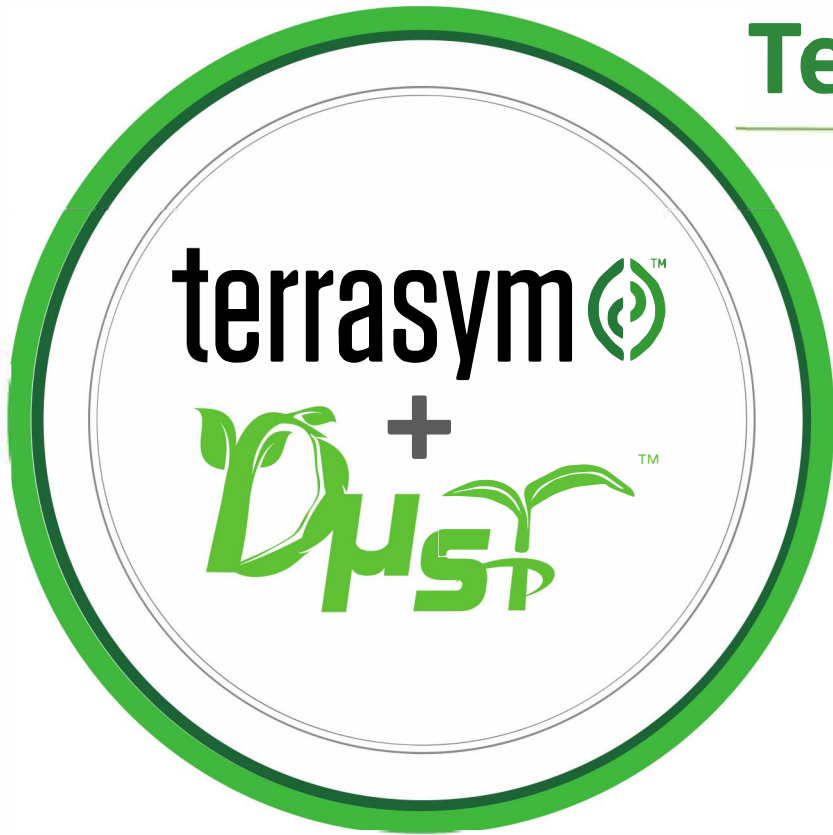
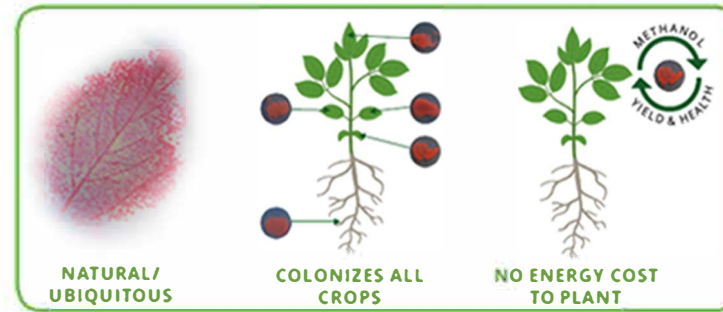


Terrasym + DUST for Corn & Soybean



**Improve Seed Flow, Nutrient Uptake,
Root Development & Yield - NATURALLY!**



**Field Results, Validations, Product Benefits
and 2023 Satisfaction Promise**



Improve seed flow, nutrient uptake, root development & yield – naturally



NewLeaf Symbiotics® and Low Mu Tech™ have combined proprietary Terrasym® microbial technology with a micro-plastic free, patented DUST™ seed flow lubricant to bring farmers a convenient, one-of-a-kind planter box application in 2022!

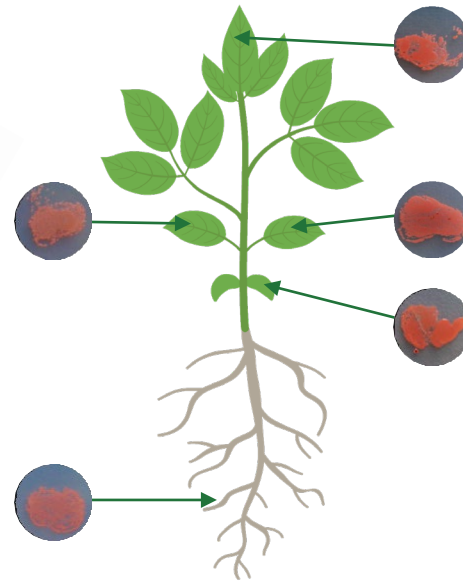
Terrasym® 401 + DUST™ for soybeans and **Terrasym® 450 + DUST™ for corn** are designed to improve seed lubrication and seed flow during planting and deliver improved nutrient uptake leading to robust early season root development, enhanced tolerance of abiotic stress throughout the growing season, and higher yields at harvest.

What are PPFMs?

Pink pigmented facultative methylotrophs, or PPFMs, are a unique class of microbes and are one of the few microbe families to have no known strains that impact plants negatively.



**NATURAL/
UBIQUITOUS**

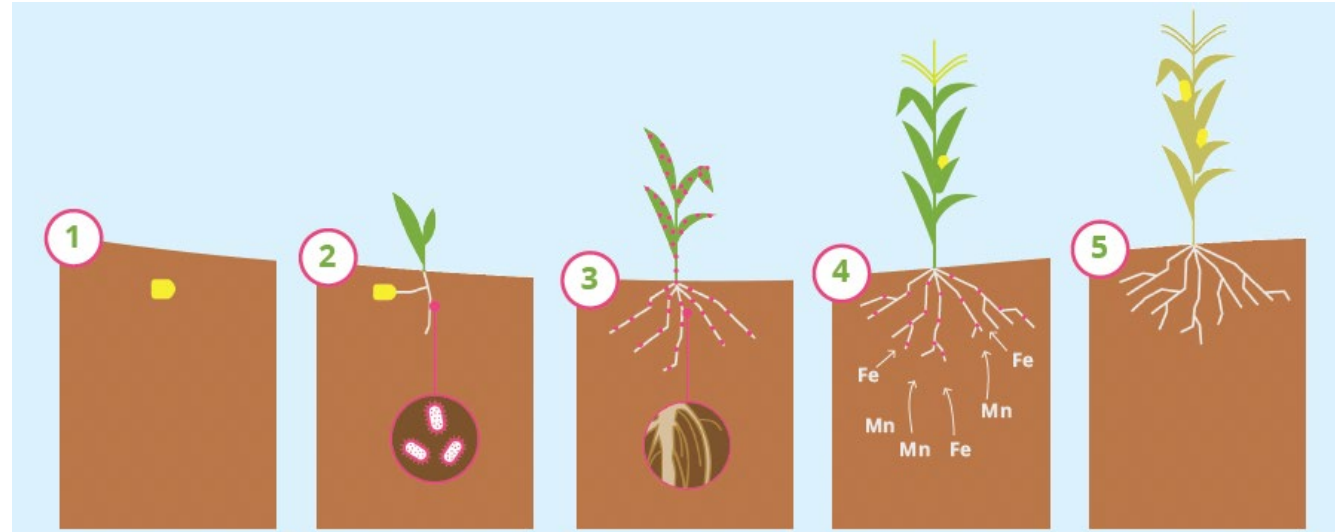


**COLONIZES ALL
CROPS**



**NO ENERGY COST
TO PLANT**

How Terrasym + DUST Works



1. DUST provides seed lubrication and seed flow aid at planting ensuring seed passes through the planter and is placed into the ground as the farmer intends.
2. As broad, season-long plant colonizers, PPFMs spread from the seed surface across a plant's roots and leaves.
3. PPFMs improve nutrient uptake by populating plant roots, which promotes higher numbers of root tips and overall root mass in turn enhancing nutrient acquisition.
4. They also secrete beneficial molecules into the root zone that can bind and transport yield-enabling micronutrients.
5. PPFM colonization throughout the growing season and increased nutrient uptake result in increased chlorophyll content and enhanced photosynthetic efficiency, both of which contribute to increases in yield.

