

Regenerating Your Profits



SW Missouri Soils



A little more background

Started no-tilling in 2012. Started with soybeans

My first cover crop was in 2013 in a prevent plant situation.

First no-till corn in 2016

Integrated Livestock in 2018



2016
No-till Corn

Not very good
corn.



Well Crap, I Think I'm Stuck



I had to CHANGE



Ray Archuleta



Gabe Brown

I Focus on Principles and Not Practices or Products

Context

Minimize Disturbance

Living Root as Long as Possible

Keep The Soil Covered

Diversity

Animal and Insect Integration



I Was Committed 100% by Fall 2016

Double crop soybeans gone
Every acre was covered
Stretched my rotation
Adjusted planting dates
Changed maturities
Diversified my cash crops
Started building fence
Cattle moved daily(as possible)
Integrated Livestock on Row crop
I became intentional



Understand your Resource Concerns

Nitrogen fixation

Scavenging of nutrients

Surface compaction

Nutrient cycling

Grazing

Erosion reduction

Increase Soil Organic Matter

Weed suppression

Winter stock pile



Value of our Soil

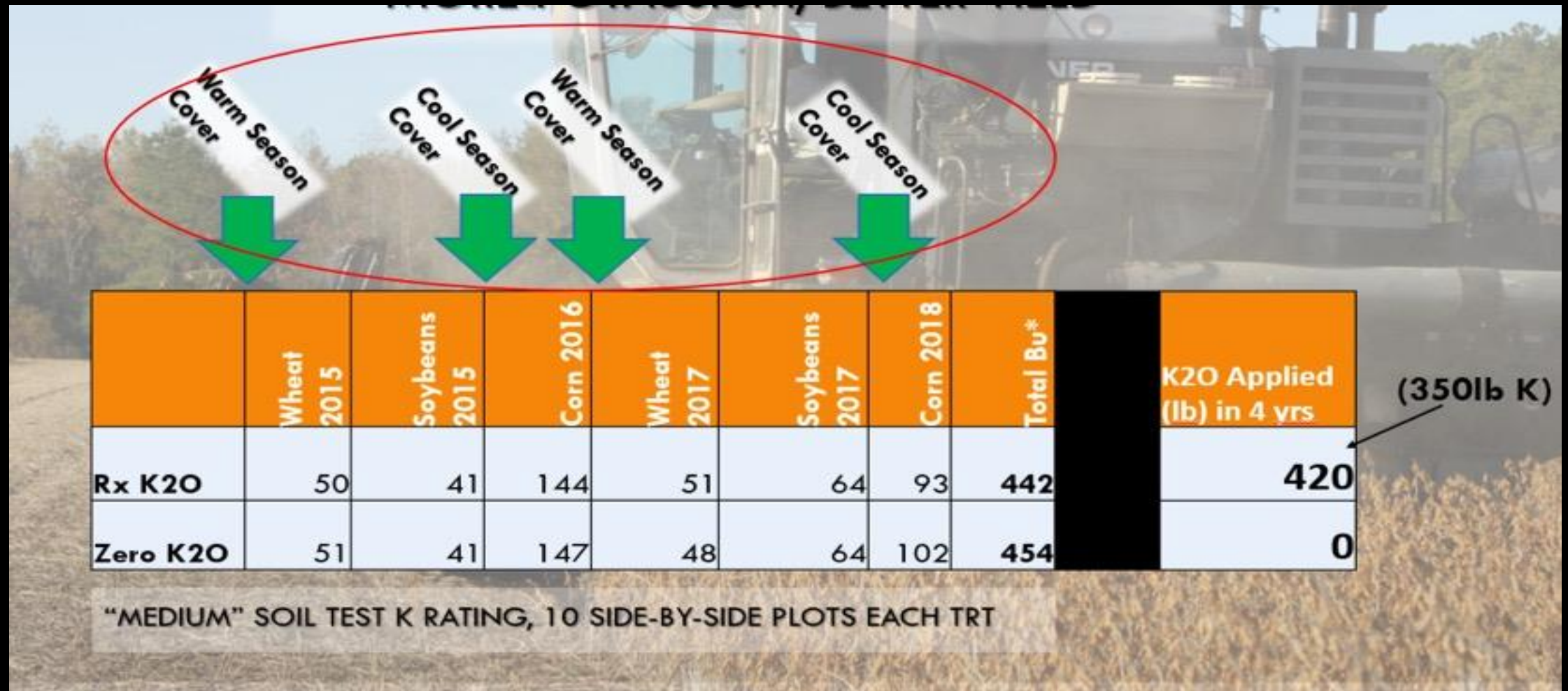
There is approximately 5.8 tons of soil lost every year to wind and water erosion

This amounts to little more than a dime thickness across an acre.

