



Terra Ag
Technologies®

"Producing higher yields for growers, one farm at a time."®

100%
sustainable
Produced without
greenhouse gas emissions



Organic Plant & Soil Pro 2™ LANDUS SUSTAINABILITY PROGRAM

Trial Results by using Organic Plant & Soil Pro 2™ in Corn & Soy
Improvement of Soil Regeneration and Carbon Sequestration



Location: **Des Moines, Iowa**

Year: **2024**

Crop: **Corn & Soy**

Grower: **Johnathan Wethers farms**

Area treated:

Corn: Treated Acres =200.00

Soy: Treated Acres =200.00

Soil Program Executed:

1. Corn Crop = Grower Std. Nutritional Program + 2 Applications of 6 Gallon/Acre (Each) of Product: **Organic Plant & Soil Pro 2**, through irrigation of Soil.
2. Soy Crop = Grower Std. Nutritional Program + 2 Applications of 6 Gallon/Acre (Each) of Product: **Organic Plant & Soil Pro 2**, through irrigation of Soil.

Objectives of the Program:

1. The main objective of this study is to evaluate Terra Ag Technologies products in improving soil regeneration, and soil carbon sequestration and soil life.
2. Support a sustainable programs for Landus' growers.

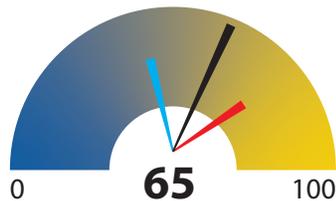
Soil Improvement Conditions

LANDUS, Wethers Farms, Corn Field: Iowa, Nov. 2024

Initial Soil Conditions (May 2024)

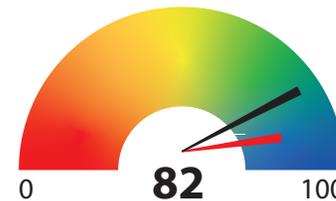
Soil Health Panel	Units	Value	Ranking:
Microbial Rate	ppm	101.2	High
Solvita Response	(0-5)	4.54	High
Soil Amino-N	ppm	197	Optimal
Crumb Aggregates	Vol %	38	Medium
Scoop Bulk Density	g/cc	1.05	Optimal
Total Carbon	%	3.520	High

Nutrients as: lb/a	Interpretative Guidelines			Est. Carbon: lb/a
	N	P ₂ O ₅	K ₂ O	
Soil Supply	175	418	188	75,797
Crop Use	175	30	195	
Difference	0	0	7	
Suggested Need	25	0	168	Est.CEC, meq
Other Notations	Low Status	Excess	Normal	41.0



Soil Regeneration Score

Your value is the BLACK pointer
 BLUE is the Minimum Target
 RED is the Optimal Target
 Color range based on Solvita Color Range



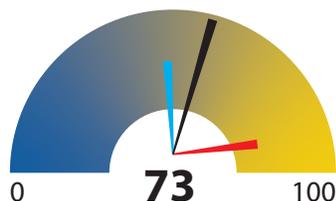
Overall Fertility Score

Your value is the BLACK pointer
 RED is the Region-Expected Target

Final Soil Condition (After Treatment, July 2024)

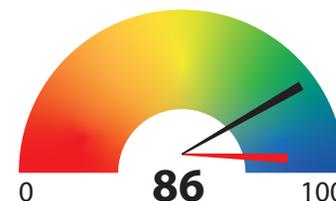
Soil Health Panel	Units	Value	Ranking:
Microbial Rate	ppm	148.0	High
Solvita Response	(0-5)	4.89	High
Soil Amino-N	ppm	267	Optimal
Crumb Aggregates	Vol %	29	Medium
Scoop Bulk Density	g/cc	1.00	Optimal
Total Carbon	%	3.510	High

Nutrients as: lb/a	Interpretative Guidelines			Est. Carbon: lb/a
	N	P ₂ O ₅	K ₂ O	
Soil Supply	247	719	422	80,233
Crop Use	175	30	195	
Difference	67	0	0	
Suggested Need	25	0	29	Est.CEC, meq
Other Notations	OK	Excess	Normal	35.1