Product Benefits

- Terrasym products contain unique strains of beneficial microbes called pink pigmented facultative methylotrophs (PPFMs). Different stains are specially selected for use in corn and soybeans.
- Flow properties equal to or better than existing offerings.
- Reduces overall dustiness and residue transfer to skin and clothing.
- Insecticide-free and carcinogen-free, reducing health risks of the farmer and environment.
- DUST Proven to reduce static and to be up to 20 times less abrasive to seed than Talc.*
- Shows improved development of root area which in turn enhances nutrient acquisition:
 - **Corn:** +6.7% in total root area and +9.6 in nodal root development.**
 - **Soybean:** +2.9% in total root area, +5.6% rooting depth, and +2.4% root tips.**
- Enhances nutrient uptake in corn, showing improved leaf tissue nutrient concentration with a +17.5% increase in iron and +12.6% increase in manganese over an untreated control.***
- PPFM microbes consume methanol (a waste byproduct in plants), which can lower the energy cost for the plant to host them as symbionts.
- Features broad compatibility with 120 days on-seed stability when applied as a planter box application.
- DUST™ product is supported by the United Soybean Board and made from 100% U.S. soybeans with the support of farmers' Soy Check-Off Dollars.



*Source: *SGS Labs Study **Combination data set from 2020 IN10T Farmer Trials® & 2021 Ag Ingenuity Partner Trials; All untreated checks and PPFM treatments have base fungicide and insecticide application. *** 2020 IN10T FarmerTrials data*

Validation of Terrasym + DUST Planter Box Technology

Terrasym + DUST Planter Box Validation Overview

Commercial-Scale Trials with Third-Party Rigor

In 2021, a partnership with independent data company Ag Ingenuity Partners (AIP) – a division of Advanced Agrilytics, LLC – and their expansive trial network brought commercial-scale data and validation on the feasibility and efficacy of planter box applications of Terrasym® + DUST™ technology. This partnership focused on:

- Seed Singulation
- Planter Type Compatibility
- PPFM Colonization and Compatibility



Ag Ingenuity

Seed Singulation & Planter Compatibility Overview

- Data pulled directly from the planters' monitors data came back showcasing these planter box applications had no negative impact to singulation.
- To cross check this result, once the crop had emerged AIP agronomists walked each trial with a pogo stick to manually calculate stand – again confirming no negative impact.

FINAL RESULT



Terrasym + DUST planter box applications do not negatively impact seed singulation and can be use in all corn planter types, **excluding soybean brush meter units.**

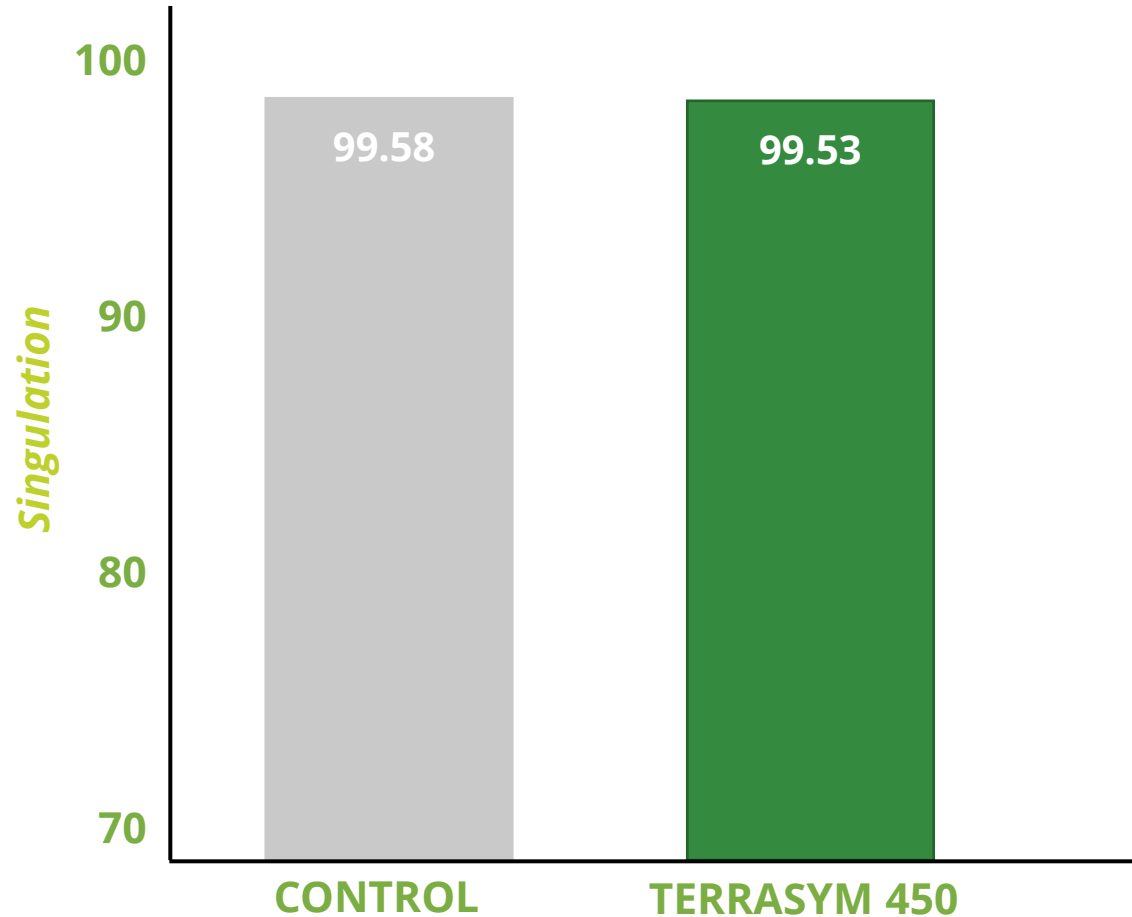
Terrasym 450 Corn Singulation vs. Control Singulation

