

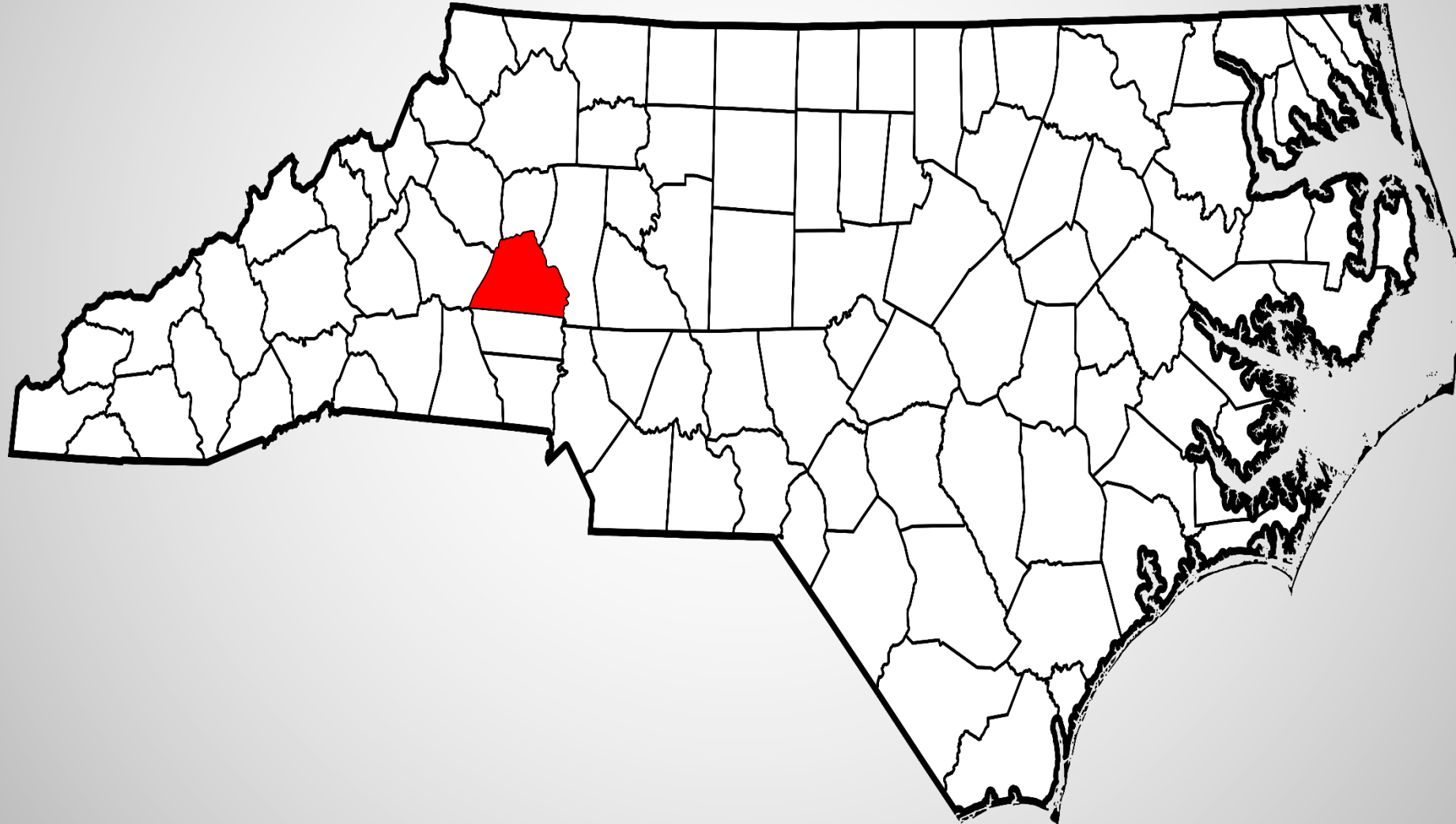


Capturing High Yields With Regenerative Practices

Russell Hedrick



Where we call home









Balance your C:N Ratios- goal 40-1



Account No.:
 Invoice No.:
 Date Received: 4/28/2022
 Date Reported: 4/29/2022

Name:
 Company:
 Address:
 City, State, ZIP:

Grower: RUSSELL HEDRICK
 Field ID: ROCKY FORD 3
 Sample ID 1: COVER CROP
 Sample ID 2: -

COVER CROP ANALYSIS REPORT

Lab #

Type:

Stage:

Forage Yield, Ton/A @ 100 % Dry Matter

Wet Wt, g 3275.1
 Tare Wt, g
 % Dry Matter 15.2
 Area Sampled 9
 Tons DM/A
 C:N Ratio

Results on a Dry Basis

Nutrient	Value	Units
Carbon	52.20	% C
Nitrogen	3.130	% N
Phosphorus	0.39	% P
Potassium	3.65	% K
Calcium	0.52	% Ca
Magnesium	0.20	% Mg
Sulfur	0.17	% S
Zinc	26.95	ppm Zn
Iron	217.17	ppm Fe
Manganese	70.99	ppm Mn
Copper	8.12	ppm Cu
Boron	4.15	ppm B
Molybdenum	1.32	ppm Mo
Aluminum	98.35	ppm Al

lbs/A of Nutrient based on Tons DM/A

Nutrient	lbs /A	Units
Carbon	2770	C
Nitrogen	166	N
Phosphorus	47.6	P2O5
Potassium	232.5	K2O
Calcium	27.6	Ca
Magnesium	10.6	Mg
Sulfur	9.0	S
Zinc	0.143	Zn
Iron	1.153	Fe
Manganese	0.377	Mn
Copper	0.043	Cu
Boron	0.022	B
Molybdenum	0.007	Mo
Aluminum	0.522	Al

Reviewer Comments

The sample area was not provided and a default of 9 square feet was used for calculations. If this is incorrect, please contact the lab. Thank you!



