

## RhizeBio- In-Field Roots-to-Shoots Trial

### SILKING Corn Summary Report

Sample Type	Untreated			Treated			% Change		
	Haney	Rhize	Tissue	Haney	Rhize	Tissue	Haney	Rhize	Tissue
<b>Health Overview</b>	17.1	60%	46	14.8	63%	58	-14%	4%	12.00
<b>Community Structure</b>	17.1	76%		14.8	80%		-13.5%	5.2%	
<b>Respiration</b>	162.1	78%		138.5	83%		-14.5%	6.0%	
<b>Environmental Stressors</b>		53%			44%			-16.4%	
<b>Carbon</b>	123.5	59%		110.4	62%		-10.6%	4.9%	
<b>Nitrogen</b>	51.4	60%	1.85	47.6	66%	1.97	-7.5%	5.9%	6.9%
<b>Phosphorus</b>	58.7	58%	0.13	27.6	61%	0.27	-52.9%	2.8%	110.2%
<b>Potassium</b>	83.7	41%	0.55	112.2	37%	0.46	34.0%	-4.0%	-16.5%
<b>Sulfur</b>	4.0	58%	0.10	3.8	51%	0.18	-4.4%	-11.4%	71.0%
<b>Calcium</b>	539.5	53%	0.61	438.5	57%	0.67	-18.7%	7.8%	10.4%
<b>Iron</b>	74.3	60%	275.00	56.2	64%	192.00	-24.3%	7.0%	30.2%
<b>Zinc</b>	5.3		35.69	3.4		60.36	-36.7%		69.1%
<b>Manganese</b>	2.4		51.89	2.9		60.76	21.9%		17.1%
<b>Magnesium</b>	166.6		0.32	130.0		0.38	-22.0%		18.9%
<b>Sodium</b>	7.2		0.01	7.0		0.01	-3.3%		0.0%
<b>Copper</b>	0.6		27.00	0.9		14.00	53.5%		48.1%
<b>Aluminum</b>	81.8		107.83	88.8		92.79	8.5%		13.9%
<b>Molybdenum</b>			0.87			0.82			5.7%
<b>Boron</b>			7.99			7.60			4.9%

Contact RhizeBio:

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<b>Community Structure</b>	17.1	76%		14.8	80%		-13.5%	5.2%	
Number of Genera		2401.3			2358.0			-1.8%	
Diversity		55.3%			51.3%			-7.2%	
Evenness		21.3%			21.0%			-1.6%	
Mycorrhizae Abundance		68%			72%			5.4%	
Plant Stress Adaptation		68%			70%			2.7%	
Bacteria to Fungal Ratio		3			3			0.0%	
Ectomycorrhizal to Arbuscular Ratio		2.3			1.81			-21.6%	
1:1 Soil pH	6.8			6.6			-2.5%		
Soil Health Calculation	17.1			14.8			-13.5%		
Organic Matter	4.5			4.2			-6.0%		
1:1 Soluble Salt	0.08			0.12			52.2%		
Organic C:N	11.0			10.6			-3.6%		
<b>Respiration</b>	162.1	78%		138.5	83%		-14.5%	6.0%	
High Oxygen Environment		78%			83%			6.0%	
CO2-C	162.1			138.5			-14.5%		
<b>Environmental Stressors</b>		53%			44%			-16.4%	
Anoxic Environment		53%			44%			-16.4%	
<b>Carbon</b>	123.5	59%		110.4	62%		-10.6%	4.9%	
Carbon Fixation		76%			65%			-14.0%	
Organic Carbon Breakdown		67%			70%			5.2%	
Methanogenesis		66%			50%			-23.8%	
H2O Total Organic C	123.5			110.4			-10.6%		
% MAC	132.0			126.9			-3.8%		