No Negative Effects on Seed Singulation

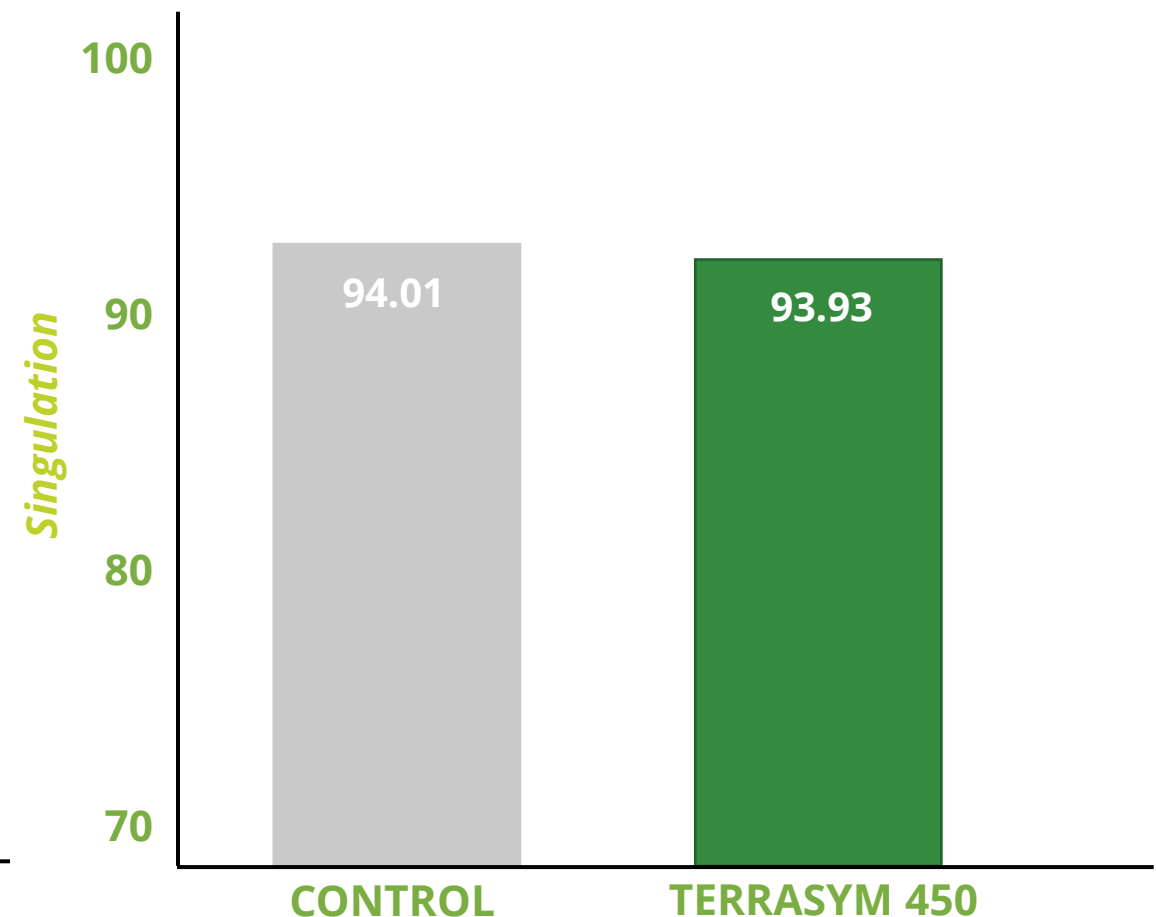


Research conducted by
the NLS PD & Commercial Teams
in partnership w/ Ag Ingenuity
Partners

MONITOR SINGULATION DATA
TRIAL AVERAGE ACROSS 14 LOCATIONS



POGO STICK SINGULATION DATA
TRIAL AVERAGE ACROSS 12 LOCATIONS



Source: 2021 AIP Farmer Trials; Singulation data reported for TS450 as a planter box application with a range of seed lubricants and planter types; Some locations have both monitor and POGO singulation, total locations Monitor = 14, POGO = 12, 107 individual data points per treatment

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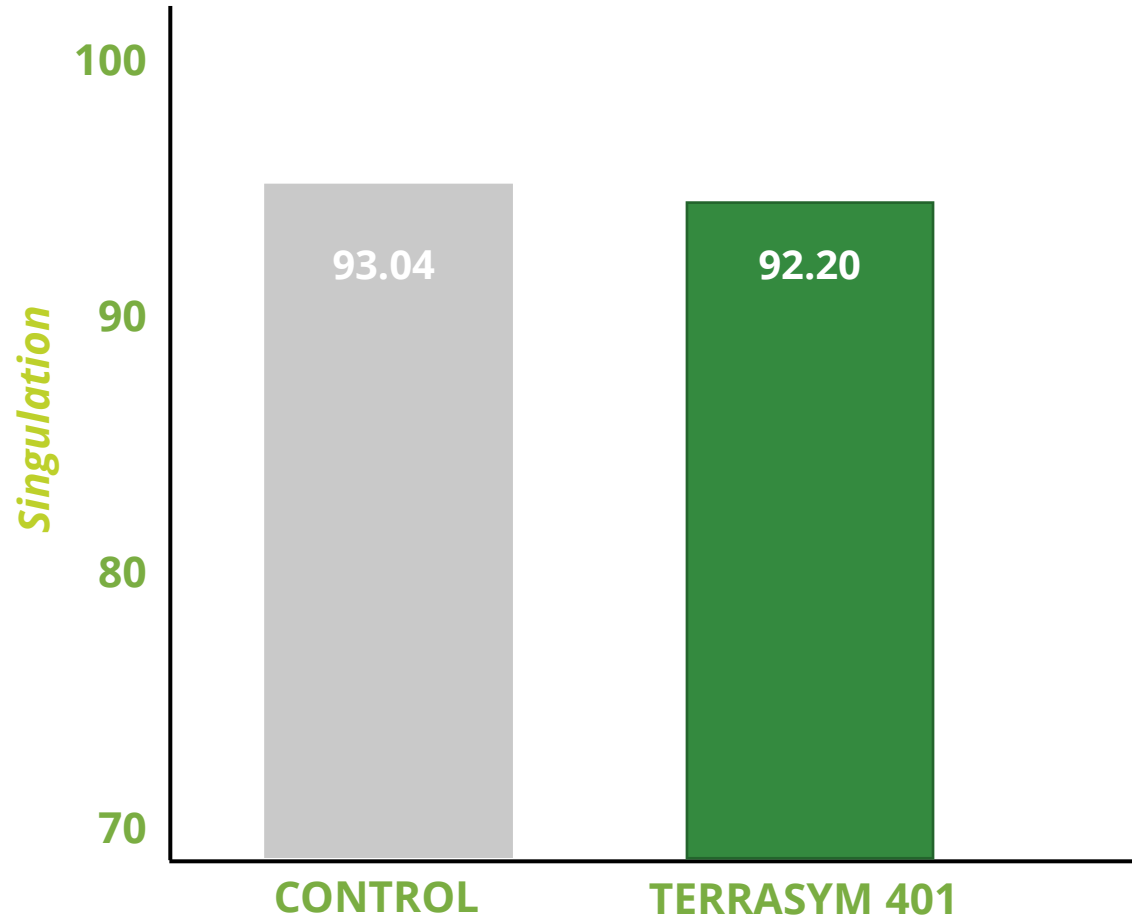
Terrasym 401 Soybean Singulation vs. Control Singulation



