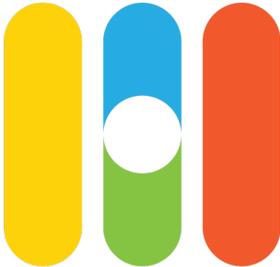




GROWER ADVISORY PANEL | 2025 REPORT

WHO IS HELIAE?

The Heliae logo graphic consists of three vertical, rounded rectangular bars. The left bar is yellow, the middle bar is blue with a white circle in the center, and the right bar is orange.

heliae[®]

makers of **PhycoTerra**

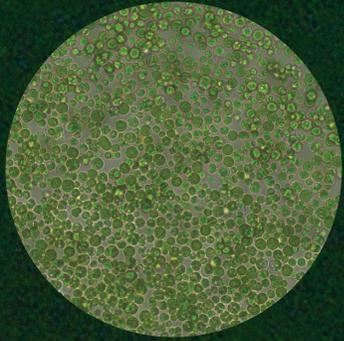
We are the industry leader in microalgae technology and microbial feeding.

Founded in 2008 and based in Gilbert, AZ, our mission is to develop sustainable microalgae solutions that improve soil, plant, animal and human health.

MADE FROM MICROALGAE



MICROBIAL
SUPERFOOD



A microalgae-based superfood for activating your farm's biology (bacteria and fungi)



Feeds your seed, soil and plant biology to support healthy crops



Tested in over 1,000 trials and analyzed on more than 2,000 different soil samples



Highly compatible and shelf-stable input with proven results across various cropping systems

WHAT IS PHYCOTERRA®?

PhycoTerra is a natural, non-living, superior food source for the bacteria and fungi (biology) around the seed, in your soil, and on your plants and residue.

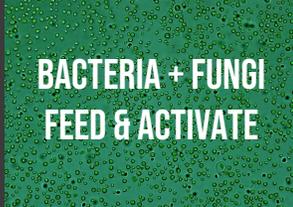
KEY BENEFITS



A COMPLETE AND SUPERIOR FOOD SOURCE FOR YOUR NATIVE BACTERIA & FUNGI



PHYCOTERRA®
APPLICATION



BACTERIA + FUNGI
FEED & ACTIVATE



CROP
RESPONSE



IMPROVEMENT IN
SOIL QUALITY

THE BENEFITS

IMPROVED NPK
AVAILABILITY

IMPROVED SOIL
STRUCTURE

IMPROVED WATER
HOLDING CAPACITY

ABIOTIC
STRESS RELIEF

Kuzaykov 2002 – Review: Factors affecting rhizosphere priming effects
Jacoby et al., 2017 – The Role of Soil Microorganisms in Plant Mineral Nutrition—Current Knowledge and Future Directions
Bargaz et al., 2018 – Soil Microbial Resources for Improving Fertilizer Efficiency in an Integrated Plant Nutrient Management System
Olanrewaju et al., 2019 – Plant health: feedback effect of root exudates–rhizobiome interactions

PhycoTerra™

A Superior Food Source to Feed Bacteria & Fungi

Protein	Lipids	Carbs	Ash (Inedible)	Total Amount Of Food
24g per L	21g per L	44g per L	3g per L	92g per L

NOT A BIOLOGICAL. NOT A FERTILIZER.
NOT A SYNTHETIC.

COMPARED TO

Molasses

Protein	Lipids	Carbs	Ash	Total Food
4g per L	0.8g per L	60g per L	10g per L	74g per L

Seaweeds

Protein	Lipids	Carbs	Ash	Total Food
1g per L	0.5g per L	15g per L	15g per L	32g per L

Humic Acid

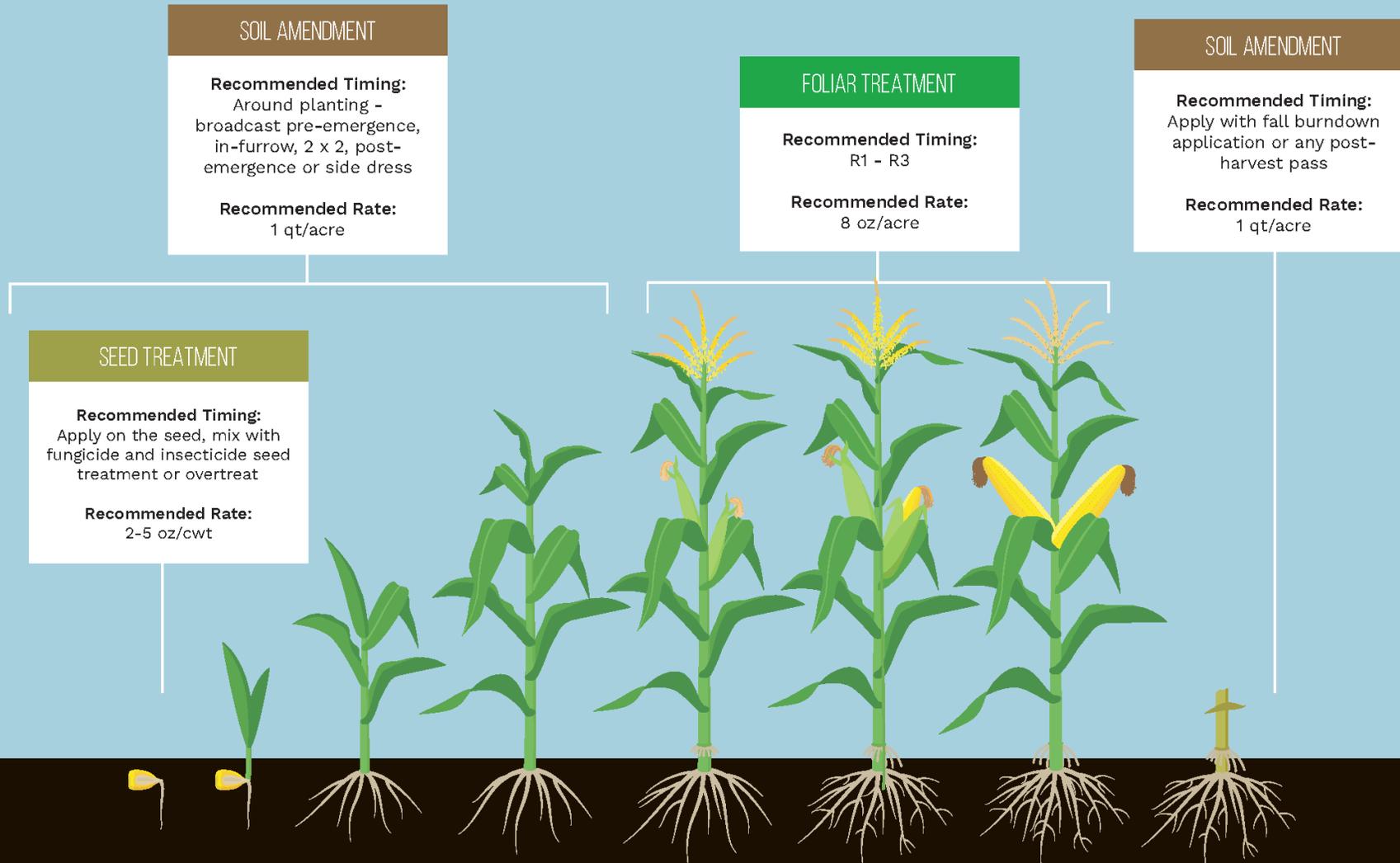
Protein	Lipids	Carbs	Ash	Total Food
1g per L	0.12g per L	2g per L	4g per L	7g per L

