Ecological Laboratories INC.

Quantum Growth Series Overview

NATURAL SOLUTIONS

Basic Manufacturer & Fermenter, Strong R&D capabilities

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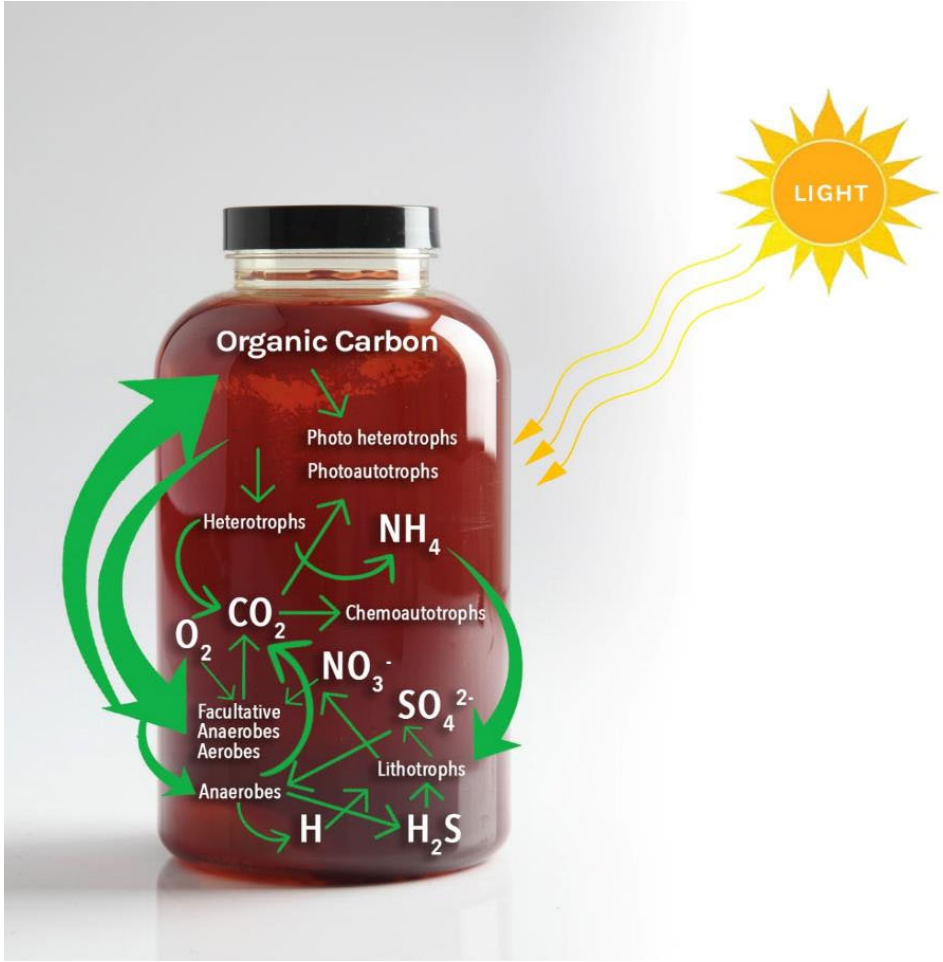
ELI Technology Introduction



Novel Ecosystem in a "bottle"

- Multistage fermentation process
- Vegetative (activates upon contact w/oxygen, nutrients)
- 14 key strains; function in aerobic and anerobic conditions
- Photosynthetic, N-fixers, P-solubilizers and other solubilization
- Shelf stable 2 years

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ELI Technology Introduction - Fermentation

- Final stage of fermentation
- Product is grown in final packaging
- Closed environment allows exceptional quality control

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Quantum Growth Primary Benefits

ENHANCE PLANT PHOTOSYNTHESIS

IMPROVE NUTRIENT AVAILABILITY & TRANSFER

ENHANGE/ RESTORE SOIL BIOLOGY

ENHANCE PLANT PHOTOSYNTHESIS

Key Strain

Quantum Growth photosynthetic bacteria *Rhodopseudomonas palustris*

- Primary microorganism (~60% of formulation)
- Can produce physiologically active amounts of 5-Aminolevulnic Acid (ALA)

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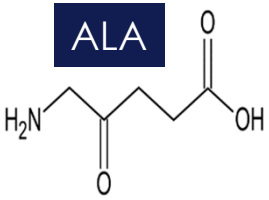
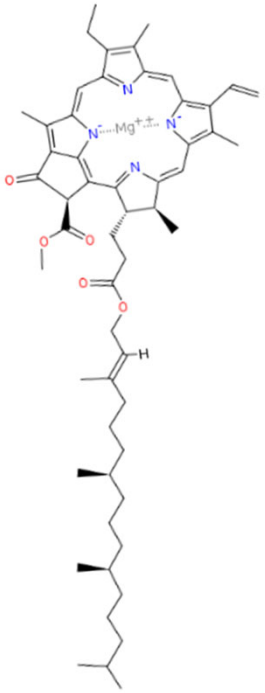
ENHANCE PLANT PHOTOSYNTHESIS

ALA & Chlorophyll

ALA



Chlorophyll a



- ALA is an important ‘building block’ molecule for chlorophyll
- Plant photosynthesis can be limited by chlorophyll availability
- Purple photosynthetic bacteria can produce physiologically active amounts of ALA

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ENHANCE PLANT PHOTOSYNTHESIS

ALA & Chlorophyll

Contents lists available at ScienceDirect

Electronic Journal of Biotechnology

Effects of 5-aminolevulinic acid (ALA)-containing supernatants from selected *Rhodopseudomonas palustris* strains on rice growth under NaCl stress, with mediating effects on chlorophyll, photosynthetic electron transport and antioxidative enzymes

Tomorn Nunkaew [a], Duangporn Kantachote [a,b,*], Hiroshi Kanzaki [c], Teruhiko Nitoda [c], Raymond J. Ritchie [d]

[a] Department of Microbiology, Faculty of Science, Prince of Songkla University, Hat-Yai 90112, Thailand
[b] Center of Excellence on Hazardous Substance Management (HSM), Hat-Yai 90112, Thailand
[c] Graduate School of Environmental and Life Science, Okayama University, 1-1-1 Tsushima-naka, Kita-Ku, Okayama 700-8530, Japan
[d] Faculty of Technology & Environment, Prince of Songkla University, Phuket 83120, Thailand

Key Point: *Rhodopseudomonas palustris* can produce physiologically active amounts of ALA that positively influence plant chlorophyll levels

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ENHANCE PLANT PHOTOSYNTHESIS