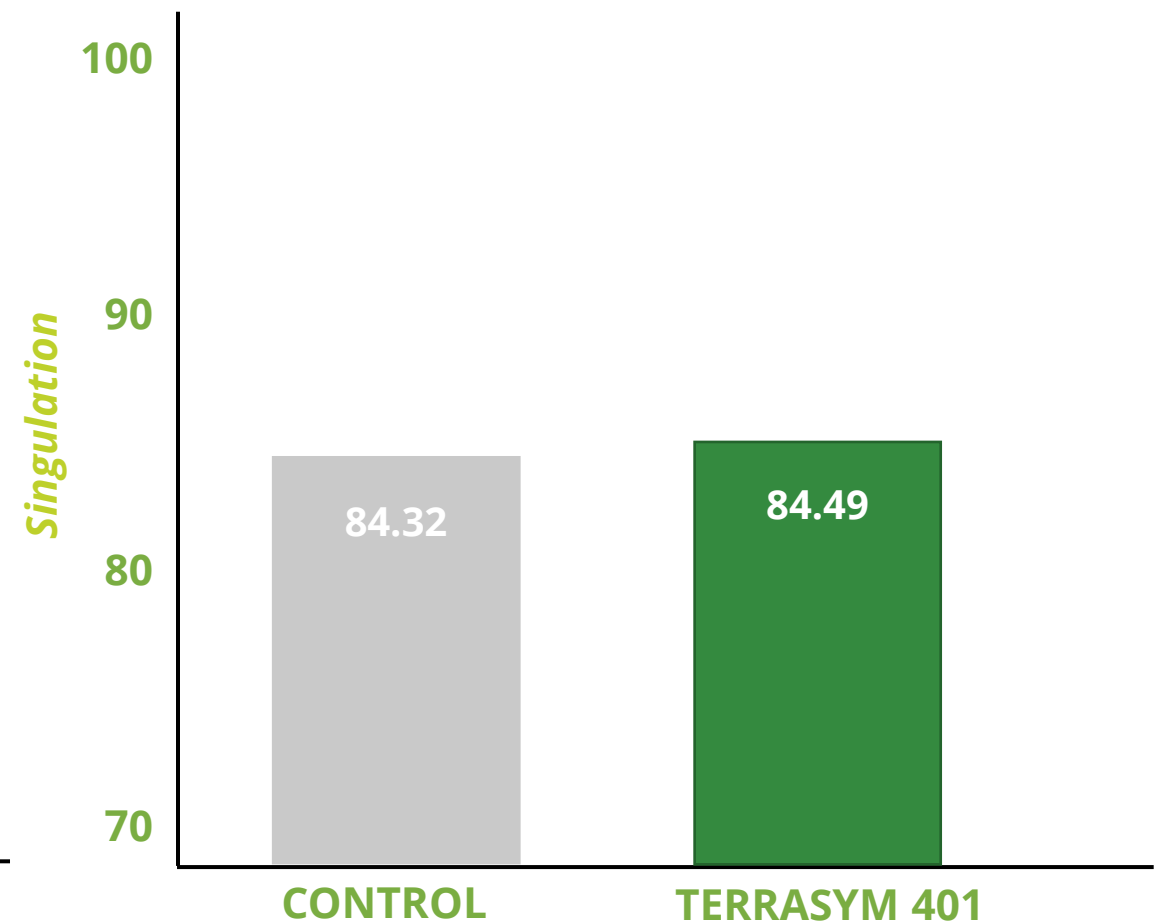
Research conducted by
the NLS PD & Commercial Teams
in partnership w/ Ag Ingenuity
Partners

No Negative Effects on Seed Singulation

MONITOR SINGULATION DATA
TRIAL AVERAGE ACROSS 10 LOCATIONS



POGO STICK SINGULATION DATA
TRIAL AVERAGE ACROSS 19 LOCATIONS



Source: 2021 AIP Farmer Trials; Singulation data reported for TS401 as a planter box application with a range of seed lubricants and planter types; Some locations have both monitor and POGO singulation data. Control monitor = 10, POGO = 19. Individual data points per treatment

Seed Distributing - 800-368-7773 - www.sidist.com

PPFM Colonization & Compatibility Overview

- To confirm even product distribution, AIP agronomists collected seed samples as trials were being planted.
- Using these collected samples, NewLeaf scientists confirmed through analysis there were robust populations of PPFMs per seed.
- Even more, planter box applications show more live PPFMs per seed with planter box applications (compared to liquid overseed treatment).
 - **Corn:** 54X more live PPFMs per seed
 - **Soybean:** 6X more live PPFMs per seed

FINAL RESULT



Terrasym + DUST planter box applications distribute evenly across large-scale fields.

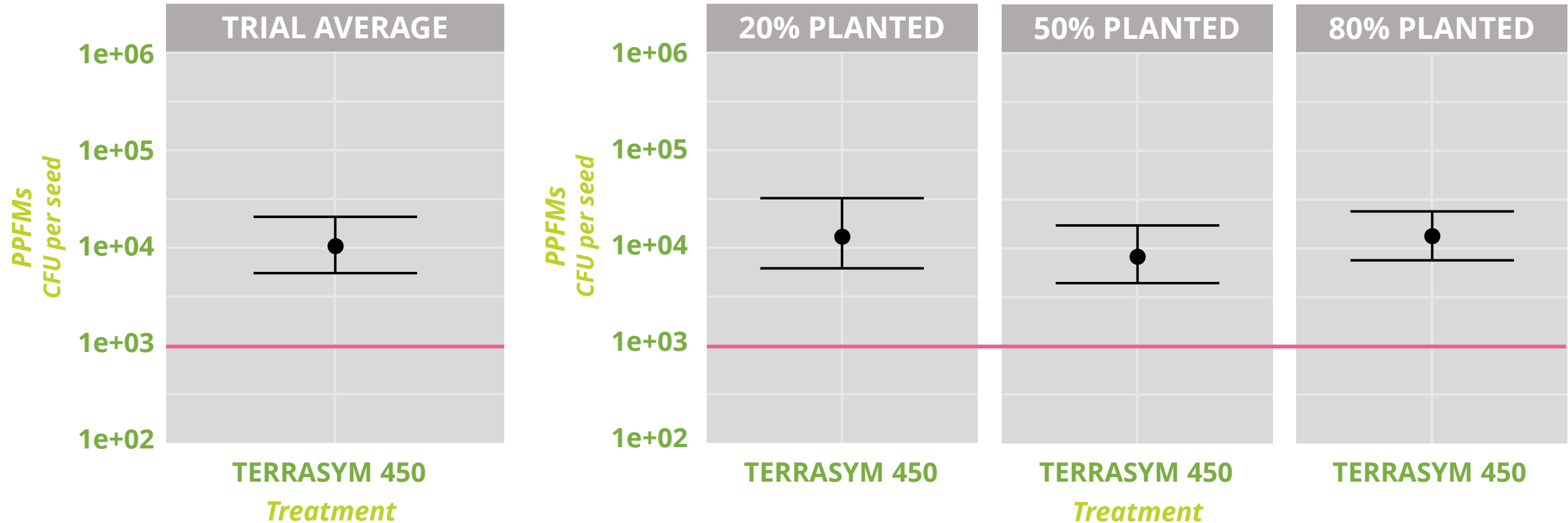
Corn On Seed Titters for Planter Box



Research conducted by
the NLS PD & Commercial Teams
in partnership w/ Ag Ingenuity
Partners

