Environoc Seed Treatment Update 2020

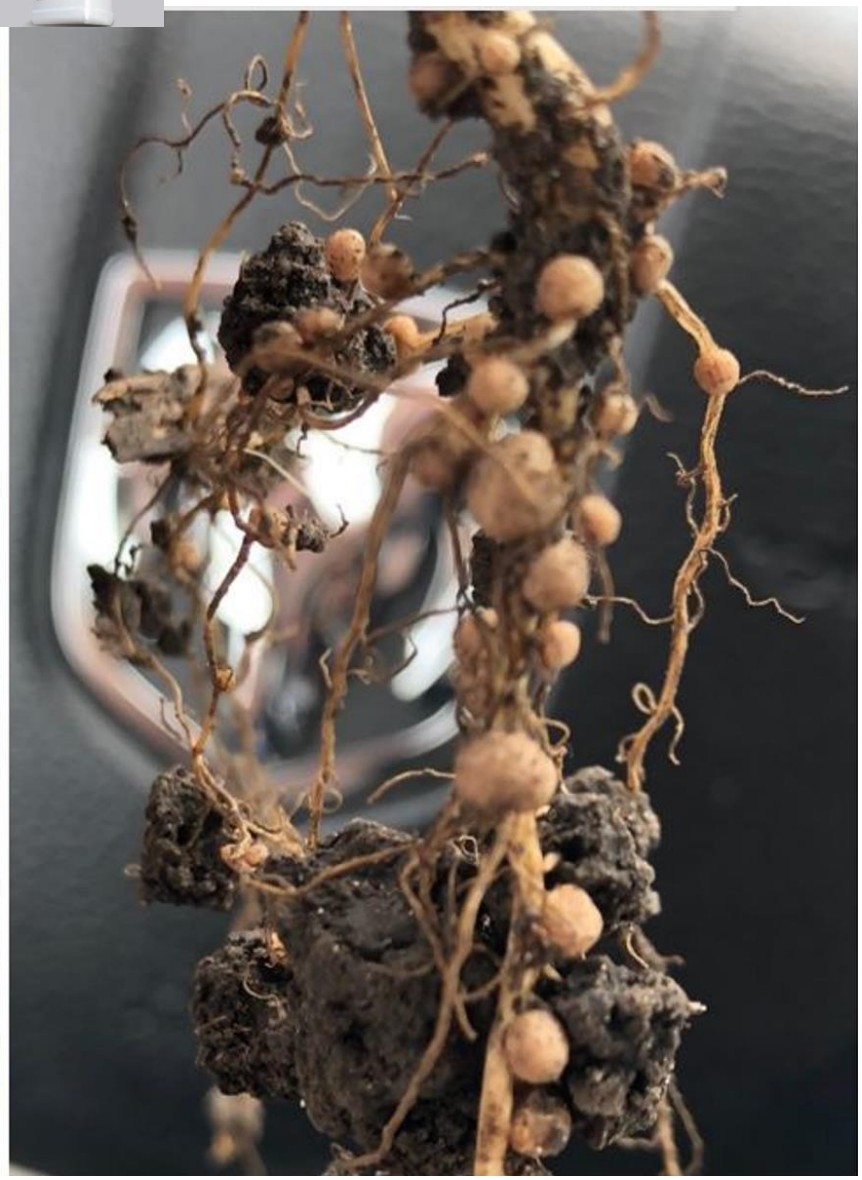
- Concentrated Microbial Formula
- Over 2 Dozen Strains of Versatile and Viable Microbes
- Nodulating Bacteria included

ENVIRONOC SEED TREATMENT

Deploy. Unleash. Reclaim.