3rd party MoA

University of Nebraska Lincoln

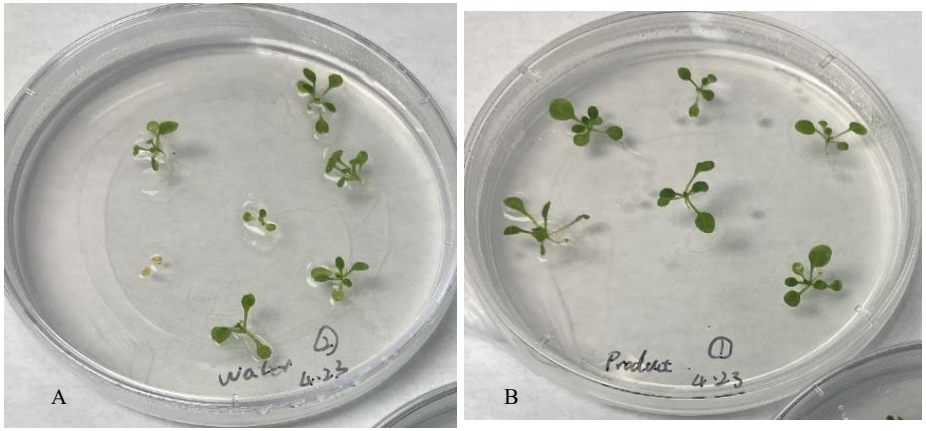
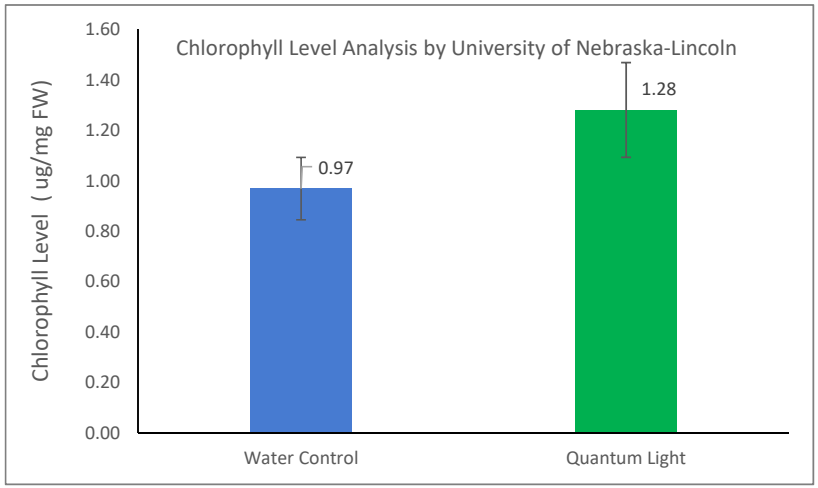


Figure 1. Photo *Arabidopsis thaliana* after 2 weeks of treatment, A: Water control; B: QL Product



Results:

The leaf chlorophyll contents in treated product groups increased 32.0% compared to the control.

Conclusion:

Quantum-Light effectively improved the plant chlorophyll levels which contributes to photosynthesis enhancement.

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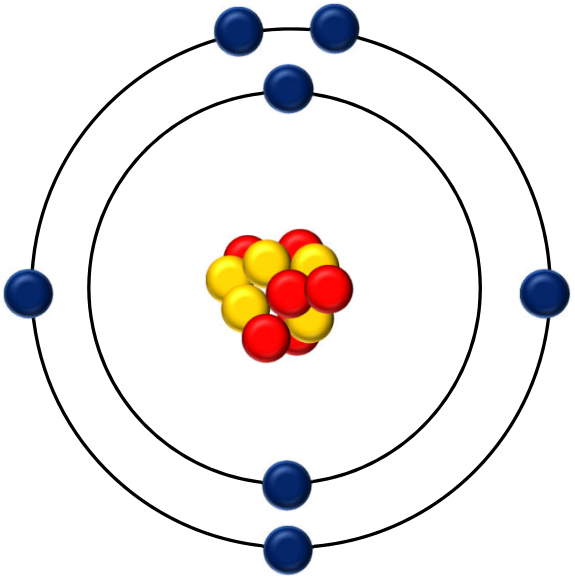
IMPROVE NUTRIENT AVAILABILITY & TRANSFER

Overview



- Increase nitrogen availability – 9 species that fix nitrogen (*R. Palustris* has 3 pathways for fixing N) and 3 that produce ammonia
- Increase phosphorus availability; 6 species that solubilize phosphorus
- Includes microorganisms that can solubilize:
  - potassium (K)
  - iron (Fe)
  - zinc (Zn)
  - calcium (Ca)
  - manganese (Mn)
  - magnesium (Mg)
  - molybdenum (Mo)
- Multiple cultures that breakdown and recycle organics

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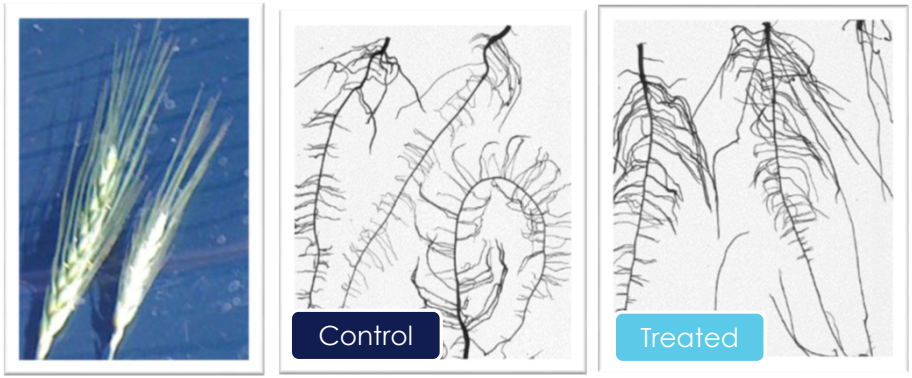
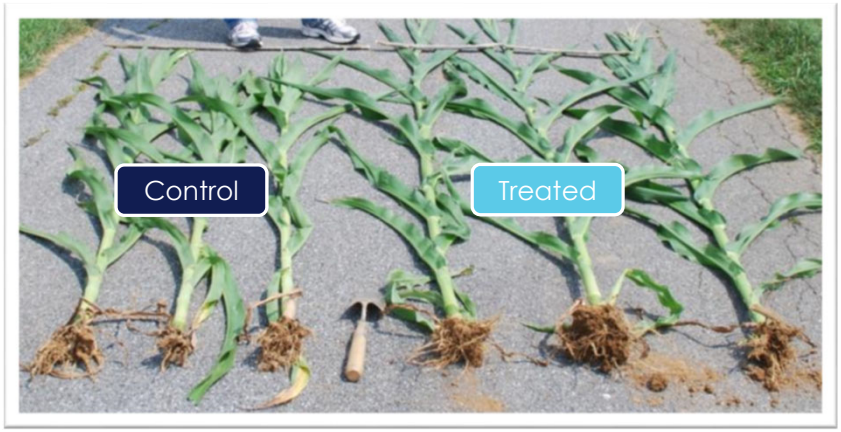
IMPROVE NUTRIENT AVAILABILITY & TRANSFER

In field results – Row Crop



- Improved root structure
- Increased shoot growth
- Improved plant health
- Increased yield



