



Originatetm ST

Ultimate Seed Treatment

- **Concentrated Microbial Formula**
- **Over 2 Dozen Strains of Versatile and Viable Microbes**
- **Addition of Nodulating Bacteria for 2019**

(*Sinorhizobium fredii*, considered to be an improved nodulator over the original *Rhizobium* species)



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Originate ST Microbes

Occur naturally in the soil

- Organisms not modified or engineered in any way

Explode their populations in the soil

- Change plant growth dramatically when on/near roots

Manufacture Root Growth Promoting Hormones

- Make more and bigger roots improving nutrient uptake

Manufacture multiple enzymes that release fertility

- Release many P forms and micros especially iron

Manufacture enzymes that harvest nitrogen from the air

- Fix nitrogen in root zone and make it soil and plant available

Improve plant health and speed crop development

- Raises sugar levels in the plant providing stress relief

Interact with the plant to improve growth efficiency/productivity

- Removing stress at key times improves yield/quality
- Iron releasing technology- siderophore production

Improve soil tilth

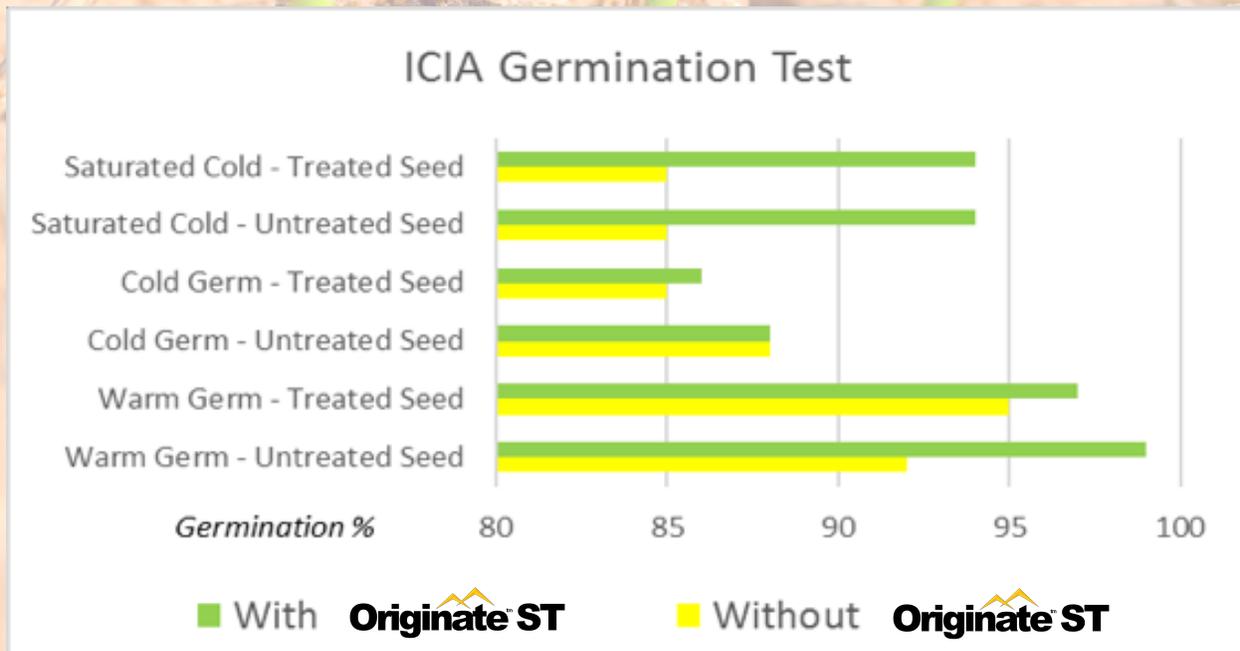
- Microbes release compounds that aggregate soil
- Larger root masses deposit higher organic matter to soil
- Microbes cycle soil organic carbon more efficiently

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The Indiana Crop Improvement Association, ICIA, performed germination tests for Originate ST following their long-established protocols. For over 100 years the ICIA has been a leader in seed certification, seed quality testing, genetic testing and research. ICIA, a non-profit, self-supporting agency, exists to deliver unbiased, needed services to their member customers.