% change in the Soil
Fall 2013 to Spring 2022

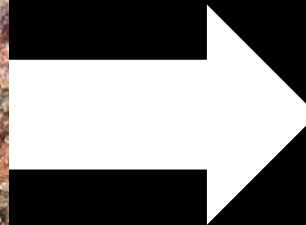
720 % Change in CO₂ Respiration

590 % Change in WEOC (food) more consumption

74 % Change in SHC: Soil Health Score

OM Increase 5.6%

NT without Covers YR1



NT with Covers YR 4









Crimping and Planting







NEW ERA
HAULING
HICKORY, NC
USDOT 3017007 NC

01

Yetter
Farm Equipment

Yetter
Farm Equipment







**31st Annual
NATIONAL
NO-TILLAGE
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January 10-13, 2023 • St. Louis, Mo.



Yetter
FARM EQUIPMENT
SINCE 1930
Ag Leader



exapta.
solutions, inc.
Precision
Planting



MonTag
The Andersons



GS3
GS3 QUALITY
SEED
Sound



Martin Till
**MidWest
Bio-Tech**

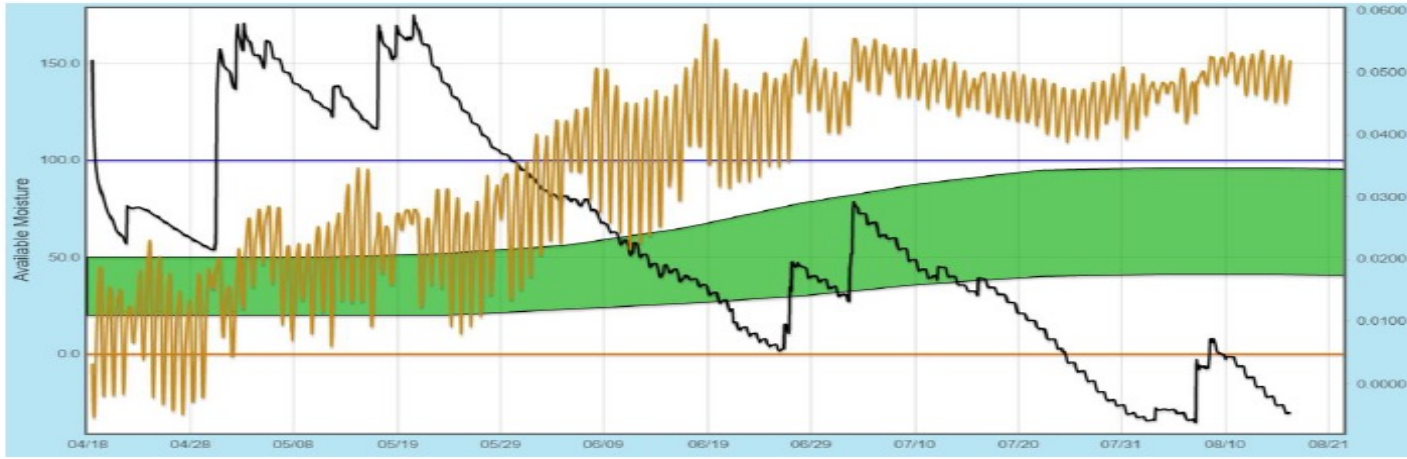


aea



wearparts
TILLAGE TOOLS
Cultivating Solutions for Growth
DAWN

Soil EC: NC-JRH Grain Farms LLC-with Cover Crop



- **EC Graph (Bulk Salts)**
- EC levels never got excessive during season
- Highest readings were between 12-16" as season progressed
- Nutrients fed crop through top 16"

Soil EC: NC-JRH Grain Farms LLC No Cover Crop



- **EC Graph (Bulk Salts)**
- EC levels never got excessive during season
- Highest readings were between 4-8" as season progressed
- Nutrients fed crop only through top 8"





- Yetter 2996 Deep Injection
- Possible Dry applications in the future Cheaper \$ per lb nutrient cost



Comparisons

	With Cover Crop	No Cover Crop
• Available Moisture	More 7-9 inches	Less
• Rooting Depth/Uptake	Deeper by 28"	Shallower
• EC/Nutrients (Salts)	Deeper in root zone by 8"	Shallower in root zone
• Soil Temps	Cooler	Hotter by 6-8 dg