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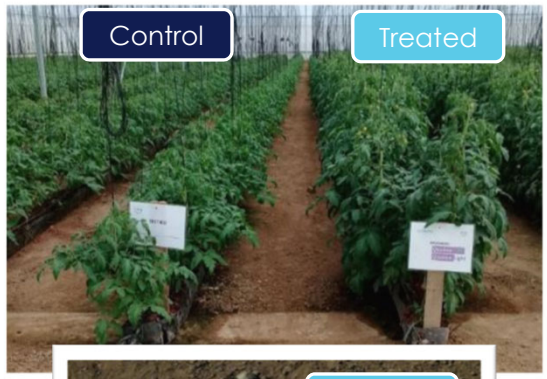
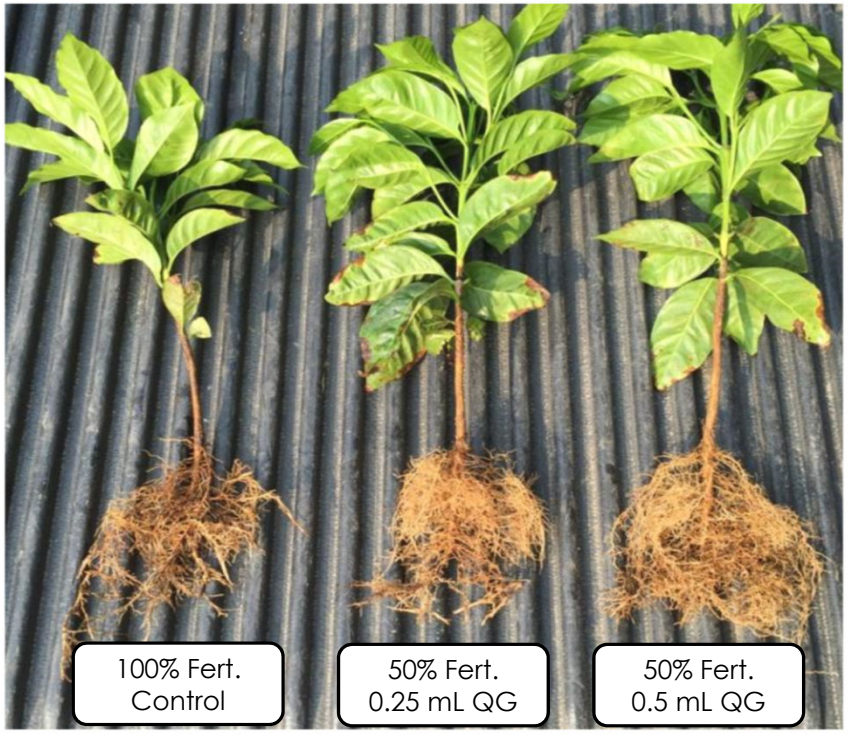
IMPROVE NUTRIENT AVAILABILITY & TRANSFER

In field results - Specialty



- Improved root structure
- Increased shoot growth
- Improved plant health
- Increased yield



IMPROVE NUTRIENT AVAILABILITY & TRANSFER

In field results - Turf & Trees

March (prior to treatment)

July (4 single gal monthly treatments thru irrigation)

- Improved root structure
- Increased shoot growth
- Improved plant health
- Increased yield

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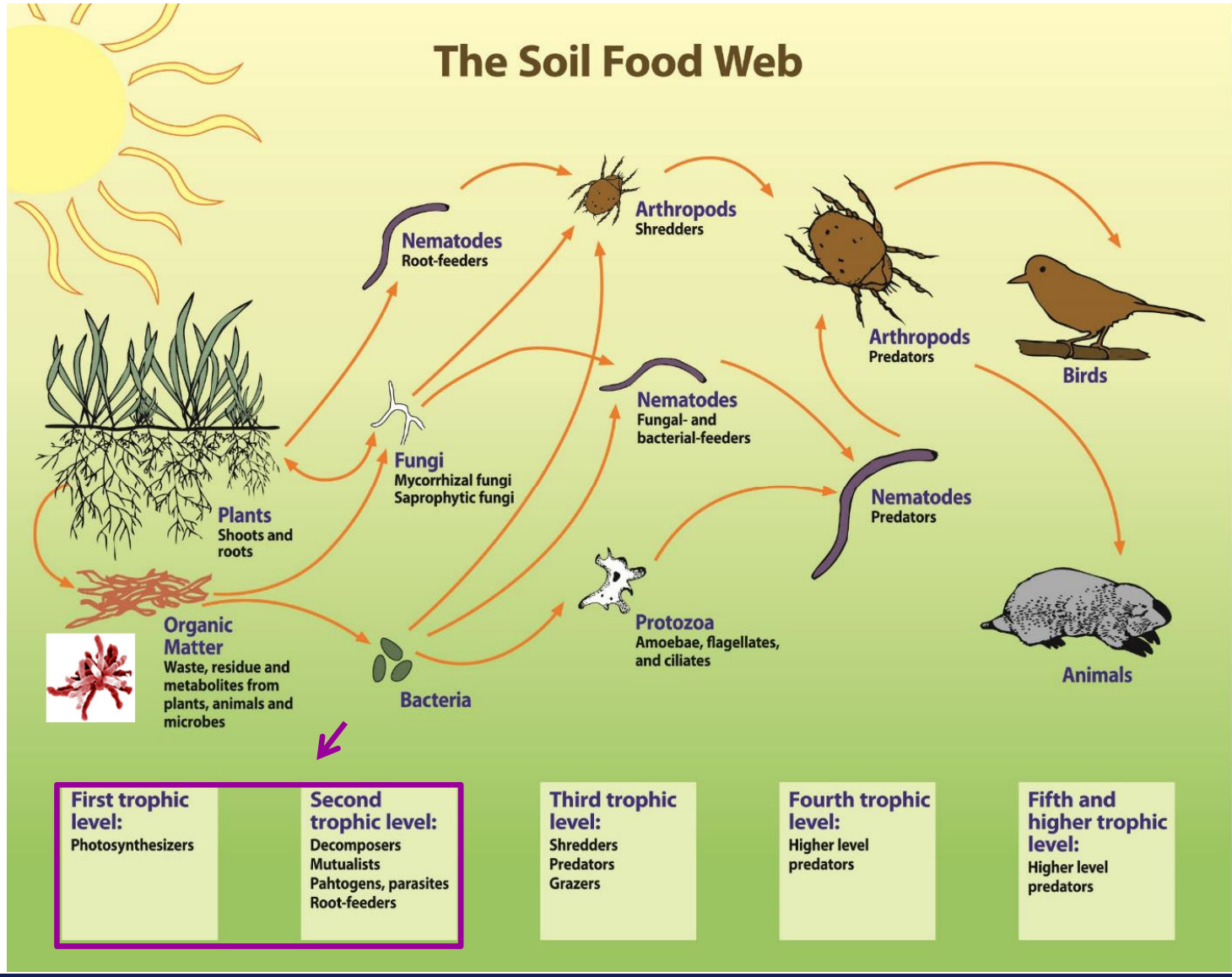
ENHANGE/ RESTORE SOIL BIOLOGY

Benefits of Balanced Biology

- Nutrient cycling
- Nutrient retention
- Improved soil structure, infiltration and water-holding capacity
- Disease suppression
- Degradation of pollutants
- Biodiversity