54x More Live PPFMs on Planter Box Seeds vs. Seed Treatment

Corn on seed titers by planting progress (%)



KEY

- 2021 AIP planter box delivery method, 28 locations
- Minimum product target
- Bars are bootstrapped 95% confidence intervals

Source: 2021 AIP Farmer Trials; On seed PPFM titer data reported for TS450 as a planter box application with a range of seed lubricants and planter types; 28 locations, n = 1 sample per planting progress timepoint (20, 50 and 80% planting progress), 84 total seed samples, CFU = colony forming units

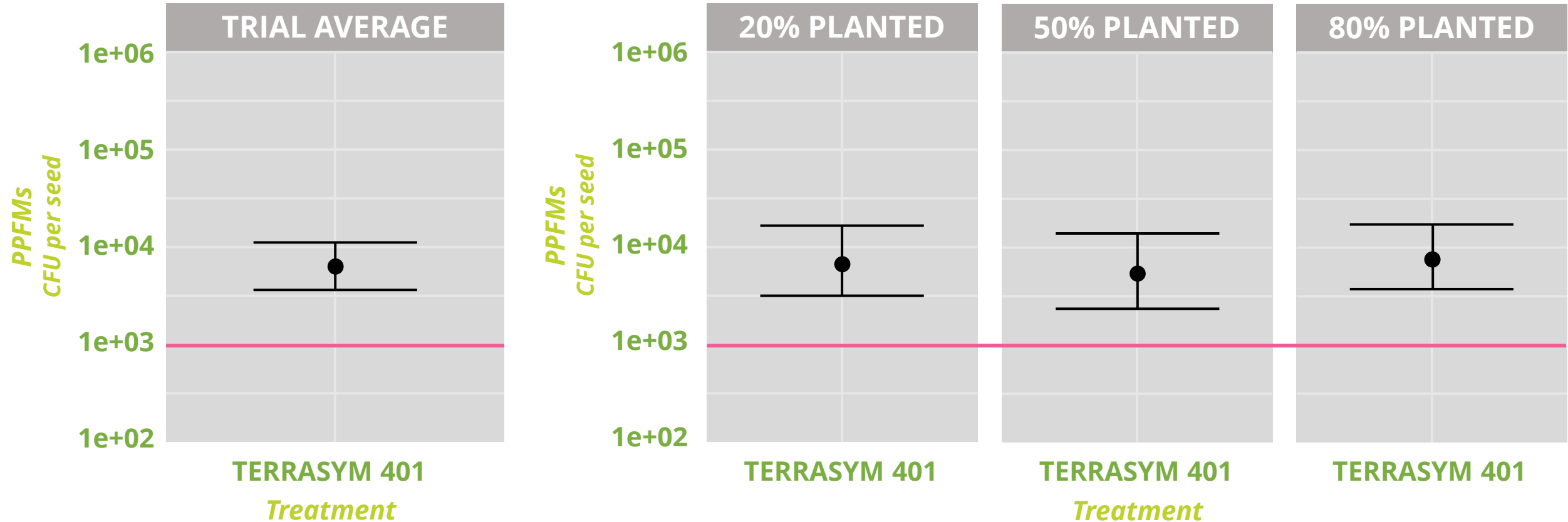
Soybean On Seed Titters for Planter Box

6x More Live PPFMs on Planter Box Seeds vs. Seed Treatment



Research conducted by the NLS PD & Commercial Teams in partnership w/ Ag Ingenuity Partners

Soybean on seed titters by planting progress (%)



KEY

- 2021 AIP planter box delivery method, 29 locations
- Minimum product target
- Bars are bootstrapped 95% confidence intervals

Source: 2021 AIP Farmer Trials; On seed PPFM titer data reported for TS401 as a planter box application with a range of seed lubricants and planter types; 29 locations, n = 1 sample per planting progress timepoint (20, 50 and 80% planting progress), 87 total seed samples; CFU = colony forming units

Terrasym Field Results



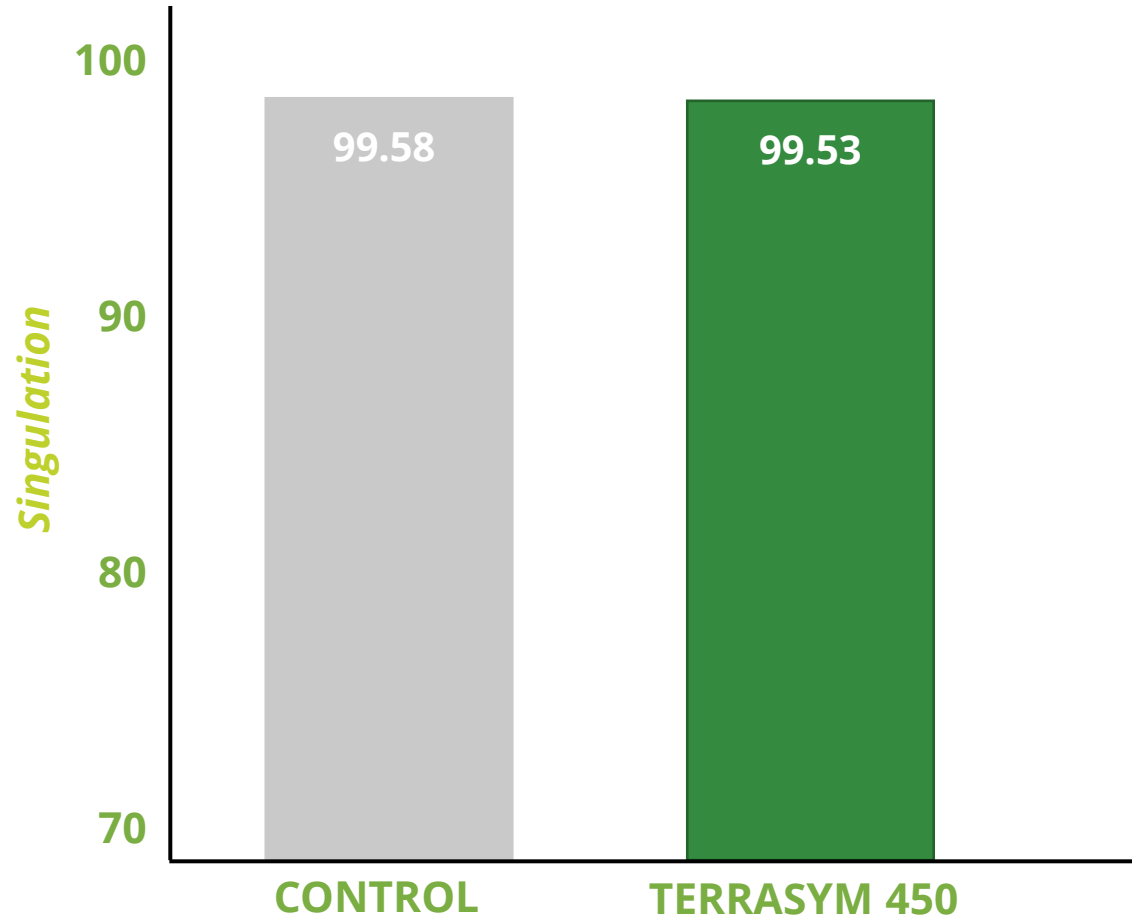
Terrasym 450 Corn Singulation vs. Control Singulation