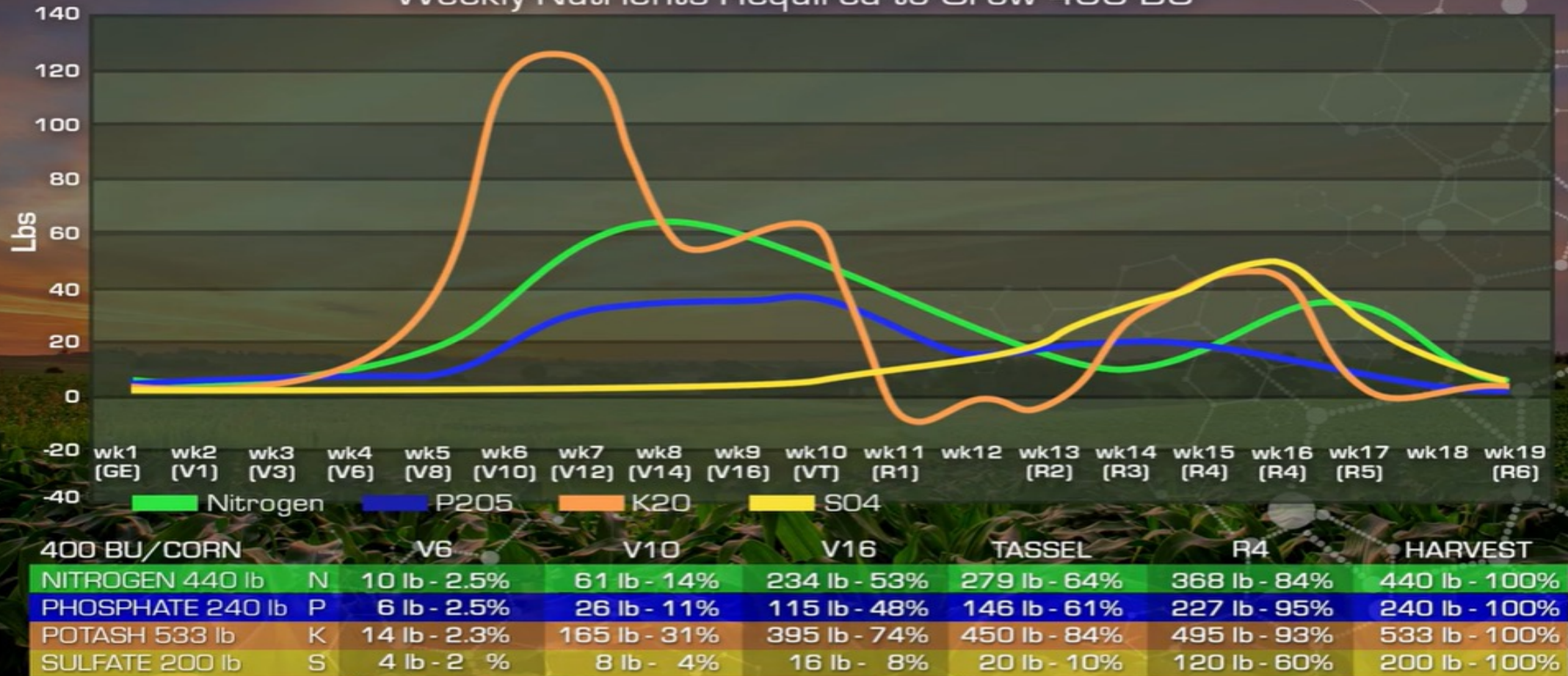
**COVER
CROPS/SOIL HEALTH**

FARMERS

**CHEMICAL
COMPANIES**

Corn Growth Cycle

Weekly Nutrients Required to Grow 400 BU

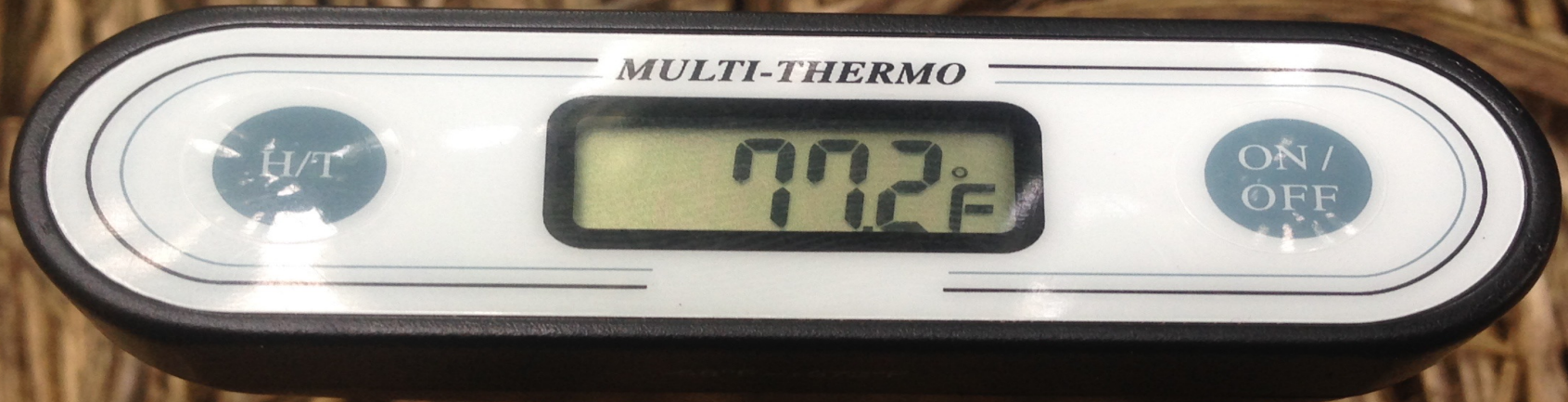


Plants Feeding Soil Biology









MULTI-THERMO

H/T

77.2°
77.2°F

ON /
OFF





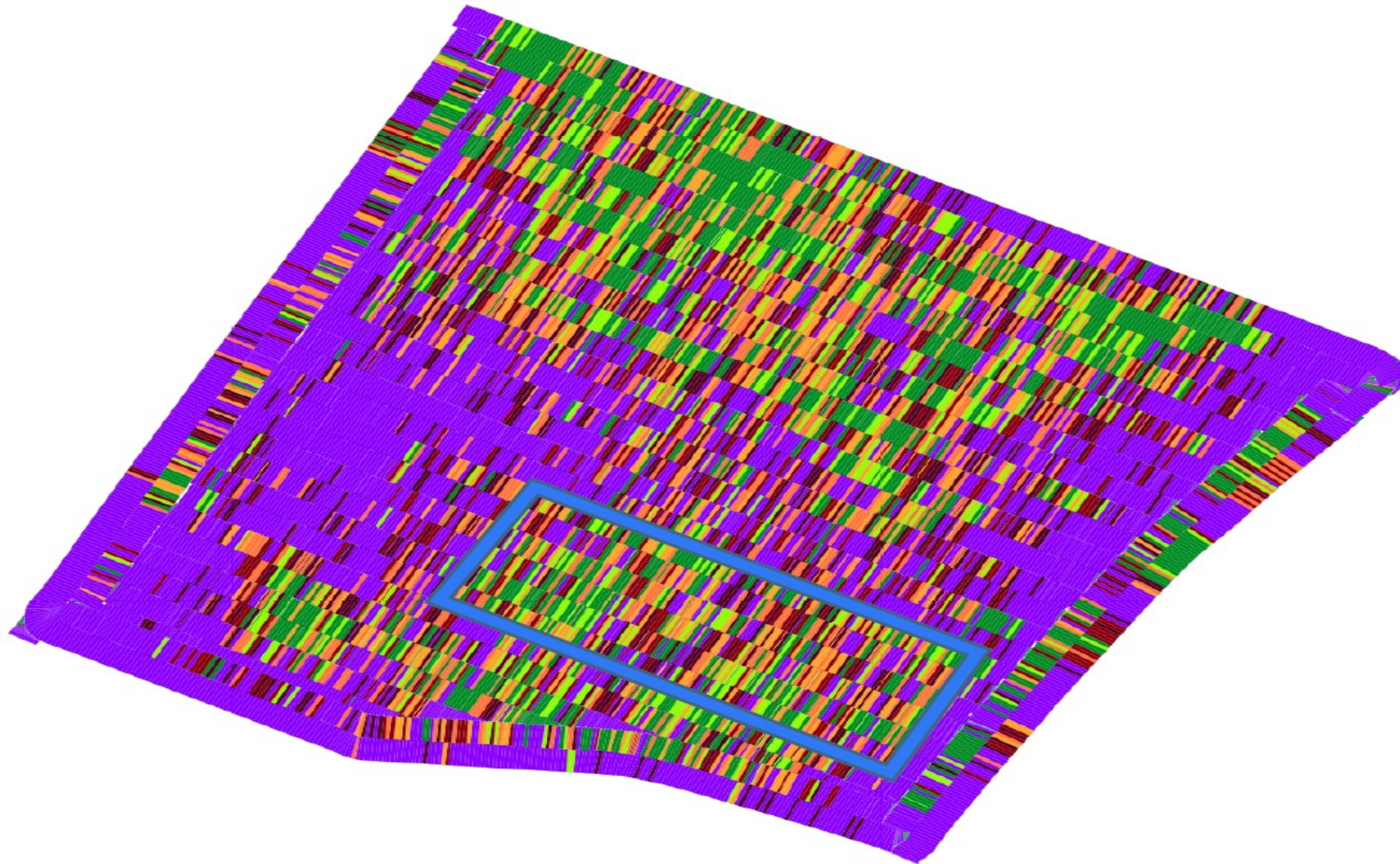








Sugar on Crops For Yield and Insects



Dark Green	> 65 bu/ac
Bright Green	64 - 65 bu/ac
Light Green	64 - 64 bu/ac
Yellow	63 - 64 bu/ac
Orange	62 - 63 bu/ac
Light Orange	62 - 62 bu/ac
Red	61 - 62 bu/ac
Brown	61 - 61 bu/ac
Dark Purple	60 - 61 bu/ac
Purple	< 60 bu/ac

New Techniques

- Utilizing Sugars and Monitoring BRIX
- Soybeans:
- Check-5.2
- Molasses-15.6 Brix
- Generic White Table Sugar-34.2
- Cold Process Sugar-36.3



2021 Soybean NC State Record 117.1 bu-Dryland



Tillage: conventional reduced no-till

Soil pH 6.3 Lime Applied: 2018 Year and Rate (T/A) 1 ton/Acre

