“That Doesn't Work Here”

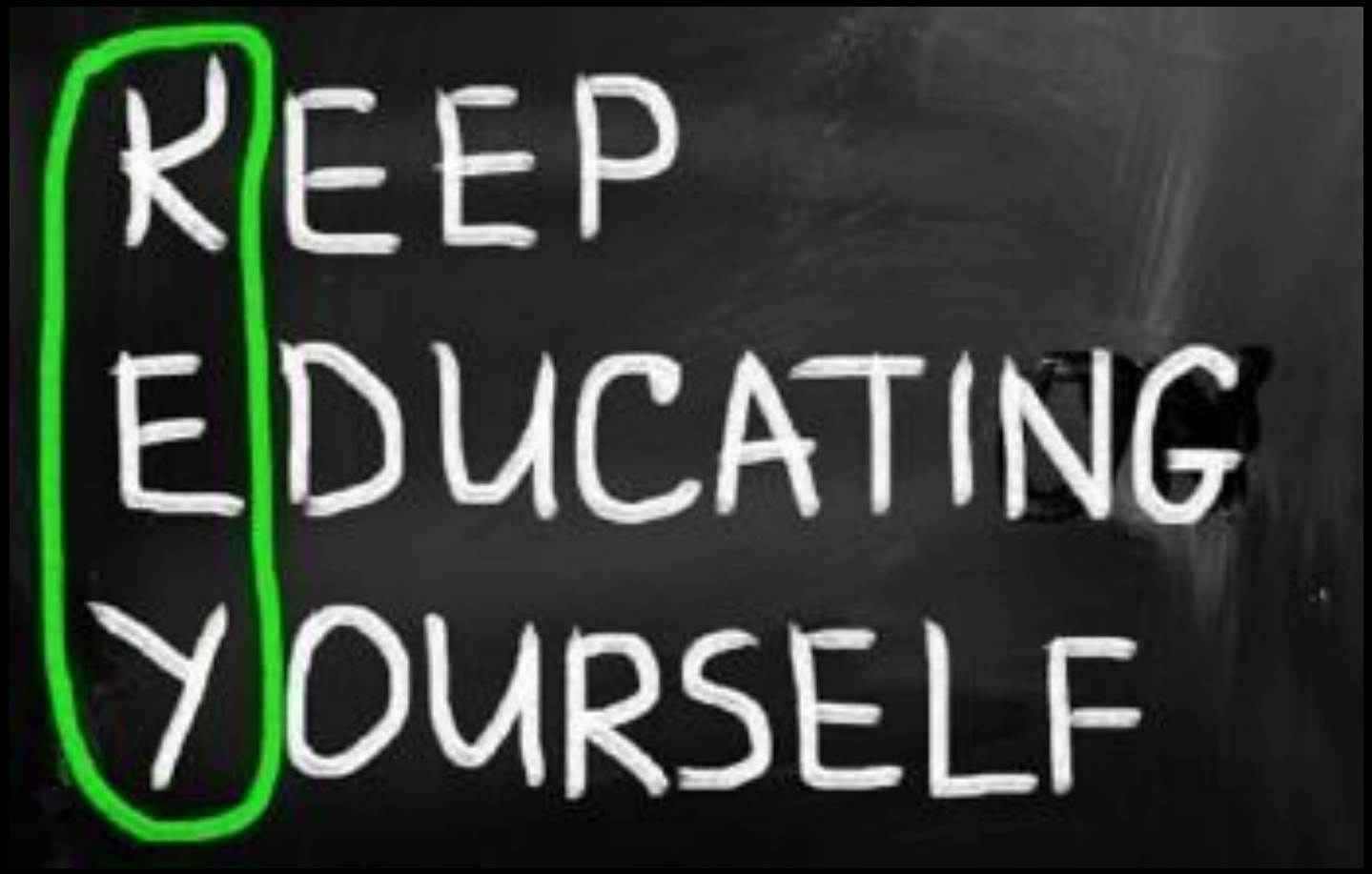
December 3rd. 2024
by the USDA

“Net farm income, a broad measure of profits, is forecast at $140.7 billion in calendar year 2024, a decrease of $6.0 billion (4.1 percent) relative to 2023 in nominal (not adjusted for inflation) dollars. After adjusting for inflation, net farm income is forecast to decrease $9.5 billion (6.3 percent) in 2024 relative to 2023.”