Fulvic Acid

Protein	Lipids	Carbs	Ash	Total Food
0g per L	0.03g per L	2g per L	5g per L	7g per L

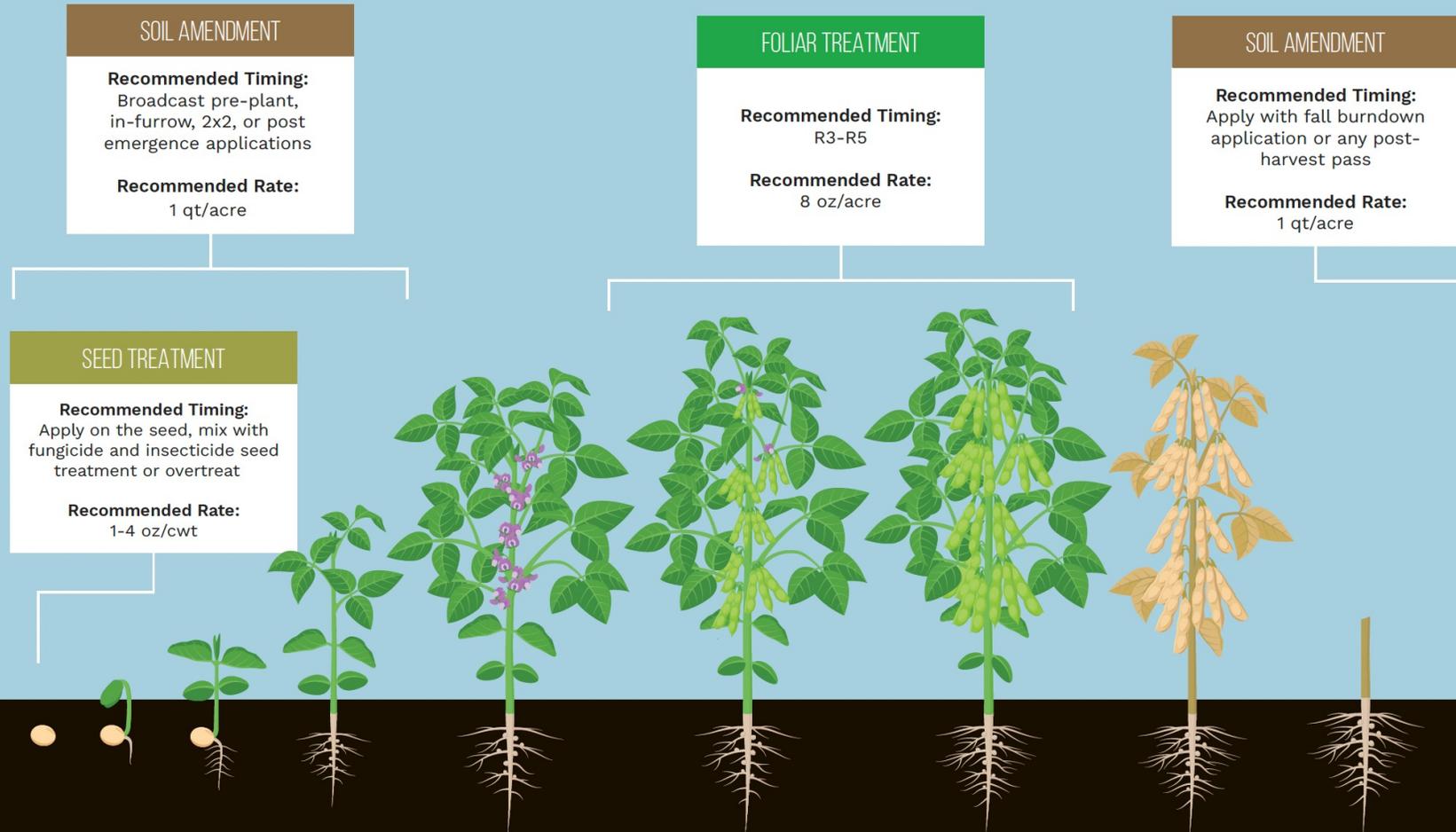
CORN

FULL MICROBIOME ACTIVATION = HIGHER YIELD & ROI



SOYBEANS

FULL MICROBIOME ACTIVATION = HIGHER YIELD & ROI



SPERMOSPHERE

SUPPORT YOUR SEED. STRENGTHEN YOUR SOIL.

PhycoTerra® ST Seed Treatment is designed to feed and activate the microbes around the seed and in the root zone. Applied directly to the seed, it delivers a high-quality carbon-rich food source that wakes up dormant microbes and supports seedling vigor. By improving microbial activity in the spermosphere, PhycoTerra ST Seed Treatment enhances seedling nutrient establishes more resilient plants.

Superior Microalgae Food For Native Crop Microbes

Its unique formulation delivers excellent natural seed adhesion. It's pasteurized and shelf-stable, making it an ideal fit for any seed treatment system.

Low-Rate, High-ROI Application

Apply directly to seed, either on-farm or through commercial seed treaters. It integrates seamlessly with standard seed treatment protocols and equipment.

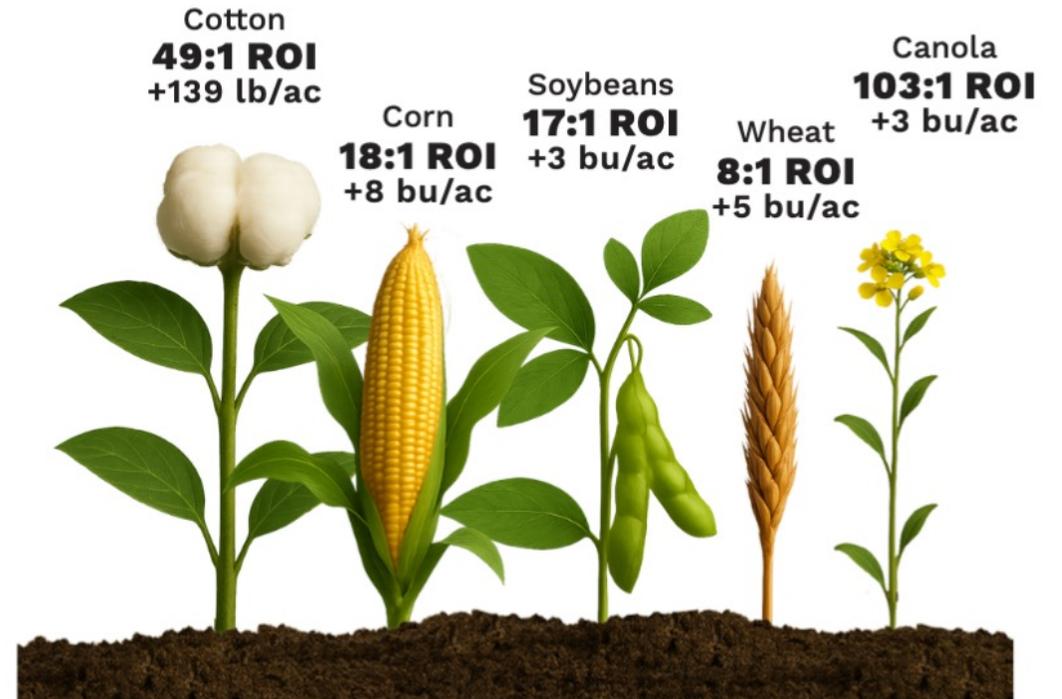


DIRECTIONS FOR USE

RECOMMENDED RATES	
CORN	2-5 oz/cwt
COTTON	6-8 oz/cwt
SOYBEANS	1-4 oz/cwt
CANOLA	5-10 oz/cwt

Note: Adjust pH to the manufacturer recommendation on any pH sensitive tank mix partner

LOW-RATE. HIGH ROI & YIELDS.