Fertilizer Applied/Product (include manure and foliar nutrients) BE SPECIFIC	Rate/A	Band or Broadcast	Soybean Stage Applied
11-37-0	4 gal/A	2x2x2	planting
Sugar	1/2 lb/A		Planting
28-0-0-S	6 gal/A	2x2x2	planting
^{product called} Soy Sauce	1/2 gal/A	Foliar	3 rd /4 th trifolia
3-18-18	1 gal/A	Foliar	3 rd /4 th trifolia
Micro 581	1 qt/A	Foliar	3 rd /4 th trifolia
Sugar	1 lb/A	Foliar	3 rd /4 th trifolia
Soy Sauce	1/2 gal/A	Foliar	R1
micro 581	1 qt/A	Foliar	R1
potassium sulfate	50 lbs/A	Broadcast	R1
Symtx	25 lbs/A	Broadcast	R1
Urea	50 lbs/A	Broadcast	R1
3-18-18	1 gal/A	Foliar	R5
Sugar	1/2 lb/A	Foliar	R5
micro 581	1 qt/A	Foliar	R5

Planting Information

Variety planted Ag Venture AV51V7E

Maturity Group (i.e. 4.6) 5.1 Indeterminate

Soybean Entry External Inbox x

Allison Brown <allison_brown@ncsu.edu> to me

look this over and make sure everything looks correct

Allison Brown
County Extension Director
Alexander County
NC Cooperative Extension
NC State University
<http://alexander.ces.ncsu.edu>
(828)632-4451

rh soybean entry-1...