There is an estimated 36 Billion tons of soil lost in the USA every year

If my farm lost 5.8 tons of soil a year, multiplied by 880 acres. That would be 5104 tons, then multiplied by \$37.50 a ton, which gives an equivalent value to \$191,000 lost annually.

How Much Fertilizer Do We Really Need?



Hay Prairie Field

- Nutrient Value Units Nutrient
- 0.86 % N Nitrogen 0.07 % P Phosphorus 0.53 % K Potassium 0.87 % Ca Calcium 0.15 % Mg Magnesium 0.09 % S Sulfur 0 % Na Sodium 20.9 ppm Zn Zinc 100 ppm Fe Iron 23.9 ppm Mn Manganese 4.2 ppm Cu Copper 6.3 ppm B Boron
- Nitrogen Deficient
- Phosphorus Deficient
- Potassium Deficient
- Calcium High
- Magnesium Deficient
- Sulfur Deficient

Every Micronutrient was sufficient

Except Manganese

Haney Test Results

- Soil PH 6.8
- Organic Matter 3.9
- %Mac 203
- Available N 47lbs
- Available P 11lbs
- Available K 18lbs
- SOIL HEALTH SCORE 25



Same Tonnage of Hay Since 1934



2021 Erin Silva Method Minimizing Disturbance



2021 Soybeans 74 Acres

\$0 Land payment
\$10 Property Tax
\$15 Miscellaneous expenses
\$20 Crop Insurance
\$32 cover crop mix sown on Nov. 5th
(80lbs Elbon Rye, 10lbs Secretariat Barley)
\$8 Broadcast cover
\$0 NPK
\$18 Non Gmo Soybeans
\$20 Planting Green
\$8 Roller Crimper
\$18 Herbicide(Includes Application)
\$35 Combing and hauling