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Overall Fertility Score

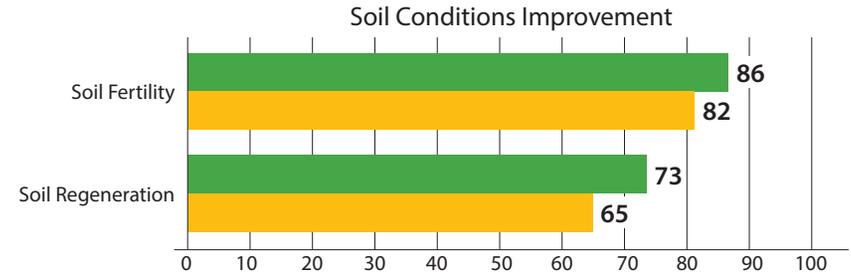
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Soil Improvement Conditions

LANDUS, Wethers Farms, Corn Field: Iowa, Nov. 2024

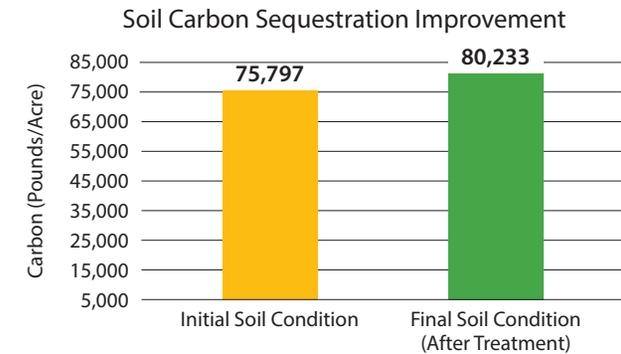
Soil Regeneration & Fertility Conditions

	Soil Regeneration	Soil Fertility	Carbon Sequestered
■ Initial Soil Condition	65	82	75,797
■ Final Soil Condition (After Treatment)	73	86	80,233
% Differences	12.31%	4.88%	5.85%



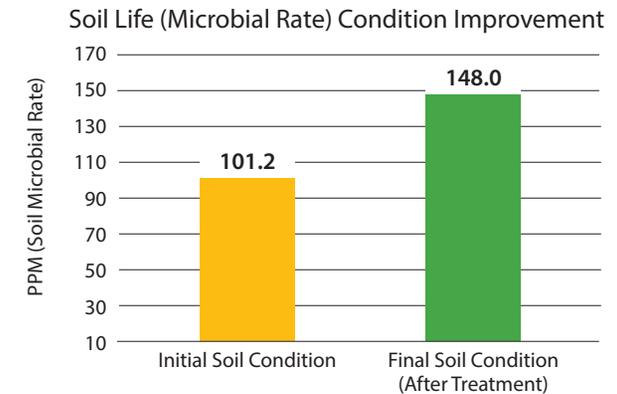
Soil Carbon Sequestered Improvement

	Soil Carbon Sequestered (Pounds/Acre)	% Difference
■ Initial Soil Condition	75,797	
■ Final Soil Condition (After Treatment)	80,233	5.85%



Soil Life (Microbial) Condition

	Soil Beneficial Microbial Rate (in PPM)	% Difference
■ Initial Soil Condition	101.2	
■ Final Soil Condition (After Treatment)	148.0	46.2%