No Negative Effects on Seed Singulation

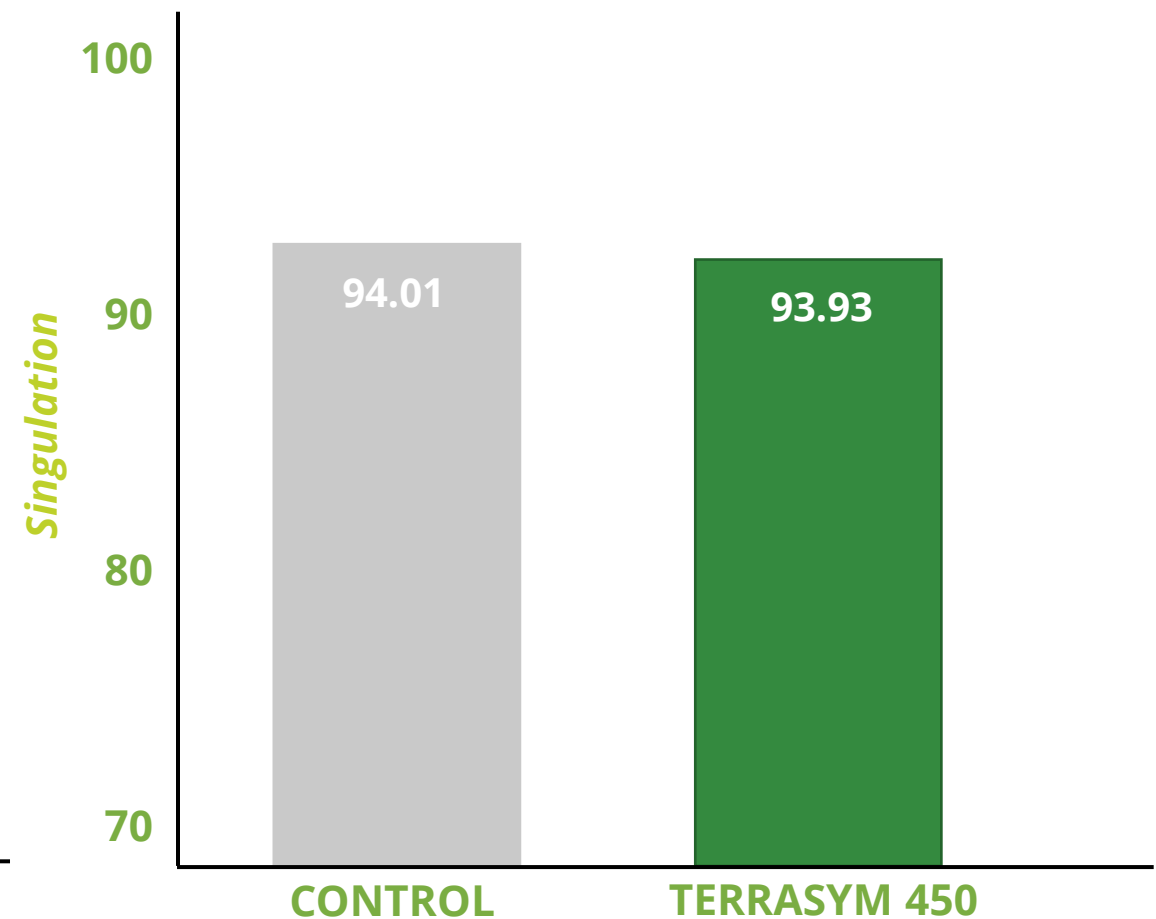


Research conducted by
the NLS PD & Commercial Teams
in partnership w/ Ag Ingenuity
Partners

MONITOR SINGULATION DATA
TRIAL AVERAGE ACROSS 14 LOCATIONS



POGO STICK SINGULATION DATA
TRIAL AVERAGE ACROSS 12 LOCATIONS



Source: 2021 AIP Farmer Trials; Singulation data reported for TS450 as a planter box application with a range of seed lubricants and planter types; Some locations had both Monitor and POGO singulation, total locations Monitor = 14, POGO = 12, 107 individual data points per treatment

S.I. Distributing

S.I. Distributing

Seed Singulation & Planter Compatibility Overview

- Data pulled directly from the planters' monitors data came back showcasing these planter box applications had no negative impact to singulation.
- To cross check this result, once the crop had emerged AIP agronomists walked each trial with a pogo stick to manually calculate stand – again confirming no negative impact.

FINAL RESULT



Terrasym + DUST planter box applications do not negatively impact seed singulation and can be use in all corn planter types, **excluding soybean brush meter units.**

Digital Imaging of Root Traits (DIRT): Soybean

Percent Increase Compared To Control

PROJECT	GROWTH STAGE	ROOT AREA	ROOTING DEPTH	ROOTING WIDTH	NUMBER OF ROOT TIPS
2020, 2021	V2-V6	+2.9	+5.6	+2.3	+2.4

Source: 2020 IN10T FarmerTrials; All untreated checks and PPFM treatments have base fungicide and insecticide application; Trends reported for Terrasym 401 applied as a seed treatment (V2-V4 15/18 locations included in analyses, n = 10 plants per treatment at each location)

2021 AIP Trials; All untreated checks and PPFM treatments have base fungicide and insecticide application; Trends reported for Terrasym 401 as a planter box application (V4-V6 15/15 locations included in analysis, n = 20 plants per treatment at each location)



