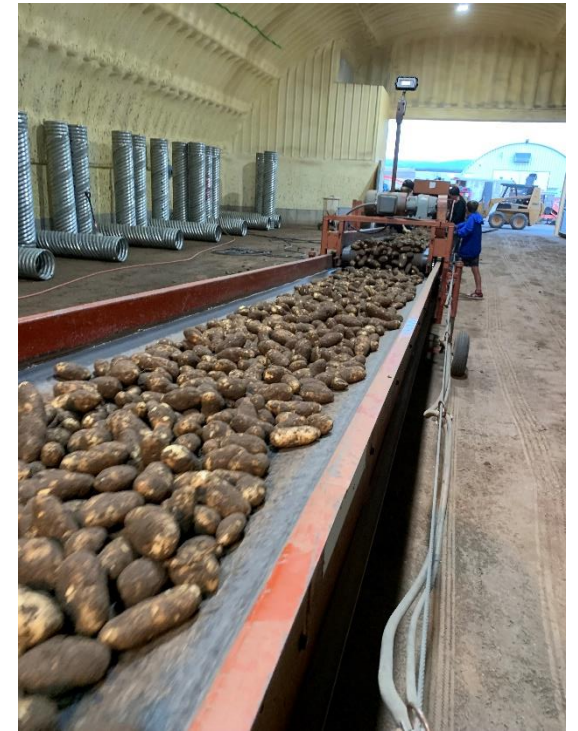
Improved Yield | Increased Quality

In the State that Potatoes Are King

Farm testing conducted in the Teton Valley ID in 2023 revealed notable improvements. Field observations indicated a 10-15% increase in tubers per plant and enhanced skin quality. The farmer also noted that fields were easier to dig, with increased moisture in the swales. Additionally, potatoes cleaned more easily in the processing plant, resulting in better crop storage. Farmers are poised to expand into larger field applications in 2024, as initial results suggest the potential to significantly boost potato yield while reducing fertilizer usage and minimizing nematode damage.



Easier Cleaning and Sorting



Improved Harvesting

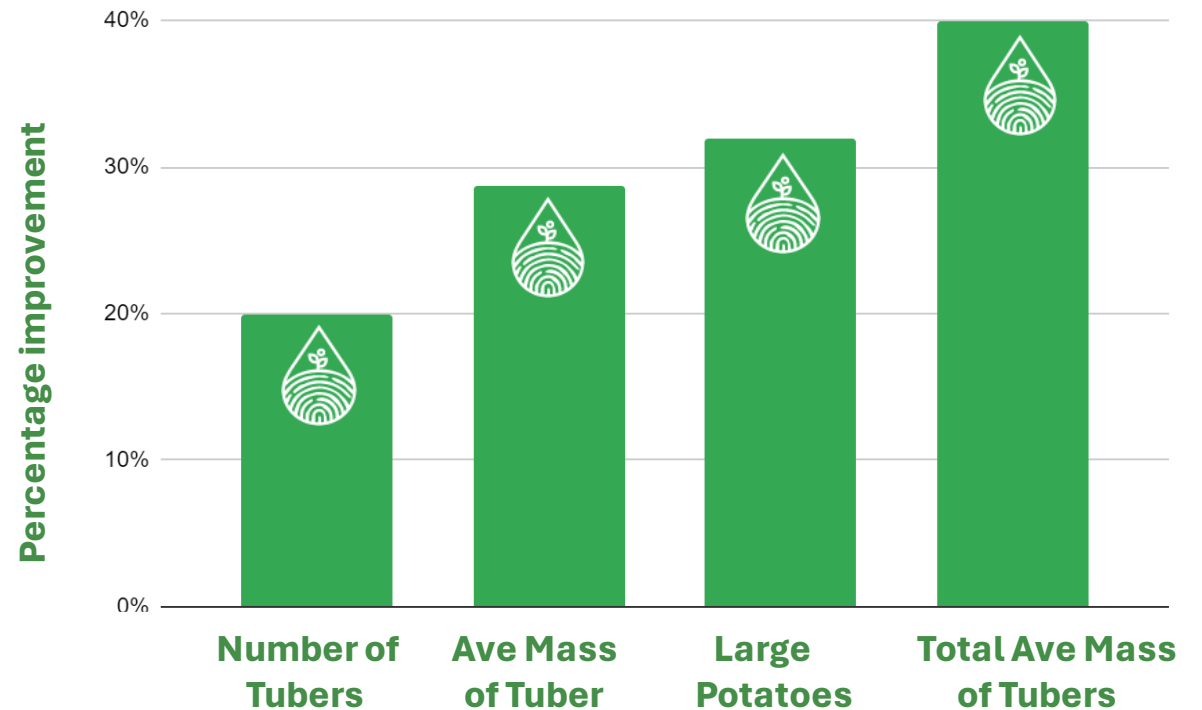
University Testing - Potato

Improved Yields| Better Selection

Increased Crop Value

From 2021 to 2022, potato research was undertaken at the Pryanishnikov Institute. Potatoes treated with Bactelife's Nano technology showcased enhanced yields ranging from 42.2 to 84.4 c/ha. Moreover, there was a beneficial impact on disease resistance, with tuber vitamin C levels increasing by 2.7 to 2.9 mg per 100g.

Nano Tech Impact on Potatoes



Awards

New technology | Broad Impact

Making a Difference

With 15 farmers, our technology conserved 4.5 billion gallons of water in Utah in 2023.



Go to Market Distribution

Direct Sales

Strategic Partnerships

Government Support



INTERNATIONAL
TRADE
ADMINISTRATION



USAID
FROM THE AMERICAN PEOPLE



Food and Agriculture
Organization of the
United Nations



**United
Nations**



United States of America
Department of Commerce



Our Team



Duane Cutler

A seasoned executive with broad experience in company structure and Ag Technologies startups.



Daniel Cluff, President

A Pioneering Scientist driving product R+D and leading support to farmers and pilot projects.



Jeremy Andra, Vice President

A dynamic Strategist for marketing products in government and distribution/sales partnerships.



Maybe You, Strategic Partner

Strategic Partner with investment and scaling connections to take Bactelife to a world in need.



Join Our Growth Journey

Fundraising Goal

Seeking \$10-20 million to unlock full growth potential. This investment will drive innovation, R&D, and global expansion.

Strategic Partnerships

Inviting partners who share our vision for a sustainable future. Together, we can bring cutting-edge biofertilizer and nanotechnology solutions to the global market.

Global Expansion

Funds will establish strategic production facilities worldwide, enhancing market access, supply chain resilience, and regulatory compliance.



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