Biodyne USA


ENVIRONIC
SEED
TREATMENT



Microbial TEAM Technology-

Seed Treatment Microbial Capabilities

over 200 proprietary isolates , non-pathogenic, non gmo, and naturally occurring

- **Diazotrophic Microbes-** *Nitrogen Fixation from free N in Air*
- **Ammonifying Microbes-** *convert organic N to ammonia form*
- **Phosphate Solubilizing Microbes-** *makes unavailable P available*
- **Microbial Surfactant Production-** *free up more nutrients in soil / rhizosphere*
- **Vitamin / Hormone-** *vitamin production and facilitate hormone release*
- **Nodulating-** *nitrogen fixing symbiotic relationship- nodules on soybeans*
- **Siderophore Production-** *"Iron Magnets" more Iron availability in the soil*
- **Petroleum Hydrocarbon Bioremediation-** *oil, diesel, gas, Soil and Groundwater*
- **Fats, Oils, Grease, Common Organics Degradation-** *Wastewater, Pond Treatments*
- **Sulfur Oxidizing Capabilities-** *enhance sulfur oxidation in the soil and increase available sulfate*

Features/Benefits – Environoc 401/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

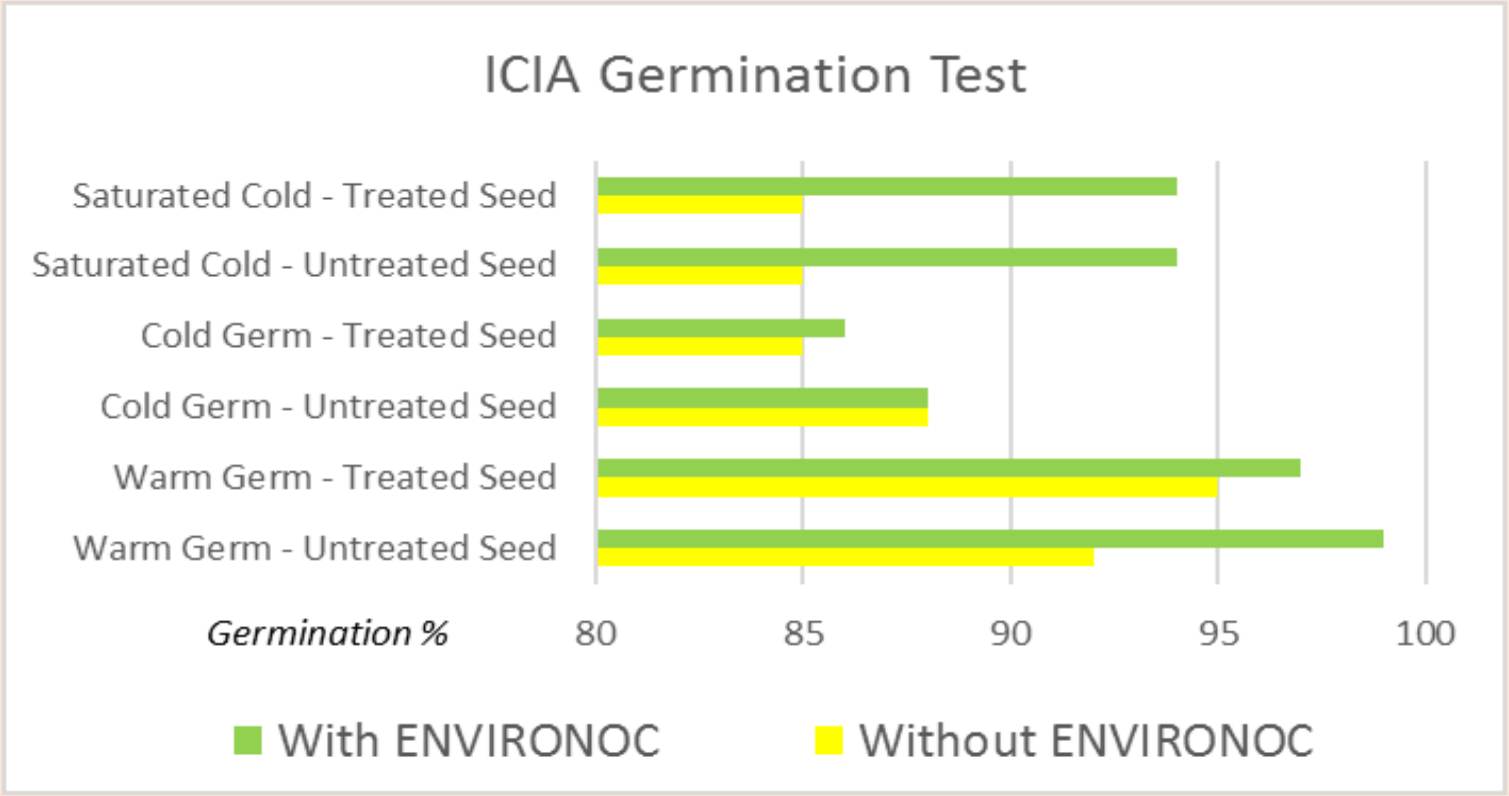
Microbes release compounds that aggregate soil