Year Three of Drought

“Have I not commanded you? Be strong and courageous. Do not be afraid; do not be discouraged, for the Lord your God will be with you wherever you go.”

- Joshua 1:9


KEEP
EDUCATING
YOURSELF

Be Encouraged, You Will Get Through This!

We All Have Soil

How To Build Soil

Minimize Disturbance

Living Root as Long as Possible

Keep The Soil Covered

Diversity

Animal and Insect Integration

Minimize Disturbance

25 year continues corn

No till
2.82 OM

Chisel/disk
2.66 OM

Moldboard plow/ disk
2.20 OM

	No-till	Chisel/disk	Moldboard plow/disk
		Soil organic matter (%)	
Depth (inch)			
0-2	3.75	2.85	2.18
2-4	2.45	2.71	2.21
4-6	2.26	2.43	2.20
0-6	2.82	2.66	2.20
		$pH\text{-}H_2O$	
0-2	6.48	6.33	6.30
2-4	6.50	6.65	6.58
4-6	6.72	6.83	6.58
0-6	6.57	6.60	6.48
		Mehlich-3 P (ppm)	
0-2	108	60	34
2-4	41	52	28
4-6	24	35	30
0-6	58	49	31
		Mehlich-3 K (ppm)	
0-2	129	127	107
2-4	83	88	79
4-6	66	70	82
0-6	93	95	89

Source: Duiker, S. W., and D. B. Beegle. 2005. Soil fertility distributions in long-term no-till, chisel/disk and moldboard plow/disk systems. Soil and Tillage Research (in press).