-The results from the tests show enhanced germination with the use of Originate ST (detailed below). Tests were performed on both Treated Soybean Seeds (fungicide and inoculant) and Untreated “naked” Soybean Seeds. Not only did seeds treated with Originate ST show strong germination in ideal conditions (Warm Germination Test) but particularly seeds treated with Originate ST Seed Treatment showed significantly better germination in cold/wet conditions (Cold Germination and Saturated Cold Test)



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Independent Research
Soybean Seed Treatment Trial:
38 various Seed Treatments - IL (2 reps)

Originate ST = 69.4 BPA
(#1 out of 38)

Base= 69.4 (+6 BPA)

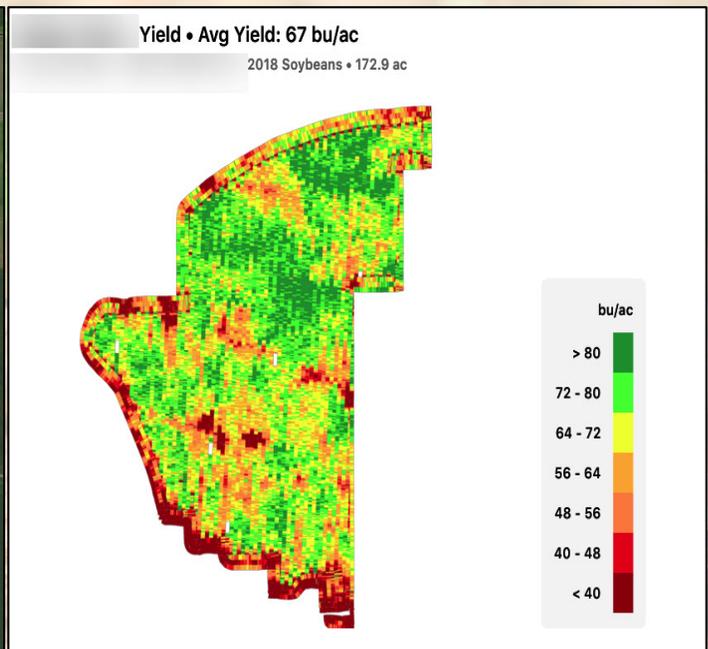
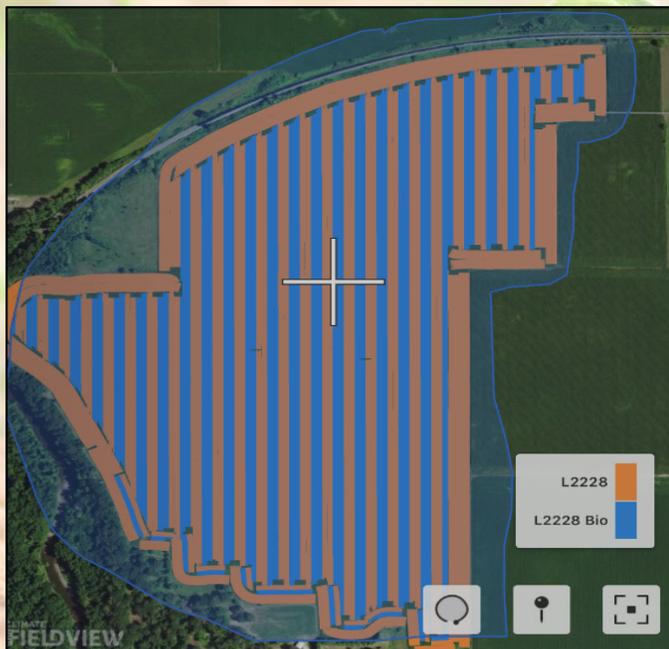
Untreated 59.2 (+10 BPA)

Base = Metalaxyl + Fludioxonil + Imidacloprid		Soybeans 2018		
CODE	TREATMENT	IL		
		Neoga		
		1	2	Ave
Treatment #31	Originate ST	72.1	66.6	69.4
Treatment #8	Base (1.6 IMD rate) + BIOST Nematicide + VPH	74.0	64.3	69.2
Treatment #25	Base + Headsup + BIOST Nematicide	62.5	74.6	68.6
Treatment #24	Base + T-methyl + BIOST Nematicide	68.6	67.6	68.1
Treatment #33	Base + BDX Seed Treatment	73.4	62.6	68.0
Treatment #14	Lumisena + FST Concept	73.0	62.5	67.8
Treatment #7	Base (1.6 IMD rate) + ILeVo + BIOST Nematide + VPH	68.9	66.4	67.7
Treatment #5	Base (-Imidacloprid) + PonchoVotivo + ILeVo	64.8	70.2	67.5
Treatment #18	Base + OBT 2003	69.7	65.1	67.4
Treatment #13	Base (-Imidacloprid) + Lumisena	61.3	71.4	66.4
Treatment #30	Base + Agra-Rouse	66.4	66.2	66.3
Treatment #17	Base + Excalibre SA 18BE_04056WP	61.1	71.5	66.3
Treatment #9	Base (Duplicate)	58.7	71.6	65.2
Treatment #35	Base + AVEO	66.0	63.6	64.8
Treatment #34	Base + UHC Inoculant	71.2	58.0	64.6
Treatment #27	Base + S 208	66.7	61.6	64.2
Treatment #6	Base (low rate F) + Intego Solo	65.3	62.9	64.1
Treatment #4	Base + ILeVo + VPH	61.2	66.7	64.0
Treatment #28	Base + Exp. BC9	65.1	62.7	63.9
Treatment #32	Base + N1b-10L ST	64.0	63.1	63.6
Treatment #2	Base	64.0	62.7	63.4
Treatment #3	Base + VPH	64.1	62.2	63.2
Treatment #12	Base + BASNem 1	62.0	64.1	63.1
Treatment #21	B775 + B798	59.6	65.8	62.7
Treatment #26	Base (1.6f/oz IMD rate) + BIOST Nematicide	64.4	60.7	62.6
Treatment #19	Base + OBT 2012	59.8	64.4	62.1
Treatment #16	Base + Commence	58.5	64.9	61.7
Treatment #29	Base + Exp. GX3	61.0	62.3	61.7
Treatment #15	Base + F4018	59.5	63.8	61.7
Treatment #23	Base + BIOST Nematicide	58.7	62.3	60.5
Treatment #10	Base + Vibrance	56.5	64.3	60.4
Treatment #20	B775	61.2	58.0	59.6
Treatment #22	Base + B798	57.4	60.9	59.2
Treatment #1	UTC	62.5	55.8	59.2
Treatment #38	Base + Root-Tek	57.1	60.9	59.0
Treatment #36	Base + AgRho S Boost ELX	59.4	57.6	58.5
Treatment #37	Base + Biovante XP	61.2	53.2	57.2
MEAN				63.8