Larger root masses deposit higher organic matter to soil

Microbes cycle soil organic carbon more efficiently

The Indiana Crop Improvement Association, ICIA, performed germination tests for ENVIRONOC Seed Treatment 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 ENVIRONOC Seed Treatment (detailed below). Tests were performed on both Treated Soybean Seeds (fungicide and inoculant) and Untreated "naked" Soybean Seeds. Not only did seeds treated with ENVIRONOC show strong germination in ideal conditions (Warm Germination Test) but particularly seeds treated with ENVIRONOC Seed Treatment showed significantly better germination in cold/wet conditions (Cold Germination and Saturated Cold Test)



Base = Metalaxyl + Fludioxonil + Imidacloprid			Soybeans 2018	
CODE	TREATMENT	IL		
		Neoga		
		1	2	Ave
Treatment #31	**Base + Environoc 401**	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 Innoculant	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 (1.6floz 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**

Independent Research

Soybean Seed Treatment Trial:

38 various Seed Treatments- IL

(2 reps)

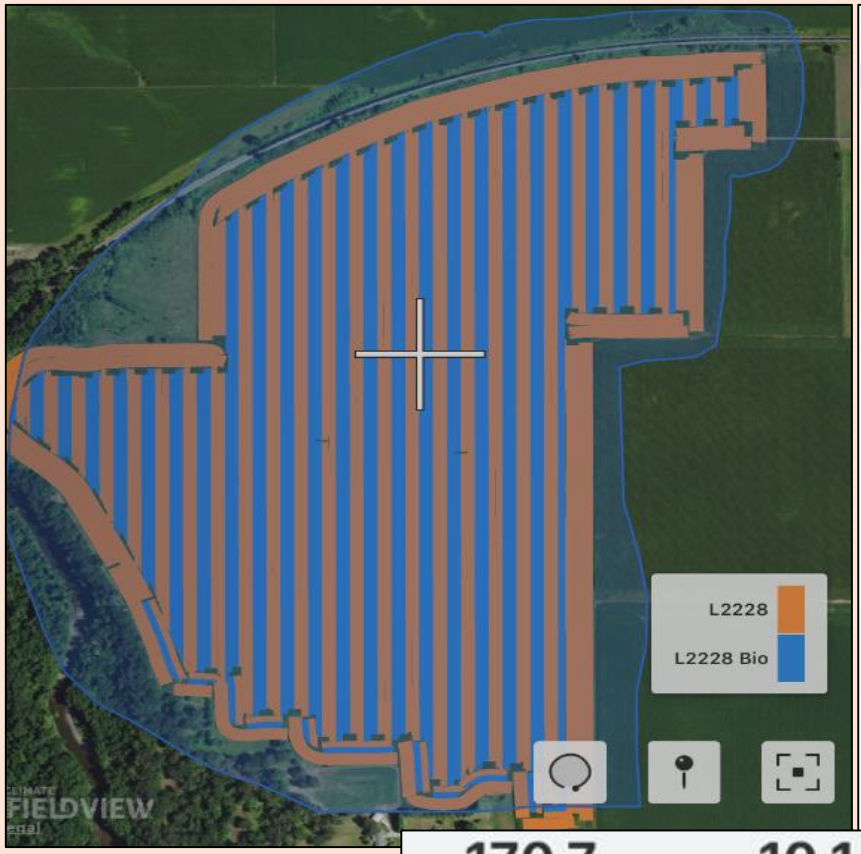
Biodyne ENVIRONOC Seed Treat= 69.4 BPA (#1 out of 38)