Reply Forward



Full Rate 42x16 8 bu
Half Rate 42x15 -5 bu
No N 41x15 -9 bu

@ \$4 bu

Full 8

Half - \$20

No N - \$36

Saving

Full Rate - \$105/ac N

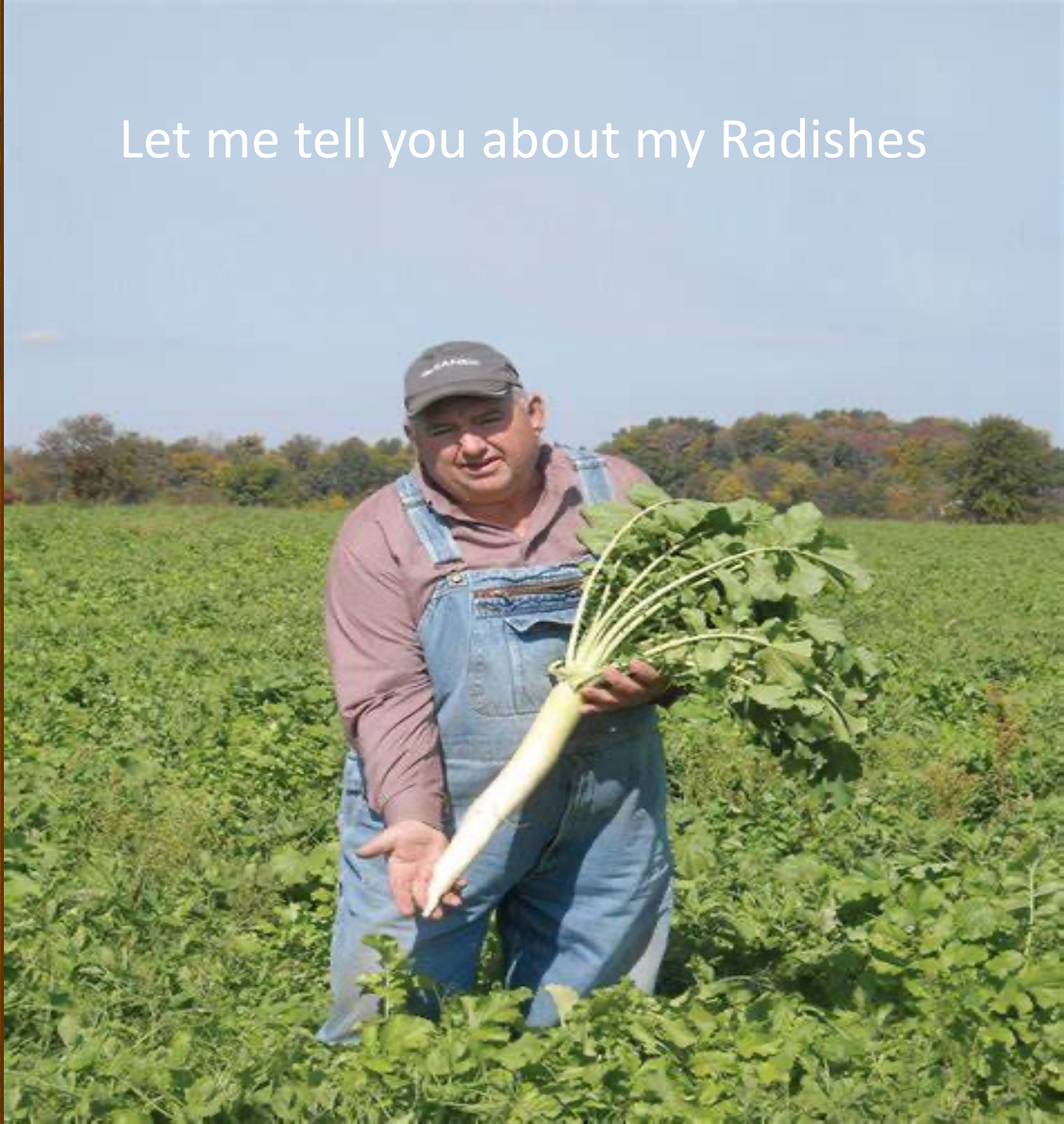
Half Rate - \$52/ac N

No N - \$0/ac





Let me tell you about my Radishes

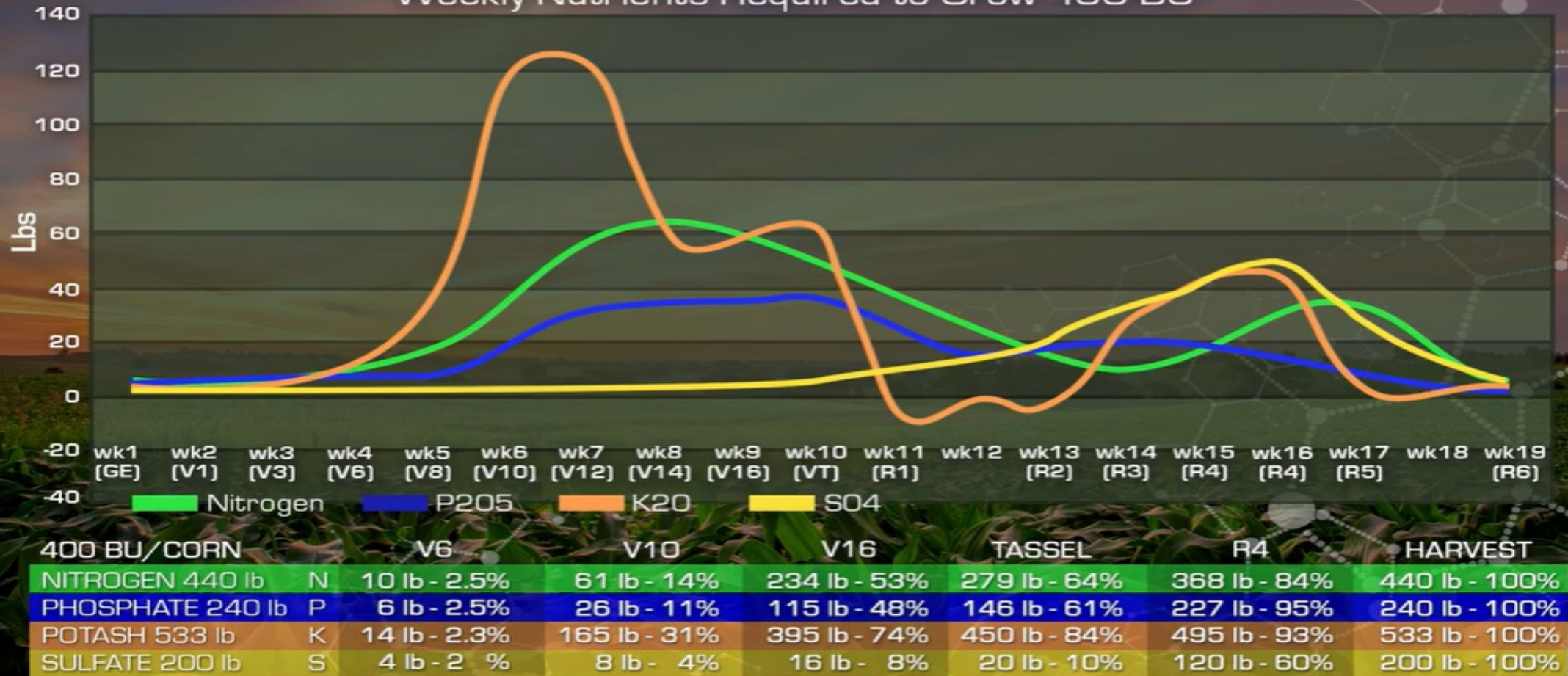




Let me tell you about my corn

Corn Growth Cycle

Weekly Nutrients Required to Grow 400 BU



Keeping them Heavy



Everyone: Hows the corn looking?