\$184 Soybean Cost of Production

Soybeans yielded 74.2 bushel to the acre

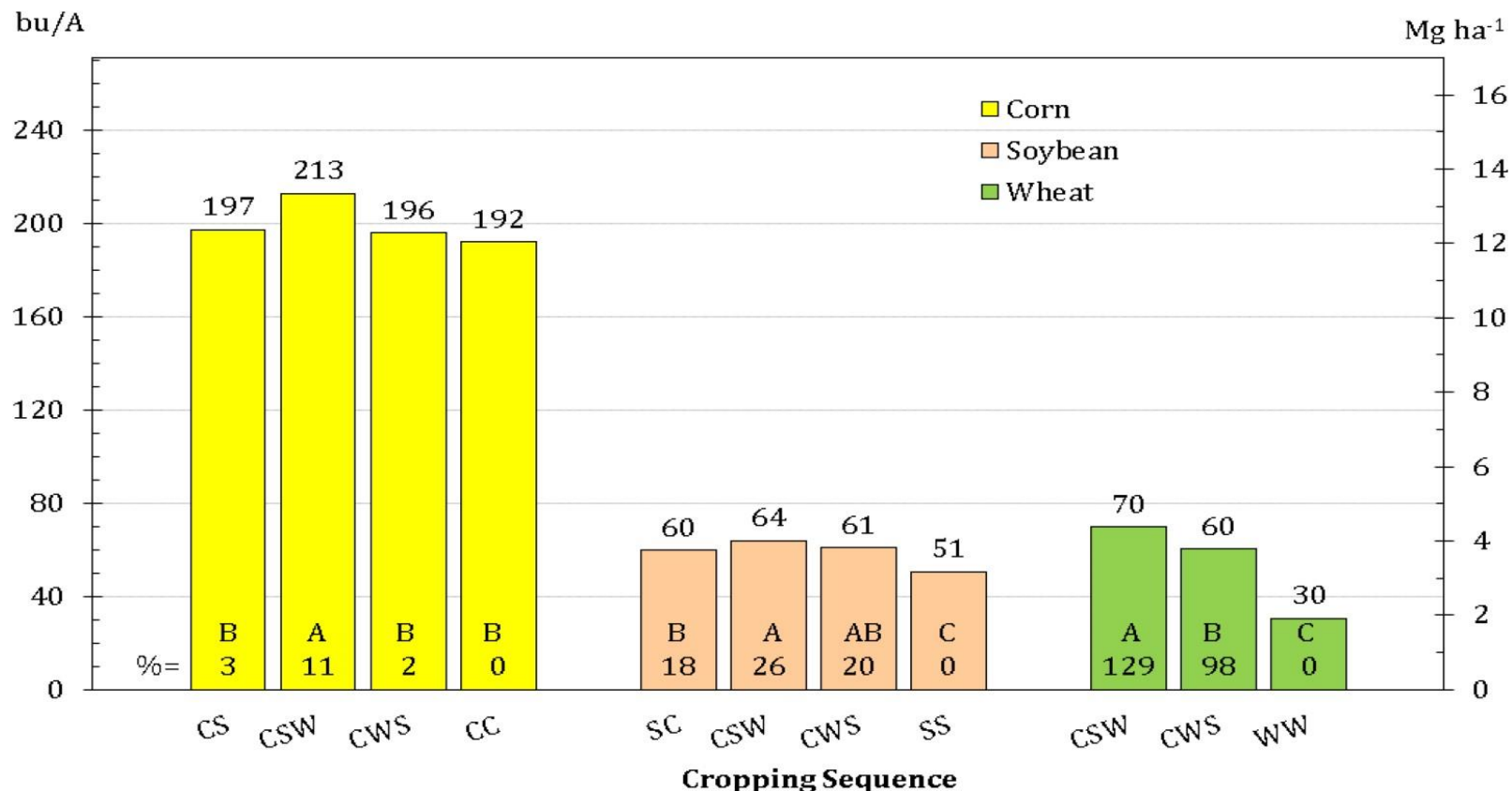
Non Gmo Soybean Market \$14.63 a bushel

Net income \$901.55 an acre



10 Year study done by Professor Joe Lauer

Extending crop rotation improves grain yield of all crops, however, sequence seems important.



C= Corn, S= Soybean, Wheat= W, CC, SS, or WW= Continuous corn, soybean or wheat







Double Crop Sunflowers



2023 Oats/Double Crop Sunflower Economics

\$75 Land Rent
\$15 Miscellaneous expenses
\$0 Crop Insurance
\$15 Oats seeding cost
\$107 Oat/Red Clover/ Sunflower seed cost
\$80 NPK
\$8 Broadcast Red Clover seeding cost
\$20 Double Crop Planting Green
\$30 Herbicide(Includes Application)
\$90 Combing and Hauling

Oats yielded 105, clean out 85%, \$.40 = \$1142.40
Sunflower yielded 500lbs at \$42.50 per 100lb = \$212.50
Red Clover nitrogen fixation???
Grazing Value???
Gross per acre \$1354.89
Net per acre \$913.90