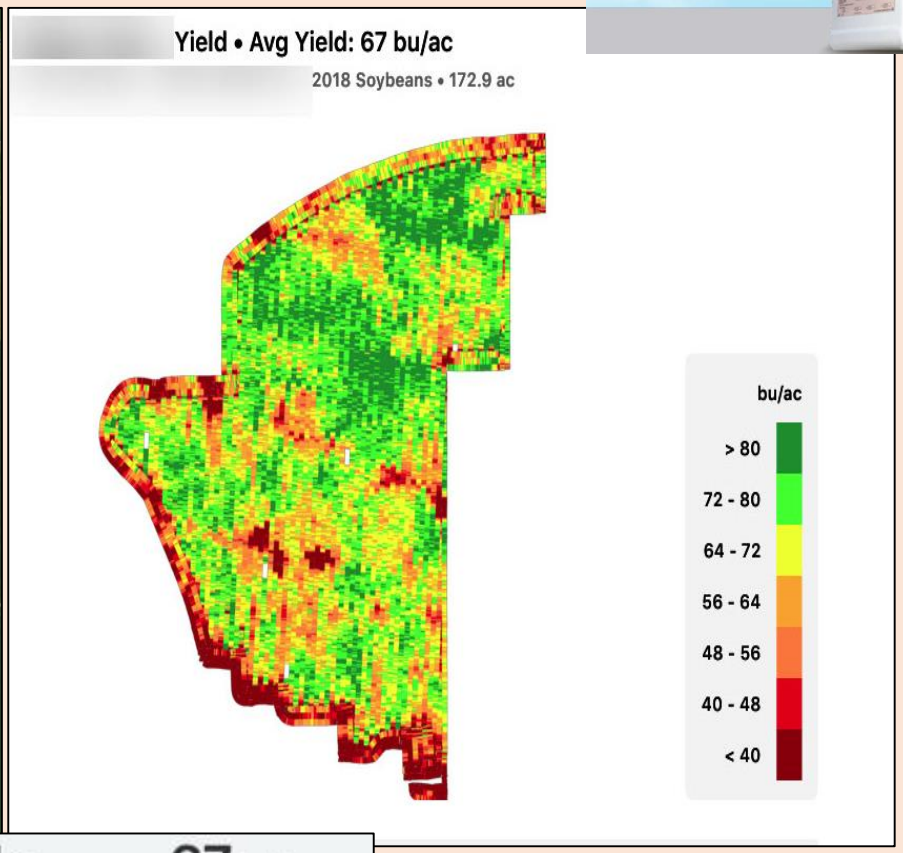
Base= 69.4 **(+6 bpa)**

Untreated 59.2 **(+10 bpa)**

NC Iowa 2018 Soybeans- 170 acres

24 rows each (blue with 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 Environoc Seed Treatment