USDA:



31st Annual
NATIONAL
NO-TILLAGE
CONFERENCE

January 10-13, 2023 • St. Louis, Mo.

Yetter
FARM EQUIPMENT
SINCE 1930

Ag Leader

exapta.
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**Precision
Planting**

MonTag

The Andersons

GS3
GS3 QUALITY
SEED

Sound

Martin Till

**MidWest
Bio-Tech**



L
LAFORGE

wearparts
TILLAGE TOOLS
Cultivating Solutions for Growth

DAWN












Nc young guns plot




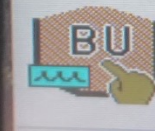
↓  

 **Groundspeed**
←←←← **3.7 mph**

 **Yield, Dry**
0 bu/ac

 **Moisture**
15.5 %

 **Area Counter**
1.34 ac

 **Bushel Counter**
624 bu

Oct 21, 2022
2:53 pm

Back **Run1**

Herbicide used

Burndown-Bicep 2 Magnum 2 qts

Gramoxone-1 qt

Spectrum-8oz

Post V5- Roundup-1qt

Caliisto-3oz

Hook-5oz

Ensoil-4oz

Sugar-8oz

Insecticide-None needed at scouting

Fungicide-Drone

R1- Valtema-8oz

Ensoil-8oz

Fertility-12 inch Soil Nitrogen Credit from soil test-180lbs

Cover Crop Nutrient analysis-125lb N credit

Preplant-50lbs Treated urea with Safe-NBPT, 30-0-0

70lb Potassium Sulfate, 0-0-42

Granubor-5lb

Planter

Pop up

3 gallons infuramax 7-23-4-1s-.5z

Humic Acid-16oz

Bore-shot-5oz

Sugar ½ lb

Ensoil-6oz

REH

2x2x2

25 gallons 11-37-0 33-110-0

Humic Acid-8oz

CM Product-1qt

Ensoil-6oz

V-3 to V-4

Y Drop

10 gal 32-0-0 UAN with Safe-NBPT 33-0-0

Humic acid-8oz

V-3 to V4

Aussie Sauce-10 gallons per acre

1 qt humate

3 qt 9-0-0-20

42lb urea

2 qts molasses

1 qt Compost tea

2 grams Nickle Sulfate

V8 to V9

TopDress-Broadcast

Urea treated with Safe-NBPT- 200b 92-0-0

AMS-150b- 31.5-0-0-36s

Phinite- 400lb- 16-45-5 Have Lab nutrient Test

Tassel

Y-Drop-10 gallons 32% 33-0-0

R-1

Broadcast AMS 100lb 21-0-0-24s

R-1 Foliar-Drone with fungicide timing

Sugar-8oz

Tassel Shot-32oz

CM Mix-16oz

Fulvic Acid-8oz

2 grams Nickle sulfate

Grain Economics

- Best Yield 459.51bu/ac Dryland 2022
- Seed cost-\$95
- Plant-\$25
- Infurrow-Infuramax 3 gallon pop-up, 1/2lb Sugar, Algae, Fulvic, \$14
- Burndown-Gramoxone, bicep 2 mag, Surfactant \$28
- Fertilizer 310-145-50-50s-2B-.75Mo-\$418
- Aussie Sauce-\$38
- Bio stimulant pass x2
- Post Spray-\$19
- Crop Ins,Rent,Harvest-\$127
- Drone-Tassel Shot, Algae, Fungicide, Sugar, Fulvic, Nickle Sulfate-\$48
- Haul & Dry-\$30
- Cost -\$1008/ Acre Cost Per Bushel-\$2.19