Food Web Challenges

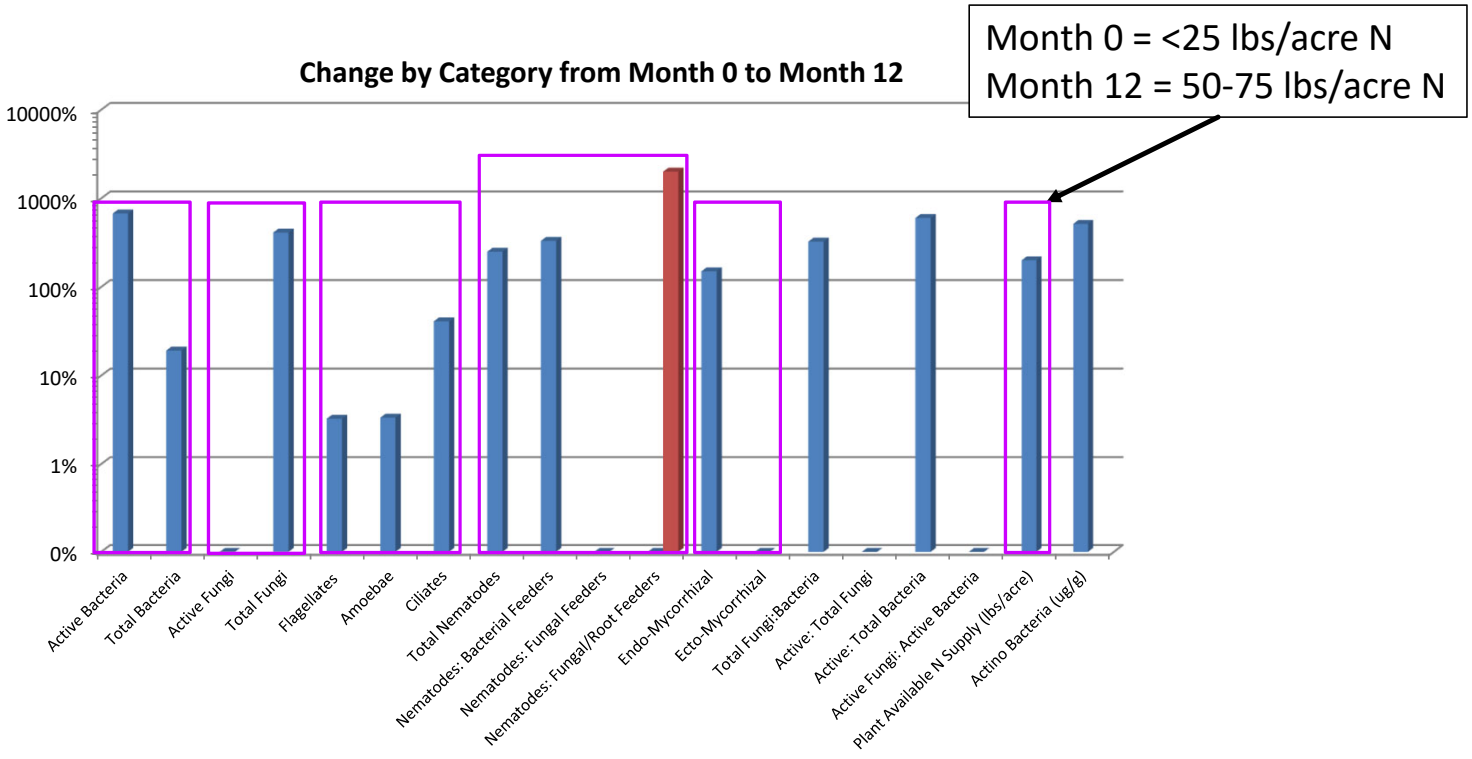
- Physical disruption (tilling, plowing, etc.)
- Chemical disruption (pesticides, pH, etc.)
- Monoculture



ENHANGE/ RESTORE SOIL BIOLOGY

Soil Biology Analysis - Citrus

- 3 yr & mature (30+ yr old) conventional citrus grove in Sebring, FL
- SFW analysis prior to treatment and after 1 year
- Quarterly QG applications at 1 gal/acre
- Soil analysis thru Earthfort Laboratories



Note: Grower's fungicide program inhibited activation of most beneficial fungi

Red bar denotes negative value

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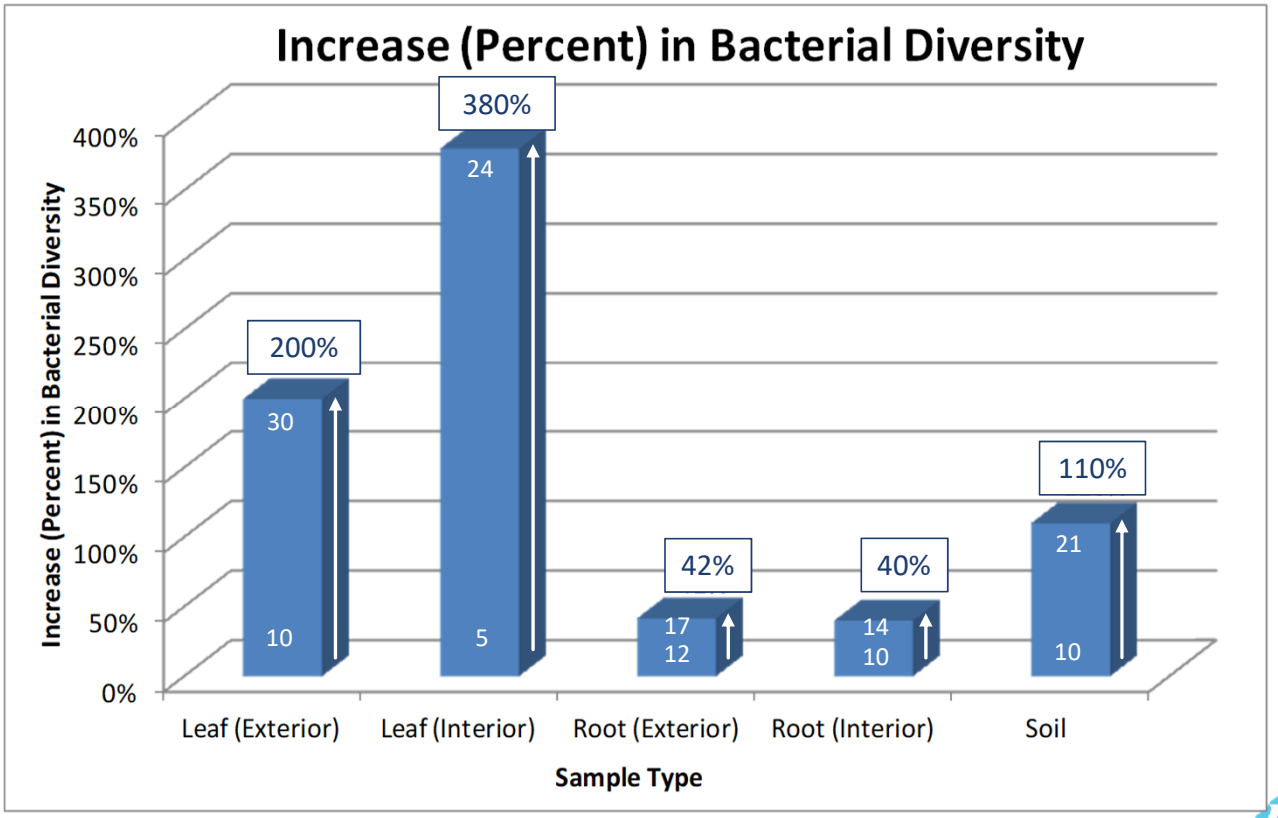
ENHANGE/ RESTORE SOIL BIOLOGY

Bacterial Analysis

- 3 yr & mature conventional citrus grove
- Number in bar is amount of different species
- Bottom number = Month 0
- Top number = Month 12
- Soil, root and leaf analysis