RHIZOSPHERE

BELOW GROUND TREATMENT. ABOVE GROUND RESULTS.

PhycoTerra® Soil Amendment is a liquid microbial food product, delivering a superior, balanced meal to the starving, dormant microbes in your soil. Using microalgal technology to activate the native beneficial microbes on your farm, PhycoTerra Soil Amendment delivers a unique mode of action to improve soil structure, increase water holding capacity and optimize nutrient availability. Improved soil quality supports crops through abiotic stress relief to reach full yield potential.

Superior Microalgal Food For Native Crop Microbes

Replenish soil biology by providing a superior food source for dormant native bacteria and fungi. Improve water holding capacity, enhance soil aggregation and optimize nutrient availability.

Low-Rate, High-ROI Soil Application

Mixes easily with other crop inputs, including fertilizers, herbicides, insecticides, fungicides and soil-applied nutrients. It's a convenient addition to any crop input program.



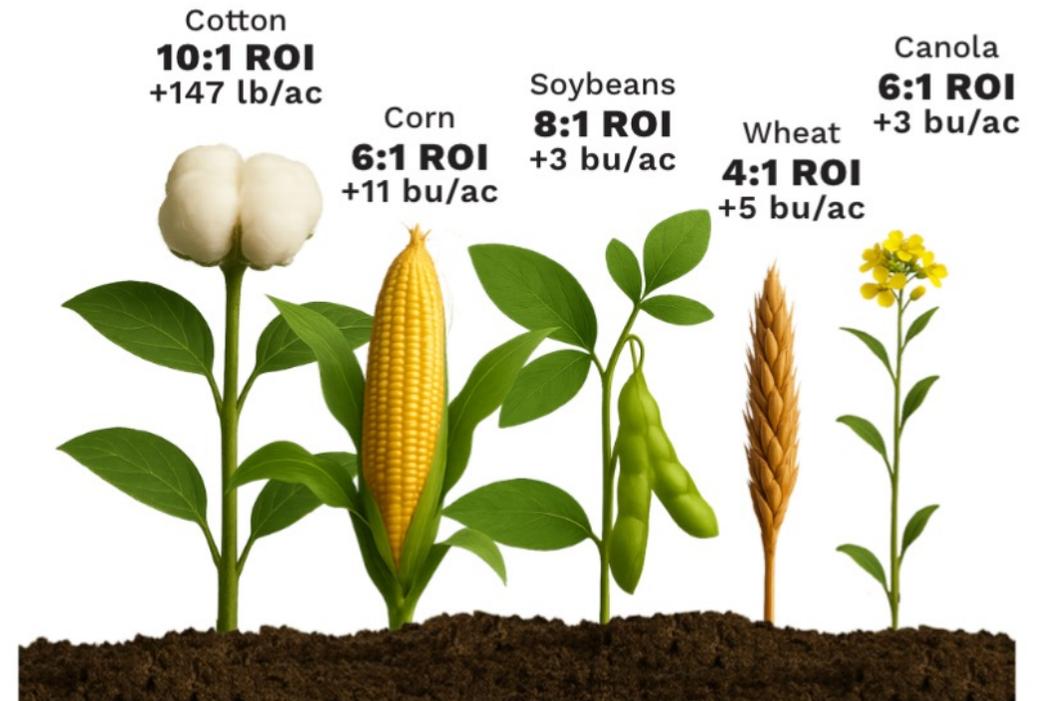
DIRECTIONS FOR USE

RECOMMENDED RATES	
CORN	1 qt/acre
COTTON	1-2 qt/acre
SOYBEANS	1 qt/acre
CANOLA	1 qt/acre

Stable with exceptional shelf life

Note: Adjust pH to the manufacturer recommendation on any pH sensitive tank mix partner

LOW-RATE. HIGH ROI & YIELDS.



PHYLLOSHERE

FEED YOUR MICROBES. FREE YOUR YIELD.

PhycoTerra® FX Foliar Treatment is a microalgae-based liquid product applied directly on the plant during the growing season. It delivers a unique, carbon-rich food source that feeds the phyllosphere microbiome – enhancing microbial activity on the leaf surface. Designed for compatibility with common foliar crop inputs, PhycoTerra FX Foliar Treatment helps crops respond more effectively to stress, build resilience, and reach their genetic potential. No extra pass needed.

Superior Microalgae Food For Native Crop Microbes

Delivers vital lipids, proteins, and carbs to nourish leaf microbes that support crop health. Protects phyllosphere against heat and drought for abiotic stress relief.

Low-Rate, High-ROI Application

Proprietary formula optimizes compatibility with other crop inputs, such as fungicides. Applied to foliage at low rates, delivering consistent ROI for farmers.



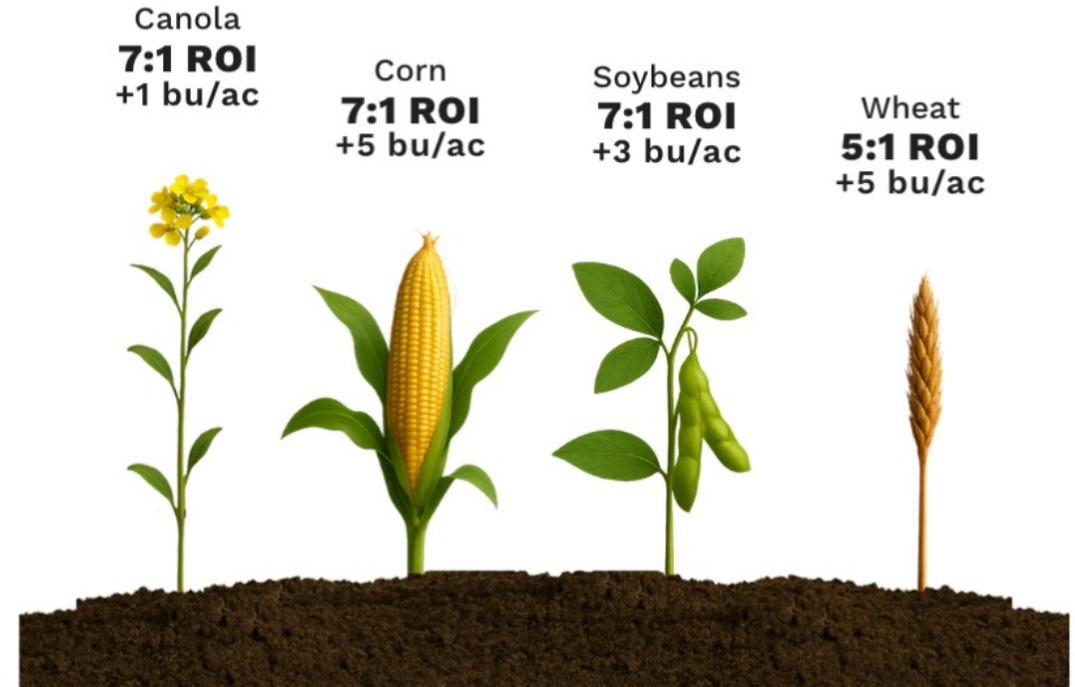
DIRECTIONS FOR USE

APPLY AT: Foliar Nutrient & Crop Protection Timings

RECOMMENDED RATES	
CORN	8 oz/acre
COTTON	8-16 oz/acre
SOYBEANS	8 oz/acre
CANOLA	8-16 oz/acre

Note: Adjust pH to the manufacturer recommendation on any pH sensitive tank mix partner

LOW-RATE. HIGH ROI & YIELDS.