Agronomy Still Matters with Healthy Soils

- Nitrogen credits from Legume Cover Crops

Reducing Herbicide Spraying-Timing & Money

No post spray on 480 acres of Corn

No Post spray on 390 acres of soybeans

Chemical Savings-\$28,750.00

Fertilizer Reductions using Haney test-

Phosphorous-\$34,900 Potassium-\$8,680 Nitrogen-\$92,125

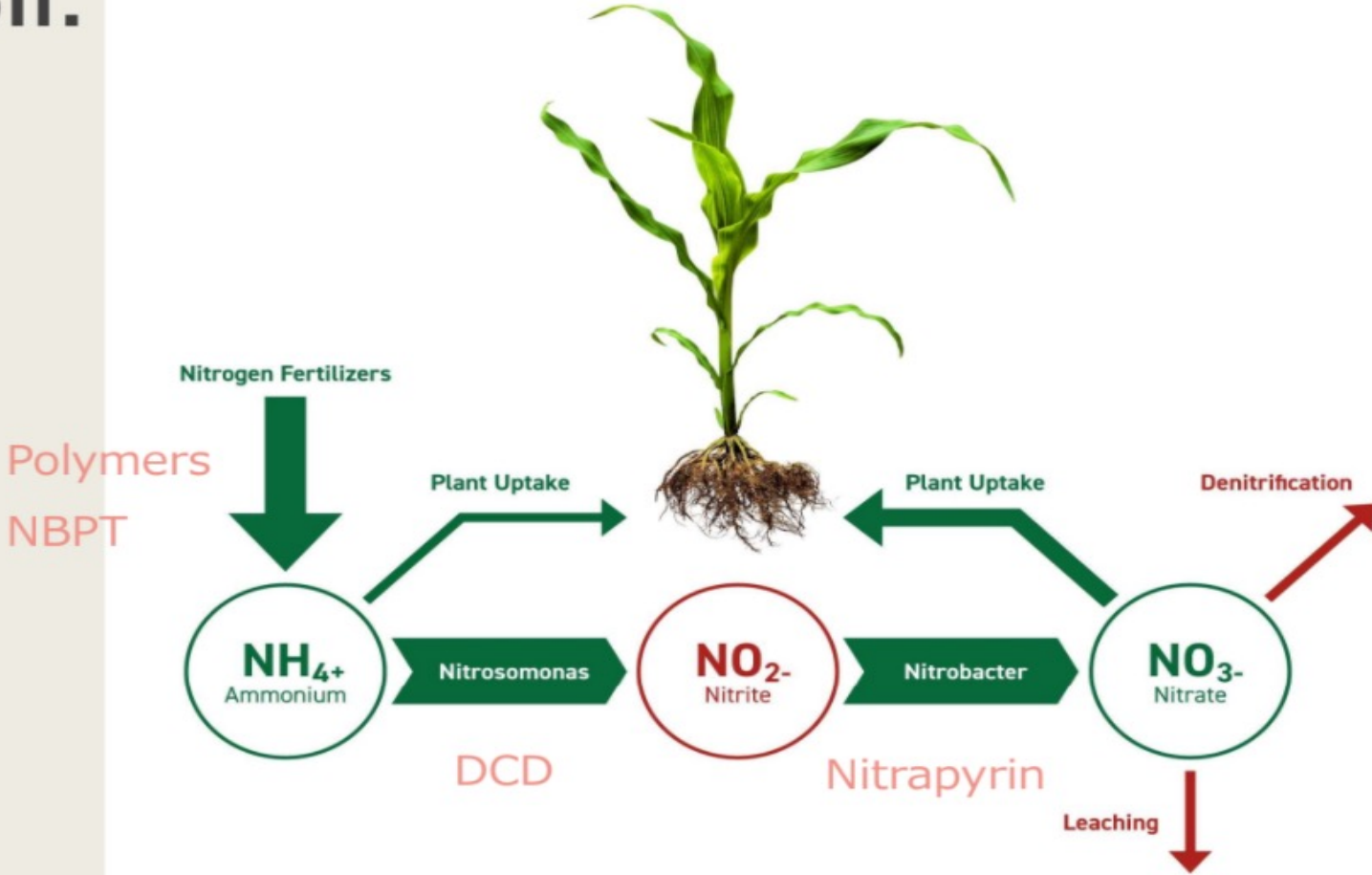
Total Savings-\$164,455.00

Cost of Haney Test-\$800.00

New Trials on the Farm

- Enlightened Soil- ENSOIL Algae
- Win-biologics- Sugar formulations, SoySauce, Tassel Shot, Humic's & Fulvic's, Forms of Micro's and Macro's
- Nitrogen Stabilizers- NBPT, Polymers
- Organic Acids-Available nutrients

Active Ingredients and where they work in the soil.



Source picture: <https://www.agrevival.com/information-center/how-the-nitrogen-conversion-process-impacts-your-yields>

Data is only as good as you understand it!

DATA



SORTED



ARRANGED



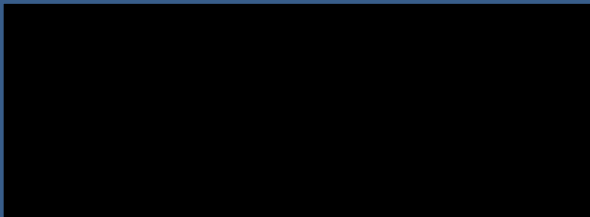
PRESENTED VISUALLY



EXPLAINED WITH A STORY







GROWER: RUSSELL HEDRICK
 Farm ID:
 Sample ID: HED 1

Received: 02/04/2015
 Processed: 02/06/2015
 Account #:

Lab Results lbs. per Acre

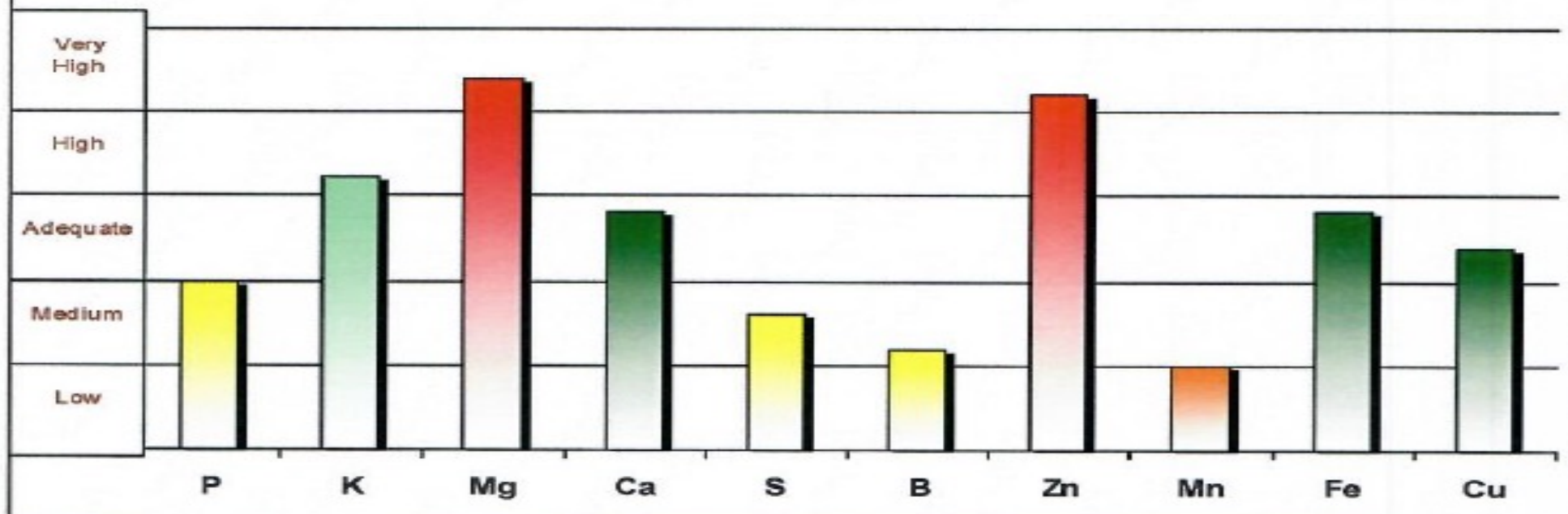
Target pH: 6

Test Method: Mehlich III

Lab Number: 148439YO

P Phosphorus	K Potassium	Mg Magnesium	Ca Calcium	Soil pH	Buffer pH	S Sulfur	B Boron	Zn Zinc	Mn Manganese	Fe Iron	Cu Copper
98 M	340 H	343 VH	1274 A	6.0	7.55	40 M	1.0 M	14.8 VH	28 L	169 A	3.9 A
Aluminum	Sodium	Nitrate N	Soluble Salts	Organic Matter	ENR	Molybdenum	NH4	Nickel	BiBarbs		
			mmhos/cm	2.29 %	45.8	ppm		ppm	meq/l		