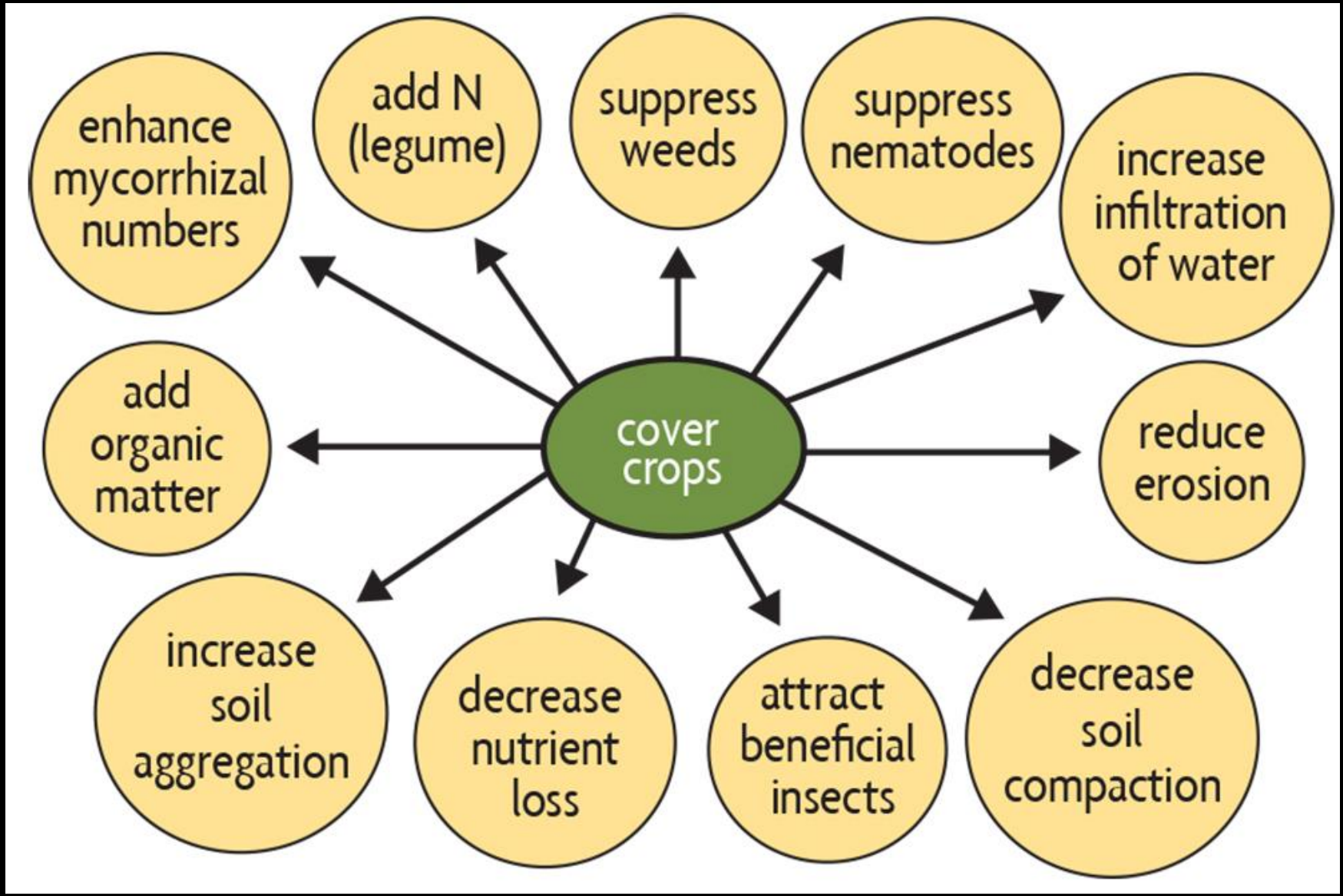
23 Year Study by University of Missouri

Tillage Type	23 year yield Avg. bu./ac.	Gross Income @ $12/bu.	Tillage Costs $/ac.	Gross Income Less tillage cost $/ac.
Fall and Spring Disk	57.1	$685.02	$38.75	$646.27
Spring Disk	58.3	$699.71	$17	$682.71
No-till	59.8	$717.50	$0	$717.50
Fall Chisel/Spring disk	55.2	$661.99	$37	$624.99