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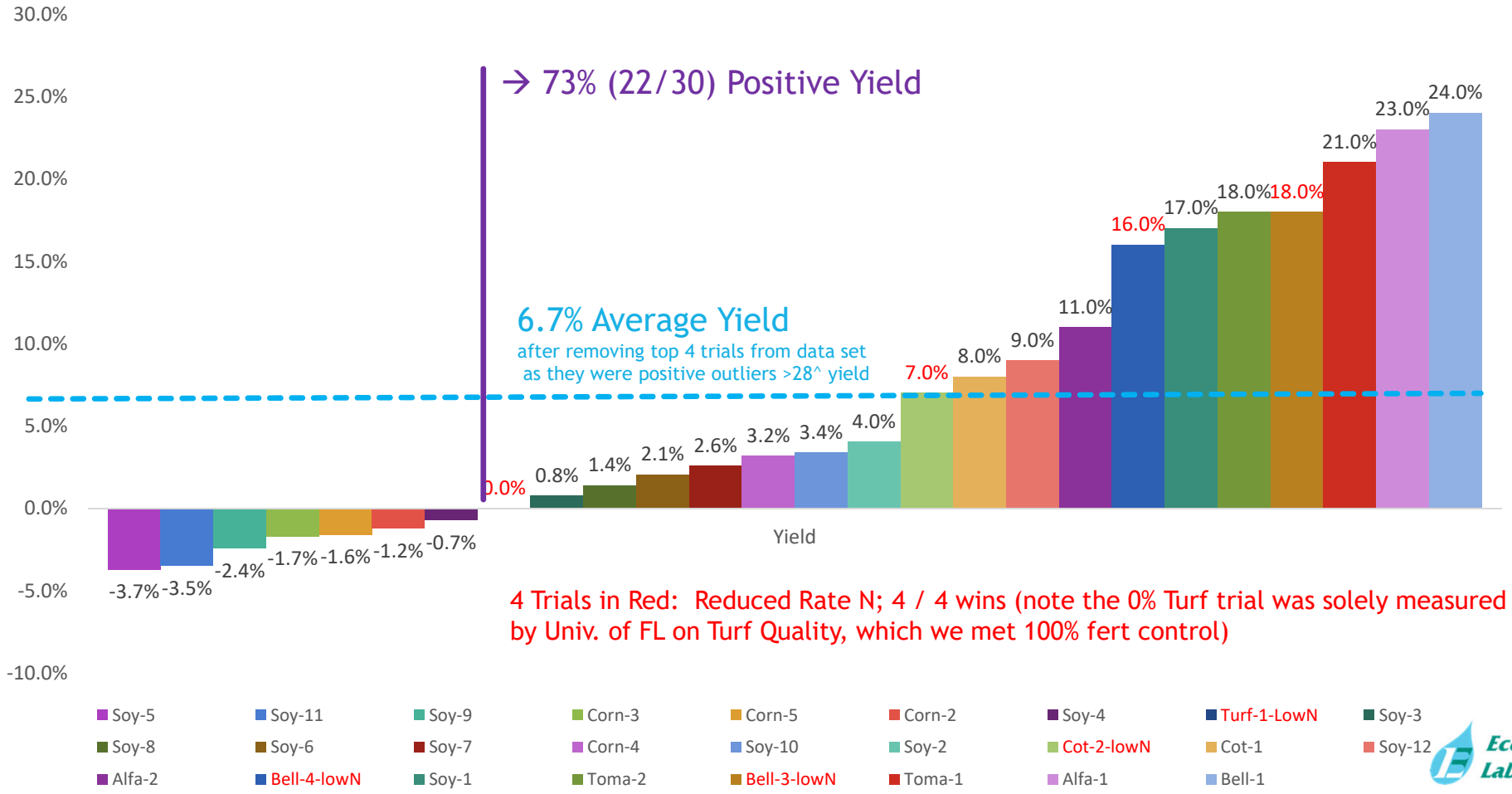
Field Data Summary: 73% Economically Positive Result, Emerging reduced rate Nitrogen story (9 N fixing strains)



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‘21 & ‘22 Trial Summary

Trial	Result(s)
AR Peanut Trial	yield inc. 113.4 lbs
NMSU Organic Peanut Trial	yield inc. 15%
TX A&M Organic Peanut Germ. Trial	best rating vs. non. org. chem. check
NC CRO Irrigated Soybean	yield inc. 4.6 bu
NC CRO Irrigated Corn	yield inc. 4.8 bu
NE & KS CRO Irrigated Soybean	yield inc. 5.2 & near miss

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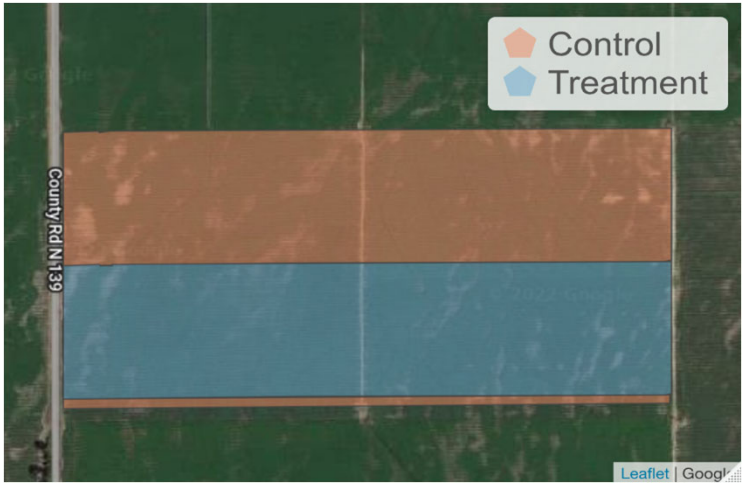
2022 Peanut

Product Applications

Treatment	Appl Timing	Date	Product	Appl Rate
Standard inoculant	In-furrow	05/12/2022	Primo	–
Quantum Peanod IF	In-furrow	05/12/2022	Quantum Peanod IF	64 fl oz/ac



Yield Summary

Treatment	Mean Yield	1st Quartile	Median	3rd Quartile	*p*-Value (Sig.)	Win Rate vs Control
Standard inoculant	5616.40	-	-	-	-	-
Quantum Peanod IF	5729.80	-	-	-	-	-

	Yield		Grade		Notes
	Standard	Treated	Standard	Treated	
Birdsong Processor	5,699.9	5,697.3	76.33	76.67	Additional Water
Delta Processor	5,532.8	5,762.4	77.17	77.00	
Average	5,616.4	5,729.8	76.75	76.84	
Avg Diff		113.5		0.09	
Gross Return		$31.77		$0.77	
Total Gross Return				$32.55	
2022 Prices		$560.00	per ton	$9.09	per grade point

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2021 NMSU Organic Peanut Trial

Table 2. One year average pod yield, total sound mature kernels (TSMK) grade and net return ($)

S.No	Inoculant	Pod Yield (lb/ac)	Grade (TSMK)	Net Return ($/ac)
1	AKX-602	1597 h±	67.7	584.40 e
2	AKX-612	1909 de	64.2	662.27 d
3	AKX 618	1769 f	67.8	647.33 d
4	Untreated Check	1576 h	67.0	570.47 e
5	Chemical check (Dynasty)	2098 b	66.6	754.90 bc
6	Garlic	1885 e	64.8	659.03 d
7	Larise Vita	2183 b	68.3	804.77 ab
8	Mycostop	2002 cd	68.1	736.30 c
9	Organic Quantum	2407 a	64.9	844.53 a
10	Organic VSC	2002 cd	67.9	734.60 c
11	Prestop	1704 fg	67.2	617.90 dc
	Mean	1921	66.7	692.41
	LSD 0.05	810.1	3.1	52.79
	Pr > F	<0.0001	NS	<0.0001

±Means followed by the same letter is not significantly different at *p* value 0.05
Loan value for organic Valencia-type peanuts were calculated at $ 10.40 per percent

+15% vs. chemical control
+10% vs. next best product

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2022 TX A&M Organic Peanut Germination Trial

AgriLifeOrganic.org
Texas A&M AgriLife Extension

Results: Planting date was May 20, 2022, into a previous irrigated site. 0.75 inches rain fell on May 23 and plots were sufficiently moist for good germination. Peanut seed 'crack' was observed on May 26. Seed germination counts were done on May 31 and no further germination occurred. Plots were 2 rows X 25' with 100 seed planted per row or 4 seed per 1' row. There were 4 replications of plots, randomized. Ratings of growth were done on June 3, 6, 9 and 13. Rating scale was 1 - 4 with 1 being best.