TREATMENT	Replic Averag
Base + Seed Treat #10	80.0
Base + Seed Treat #8	79.6
Base + Biodyne ST #17	79.6
Base+ Seed Treat #15	79.6
Base + Seed Treat #14	79.6
Base + Seed Treat #4	79.5
Base + Seed T reat #12	79.4
Base + Seed Treat #22	79.4
Base + Seed Treat #11	79.4
Base	79.2
Base + Seed Trea #16	79.2
Base + Seed Treat #23	79.0
Base + Treatment #26	79.0
Base + Seed Treatment #6	78.8
Base + Seed Treatment #9	78.8
Base + Seed Treatment #25	78.7
Base + Seed Treatment #13	78.6
Base + Seed Treatment #5	78.5
Escalate	78.4
Base + Seed Treatment #21	78.3
Base + Seed Treatment #7	78.3
Base + Seed Treatment #18	77.7
Base + Seed Treatment #20	77.5
Base + Seed Treatment #19	77.3
Untreated	77.2
Base + Seed Treatment #24	76.7
	78.7

7 States- 39 Replications

Independent Research

26 different Biostimulants- Comparison WHEAT Seed Treatment Trial-

7 States, 39 Replications

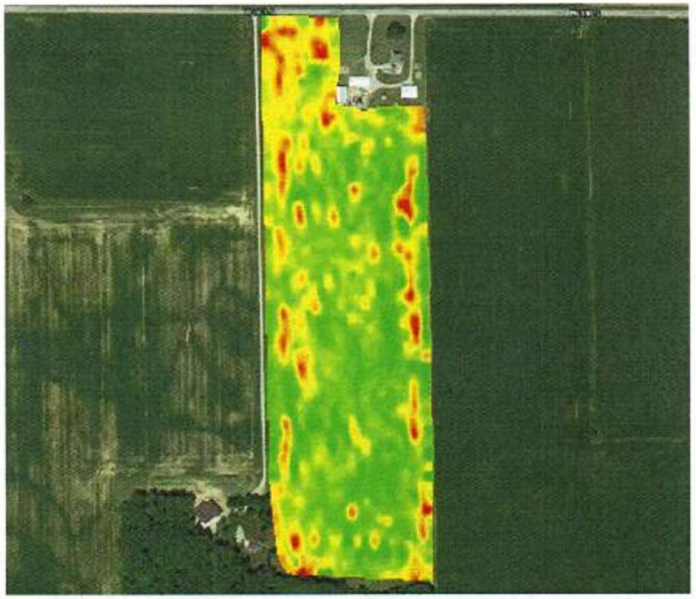
Biodyne ENVIRONOC Seed Treat= 79.6 BPA +3bpa (3/26)

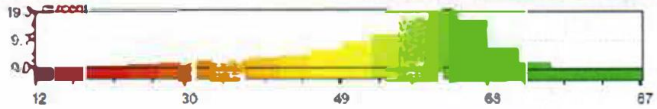
Mean= 76.7, Untreated 77.2

FieldAlytics™

Grower: (AC) NE IN Farm: Grandma Field: West (Soybean)

Yield by Management Zones Field Level Management Zone Detail Crop: Soybeans 2019





Zone No.	Mgmt Zone Name	Range	Zone Name	Data	Avg Moisture%	Avg Yield	Total Yield	HarvestAcres	Area
Zone BioDyne	Seed Treatment Test	Min - Max	BioDyne	None	13.12	60.28 bu/ac	683 bu	11.33	11.37
Zone Normal	Seed Treatment Test	Min - Max	Normal	None	12.09	56.07 bu/ac	1138 bu	20.30	20.30