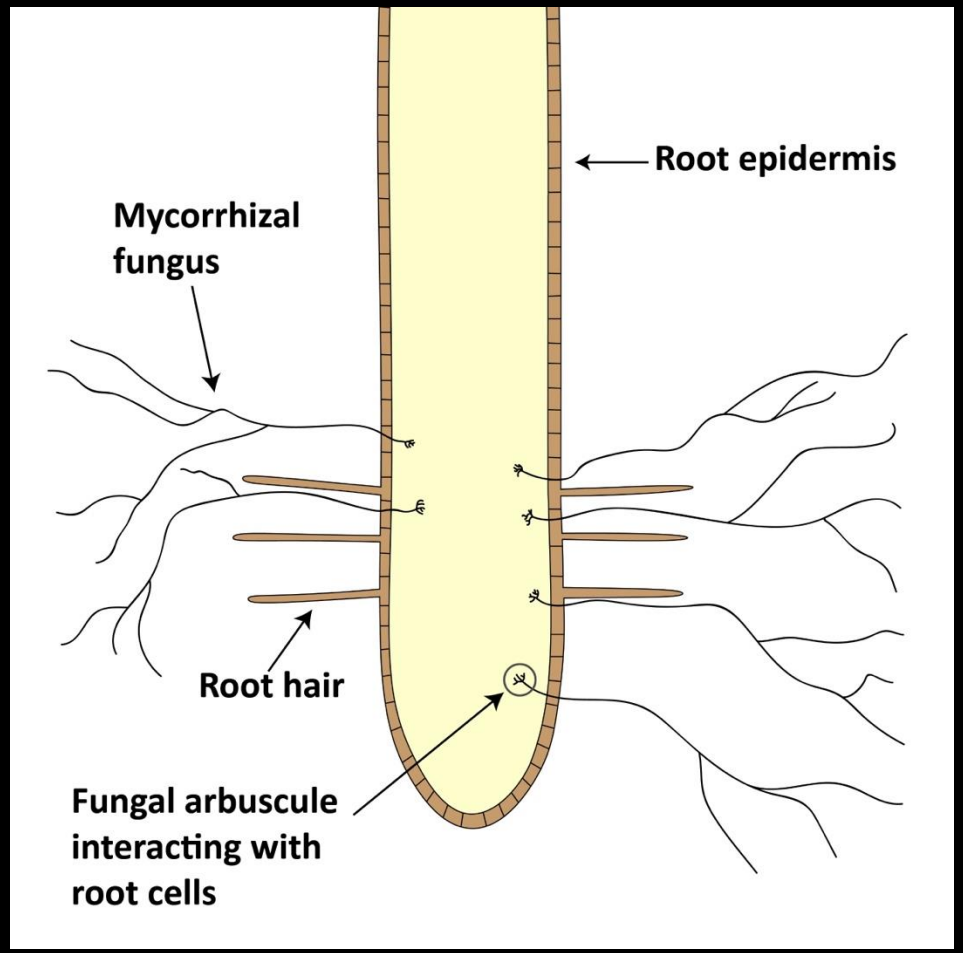
34 Year Study by University of Missouri

Tillage Type	34-year yield Avg. bu./ac.	Gross income @4.50/bu	Tillage costs $/ac.	Gross income less tillage cost $/ac.
Fall and spring disk	183.3	$824.64	$37	$787.64
Spring disk	188.2	$846.95	$17	$829.95
No-till	187.6	$844.16	$0	$844.16
Fall chisel/spring disk	182.3	$820.38	$38.75	$781.63

Living Roots

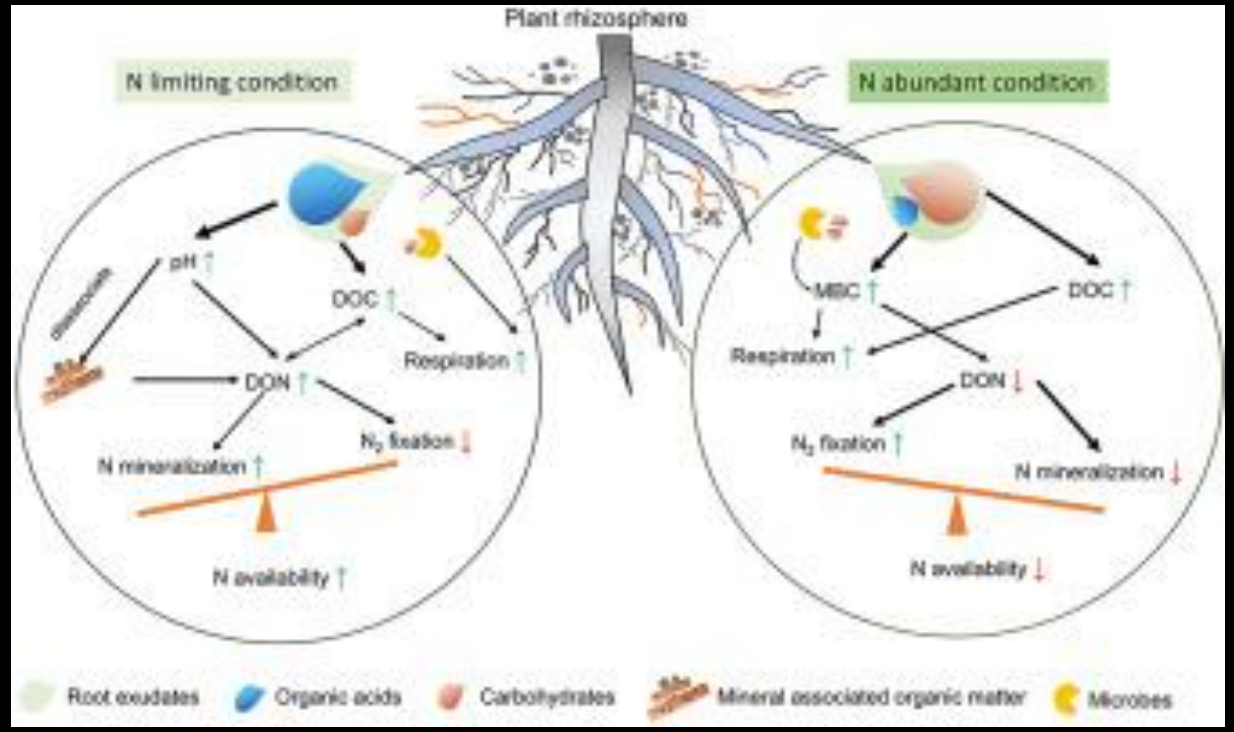

cover crops
enhance mycorrhizal numbers
add N (legume)
suppress weeds
suppress nematodes
increase infiltration of water
add organic matter
reduce erosion
increase soil aggregation
decrease nutrient loss
attract beneficial insects
decrease soil compaction

Mycorrhiza Fungi



Plants can change the structure of their roots to take advantage of areas with higher nutrient availability. For example, lupin plants develop cluster roots to increase their uptake of phosphorus.