Trt. #	Company	Product	Method	Rate	Germination % 5/31	Plot Rating
10	NA	Treated seed check	Seed	Standard	52.875	1.750
1	Ecological Laboratories	Quantum-EXP 1	IF	64 oz/ac	45.857	1.875
2	Summit Agro	AVIV	Seed	10-30 oz/100-gallon water. Soak and dry	43.750	2.125
4	Certis Bio	Double Nickel	IF	Double Nickel LC @ 8 fl oz/acre	44.250	2.188
7	**NA**	**Untreated Check**	**NA**	**NA**	**43.750**	**2.438**
3	Summit Agro	AVIV	IF	10-30 oz/100-gallon water.	44.125	2.563
8	Corteva	Bexfond	IF	14 oz/ac	35.500	2.813
6	American Plant Food	Sigma 5-3-2 Bio	PPI	1000 lbs/ac	34.625	3.063
9	Valent	Endoprime	IF	2oz/Ac	32.000	3.125
5	Certis Bio	Double Nickel	IF	Double Nickel LC @ 16 fl oz/acre	37.250	3.188
					Average	**2.513**

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2021 Irr. Soybean

Fowler Crop Consulting, Inc,

Ecological Laboratories Soybean Irrigated 2021

Trial ID: Eco Lab Soy Irrigated 21 Location: Mt. Olive, NC Trial Year: 2021
Protocol ID: Eco Lab Soy Irrigated 21 Investigator (Creator): Daniel Fowler
Project ID: Eco Lab Soy Irrigated 21 Study Director:
Sponsor Contact:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*
	Rating Date				Oct-19-2021	Oct-19-2021	Oct-19-2021	Oct-19-2021	Oct-19-2021
	Rating Type				Weight	Moisture	Test Weight	Plot Length	YIELD
	Rating Unit/Min/Max				lb/plot, -, -	%, 0, 100	Number, -, -	Feet, -, -	BU, -, -
	Number of Subsamples				1	1	1	1	1
	Data Entry Date				Nov-4-2021	Nov-4-2021	Nov-4-2021	Nov-4-2021	
	ARM Action Codes					ER1	ER1	ER1	TY1
	Number of Decimals								1
1	Growers Standard				16.595 b	11.13 -	62.40 -	40.0 -	51.3 b
2	Quantum Exp 5	64	fl oz/a	A	18.133 a	11.07 -	62.50 -	40.0 -	55.9 a
	Quantum Exp 4	64	fl oz/a	B					
	LSD P=.05				1.2108	0.625	0.657	.	3.80
	Standard Deviation				0.5381	0.178	0.187	0.00	1.69
	CV				3.1	1.6	0.3	0.0	3.16
	Grand Mean				17.3638	11.100	62.450	40.00	53.57
	Levene's F^				0.00	0.00	0.00	0.00	0.00
	Levene's Prob(F)				1.00	1.00	1.00	1.00	1.00
	Rank X2				.	.	.	.	.
	P(Rank X2)				.	.	.	.	.
	Skewness^				0.0	0.0	0.0	0.0	0.0
	Kurtosis^				-0.6517	-0.407	-0.3323	0.0	-0.6219
	Replicate F				7.019	0.474	0.429	0.000	7.640
	Replicate Prob(F)				0.0719	0.6786	0.7000	1.0000	0.0645
	Treatment F				16.330	0.211	0.429	0.000	14.702
	Treatment Prob(F)				0.0273	0.6914	0.5799	1.0000	0.0313

+4.6 bu

Rating Type
Weight = weight
YIELD = yield
Rating Unit/Min/Max
lb/plot, , = pounds per plot
%, 0, 100 = percent
Number, , = number
BU, , = bushel
ARM Action Codes
ER1 = Excluded replicate 1
TY1 = 3.025*[1]*(100-[2])/87

Ecological Laboratories INC.

2021 Irr. Field Corn

Fowler Crop Consulting, Inc,

Ecological Lab Corn Irrigated 2021

Trial ID: Eco Lab Corn Irrigated 21 Location: Mt. Olive, NC Trial Year: 2021
Protocol ID: Eco Lab Corn Irrigated 21 Investigator (Creator): Daniel Fowler
Project ID: Eco Lab Corn Irrigated 21 Study Director:
Sponsor Contact:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4* dAl
	Crop Name				Corn	Corn	Corn	Corn
	Rating Date				Sep-11-2021	Sep-11-2021	Sep-11-2021	Sep-11-2021
	Rating Type				Yield	Moisture	Test Wt.	YIELD
	Rating Unit/Min/Max				LBS/PLOT, -, -	%, 0, 100	NUMBER, -, -	BU, -, -
	Sample Size				1 PLOT			1 A
	Number of Subsamples				1	1	1	1
	Data Entry Date				Sep-15-2021	Sep-15-2021	Sep-15-2021	
	Rating Timing				Harvest	Harvest	Harvest	Harvest
	Days After First/Last Applic.				123, 82	123, 82	123, 82	123, 82
	Trt-Eval Interval				123 DA-A	123 DA-A	123 DA-A	123 DA-A
	Plant-Eval Interval				123 DP-1	123 DP-1	123 DP-1	123 DP-1
	ARM Action Codes							AL TY1
	Number of Decimals							1
1	Growers Standard (17-17-0)	1.5	gal/a	A	46.968 -	21.05 -	51.18 b	142.1 -
2	Quantum Exp 5	64	oz/a	A	48.863 -	21.33 -	51.70 a	146.9 -
	Quantum Exp 4	64	oz/a	B				
	LSD P=.05				9.2067	0.904	0.398	25.47 - 29.77
	Standard Deviation				4.0913	0.402	0.177	0.04t
	CV				8.54	1.9	0.34	1.69t
	Grand Mean				47.9150	21.188	51.438	2.16t
	Levene's F^				0.00	0.00	0.00	0.00
	Levene's Prob(F)				1.00	1.00	1.00	1.00
	Rank X2				.	.	.	.
	P(Rank X2)				.	.	.	.
	Skewness^				0.0	0.0	0.0	0.0
	Kurtosis^				-0.1168	-0.2692	-0.8602	-0.1091
	Replicate F				0.755	0.649	2.707	0.748
	Replicate Prob(F)				0.5887	0.6347	0.2176	0.5915
	Treatment F				0.429	0.938	17.640	0.311
	Treatment Prob(F)				0.5592	0.4042	0.0246	0.6160

Rating Type
Yield = yield
Rating Unit/Min/Max
%, 0, 100 = percent
NUMBER, , = number
BU, , = bushel

PLOT = total plot
A = acre
Plant-Eval Interval
123 DP-1 = 1 ZEAMX May-11-2021
ARM Action Codes
AL = Automatic log transformation of X+1
TY1 = 3.24107143*[1]*(100-[2])/84.5

+4.8 bu

Ecological Laboratories INC.