ForeFront AG SOLUTIONS

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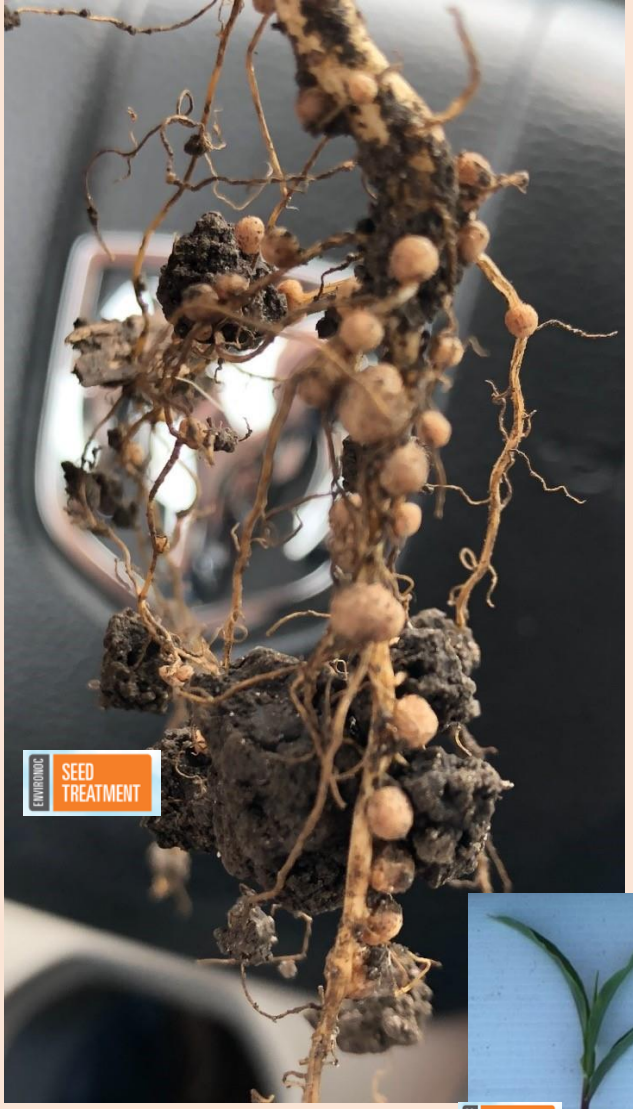
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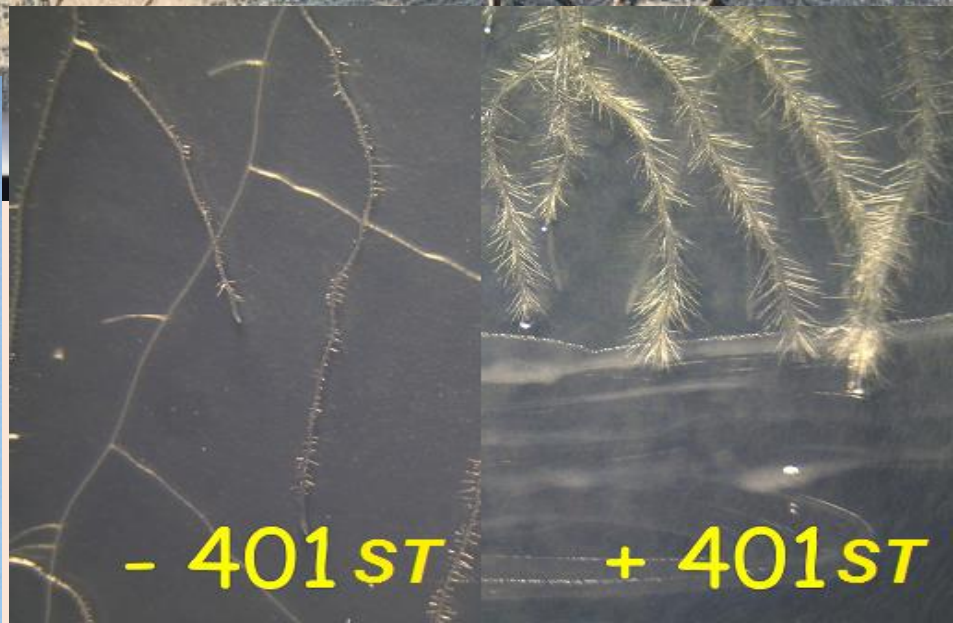
- 401 ST
+ 401 ST

BECAUSE EVERY GOOD KID DESERVES A TREAT.

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