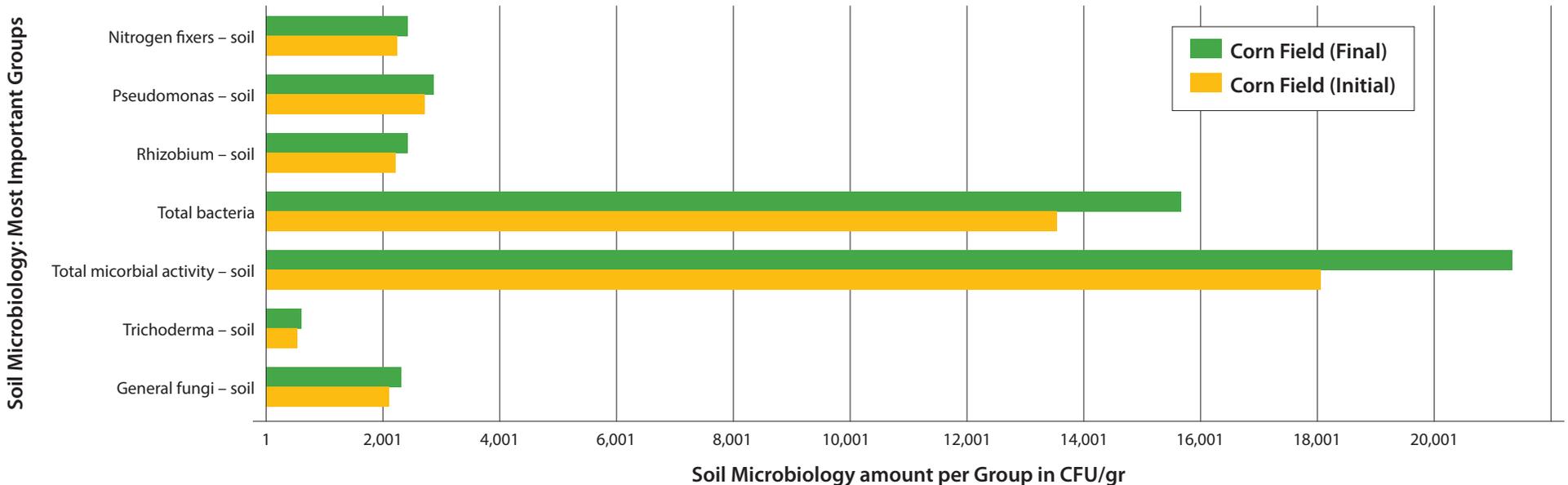
Soil Microbiology Improvement

LANDUS, Wethers Farms, Corn Field: Iowa, Nov. 2024

Soil Microorganism	Corn Field (Initial)	Corn Field (Final)	Differences	
			Amount	%
1. General fungi – soil	2,126	2,334	208	10%
2. Trichoderma – soil	569	622	53	9%
3. Total microbial activity – soil	18,067	21,357	3,290	18%
4. Total bacteria	13,576	15,678	2,102	15%
5. Rhizobium – soil	2,239	2,445	206	9%
6. Pseudomonas – soil	2,746	2,889	143	5%
7. Nitrogen fixers – soil	2,239	2,451	212	9%
8. Gram+: Gram–	0.61	0.86	0.25	41%
9. Gram+: Actinomycetes	0.82	0.97	0.15	18%

Soil Microorganism	Corn Field (Initial)	Corn Field (Final)	Differences	
			Amount	%
10. Aerobe: Anaerobe	1.08	2.43	1.35	125%
11. General bacteria	1,946	2,189	243	12%
12. Total gram negatives – soil	7,224	5,409	-1,815	-25%
13. Gram positives – soil	1,983	2,292	309	16%
14. Fungi: Trichoderma	3.74	3.66	-0.08	-2%
15. Fungi: Bacteria	0.2	0.19	-0.01	-5%
16. Anaerobes – soil	1,797	1,577	-220	-12%
17. Actinomycetes	2,423	2,765	342	14%

All units are determined in CFU/gr (Colony Forming Units per grams of soil)



Conclusion: All soil parameters were improved significantly.

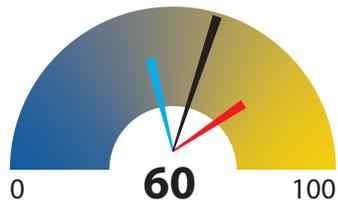
Soil Improvement Conditions

LANDUS, Wethers Farms, Soy Field: Iowa, Nov. 2024

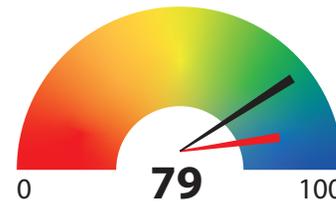
Initial Soil Conditions (May 2024)