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NC Iowa 2018 Soybeans - 170 acres (85 acres each)
24 rows each (blue with Originate ST, Orange without)



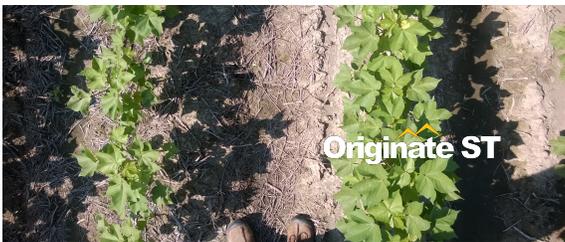
170.7 ac Harvested	10.1% Moisture	67 bu/ac Average Yield
By Variety	Avg. Yield	Acre
● L2228 Bio	70	69.2 >
● L2228	65	99.8 >

+ 5 BPA **Originatetm ST**



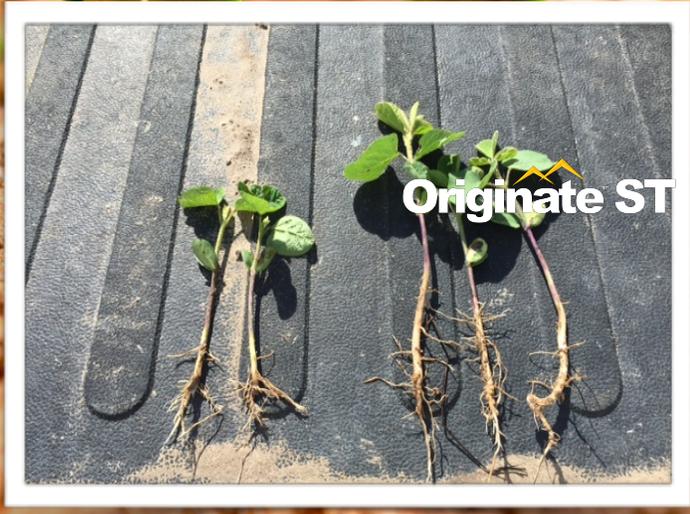
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Product Attributes Checklist	Origin [™] ST
Improves Germination	X
Improves early growth and vigor	X
Application window of 90+ days	X
Compatible with other products	X
Contains strains that work in varying O2 conditions	X
Contains nodulating N-fixing inoculant	X
Contains other beneficial microbes	X
Provides food sources for microbes in blend	X
Contains phosphate releasing technology	X
No special replant restrictions	X
Produces multiple enzymes around root	X
Contains food sources that chelate micronutrients	X
Contains dozens of strains of microbes	X
Contains iron releasing technologies	X
Built specifically to work in high pH calcareous soils	X
No special mixing or agitation required	X
No special bag tagging required	X
Live entire season in conjunction with plant roots	X
Produces enzymes that fix atmospheric N to soil	X
Produce enzymes that degrade cellulose into food	X
Produce enzymes that degrade chemicals into food	X
Contains both bacterial and fungal strains	X
Contains multiple strains producing chitinase	X
Contains strains that work in a wide temp range	X

“Treat your seed with Origin[™] ST Seed Treatment and have confidence in knowing you have given it the power of life to maximize yield and productivity. Origin[™] ST Seed Treatment lives on well into the season with the roots and continues to provide health benefits to plants long after crop protection chemicals have been degraded by chemicals or microbes.