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<b>Nitrogen</b>	51.4	60%	1.85	47.6	66%	1.97	-7.5%	5.9%	6.9%
Nitrogen Fixation		82%			77%			-5.1%	
Nodulating Bacteria		59%			65%			10.2%	
Organic Nitrogen Breakdown		72%			75%			4.8%	
H3A Ammonium	1.1			0.7			-31.5%		
Nitrification		39%			47%			19.6%	
H3A Nitrate	9.1			8.7			-4.4%		
Denitrification		50%			33%			-33.4%	
H2O Total N	21.7			20.1			-7.0%		
H2O Organic N	11.3			10.4			-7.8%		
H3A Inorganic Nitrogen	10.2			9.4			-7.2%		
Organic N Release	11.3			10.4			-7.8%		
Organic N Reserve	0.0			0.0					
Available N	51.4			47.6			-7.5%		
Total Nitrogen, % N			1.8			2.0			6.9%
<b>Phosphorus</b>	58.7	58%	0.13	27.6	61%	0.27	-52.9%	2.8%	110.2%
Phosphorus Solubilization		58%			61%			4.8%	
H3A Total Phosphorus	25.5			12.0			-52.9%		
H3A Inorganic Phosphorus	21.5			8.4			-60.7%		
H3A Organic Phosphorus	4.0			3.6			-10.7%		
Organic P Release	4.0			3.6			-10.7%		
Organic P Reserve	0.0			0.0					
Available P	58.7			27.6			-52.9%		
Phosphorus, % P			0.13			0.27			110.2%

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<b>Potassium</b>	83.7	41%	0.55	112.2	37%	0.46	34.0%	-4.0%	-16.5%
Potassium Solubilization		41%			37%			-9.8%	
H3A ICAP Potassium	69.8			93.5			34.0%		
Available K	83.7			112.2			34.0%		
Potassium, % K			0.55			0.46			-16.5%
<b>Sulfur</b>	4.0	58%	0.10	3.8	51%	0.18	-4.4%	-11.4%	71.0%
Sulfur Oxidation		52%			49%			-5.9%	
Sulfur Reduction		64%			54%			-15.9%	
H3A ICAP Sulfur	4.0			3.8			-4.4%		
Sulfur, % S			0.10			0.18			71.0%
<b>Calcium</b>	539.5	53%	0.61	438.5	57%	0.67	-18.7%	7.8%	10.4%
Calcium Transport		53%			57%			7.8%	
H3A ICAP Calcium	539.5			438.5			-18.7%		
Calcium, % Ca			0.61			0.67			10.4%
<b>Iron</b>	74.3	60%	275.00	56.2	64%	192.00	-24.3%	7.0%	30.2%
Iron Acquisition		60%			64%			7.0%	
H3A ICAP Iron	74.3			56.2			-24.3%		
Iron, ppm Fe			275.00			192.00			30.2%
<b>Zinc</b>	5.3		35.69	3.4		60.36	-36.7%		69.1%
H3A ICAP Zinc	5.3			3.4			-36.7%		
Zinc, ppm Zn			35.69			60.36			69.1%
<b>Manganese</b>	2.4		51.89	2.9		60.76	21.9%		17.1%
H3A ICAP Manganese	2.4			2.9			21.9%		
Manganese, ppm Mn			51.89			60.76			17.1%

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<b>Health Overview</b>	17.1	60%	46	14.8	63%	58	-14%	4%	12.00
<b>Magnesium</b>	166.6		0.32	130.0		0.38	-22.0%		18.9%
H3A ICAP Magnesium	166.6			130.0			-22.0%		
Magnesium, % Mg			0.32			0.38			18.9%
<b>Sodium</b>	7.2		0.01	7.0		0.01	-3.3%		0.0%
H3A ICAP Sodium	7.2			7.0			-3.3%		
Sodium, % Na			0.01			0.01			0.0%
<b>Copper</b>	0.6		27.00	0.9		14.00	53.5%		48.1%
H3A ICAP Copper	0.6			0.9			53.5%		
Copper, ppm Cu			27.00			14.00			48.1%
<b>Aluminum</b>	81.8		107.83	88.8		92.79	8.5%		13.9%
H3A ICAP Aluminum	81.8			88.8			8.5%		
Aluminum, ppm Al			107.83			92.79			13.9%
<b>Molybdenum</b>			0.87			0.82			5.7%
Molybdenum, ppm Mo			0.87			0.82			5.7%
<b>Boron</b>			7.99			7.60			4.9%
Boron, ppm B			7.99			7.60			4.9%

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## RhizeBio- In-Field Trial Pathogen Screening

	<u>Untreated</u>			<u>Treated</u>		
	Pathogen Species	Disease Common Name	Abundance (%)	Pathogen Species	Disease Common Name	Abundance (%)
<b><u>Replicate 1</u></b>	Pythium pyrillobum	Pythium Root Rot	0.1%	Setosphaeria turcica	Northern Corn Leaf Blight	0.1%
	Pythium torulosum	Pythium Root Rot	0.1%			
	Streptomyces scabiei	Common Scab (Tubers)	<0.1%			
<b><u>Replicate 2</u></b>	Pythium pyrillobum	Pythium Root Rot	0.1%	Puccinia polysora	Southern Corn Rust	0.1%
	Pythium torulosum	Pythium Root Rot	0.1%			
	Streptomyces scabiei	Common Scab (Tubers)	<0.1%			
<b><u>Replicate 3</u></b>	Pythium pyrillobum	Pythium Root Rot	0.1%	Streptomyces scabiei	Common Scab (Tubers)	<0.1%
	Pythium torulosum	Pythium Root Rot	0.1%			
	Streptomyces scabiei	Common Scab (Tubers)	<0.1%			