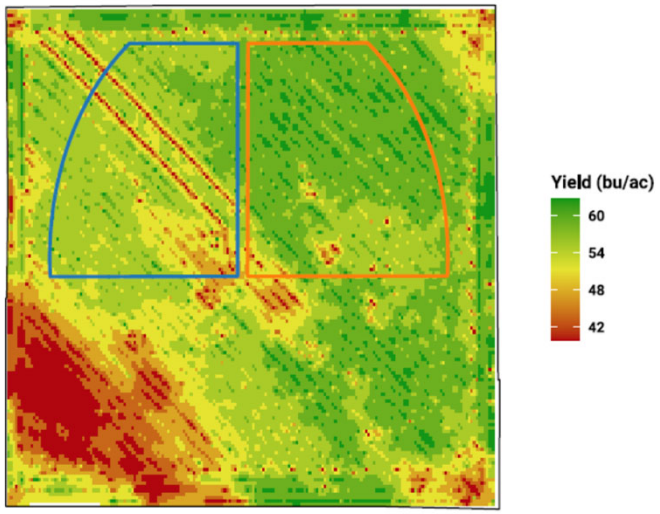
2022 Irr. Soybean

Douglas County, Nebraska – Soybean

+5.2 bu/ac = 9.6 ROI

Yield Summary

Treatment	Mean Yield	1st Quartile	Median	3rd Quartile	*p*-Value (Sig.)	Win Rate vs Control
Grower Standard	**56.42**	52.13	58.09	63.26	-	-
Grower Standard + Quantum RCF	**61.65**	57.38	62.30	67.08	-	-

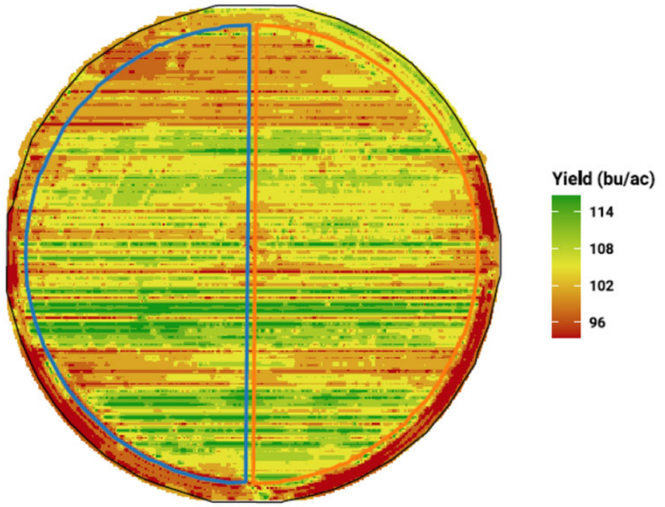


Meade County, Kansas – Soybean

tight miss vs. big input program

Yield Summary

Treatment	Mean Yield	1st Quartile	Median	3rd Quartile	*p*-Value (Sig.)	Win Rate vs Control
Grower Standard	**106.74**	94.13	103.35	117.16	-	-
Grower Standard + Quantum RCF	**106.60**	95.48	104.30	115.11	-	-



Ecological Laboratories INC.

Quantum-Peanod

BIODEGRADABLE • EASY-TO-USE • BIODEGRADABLE • EASY-TO-USE • BIODEGRADABLE • EASY-TO-USE • BIODEGRADABLE

Quantum Peanod represents the primary bioformulation in the Quantum series and should always be used in plant and soil biology development programs. Quantum Peanod may be applied as a stand alone product or in combination with other Quantum products based on soil conditions, soil toxicity, crop conditions and crop selection.

Storage and Handling:
Shake bottle well/agitate before use. Re-cap as soon as possible. Minimize empty volume. Store unused product in original container with package tightly sealed.
Store between 32° F/0° C and 110° F/ 43° C. Shelf stable for 2 years (unopened) and 1 year (opened). Buyers and users shall assume all risk and responsibility for potential loss or damage if this product is used, stored, handled or applied in a manner inconsistent with this labeling.

Safety:
Keep out of reach of children. Do not ingest. If swallowed, induce vomiting if advised to do so by a physician. May cause eye irritation. If eye contact is made, flush eyes with clean, clear water.
Product does not contain any hazardous substances nor does it require special PPE for handling or application.

Treated area does not have any re-entry restrictions. Information regarding the contents and levels of metals in this product is available on the internet at http://www.aapfco.org/metals.html

Another quality product from the Quantum Growth series.

MADE IN THE USA

Quantum Peanod

PHOTOSYNTHETIC & NITROGEN FIXING CULTURES

BENEFICIAL SOIL AND PLANT INOCULANT

- ❑ 2.5 Gal. / 9.5 L (22.5 lbs / 10.21 kg)
- ❑ 275 Gal. / 1,041 L (2,475 lbs / 1,123 kg)
- ❑ _____

Product weighs 9 lbs per gallon at 68° F.

Manufactured and Guaranteed by:
Ecological Laboratories INC.
2525 N.E. 9th Ave.
Cape Coral, FL 33909
www.GrowQuantum.com

CONTAINS NONPLANT FOOD INGREDIENTS

Active Ingredients:

Rhodopseudomonas palustris	900,000 cfu/mL
Bacillus amyloliquefaciens	10,000,000 cfu/mL
Bacillus subtilis	5,000,000 cfu/mL
Bradyrhizobium spp.	500.000 cfu/mL

Inactive Ingredients:
97% Deionized Water

Application Rates and Timings (Per Acre):

Peanut
32-64 oz in furrow (optional foliar app 32-64 oz w/ compatible 1st herbicide app)
Corn
32-64 oz in furrow (optional additional app. 32-64 oz w/ side dress)
Soybean
32-64 oz in furrow/10-14 days after emergence (optional additional app. 32-64 oz w/ 1st herb. spray [check compatibility])
Cotton
32-64 oz in furrow (optional additional app. 32-64 oz w/ side dress)
Small Grain
12" high – 32-64 oz w/ broadcast fertilizer (optional additional app. 2 weeks before booting)

Use only with non-chlorinated water.
To check product tank mix compatibility, go to: *https://GrowQuantum.com/products.html* and select 'Tank Mix Compatibility'

Tank Mix Instructions: When tank mixing, add the Quantum Growth products last and apply within 0 to 12 hours. Ensure that the mix is sufficiently dilute before adding the Quantum Growth products.

Expires 2 years from production date on base of container.

F100910 Item #QUANP

REV 2302

SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL

Ecological Laboratories INC.

Quantum-RC

BIODEGRADABLE • EASY-TO-USE • BIODEGRADABLE • EASY-TO-USE • BIODEGRADABLE • EASY-TO-USE • BIODEGRADABLE

Quantum-RC represents the primary bioformulation in the Quantum series and should always be used in plant and soil biology development programs. Quantum-RC may be applied as a stand alone product or in combination with other Quantum products based on soil conditions, soil toxicity, crop conditions and crop selection.

Storage and Handling:
Shake bottle well/agitate before use. Re-cap as soon as possible. Minimize empty volume. Store unused product in original container with package tightly sealed.
Store between 32° F/0° C and 110° F/ 43° C. Shelf stable for 2 years (unopened) and 1 year (opened). Buyers and users shall assume all risk and responsibility for potential loss or damage if this product is used, stored, handled or applied in a manner inconsistent with this labeling.

Safety:
Keep out of reach of children. Do not ingest. If swallowed, induce vomiting if advised to do so by a physician. May cause eye irritation. If eye contact is made, flush eyes with clean, clear water.
Product does not contain any hazardous substances nor does it require special PPE for handling or application.
Treat area does not have any re-entry restrictions.

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

Another quality product from the Quantum Growth series.

MADE IN THE USA

Quantum-RC

PHOTOSYNTHETIC & NITROGEN FIXING CULTURES

BENEFICIAL SOIL AND PLANT INOCULANT

- ❑ 2.5 Gal. / 9.5 L (22.5 lbs / 10.21 kg)
- ❑ 275 Gal. / 1,041 L (2,475 lbs / 1,123 kg)
- ❑ _____

Product weighs 9 lbs per gallon at 68° F.