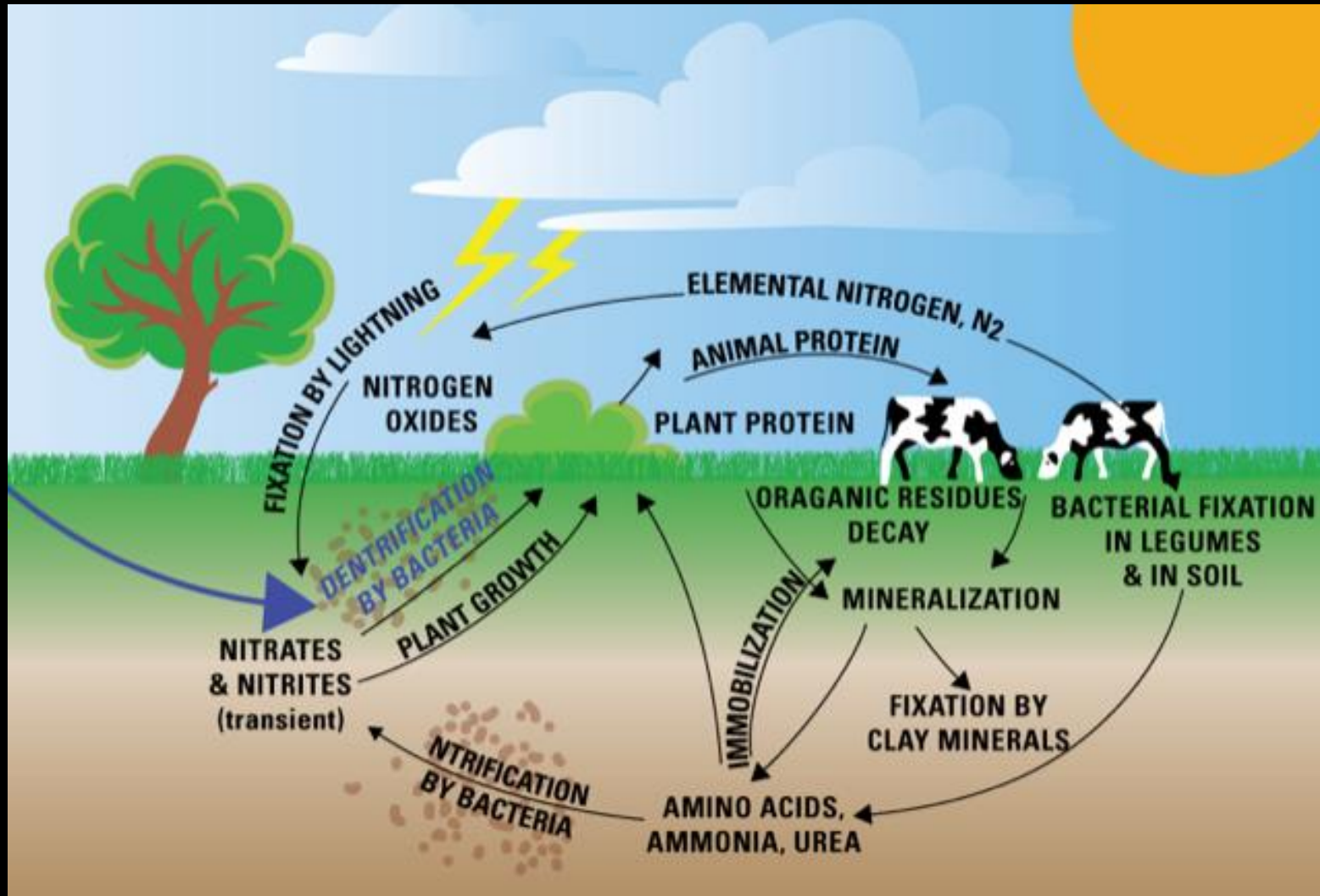
Why Would We Put Cows on our Land?



Nasty and Inefficient



Nutrient Cycle





Worms!





Worm Casting

26% Carbon

1.9% Nitrogen

1.4% Potassium

1.6% Phosphorus

3.7% Calcium

Moving Equipment



How I Custom Graze

I graze other producers cattle

They supply mineral

Charge a \$1.50 per animal unit per day
(Calf, Cow) \$2 per bull

148 head for 45 days on 98 acres = \$9990 (\$101.94)

That's another \$100 an acre!

ALWAYS HAVE A CONTRACT!