Soil Health Panel	Units	Value	Ranking:
Microbial Rate	ppm	125.1	High
Solvita Response	(0-5)	4.73	High
Soil Amino-N	ppm	161	Optimal
Crumb Aggregates	Vol %	30	Medium
Scoop Bulk Density	g/cc	1.02	Optimal
Total Carbon	%	2.880	Med-High

Nutrients as: lb/a	Interpretative Guidelines			Est. Carbon: lb/a
	N	P ₂ O ₅	K ₂ O	
Soil Supply	211	400	179	58,944
Crop Use	175	30	195	
Difference	0	0	16	
Suggested Need	25	0	112	Est.CEC, meq 31.7
Other Notations	Low Status	Excess	Normal	



Soil Regeneration Score
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 Color range based on Solvita Color Range

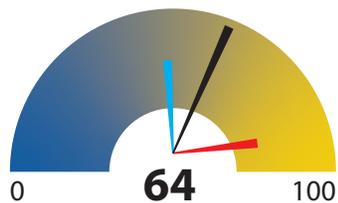


Overall Fertility Score
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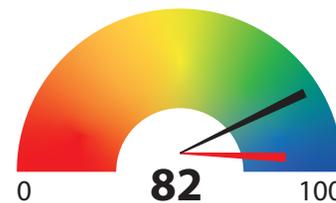
Final Soil Condition (After Treatment, July 2024)

Soil Health Panel	Units	Value	Ranking:
Microbial Rate	ppm	177.4	High
Solvita Response	(0-5)	5.05	High
Soil Amino-N	ppm	269	Optimal
Crumb Aggregates	Vol %	50	High
Scoop Bulk Density	g/cc	0.96	Optimal
Total Carbon	%	3.040	Med-High

Nutrients as: lb/a	Interpretative Guidelines			Est. Carbon: lb/a
	N	P ₂ O ₅	K ₂ O	
Soil Supply	307	458	235	68,267
Crop Use	175	30	195	
Difference	0	0	0	
Suggested Need	25	0	140	Est.CEC, meq 41.5
Other Notations	OK	Excess	Normal	



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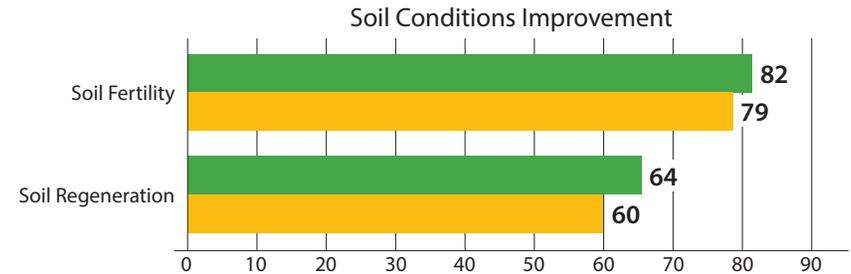
Overall Fertility Score
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Soil Improvement Conditions

LANDUS, Wethers Farms, Soy Field: Iowa, Nov. 2024

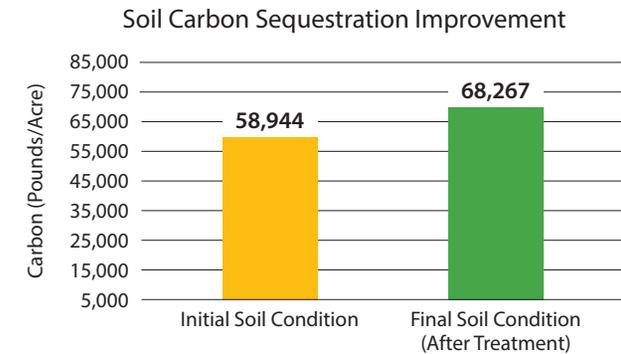
Soil Regeneration & Fertility Conditions

	Soil Regeneration	Soil Fertility	Carbon Sequestered
■ Initial Soil Condition	60	79	58,944
■ Final Soil Condition (After Treatment)	64	82	68,267
% Differences	6.67%	3.80%	15.82%