ON FARM RESEARCH 2025



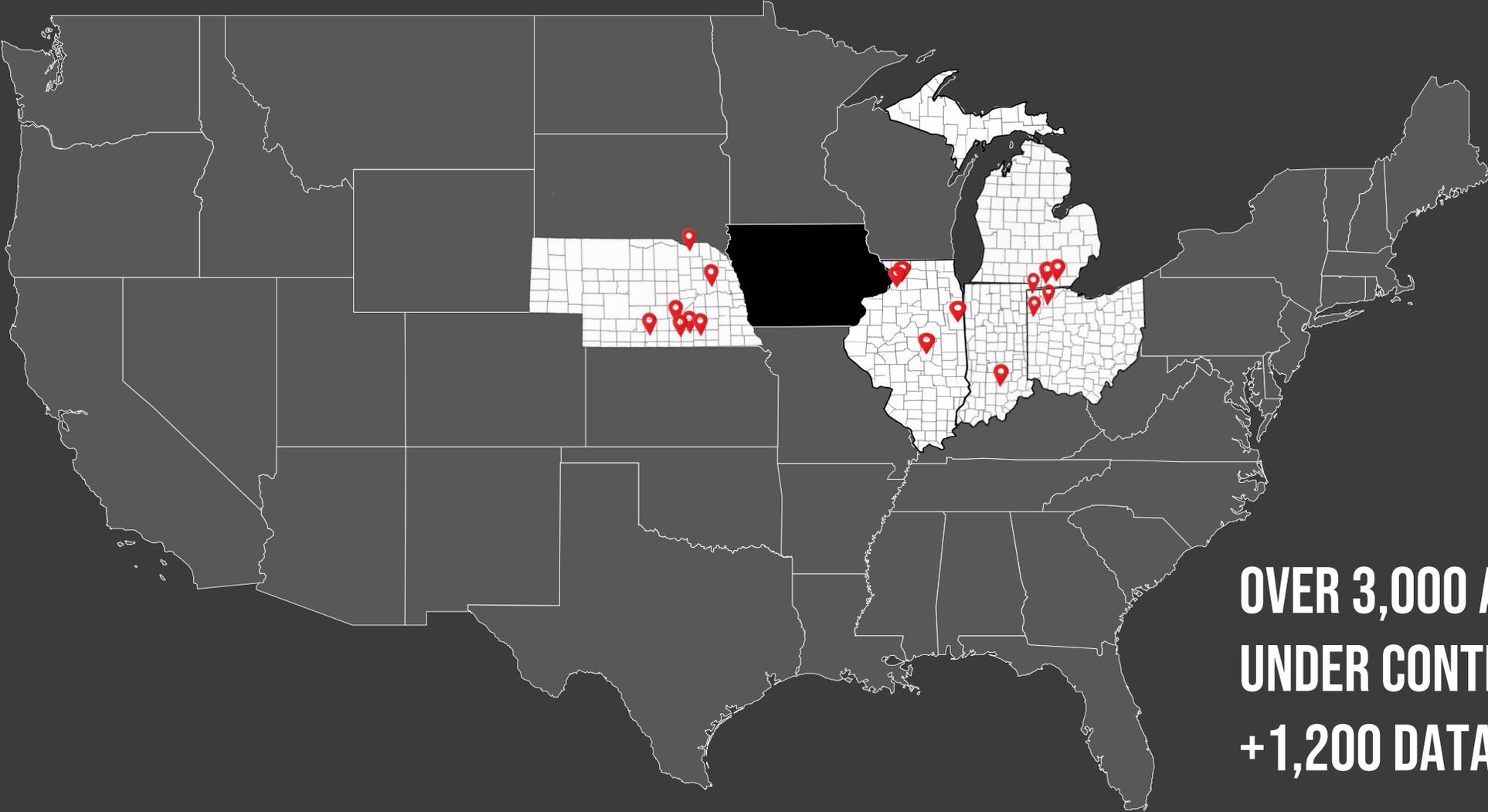
OBJECTIVE

The PhycoTerra® Grower Advisory Group creates a direct connection between end users and PhycoTerra Ag Science. This creates an opportunity to conduct field-level, broadacre research with a high probability of success and reliable, farm-applicable results. It creates an excellent feedback loop between PhycoTerra and farmers for not just yield, but also product experience and direction for future product development and improving customer experience.

WHO

Our objective is to create a group of growers located across the Midwest region that utilizes a variety of management practices in different environments. These growers should have the capabilities and willingness to conduct on-farm trials of a product or practice on clean 40-acre plot.

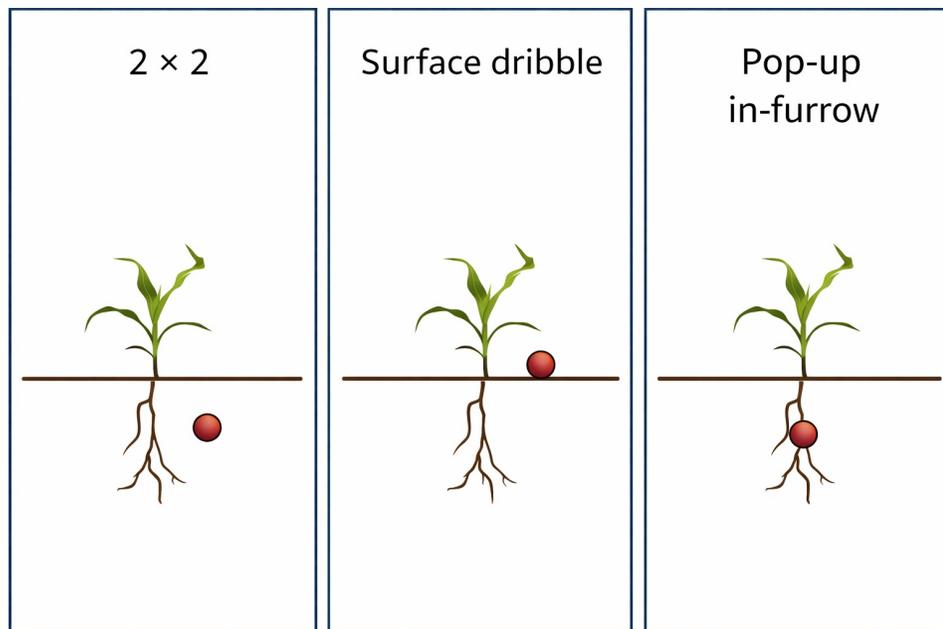
BACKGROUND OF OUR GROWER ADVISORY PANEL



**OVER 3,000 ACRES
UNDER CONTRACT
+1,200 DATA POINTS**

STARTER TRIALS (CORN)