## Plant Tissue Sufficiency Criteria

		Deficient	Low	Sufficient	High	Very High
V4-V6	Total Nitrogen, % N	0.00	2.91	3.51	5.01	6.26
	Phosphorus, % P	0.00	0.28	0.35	0.56	0.70
	Potassium, % K	0.00	1.91	2.51	3.51	4.39
	Sulfur, % S	0.00	0.14	0.21	0.29	0.36
	Calcium, % Ca	0.00	0.21	0.26	0.81	1.01
	Iron, ppm Fe	0.00	20.00	50.00	301.00	376.25
	Zinc, ppm Zn	0.00	15.00	21.00	61.00	76.25
	Manganese, ppm Mn	0.00	20.00	30.00	161.00	201.25
	Magnesium, % Mg	0.00	0.11	0.16	0.41	0.51
	Copper, ppm Cu	0.00	3.00	5.00	21.00	26.25
	Molybdenum, ppm Mo	0.00	0.11	0.21	2.01	2.51
	Boron, ppm B	0.00	3.00	6.00	26.00	32.50
V7-V9	Total Nitrogen, % N	0.00	2.61	3.21	4.81	6.01
	Phosphorus, % P	0.00	0.26	0.29	0.51	0.64
	Potassium, % K	0.00	1.81	2.31	3.51	4.39
	Sulfur, % S	0.00	0.13	0.16	0.28	0.35
	Calcium, % Ca	0.00	0.21	0.26	0.81	1.01
	Iron, ppm Fe	0.00	21.00	31.00	301.00	376.25
	Zinc, ppm Zn	0.00	15.10	20.10	60.10	75.13
	Manganese, ppm Mn	0.00	21.00	31.00	161.00	201.25
	Magnesium, % Mg	0.00	0.11	0.15	0.41	0.51
	Copper, ppm Cu	0.00	3.00	5.00	21.00	26.25
	Molybdenum, ppm Mo	0.00	0.11	0.21	2.01	2.51
	Boron, ppm B	0.00	4.00	7.00	26.00	32.50
V10-V14	Total Nitrogen, % N	0.00	2.41	3.01	4.01	5.01
	Phosphorus, % P	0.00	0.22	0.27	0.38	0.48
	Potassium, % K	0.00	1.50	2.21	3.01	3.76
	Sulfur, % S	0.00	0.12	0.15	0.35	0.44
	Calcium, % Ca	0.00	0.24	0.29	0.41	0.51
	Iron, ppm Fe	0.00	21.00	31.00	301.00	376.25
	Zinc, ppm Zn	0.00	13.10	19.01	60.00	75.00
	Manganese, ppm Mn	0.00	21.00	31.00	161.00	201.25
	Magnesium, % Mg	0.00	0.11	0.15	0.35	0.44
	Copper, ppm Cu	0.00	2.01	4.01	21.00	26.25
	Molybdenum, ppm Mo	0.00	0.06	0.21	2.51	3.14
	Boron, ppm B	0.00	2.00	4.00	25.00	31.25
SILKING	Total Nitrogen, % N	0.00	2.21	2.71	3.41	4.26
	Phosphorus, % P	0.00	0.20	0.25	0.36	0.45
	Potassium, % K	0.00	1.20	2.01	2.61	3.26
	Sulfur, % S	0.00	0.11	0.16	0.27	0.34
	Calcium, % Ca	0.00	0.20	0.25	0.81	1.01
	Iron, ppm Fe	0.00	20.00	30.00	301.00	376.25
	Zinc, ppm Zn	0.00	13.00	18.00	61.00	76.25
	Manganese, ppm Mn	0.00	15.00	20.00	151.00	188.75
	Magnesium, % Mg	0.00	0.10	0.15	0.36	0.45
	Copper, ppm Cu	0.00	2.00	5.00	21.00	26.25
	Molybdenum, ppm Mo	0.00	0.06	0.21	2.51	3.14
	Boron, ppm B	0.00	2.00	4.00	26.00	32.50