DECATUR, IL

TERRASYM 401

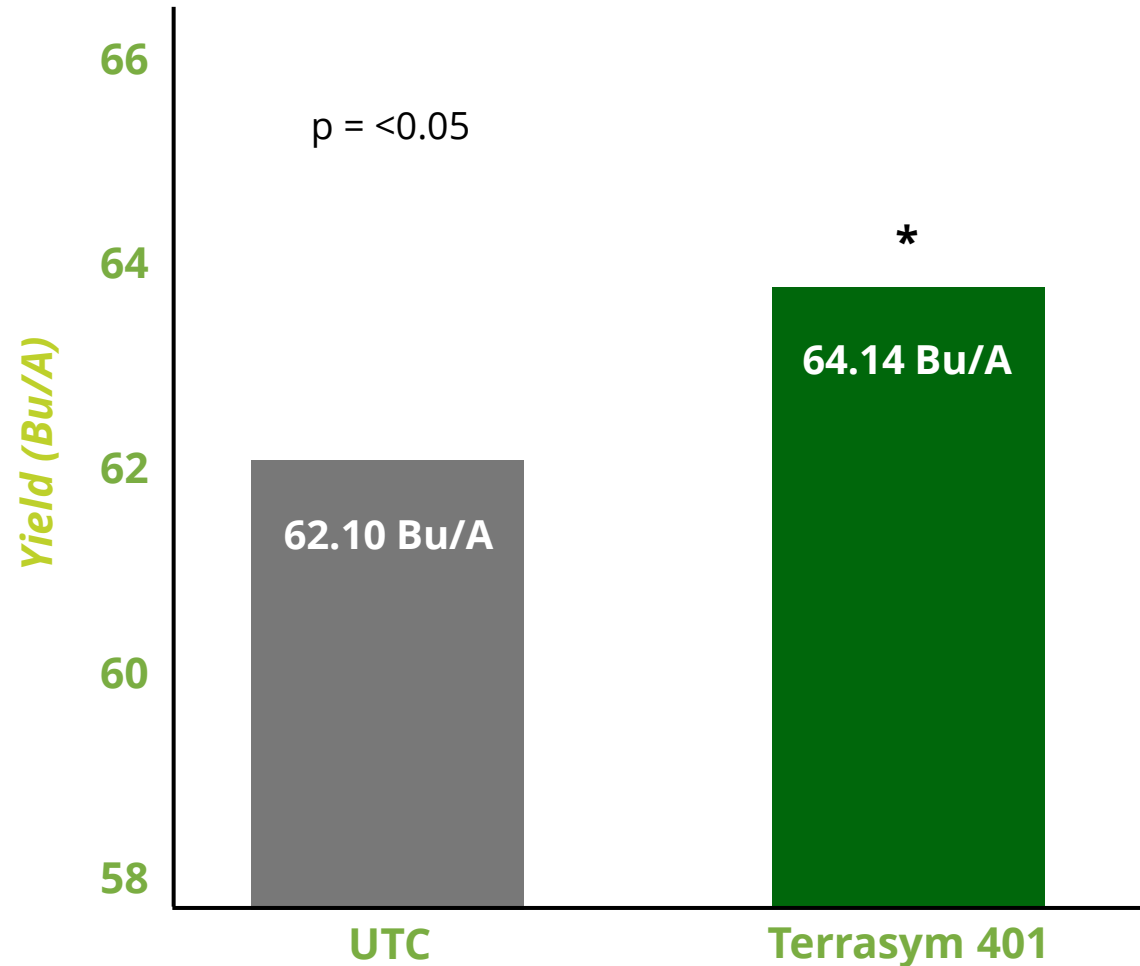
In-Field Performance

Improved nutrient uptake enables enhanced emergence, vigor and nutrient acquisition, which translates to enhanced plant growth throughout the growing season, resulting in higher yield and crop quality at harvest.

2020 RESULTS: COMMERCIAL SCALE TRIALS

- Average Yield Increase: **+2.0 Bu/A**
- Win rate: **75%**
 - 16 unique locations
 - 16 total trials

**Source: 2020 IN10T FarmerTrials; All untreated checks and PPFM treatments have base fungicide and insecticide application; Trends reported for Terrasym 401 applied as seed treatment (n= 16 locations)*



** Significantly different from UTC at $p < 0.05$
UTC = Untreated Check
UTC and Terrasym 401 have base fungicide + insecticide*



Digital Imaging of Root Traits (DIRT): Corn

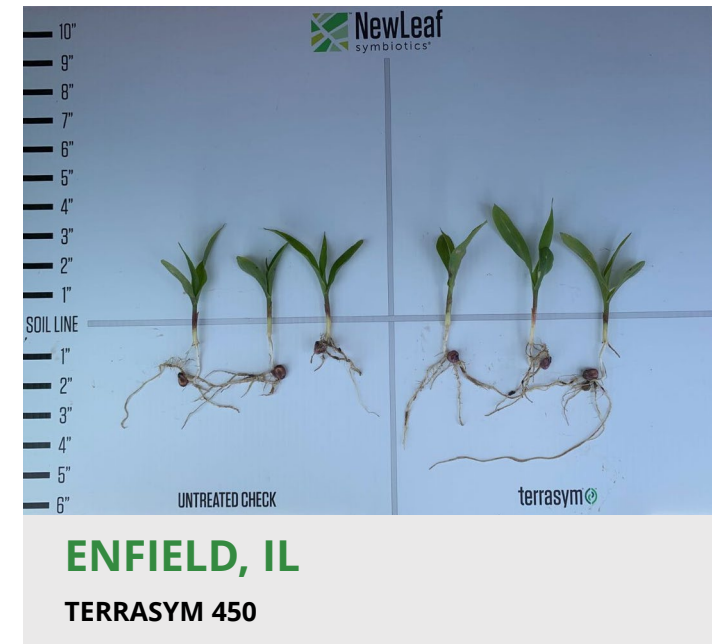
Percent increase compared to control

PROJECT	GROWTH STAGE	ROOT AREA	ROOTING DEPTH	ROOTING WIDTH	NUMBER OF ROOT TIPS	NODAL ROOT LENGTH*
2020, 2021	V2-V6	+6.7	+7.3	-0.4	+0.6	+9.6

Source: 2020 IN10T FarmerTrials; All untreated checks and PPFM treatments have base fungicide and insecticide application; Trends reported for Terrasym 450 applied in furrow (V2-V4, 19/24 locations included in the analysis), n = 10 plants per treatment at each location

2021 AIP Trials: All untreated checks and PPFM treatments have base fungicide and insecticide application; Trends reported for Terrasym 450 as a planter box application (V4-V6, 13/15 locations included in the analysis), n = 10 plants per treatment at each location

*Nodal roots traced and measured in ImageJ for the 2020 IN10T trials and dissected and measured fresh for the 2021 AIP Trials



Corn Leaf Tissue Nutrient Concentration

In-Field Data Validates Early Greenhouse Work

IMPORTANCE OF IRON AND MANGANESE IN CORN

- Iron deficiencies can cost growers anywhere between 5-10 Bu/A
- Manganese plays a critical role in corn growth impacting key yield-establishing processes like:
 - Chloroplast formation in leaves, which impacts chlorophyll production
 - A plant's ability to build carbohydrates and metabolizing nitrogen

OPPORTUNITY

- In 2019 greenhouse trials, corn treated with Terrasym 450 showed a **18.1% increase in foliar Fe** content and an **11.4% increase in foliar Mn** content.
- 2020 IN10T Farmer Trials confirm increases in **foliar Fe by an average of 17.5%** and **foliar Mn by 12.6%**.

Showcasing percent increase compared to control.

Source: 2020 IN10T Farmer Trials; All untreated checks and PPFFM treatments have base fungicide and insecticide application; Nutrient data reported for Terrasym 450 as a seed treatment and in furrow treatment (V5-V6, 24 locations, 10 plants per treatment per location)