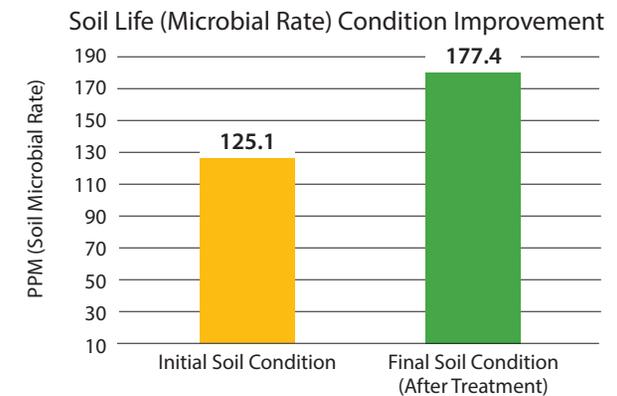
Soil Carbon Sequestered Improvement

	Soil Carbon Sequestered (Pounds/Acre)	% Difference
■ Initial Soil Condition	58,944	
■ Final Soil Condition (After Treatment)	68,267	15.82%



Soil Life (Microbial) Condition

	Soil Beneficial Microbial Rate (in PPM)	% Difference
■ Initial Soil Condition	125.1	
■ Final Soil Condition (After Treatment)	177.4	41.8%



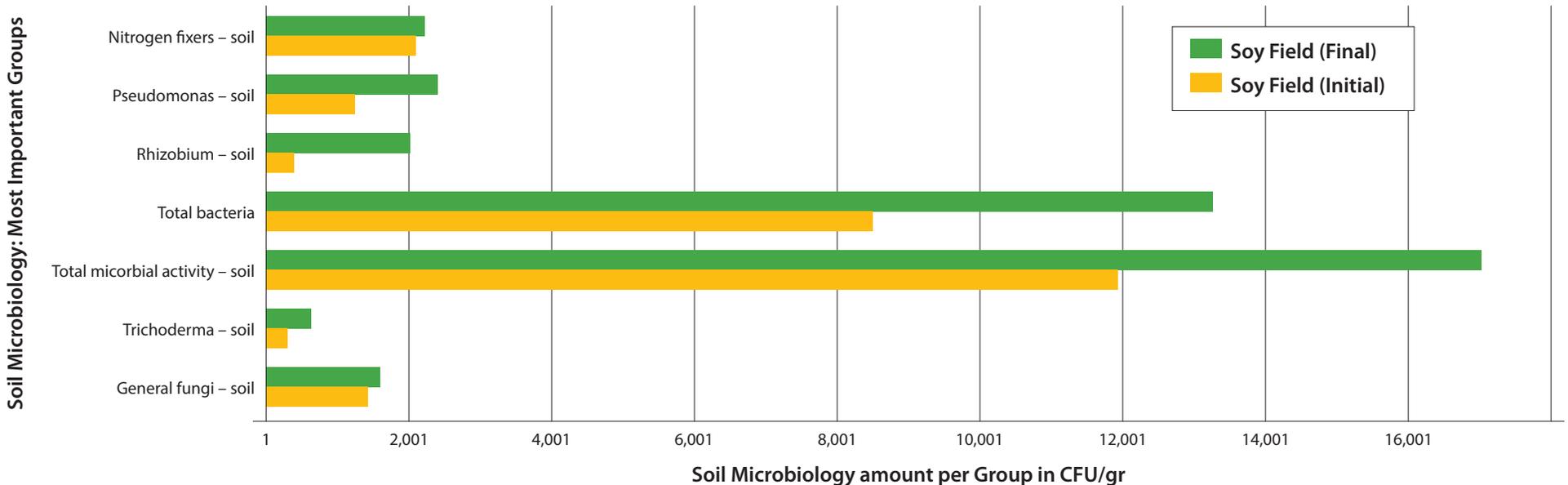
Soil Microbiology Improvement

LANDUS, Wethers Farms, Soy Field: Iowa, Nov. 2024

Soil Microorganism	Soy Field (Initial)	Soy Field (Final)	Differences	
			Amount	%
1. General fungi – soil	1,438	1,606	168	12%
2. Trichoderma – soil	313	654	341	109%
3. Total microbial activity – soil	11,954	17,050	5,096	43%
4. Total bacteria	8,541	13,267	4,726	55%
5. Rhizobium – soil	418	2,040	1,622	388%
6. Pseudomonas – soil	1,258	2,418	1,160	92%
7. Nitrogen fixers – soil	2,136	2,236	100	5%
8. Gram+: Gram–	0.71	0.72	0.01	1%
9. Gram+: Actinomycetes	0.47	0.81	0.34	72%