Crop Response and Yield Results





STARTER

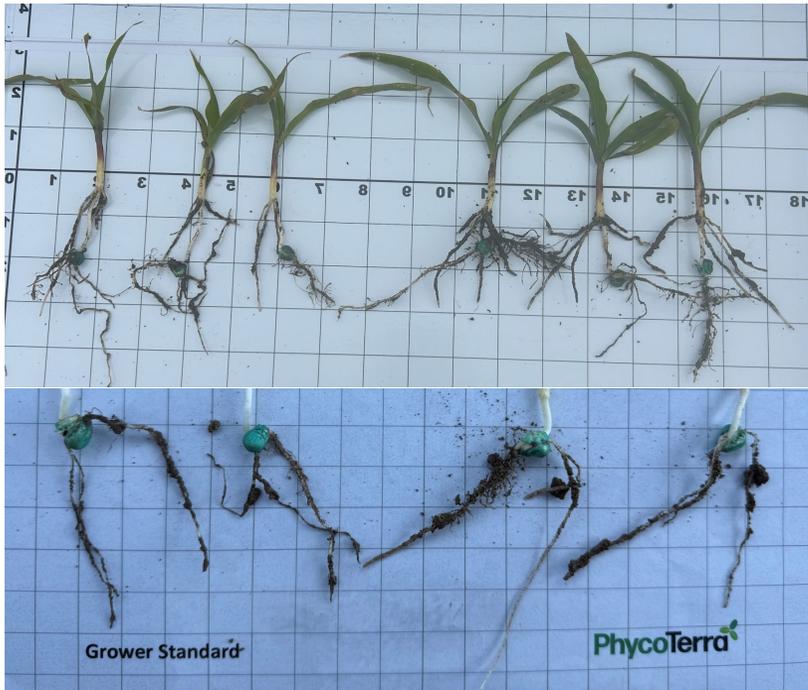
TREATMENTS	DIFF	TRIALS
Control: No Treatments	--	--
32 oz. (1 qt) PhycoTerra [®] Soil Amendment @ Plant	+3.2	8
32 oz. (1 qt) PhycoTerra Soil Amendment @ Plant + 8 oz. PhycoTerra Foliar Treatment @ R2	+6.2	5



STARTER

Planted 5/3/2025
Harvested 10/10/2025
Location Wausa, NE

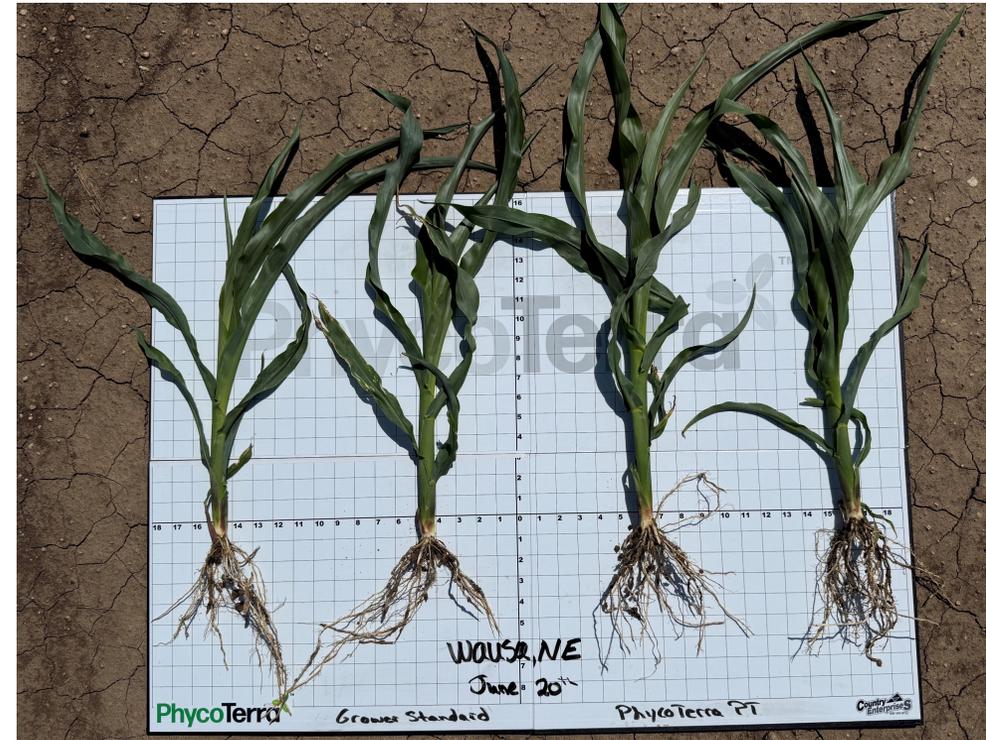
Application 5/3/2025 @ Plant
Application Method Planter (2x2)
Rate 32 oz (1 qt) PhycoTerra® Soil Amendment



Root Development

Plant Health

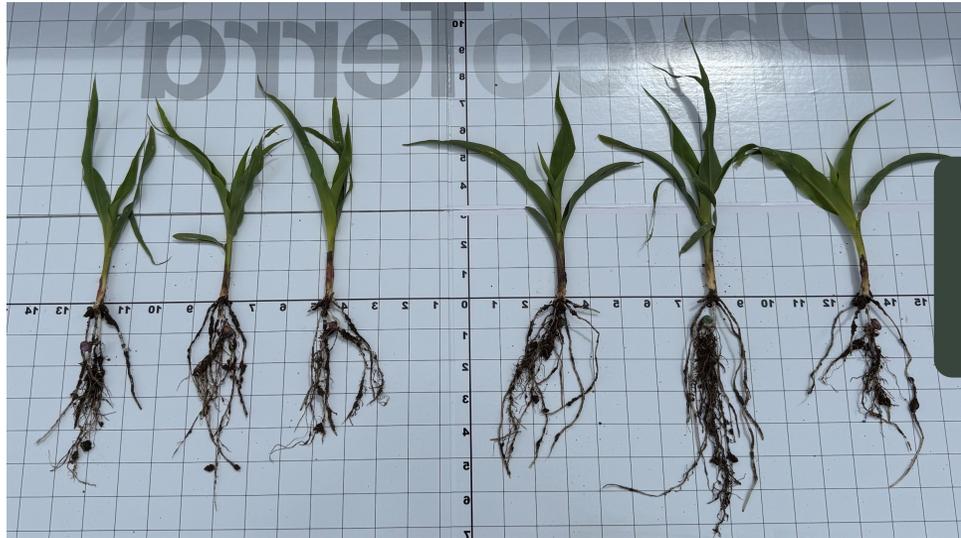
Stronger Plants



STARTER

Planted 4/29/2025
Harvested 10/9/2025
Location Harvard, NE

Application 4/29/2025 @ Plant
Application Method Planter (In-Furrow)
Rate 32 oz (1 qt) PhycoTerra® Soil Amendment