Manganese Deficiency in Corn

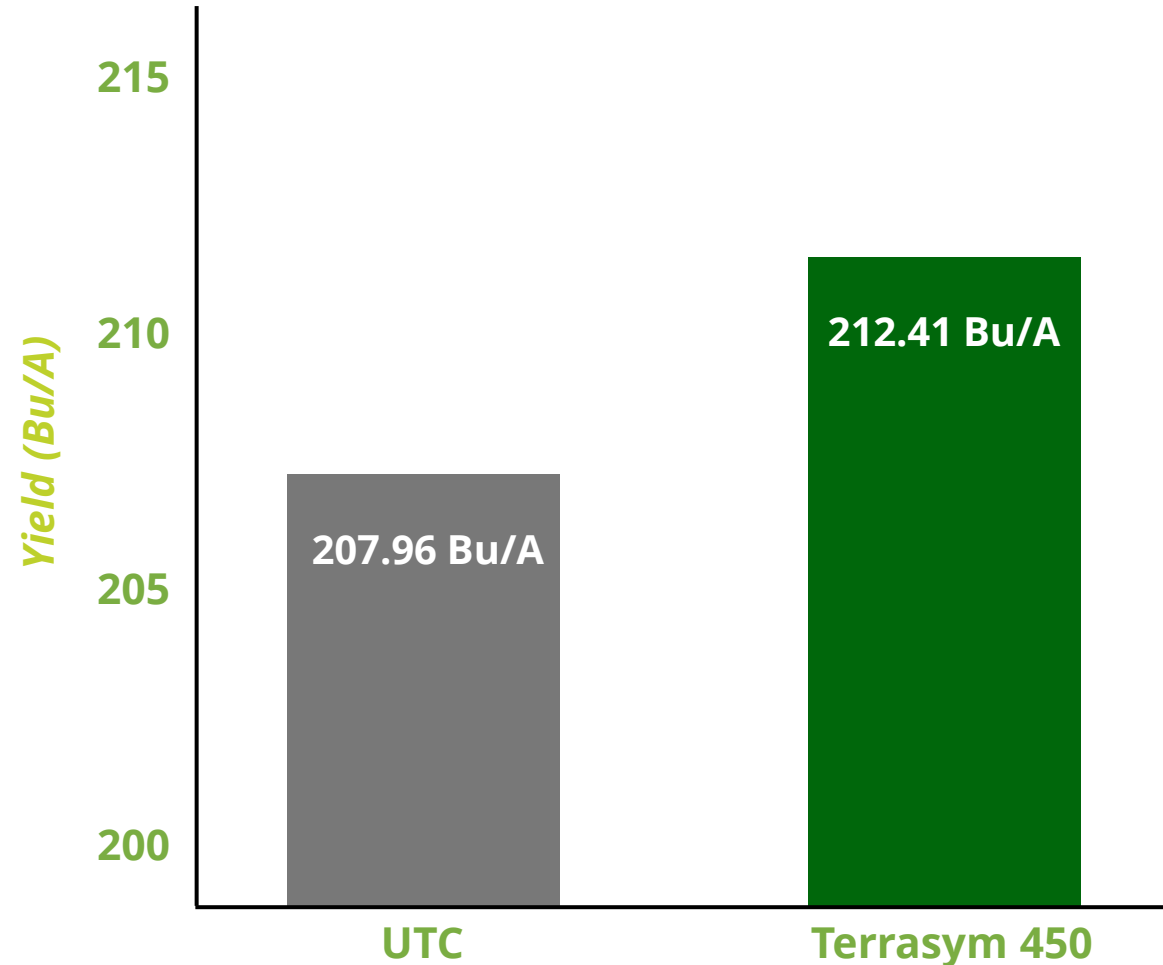
In-Field Performance

Improved nutrient uptake results in early season root development and enhanced nutrient acquisition throughout the growing season leading to higher yields at harvest.

2020 RESULTS: COMMERCIAL SCALE TRIALS

- Average Yield Increase: **+4.5 Bu/A**
- Win rate: **80%**
 - 20 locations
 - 23 total trials

Source: 2020 IN10T FarmerTrials; All untreated checks and PPFM treatments have base fungicide and insecticide application; Trends reported for Terrasym 450 applied in furrow (n=18 locations) and Terrasym 450 applied as overseed treatment (n=5 locations)



Product Specifications

Terrasym + DUST

PRODUCT NAME / PACK	ACTIVE INGREDIENTS	PACKAGING	APPLICATION INFORMATION
TERRASYM 401 + DUST FOR SOYBEANS	Microbial content 2% <i>Methylobacterium hispanicum</i> 1×10^9 cfu/g Inert ingredients 98%	Quantity of 8 individual 40-unit soybean packets per case* <i>*Each case treats 320 units or 320 acres @ 140K population</i>	0.5 oz. of Terrasym 401 + DUST per unit of soybean (@140K)
TERRASYM 450 + DUST FOR CORN	Microbial content 2% <i>Methylobacterium gregans</i> 1×10^9 cfu/g Inert ingredients 98%	Quantity of 4 individual 50-unit corn packets per case* <i>*Each case treats 200 units or 470 acres @ 34K population</i>	0.5 oz. of Terrasym 450 + DUST per unit of corn (@80K)

Planter Box Product Packaging

Terrasym + DUST



TERRASYM 401 FOR SOYBEAN

8, 40-unit soy bags per case
Each case treats 320 units or
320 acres @ 140K population



TERRASYM 450 FOR CORN

4, 50-unit corn bags per case
Each case treats 200 units or 470
acres @ 34K population

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2023 Satisfaction Promise

Providing Confidence & Sharing Risk to Adopt Terrasym in 2023!

AT A GLANCE

To enable farmers to take a full look at Terrasym during the 2023 growing season, NewLeaf Symbiotics is offering the Farmer Satisfaction Promise to take away any potential perceived risk the farmer may have.

If a farmer does not have an economic return that covers the cost of Terrasym, NewLeaf will refund the farmer with free product for the following growing season.

ELIGIBLE TERRASYM PRODUCTS & REFUND COST/ACRE

Terrasym 401 + DUST
Planter Box

Terrasym 401
Seed Treatment

Terrasym 450 + DUST
Planter Box

Terrasym 450
Seed Treatment

2023 Satisfaction Promise

Eligibility Requirements

In order to be reimbursed, farmers and retailers must meet the following eligibility requirements:

- Purchase one or more of eligible Terrasym products and enroll in the 2023 Satisfaction Promise program.
- Farmer to send one cup of Terrasym-treated seed to a third party within 30 days of treatment to verify presence of the product on seed. NewLeaf Symbiotics will provide details of third-party lab.
- Farmer plants Terrasym according to NewLeaf Symbiotics on-farm trial requirements.
- Measure average yield across all acres with Terrasym treatments (if multiple fields/farms, measure yield in aggregate).
- For any field that meets eligibility requirements and does not meet the Economic Return Threshold (0.3 bushel for soybeans, 0.8 bushels for corn), submit digital proof of the on-farm trial requirements and average yield across all acres with Terrasym product via yield monitor digital data.
- Submit claim electronically to NewLeaf Symbiotics at satisfactionpromise@newleafsym.com and sign the terms and conditions by December 1, 2023.

The 2023 Satisfaction Promise is available to new customers only purchasing a minimum of 1,000 acres

2023 Satisfaction Promise

Newleaf Symbiotics On-farm Trial Requirements

- Trial design can vary.
 - **If treated acres are less than 2,500 acres:** A farmer must have at least 1-2 validation fields* per crop per Terrasym treatment/application.
 - **If treated acres exceeds 2,500 acres:** A farmer must work with their seed treater/retailer to determine the appropriate number of validation fields* per crop per Terrasym treatment/application.
- Supply digital proof including yield outcome and treatment location to field a claim, i.e., raw field data or harvest summary reports from any digital platform.

**Validation fields must be planted as a split field (i.e. side-by-side or block trial) or split planter (i.e., 24 row planter, 12 row head) where the Terrasym treatment/application is the only differing variable.*