Soil Microorganism	Soy Field (Initial)	Soy Field (Final)	Differences	
			Amount	%
10. Aerobe: Anaerobe	1.22	1.5	0.28	23%
11. General bacteria	2,037	2,283	246	12%
12. Total gram negatives – soil	3,813	6,400	2,587	68%
13. Gram positives – soil	865	2,053	1,188	137%
14. Fungi: Trichoderma	4.6	4.55	-0.05	-1%
15. Fungi: Bacteria	0.2	0.17	-0.03	-15%
16. Anaerobes – soil	1,663	1,522	-141	-8%
17. Actinomycetes	1,826	2,531	705	39%

All units are determined in CFU/gr (Colony Forming Units per grams of soil)



Conclusion: All soil parameters were improved significantly.

Consolidated Total Final Values

LANDUS, Wethers Farms, Corn and Soy Fields: Iowa, Nov. 2024

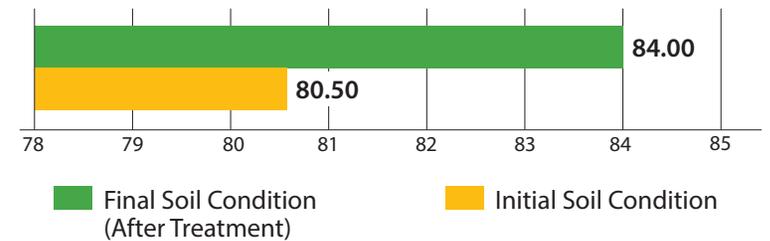
Soil Carbon Sequestration			Soil Fertility (Score)			Soil Regeneration (Score)			Soil Microorganism Rate		
Pre plant: Tons/Acre	At harvest: Tons/Acre	Change: Tons/Acre	Pre plant soil	At harvest soil	Change soil	Pre plant soil	At harvest soil	Change soil	Initial PPM	Final PPM	Change PPM
33.69	37.13	3.44	80.50	84.00	4.35%	62.50	68.50	9.60%	113.15	162.70	43.79%

Total Acres Treated: 400.00

Soil Fertility Conditions

	Soil Fertility Improvement (Score)	% Difference
Initial Soil Condition	80.50	
Final Soil Condition (After Treatment)	84.00	
TOTAL	3.50	4.35%

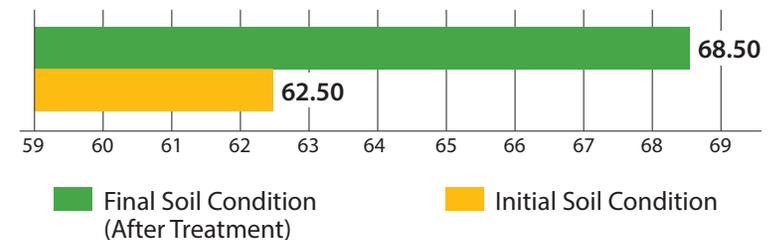
Soil Fertility Improvement (Score)



Soil Regeneration Conditions

	Soil Regeneration Improvement (Score)	% Difference
Initial Soil Condition	62.50	
Final Soil Condition (After Treatment)	68.50	
TOTAL	6.00	9.60%

Soil Regeneration Improvement (Score)



Conclusion:

Total soil fertility increased 3.50 points, or 4.35%, and Soil regeneration increased 6.00 points or 9.60%, which means that soil increased its regeneration, buffer capacity, availability and balance nutrients for crop production.