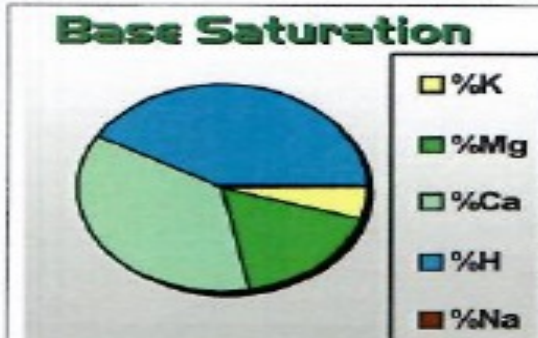
Soil Analysis Ratings



Cation Exchange Capacity **8.7** meq/100g

Base Saturation

- K: 5.0 %
- Mg: 16.5 %
- Ca: 36.8 %
- H: 41.6 %
- Na: %



Lab #	Nitrate ppm NO3-N	Ammonium ppm NH4-N	Inorg. N ppm N	Total N ppm N	Org. N ppm N	Org. N: Inorg. N	Org. N Rel. ppm N	Org. N Res. ppm N	Avail. N lbs/A	Total P ppm P	Inorg. P ppm PO4-P	Org. P ppm P	Org. P Rel ppm P	Org. P Res. ppm P	Avail. P lbs/A
351	18.4	4.7	23.1	36.9	15.4	0.72	15.4	0.0	69.2	16.1	14.0	2.1	2.1	0.0	36.9
Rank															

Lab #	Other Soil Measures					Fertility									
						H3A Extract									
	Soil pH 1:1	Buffer pH Mod. WDRF	Soluble Salt mmho/cm	Excess Lime	Soil OM % LOI	Potassium ppm K	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Manganese ppm Mn	Iron ppm Fe	Copper ppm Cu	Aluminum ppm Al	Sulfur ppm S
351	6.0	6.5	0.22	NONE	7.5	121	466	92	14	10.82	6.1	129	0.83	155	18.54
Rank															

Lab #	Soil Health						Nitrogen Comparison				Reviewer Comments
	H2O Extract						Traditional N lbs/A	Haney N lbs/A	Differ. N lbs/A	Savings N \$/A	
	Soil Resp. ppm CO2-C	Org. C ppm C	MAC %	C:N	SHC	Cover Crop Suggestion					
351	414.1	181	229.3	11.70	28.20	20% Legume 80% Grass	33.1	69.2	36.1	23.10	
Rank											

Lab #	Intended		N Credits, lbs/A			Fertility Recommendations, lbs of Required Nutrients per Acre									
	Crop	Yield Goal	Past Crop	Subsoil	Haney	N	P2O5	K2O	S	Zn	Mg	Fe	Mn	Cu	Lime T/A
351	SOYBEANS BU/A	100	0		69.2	-	45	-	-	-	-	-	-	-	2
351	CORN BU/A	425	0		69.2	395	100	-	-	-	-	-	-	-	-

Reviewed By: Emily Shafto

Date: 2/15/2022

Recommendations Provided by Regen Ag Lab, LLC

Analysis Performed by Regen Ag Lab, LLC

Lab #	Nitrogen									Phosphorus					
	H3A Extract			H2O Extract						H3A Extract					
	Nitrate ppm NO3-N	Ammonium ppm NH4-N	Inorg. N ppm N	Total N ppm N	Org. N ppm N	Org. N: Inorg. N	Org. N Rel. ppm N	Org. N Res. ppm N	Avail. N lbs/A	Total P ppm P	Inorg. P ppm PO4-P	Org. P ppm P	Org. P Rel ppm P	Org. P Res. ppm P	Avail. P lbs/A
352	16.8	5.1	21.9	32.0	12.2	0.61	12.2	0.0	61.2	17.0	14.0	3.0	3.0	0.0	39.0
Rank															

Lab #	Other Soil Measures					Fertility										
											H3A Extract					
	Soil pH 1:1	Buffer pH Mod. WDRF	Soluble Salt mmho/cm	Excess Lime	Soil OM % LOI	Potassium ppm K	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Manganese ppm Mn	Iron ppm Fe	Copper ppm Cu	Aluminum ppm Al	Sulfur ppm S	
352	5.6	6.3	0.18	NONE	6.4	83	372	82	12	3.20	3.9	110	0.77	165	10.29	
Rank																

Lab #	Soil Health					Nitrogen Comparison				Reviewer Comments
	H2O Extract					Traditional N lbs/A	Haney N lbs/A	Differ. N lbs/A	Savings N \$/A	
	Soil Resp. ppm CO2-C	Org. C ppm C	MAC %	C:N	SHC					
352	210.5	136	154.6	11.20	19.00	30% Legume 70% Grass	30.2	61.2	31.0	19.84
Rank										

Lab #	Intended		N Credits, lbs/A			Fertility Recommendations, lbs of Required Nutrients per Acre									
	Crop	Yield Goal	Past Crop	Subsoil	Haney	N	P2O5	K2O	S	Zn	Mg	Fe	Mn	Cu	Lime T/A
352	SOYBEANS BU/A	100	0		61.2	-	45	-	-	-	-	-	-	-	3
352	CORN BU/A	425	0		61.2	405	100	-	36	-	-	-	-	-	3

Reviewed By: Emily Shafto

Date: 2/15/2022

Recommendations Provided by Regen Ag Lab, LLC

Analysis Performed by Regen Ag Lab, LLC

The day the people understand this image everything changes.





Questions ?

- Russell Hedrick
- 803-530-4315
- Russell@agsoilregen.com