When a plant has active, living roots in the soil, the overall biological activity within that soil ecosystem also increases, primarily due to the release of exudates from the roots which act as a food source for soil microbes, thus enhancing microbial diversity and function within the soil environment.



Plants can change the chemical availability of nutrients in the rhizosphere by releasing organic acids, enzymes, and ions. They can also increase the number of transporters and channels in their cell membranes to improve nutrient uptake.

Importance of Residue

Cuts Erosion and Acts as Insolation

Cropping Rotation

0N is No Nitrogen

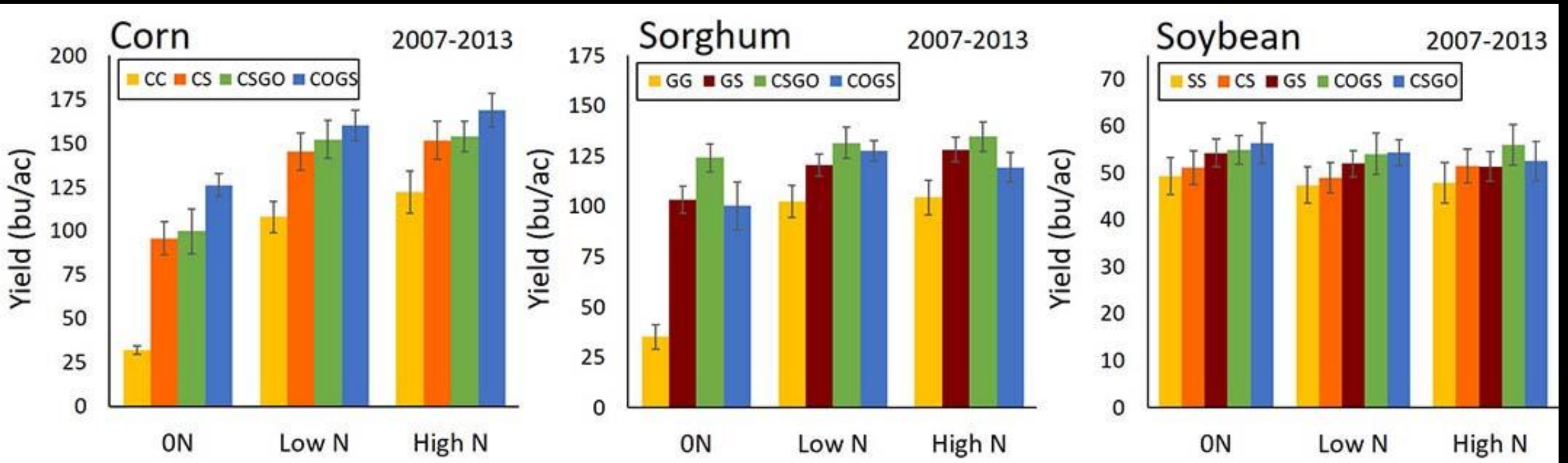


Figure 1. Increasing crop rotation complexity significantly increased corn and grain sorghum yields at all N levels compared to continuous cropping. Soybean yield did not respond to N fertilizer, but tended to increase slightly with crop rotation complexity.

Livestock Integration

Does Grazing Cause Compaction

Study by University of Nebraska

Cover crop grazing had no impact on soil compaction, wind or water erosion potential (expressed as wet and dry aggregate stability), water infiltration, water retention, organic matter, particulate organic matter (fraction of organic matter readily accessible to soil microbes), or microbial biomass compared to the non-grazed cover crop. These findings strongly suggest that cover crop grazing does not damage soils.