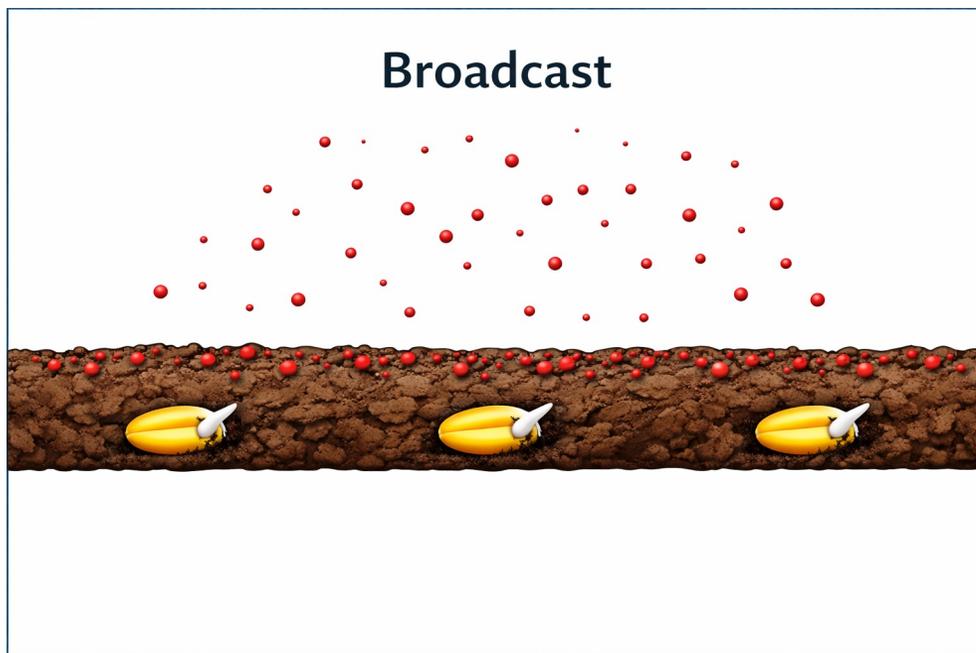


2 Weeks
← Plant Development →



BROADCAST: PRE-EMERGE (CORN)

Crop Response and Yield Results





BROADCAST: PRE-EMERGE

TREATMENTS	DIFF	TRIALS
Control: No Treatments	--	--
32 oz. (1 qt) PhycoTerra [®] Soil Amendment @ Plant	+5	1
32 oz. (1 qt) PhycoTerra Soil Amendment @ Plant + 8 oz. PhycoTerra Foliar Treatment @ R2	--	--



BROADCAST: POST-EMERGE (CORN)

Crop Response and Yield Results



BROADCAST: POST-EMERGE

TREATMENTS	DIFF	TRIALS
Control: No Treatments	--	--
32 oz. (1 qt) PhycoTerra [®] Soil Amendment @ Plant	+5.4	6
32 oz. (1 qt) PhycoTerra Soil Amendment @ Plant + 8 oz. PhycoTerra Foliar Treatment @ R2	+3	1



POST-EMERGE

Planted 4/28/2025
Harvested 10/15/2025
Location Sutton, NE

Application 5/20/2025 @ V3
Application Method Broadcast (Ground)
Rate 32 oz (1 qt) PhycoTerra® Soil Amendment



Enhanced Plant Vigor

Increased Root Development & Growth



POST-EMERGE

Planted 4/21/2025
Harvested 10/13/2025
Location Shickley,
NE

Application 5/21/2025 @ V3-V4
Application Method Broadcast (Drone)
Rate 32 oz (1 qt) PhycoTerra® Soil Amendment



Abiotic Stress Relief

Deeper Green

Enhanced Growth



Y-DROP: POST-EMERGE (CORN)

Crop Response and Yield Results



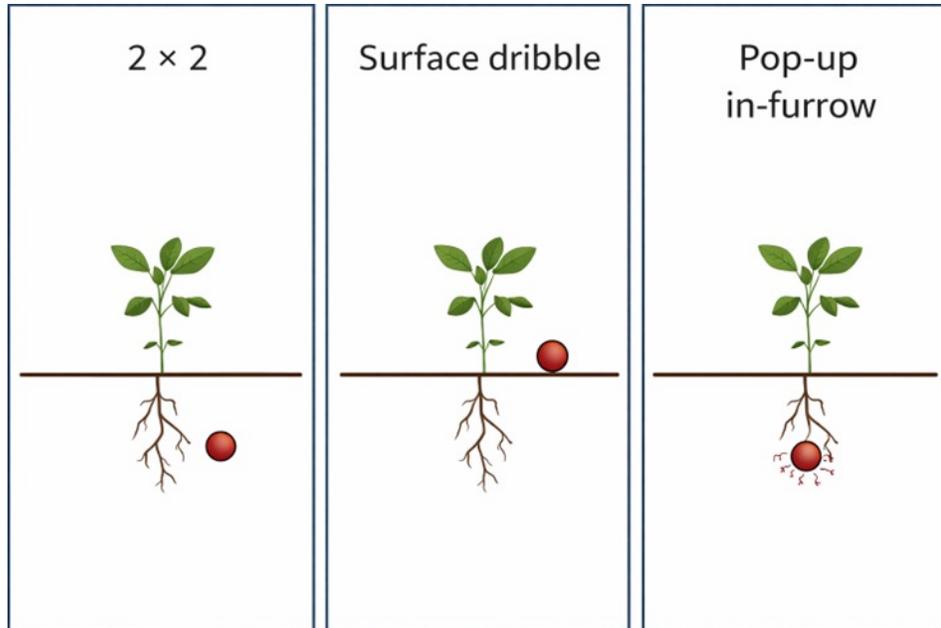
Y-DROP: POST-EMERGE

TREATMENTS	DIFF	TRIALS
Control: No Treatments	--	--
32 oz. (1 qt) PhycoTerra [®] Soil Amendment @ Plant	+7	1
32 oz. (1 qt) PhycoTerra Soil Amendment @ Plant + 8 oz. PhycoTerra Foliar Treatment @ R2	+10	1



STARTER TRIALS (SOYBEANS)

Crop Response and Yield Results





STARTER

TREATMENTS	DIFF	TRIALS
Control: No Treatments	--	--
32 oz. (1 qt) PhycoTerra® Soil Amendment @ Plant	+5	2
32 oz. (1 qt) PhycoTerra Soil Amendment @ Plant + 8 oz. PhycoTerra Foliar Treatment @ R3	+3.5	2



STARTER

Planted 4/26/2025
Harvested 9/30/2025
Location Tampico, IL

Application 4/26/2025 @ Plant
Application Method Planter (In-Furrow)
Rate 32 oz (1 qt) PhycoTerra® Soil Amendment



Improved Early Establishment

Greater Root Density

Stronger Early Vigor



STARTER

Planted 4/16/2025
Harvested 10/1/2025
Location Harvard, NE

Application 4/16/2025 @ Plant
Application Method Planter (2x2)
Rate 32 oz (1 qt) PhycoTerra® Soil Amendment