Moving Polywire Through a Large Cover Crop



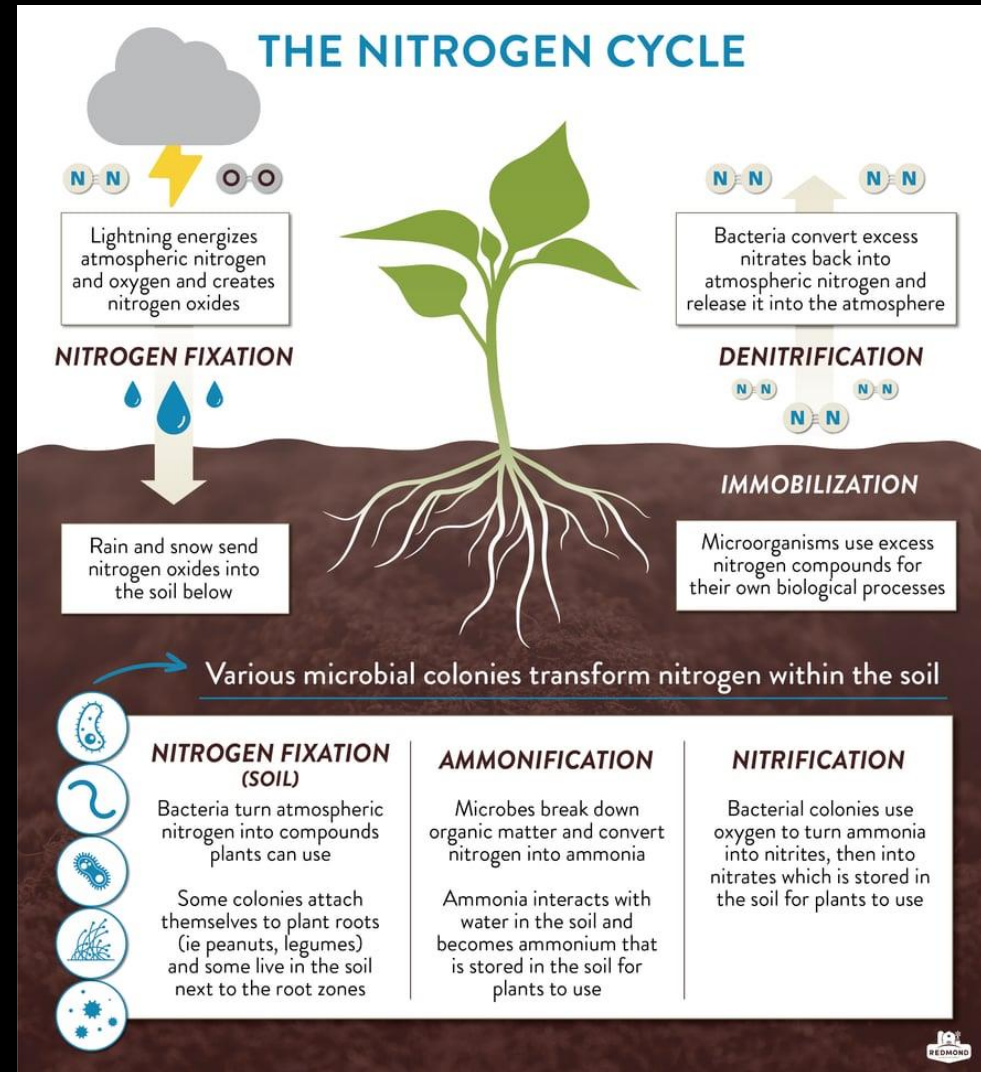


We Can Graze Brassicas, but it has a Negative Effect on the Soil Structure



No-Till Corn with Cover Crop Management

Material	C:N Ratio
rye straw	82:1
wheat straw	80:1
oat straw	70:1
corn stover	57:1
rye cover crop (anthesis)	37:1
pea straw	29:1
rye cover crop (vegetative)	26:1
mature alfalfa hay	25:1
Ideal Microbial Diet	24:1
rotted barnyard manure	20:1
legume hay	17:1
beef manure	17:1
young alfalfa hay	13:1
hairy vetch cover crop	11:1
soil microbes (average)	8:1



TND Test



Account No.:		Name:		Grower:	
Invoice No.:		Company:		Field ID:	
Date Recd:	4/14/2021	Address:		Sample ID 1:	
Date Repd:	4/16/2021	City, State, ZIP:		Sample ID 2:	
				Sample Depth:	0-12

TOTAL NUTRIENT DIGESTION ANALYSIS REPORT

Lab # 1707

Nutrient	Nutrient Results		Nutrients, Lbs/A	Fertilizer Equivalent, lbs of Fert*	
	Value	Units	Value	Value	Reference Fertilizer
Carbon	1.13	% C	40680	67800	60% C
Nitrogen	0.121	% N	4356	9470	46-0-0
Phosphorus	0.038	% P	1377	6066	11-52-0 at 22.7% P
Potassium	0.147	% K	5276	21187	0-0-60 at 24.9% K
Calcium	0.294	% Ca	10583	48104	Gypsum-22% Ca
Magnesium	0.295	% Mg	10603	100981	K-Mag-10.5% Mg
Sulfur	0.014	% S	516	2149	AMS-24% S
Zinc	56.94	ppm Zn	205.0	586	ZnSO4-35% Zn
Iron	19809.87	ppm Fe	71316	356578	FeSO4-20% Fe
Manganese	674.90	ppm Mn	2430	7838	MnSO4-31% Mn
Copper	23.61	ppm Cu	85.0	340	CuSO4-25% Cu
Boron	15.52	ppm B	55.9	508	Borax-11% B
Sodium	0.017	% Na	602		
Molybdenum	0.90	ppm Mo	3.3	8.3	NaMoO4-39% Mo
Aluminum	13259.47	ppm Al	47734		
C:N Ratio	9.3				

Reviewer Comments

*Lbs of fertilizer needed to be equal to Lbs of soil nutrient/A

Reviewed By: Lance Gunderson
Date: 4/16/2021

Analysis Performed by Regen Ag Lab, LLC

Regen Ag Lab, LLC
31740 Hwy 10, Pleasanton NE 68866

Gain Ground

308-440-1681
regenaglab.com

Pull Soil Sample Before Planting



Account No.: 106
 Invoice No.:
 Date Recd: 2/19/2024
 Date Repd: 2/21/2024

Name: MACAULEY KINCAID
 Company:
 Address: 17534 BASELINE BLVD
 City, State, ZIP: JASPER, MO 64755