Manufactured and Guaranteed by:
Ecological Laboratories INC.
2525 N.E. 9th Ave.
Cape Coral, FL 33909
www.GrowQuantum.com

CONTAINS NONPLANT FOOD INGREDIENTS

Active Ingredients:

Rhodopseudomonas palustris	900,000 cfu/mL
Bacillus amyloliquefaciens	15,000,000 cfu/mL
Bacillus subtilis	7,500,000 cfu/mL
Bacillus licheniformis	7,500,000 cfu/mL
Bacillus megaterium	7,500,000 cfu/mL
Paenibacillus polymyxa	7,500,000 cfu/mL

Inactive Ingredients:
97% Deionized Water

Application Rates and Timings (Per Acre):

Corn
32-64 oz in furrow & 32-64 oz w/side dress
Soybean
32-64 oz in furrow/emergence & 32-64 oz w/1st herbicide spray (check compatibility)
Cotton
32-64 oz in furrow & 32-64 oz w/side dress
Peanut
32-64 oz in furrow (optional foliar app 32-64 oz w/ compatible 1st herbicide app)
Small Grain
12" high – 32-64 oz with broadcast fertilizer & 2 weeks before booting

Use only with non-chlorinated water.
To check product tank mix compatibility, go to:
https://GrowQuantum.com/products.html
and select 'Tank Mix Compatibility'

Tank Mix Instructions: When tank mixing, add the Quantum Growth products last and apply within 0 to 12 hours. Ensure that the mix is sufficiently dilute before adding the Quantum Growth products.

F100910 Item #QUANRC REV 2302

SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL • SHAKE WELL

Ecological Laboratories INC.

Product

2.5-gal & 275-gal bulk tote

2.5 gal $45 per unit ($18 per gal)
Treats 5 acres

Bulk Tote $16 per gal

<u>App Rates & Timings (per acre)</u>

64 oz in furrow or 7-10 days after emergence

Ecological Laboratories INC.

Compatibility

Tank Mix Compatibility Testing

Product Name	Quantum-Light (Y/N)	Quantum-VSC (Y/N)	Quantum-Organic Light (Y/N)	Quantum-Organic VSC (Y/N)	Quantum-RC (Y/N)	Quantum-Peanod (Y/N)	Quantum-CPro (Y/N)	Max/ tested time of exposure	Note
9-4-9	N	N	N	N	N	N	N	0 and 7 days	pH of the solution 1.27
5-1-7	N	N	N	N	N	N	N	0 and 7 days	pH of the solution 1.15
7-2-7	N	N	N	N	N	N	N	0 and 7 days	pH of the solution 0.71
8-0-8	N	N	N	N	N	N	N	0 and 7 days	pH of the solution 0.14
8-0-8	Y	Y	Y	Y	Y	Y	Y	0 and 7 days	pH of the solution 4.3
4-1-9	N	N	N	N	N	N	N	0 and 7 days	pH of the solution 0.8
7-2-7	N	N	N	N	N	N	N	0 and 7 days	pH of the solution 0.34
10-0-10	N	N	N	N	N	N	N	0 and 7 days	pH of the solution 1.48
5-1-10	N	N	N	N	N	N	N	0 and 7 days	pH of the solution 1.1
9-1-6	N	N	N	N	N	N	N	0 and 7 days	pH of the solution 0.92
10-20-10 Liquid Fertilizer	Y	Y	Y	Y	Y	Y	Y		
15-0-0 Plus 6% Iron	N	N/T	N	N/T	N/T	N	N	6 hour	
24-D	Y	Y	Y	Y	Y	Y	Y	0 and 6 hour	
24-D	Y	N/T	Y	N/T	N/T	Y	Y	5 and 24 hour	
24-D (Enlist One)	Y	Y	Y	Y	Y	Y	Y	0, 1, 3, and 6 hours	
3-0-10	Y	Y	Y	Y	Y	Y	Y	0, 24 and 48 hour	
32% N Liquid Urea	Y	Y	Y	Y	Y	Y	Y	30 mins and 24 hours	
6-24-6	Y	Y	Y	Y	Y	Y	Y	0 hour	
46-0-0	Y	Y	Y	Y	Y	Y	Y	0 and 6 hour	dissolved in water
435 Spray Oil	Y	N/T	Y	N/T	N/T	Y	Y	0, 2 and 6 hour	
Acephate	Y	Y	Y	Y	Y	Y	Y	0 and 6 hour	
Actinovate AG	Y	N/T	Y	N/T	N/T	Y	Y	0, 2 and 6 hour	
Activator 90	Y	N/T	Y	N/T	N/T	Y	Y	0 and 4 hour	
Activator 90	Y	N/T	Y	N/T	N/T	Y	Y	0, 2 and 6 hour	
Agri-Mek SC	Y	N/T	Y	N/T	N/T	Y	Y	0, 2 and 6 hour	
Alion	Y	N/T	Y	N/T	N/T	Y	Y	0, 24 and 48 hour	
Assure II	N	Y	N	Y	Y	N	N	0, 1, 3, and 6 hours	
Azasol	Y	Y	Y	Y	Y	Y	Y	0, 5, 24 and 48 hour	
Azatrol	N	N	N	N	N	N	N		
Barricade	Y	Y	Y	Y	Y	Y	Y	0 and 6 hour	
Bifen	Y	N/T	Y	N/T	N/T	Y	Y	0 and 6 hour	*compatible at 0 hours but not at 6 hours
Bifen	Y	Y	Y	Y	Y	Y	Y	0 and 6 hour	
Carbon Penetrant	Y	Y	Y	Y	Y	Y	Y	0, 6 and 24 hour	
Celcius	Y	Y	Y	Y	Y	Y	Y	0, 6 and 24 hour	
Celcius	Y	Y	Y	Y	Y	Y	Y	0 and 6 hour	
Chitosan	Y	Y	Y	Y	Y	Y	Y	0, 1, and 3 hours	
Corvus	Y	Y	Y	Y	Y	Y	Y	0, 1, 3, and 6 hours	
Crop Oil	Y	Y	Y	Y	Y	Y	Y	0, 1, 3, and 6 hours	
CuSO4	Y*	Y*	Y*	Y*	Y*	Y*	Y*		* avoid final concentration CuSO4 higher than 0.5 ppm

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Compatibility

YES	NO
Corvus	Assure II
Dual II	Dicamba
Enlist One (2 4 – D)	Enlist Duo
Glufosinate	Glyphosate
Gramaxone	Outlook
Movento	
Mustang	
Princep	
Prowl H2O	
Pursuit	
Status	
Trimec	
Zenith	
Zidua	

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Application FAQs

Tank Mix Compatibility (see chart)

- **pH Tolerance:** 7 to 8 = optimal, 5 to 9 = okay, <5 or >9 marginal to poor
- If product is not on chart, contact us for advice/arrange for potential testing

Tank Mix Instructions - add the Quantum Growth products last and apply within 0 to 12 hours.

Chemical Application Timing - allow 7-10 days after a pesticide application (herbicide, fungicide, insecticide, nematicide, etc. that is found/judged incompatible) before applying the Quantum Growth products.

Irrigation Systems - Quantum Growth products may be applied through any type of irrigation system such as speed sprayer, boom sprayer, pivot irrigation, aerial spray, micro jet, etc.

Watering Requirements – minimum 10 gallons of water (broadcast), 3-5 gals in furrow, no maximum amount. **Use only non-chlorinated water.**

Storage – Do not freeze and keep core temperature of container <110° F

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