2 Weeks Apart



Grower Standard

PhycoTerra

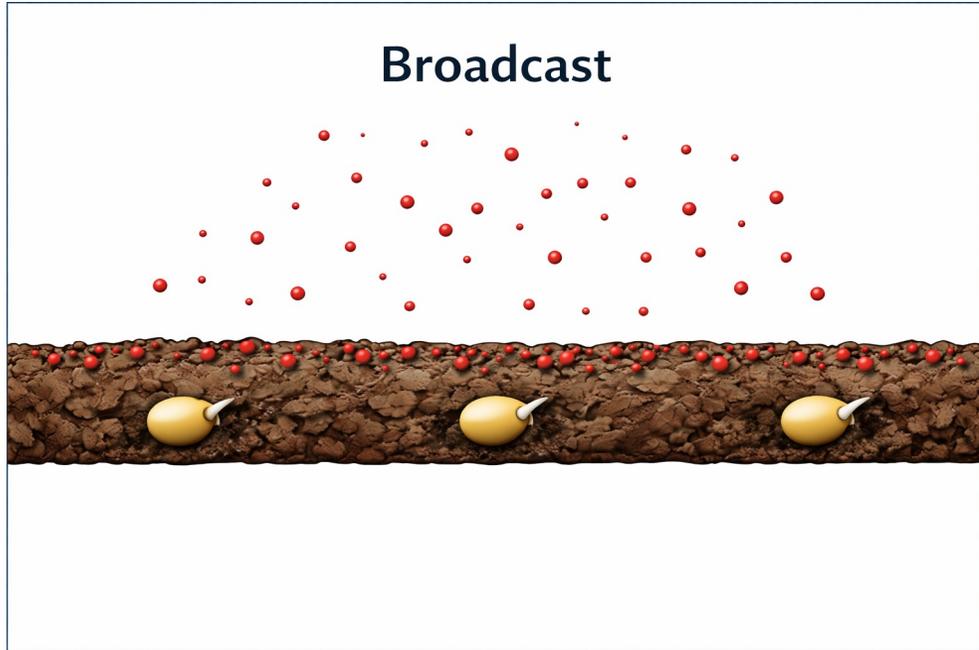
Grower Standard

PhycoTerra



BROADCAST: PRE-EMERGE (SOYBEANS)

Crop Response and Yield Results



BROADCAST: PRE-EMERGE

TREATMENTS	DIFF	TRIALS
Control: No Treatments	--	--
32 oz. (1 qt) PhycoTerra [®] Soil Amendment @ Plant	+3	1
32 oz. (1 qt) PhycoTerra Soil Amendment @ Plant + 8 oz. PhycoTerra Foliar Treatment @ R3	0	1



BROADCAST: POST-EMERGE (SOYBEANS)

Crop Response and Yield Results





BROADCAST: POST-EMERGE

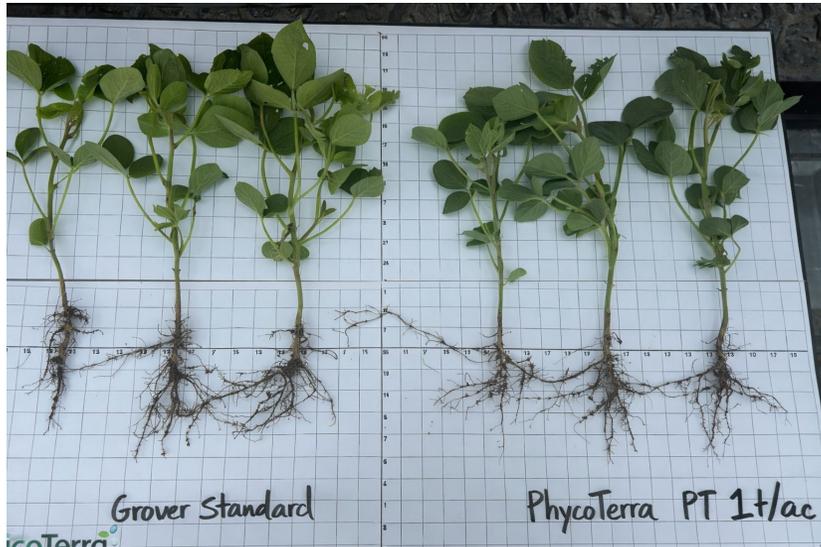
TREATMENTS	DIFF	TRIALS
Control: No Treatments	--	--
32 oz. (1 qt) PhycoTerra [®] Soil Amendment @ V2-V7	+1.2	5
32 oz. (1 qt) PhycoTerra Soil Amendment @ V2-V7 + 8 oz. PhycoTerra Foliar Treatment @ R3	+1.8	4



POST-EMERGE

Planted 4/16/2025
Harvested 11/25/2025
Location Sutton, NE

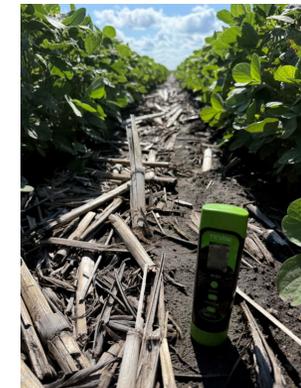
Application 6/13/2025 @ V6-V7
Application Method Broadcast
Rate 32 oz (1 qt) PhycoTerra® Soil Amendment



**4 Days Post
(No Difference)**



**2 Week Post
(Root & Plant Growth)**



**+3.3%
Water Holding Capacity**



POST-EMERGE

Planted 6/2/2025
Harvested 10/13/2025
Location Clayton, MI

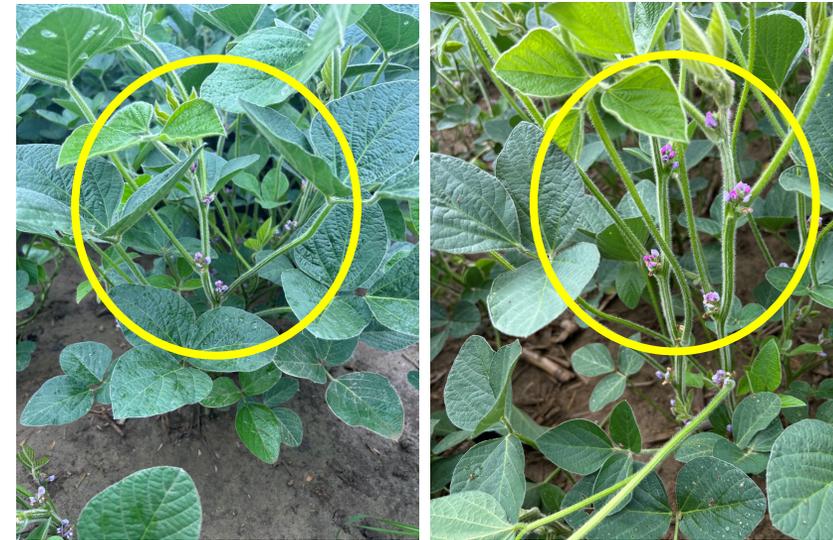
Application 6/17/2025 @ V2
Application Method Broadcast
Rate 32 oz (1 qt) PhycoTerra® Soil Amendment



Healthier Canopy

Greener Foliage

Plant Vigor (PT Applications)



Increased Flowers/Plant



FOLIAR APPLICATION STUDY

Crop Response and Yield Results



OVERALL RESULTS

TREATMENT	CORN	TRIALS
Control: No Treatments	--	--
PhycoTerra Foliar Treatment	+5.9	10
PhycoTerra Soil Amendment + PhycoTerra Foliar Treatment	+6.3	10