Grower: MACAULEY KINCAID
 Field ID: DANA 80A 2
 Sample ID 1: -
 Sample ID 2: -
 Sample Depth: 0-8

HANEY SOIL HEALTH ANALYSIS

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
2754	2.9	1.6	4.4	10.3	5.7	1.25	5.7	0.0	24.3	14.9	13.0	1.9	1.9	0.0	34.3
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
2754	7.2	-	0.05	NONE	3.8	68	386	117	5	1.94	8.5	77	0.33	56	2.11
Rank															

Lab #	Soil Health					Nitrogen Comparison				Reviewer Comments	
	H2O Extract										
	Soil Resp. ppm CO2-C	Org. C ppm C	MAC %	C:N	SHC	Cover Crop Suggestion	Traditional N lbs/A	Haney N lbs/A	Differ. N lbs/A		Savings N S/A
2754	35.5	79	44.8	13.87	5.71	50% Legume 50% Grass	6.9	24.3	17.5	18.18	
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

Reviewed By: Lance Gunderson
 Date: 2/21/2024

Recommendations Provided by Regen Ag Lab, LLC
 Analysis Performed by Regen Ag Lab, LLC

Regen Ag Lab, LLC
 31740 Hwy 10, Pleasanton NE 68866

Gain Ground

308-627-0065
 regenaglab.com



Cover Crop Sample



Account No. 146
 Invoice No.
 Date Received 5/18/2023
 Date Reported 5/22/2023

Name
 Company PROGRESSIVE AG
 Address PO BOX 66
 City, State, ZIP VANDALIA, IL 62471

Grower NATHAN BRUBAKER
 Field ID CLEARED FIELD
 Sample ID 1
 Sample ID 2

COVER CROP ANALYSIS REPORT

Lab # 732
 Type: COVER CROP
 Stage: N/A

Forage Yield, Ton/A @ 100 % Dry Matter

Wet Wt, g 3546
 Tare Wt, g Tons DM/A 1.59
 % Dry Matter 8.4
 Area Sampled 9 C:N Ratio 18.0

Results on a Dry Basis

Nutrient	Value	Units
Carbon	44.80	% C
Nitrogen	2.484	% N
Phosphorus	0.37	% P
Potassium	4.20	% K
Calcium	1.15	% Ca
Magnesium	0.17	% Mg
Sulfur	0.21	% S
Zinc	120.59	ppm Zn
Iron	214.44	ppm Fe
Manganese	108.99	ppm Mn
Copper	11.16	ppm Cu
Boron	41.33	ppm B
Molybdenum	0.14	ppm Mo
Aluminum	129.31	ppm Al

lbs/A of Nutrient based on Tons DM/A

Nutrient	lbs./A	Units
Carbon	1423	C
Nitrogen	79	N
Phosphorus	27.1	P2O5
Potassium	160.2	K2O
Calcium	36.5	Ca
Magnesium	5.5	Mg
Sulfur	6.6	S
Zinc	0.383	Zn
Iron	0.681	Fe
Manganese	0.346	Mn
Copper	0.035	Cu
Boron	0.131	B
Molybdenum	0.000	Mo
Aluminum	0.411	Al

Reviewer Comments

Reviewed By: Emily Shatto
 Date: 5/23/2023

Analysis Performed by Regen Ag Lab, LLC



Biomass=Armored Soil













Repeat Haney and Forage Sample



2020 98a Corn Field



\$140 Land payment
\$10 Property Tax
\$15 Miscellaneous expenses
\$15 Crop Insurance
\$18 cover crop mix sown on Oct. 4th
(Phacilia, Annual Ryegrass, Cereal Rye, Barley, Balansa, Crimson, Hairy Vetch, Winter Peas, and Rapeseed)
\$15 Drilling cover
\$35 Litter
\$24 80 units of Nitrogen
\$15 Application cost of N
\$39 Non Gmo Corn
\$20 Planting Green
\$18 Herbicide(Includes Application)
\$35 Combing and hauling

\$399 Corn Cost of Production

Corn Hybrid yielded 160 bushel to the acre

Non Gmo Corn Market \$5 a bushel

Net income \$401 an acre









Which System is Better for the Environment?



Soils Are Less Than 5ft Apart



Thank you! PN: 417-660-9207
Facebook: Macauley Kincaid