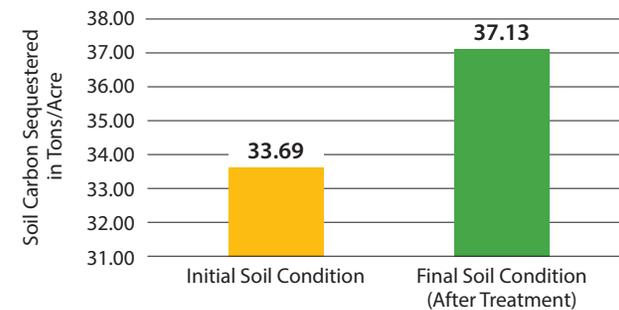
Consolidated Total Final Values

LANDUS, Wethers Farms, Corn and Soy Fields: Iowa, Nov. 2024

Soil Carbon Sequestered Improvement

	Soil Fertility Improvement (Score)	% Difference
■ Initial Soil Condition	33.69	
■ Final Soil Condition (After Treatment)	37.13	
TOTAL	3.44	10.21%

Soil Carbon Sequestration Improvement



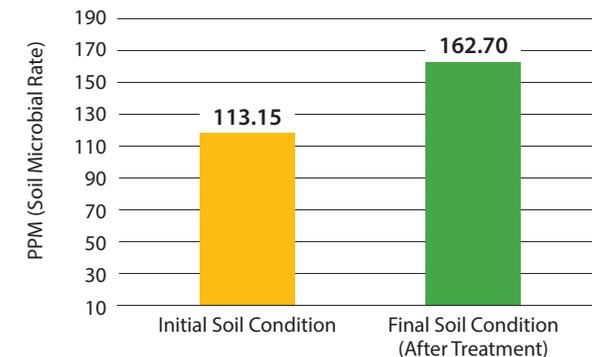
Conclusion:

Total soil carbon increased by **3.44 Tons/Acre**, or **10.21%** more. This determines that by increasing soil biology and overall conditions, 3.44 more Tons of Carbon per acre, in average, were sequestered into the soil. This increases a sustained productive system.

Soil Life (Microbial) Condition

	Soil Beneficial Microbial Rate (in PPM)	% Difference
■ Initial Soil Condition	113.15	
■ Final Soil Condition (After Treatment)	162.70	
TOTAL	49.55	43.79%

Soil Life (Microbial Rate) Condition Improvement



Conclusion:

Total soil life of microbial rate suffered a dramatic increase by implementing the program. The increase went up to **49.55 ppm** or by **43.79%** more. This indicates that the recovering of life in soil and growth of all microorganisms were positive increasing all populations, regenerating a more active and vigor soil system.

Final summary for the Landus Corn and Soybean Trials

1. All soil health parameters were improved significantly.
2. The soil regeneration factor increased by **6.00** score points or **+9.60%**, indicating a positive improvement in soil quality and health, across measured indicators in a sustained manner.
3. Total soil carbon increased by **3.44 Tons/Acre**, or **+10.21%**. The improved performance of the existing soil microbiology sequestered, on average 3.44 more Tons of Carbon per acre.
4. The total soil life growth microbial rate showed a dramatic increase from the implementation of the Terra Ag Technologies program. The increase of **49.55 ppm** or **+43.79%** reflects restored microbial soil life activity across the present native populations. Against these metrics, we view this as a more vigorous restored or regenerated soil system.
5. Total soil fertility increased **3.50 points**, or **+4.35%**. Increased availability of plant nutrients in soils leads to optimal balancing of nutrient inputs and greater efficiencies in crop production.
6. In the corn crop trials, there was significant improvements in the quality of the grains, i.e. bigger grains, more uniform sizes. Results showed a **+10% increase** in average grains per row and tighter spacing of the grains between rows with heavier content. These reflect improved measurements in yields and final quality.
7. In an increasingly interwoven world of food and feed markets, manufacturers and processors that source cereal inputs across the globe are seeking growers who can meet and exceed their business' sustainability goals. They are setting expectations for measurable results of proven soil regeneration and carbon sequestration from their supply chain partners.
8. The trial results provide clear benefits that not only address key environmental challenges, but help growers meet the evolving food and feed supply chain requirements established by their customers and consumer stakeholders