TREATMENT	SOYBEANS	TRIALS
Control: No Treatments	--	--
PhycoTerra Foliar Treatment	+2	7
PhycoTerra Soil Amendment + PhycoTerra Foliar Treatment	+2	7



AERIAL APPLICATION

TREATMENT	CORN	TRIALS
Control: No Treatments	--	--
PhycoTerra Foliar Treatment	+5	4
PhycoTerra Soil Amendment + PhycoTerra Foliar Treatment	+5.3	4

TREATMENT	SOYBEANS	TRIALS
Control: No Treatments	--	--
PhycoTerra Foliar Treatment	+3	3
PhycoTerra Soil Amendment + PhycoTerra Foliar Treatment	+3	3



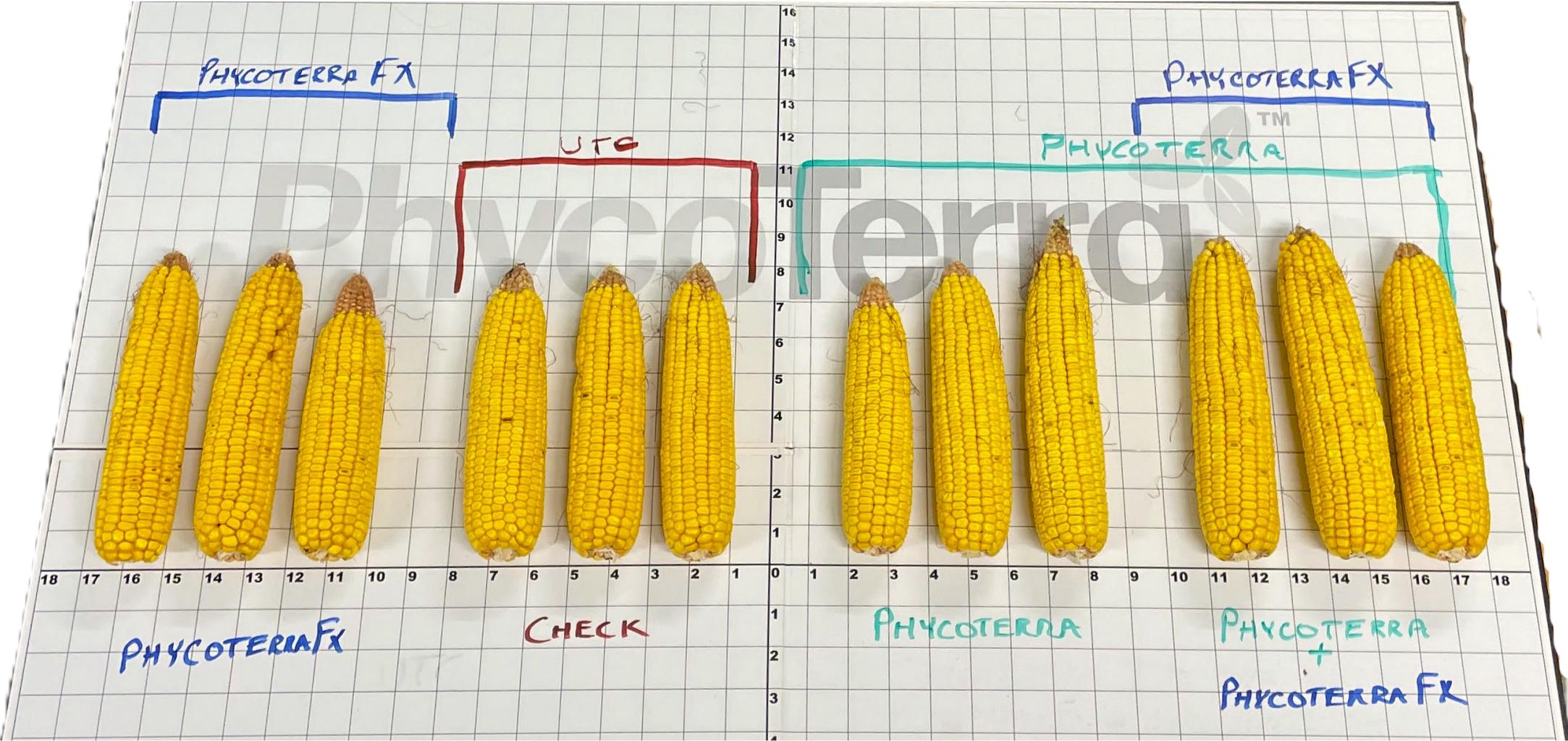
BROADCAST APPLICATION

TREATMENT	CORN	TRIALS
Control: No Treatments	--	--
PhycoTerra Foliar Treatment	+7	5
PhycoTerra Soil Amendment + PhycoTerra Foliar Treatment	+7.7	5

TREATMENT	SOYBEANS	TRIALS
Control: No Treatments	--	--
PhycoTerra Foliar Treatment	+1.3	4
PhycoTerra Soil Amendment + PhycoTerra Foliar Treatment	+1.3	4



PHYCOTERRA® : IMPACT ON POLLINATION AND KERNAL FILL





GAP SUMMARY DATA

PhycoTerra® Soil Amendment \$40/GAL Corn \$4.45/Bu
 PhycoTerra Foliar Treatment \$80/GAL Soybeans \$10.52/Bu

TREATMENTS	CORN	TRIALS	ROI	SOYBEAN	TRIALS	ROI
PhycoTerra Soil Amendment	+4.4	16	\$6.91 2.25 bu	+2.4	8	\$15.25 .95 bu
PhycoTerra Foliar Treatment	+5.9	7	\$21.26 1.12 bu	+2	7	\$16.04 .48 bu
PhycoTerra Soil Amendment + Foliar Treatment	+6.3	7	\$13.04 3.37 bu	+2	7	\$6.04 1.43 bu

GAP SUMMARY DATA '24 + '25



	2025 YIELD RESULTS	2025 TRIAL COUNT	2024 YIELD RESULTS	2024 TRIAL COUNT	2 YEAR YIELD RESULTS	2 YEAR TRIAL COUNT
Aerial: FX	+5	4	+2	3	+3.7	7
Aerial: PT+FX	+5.3	4	+5	3	+5.2	7
Broadcast: FX	+7	5	+9	5	+8	10
Broadcast: PT+FX	+7.7	5	+11	5	+9.3	10



Aerial: FX	+3	3	-	-	+3	3
Aerial: PT+FX	+3	3	-	-	+3	3
Broadcast: FX	+1.3	4	-	-	+1.3	4
Broadcast: PT+FX	+1.3	4	-	-	+1.3	4

GAP SUMMARY DATA '24 + '25



	2025 YIELD RESULTS	2025 TRIAL COUNT	2024 YIELD RESULTS	2024 TRIAL COUNT	2 YEAR YIELD RESULTS	2 YEAR TRIAL COUNT
Starter: In Furrow, 2x2	3.2	8	19	2	6.4	10
Broadcast: Pre-Emerge	5	1	8	3	7.3	4
Broadcast: Post-Emerge	5.4	6	2.3	3	4.1	9
Side Dress	7	1	-	-	7	1
Pivot Injection	-	-	3	2	3	2



FARM FOREVER.™