Oct. 9th Sown Cover Crop

You Can Graze Cover Crops Through the Snow

Large Ruminant Animal's Microbiome

There are approximately **7,000** bacteria species and **1,500** single-celled organism species in the rumen. Rumen Protozoa are more present when animals are fed high-grain diets, and rumen fungi is more common when fed a higher grass diet. Approximately 10 percent of the total rumen microbiome is fungal at any given time.

Fungal to Bacterial
Near 1:1

The Value of Cow Pats

Cow pats are about 3% Nitrogen, 2% Phosphorus, and 1% Potassium

Properly Grazed Cattle can Cycle about 100-300lbs of N, 60-200lbs of Phosphorus, and 30-150lbs of Potash

That's enough nutrients to have a pretty decent Corn Crop

$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

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

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

Account No.:	106	Name:	MACAULEY KINCAID	Grower:	KINCAID
Invoice No.:		Company:		Field ID:	-
Date Recd:	6/16/2020	Address:	17534 BASELINE BLVD	Sample ID 1:	-
Date Repd:	6/16/2020	City, State, ZIP:	JASPER, MO 64755	Sample ID 2:	-
				Sample Depth:	0-8

HANEY SOIL HEALTH ANALYSIS

	Nitrogen									Phosphorus					
	H3A Extract			H2O Extract						H3A Extract					
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
2	7.3	1.7	9.0	14.3	5.3	0.59	5.3	0.0	34.2	41.4	38.6	2.9	2.9	0.0	95.3
Rank															

	Other Soil Measures					Fertility									
						H3A Extract									
Lab #	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
2	7.0	-	0.30	NONE	1.6	75	641	108	15	3.16	124.3	286	0.71	175	2.54
Rank															

	Soil Health						Nitrogen Comparison				Reviewer Comments
		H2O Extract					Traditional N	Haney N	Differ. N	Savings N	
Lab #	Soil Resp. ppm CO2-C	Org. C ppm C	MAC %	C:N	SHC	Cover Crop Suggestion	lbs/A	lbs/A	lbs/A	$/A	
2	27.0	66	41.0	12.47	4.54		17.6	34.2	16.6	10.64	
Rank											

	Intended		N Credits, lbs/A			Fertility Recommendations, lbs of Required Nutrients per Acre									
Lab #	Crop	Yield Goal	Past Crop	Subsoil	Haney	N	P2O5	K2O	S	Zn	Mg	Fe	Mn	Cu	Lime T/A

Reviewed By: Lance Gunderson
Date: 12/10/2024

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

Account No.:	985
Invoice No.:	
Date Recd:	5/31/2024
Date Repd:	6/4/2024

Name:	REGENIFIED LLC
Company:	
Address:	1908 SPRING DR NW
City, State, ZIP:	FORT PAYNE, AL 35968

Grower:	KINCAID
Field ID:	DANA 90A
Sample ID 1:	8
Sample ID 2:	-
Sample Depth:	0-6

HANEY SOIL HEALTH ANALYSIS

	Nitrogen									Phosphorus					
	H3A Extract			H2O Extract						H3A Extract					
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
29204	44.0	7.5	51.5	65.2	16.3	0.33	16.3	0.0	122.0	29.3	24.4	4.9	4.9	0.0	67.4
Rank															

	Other Soil Measures					Fertility									
						H3A Extract									
Lab #	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
29204	5.4	6.4	0.18	NONE	3.8	35	362	69	7	3.36	70.9	86	0.31	101	5.14
Rank															

	Soil Health						Nitrogen Comparison				Reviewer Comments
		H2O Extract					Traditional	Haney	Differ.	Savings	
Lab #	Soil Resp. ppm CO2-C	Org. C ppm C	MAC %	C:N	SHC	Cover Crop Suggestion	N lbs/A	N lbs/A	N lbs/A	N $/A	
29204	214.9	179	120.4	10.95	20.55	10% Legume 90% Grass	79.2	122.0	42.8	44.55	
Rank											

	Intended		N Credits, lbs/A			Fertility Recommendations, lbs of Required Nutrients per Acre									
Lab #	Crop	Yield Goal	Past Crop	Subsoil	Haney	N	P2O5	K2O	S	Zn	Mg	Fe	Mn	Cu	Lime T/A

Reviewed By: Lance Gunderson
Date: 6/4/2024

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

Soils Are Less Than 5ft Apart

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