Sequestering Carbon in Corn & Soybean Production System

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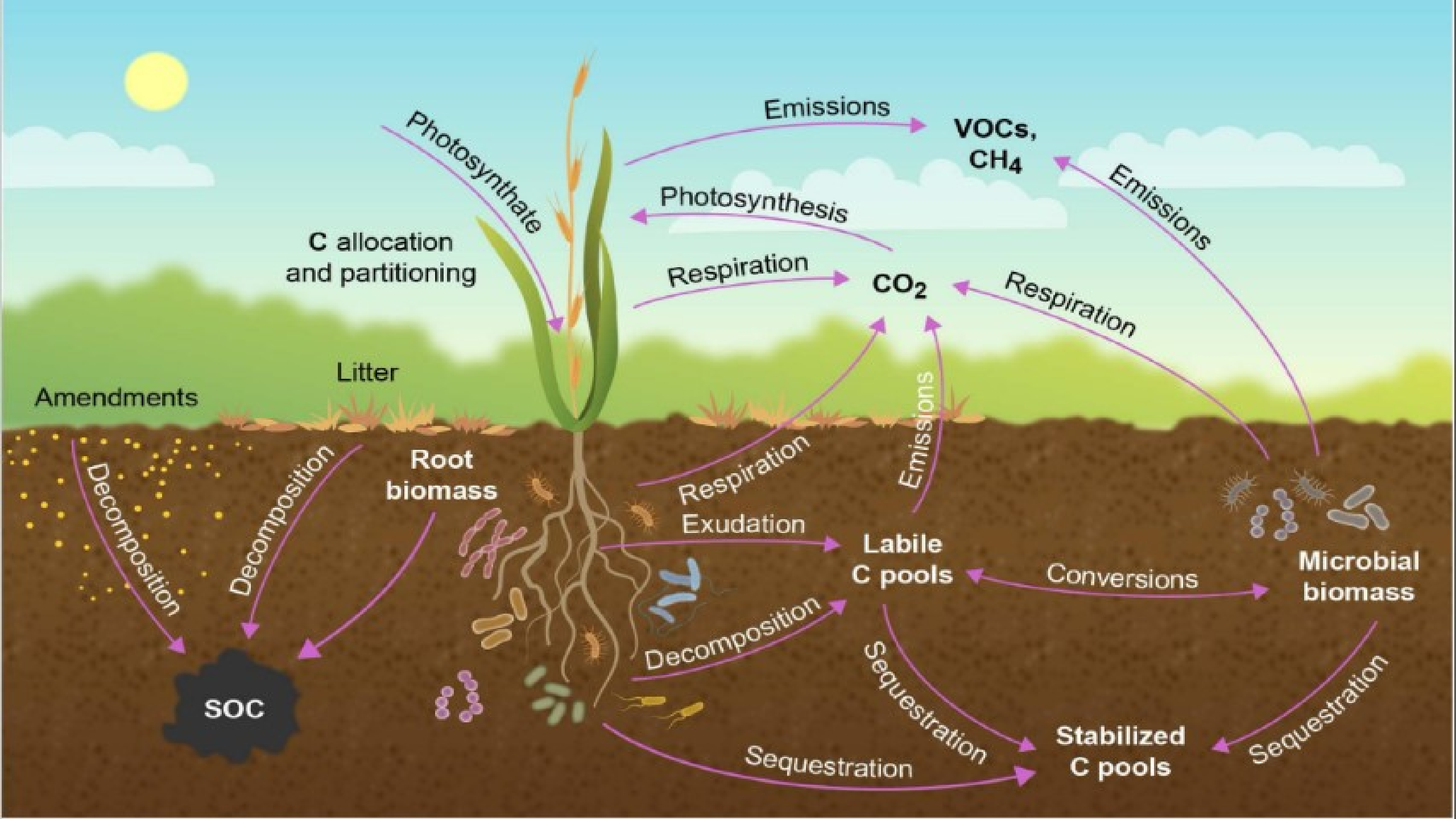

Photosynthate
Emissions
VOCs, CH_4
Emissions
Photosynthesis
C allocation and partitioning
Respiration
CO_2
Respiration
Litter
Amendments
Emissions
Respiration
Root biomass
Decomposition
Decomposition
Exudation
Labile C pools
Conversions
Microbial biomass
Decomposition
Sequestration
Sequestration
SOC
Sequestration
Stabilized C pools

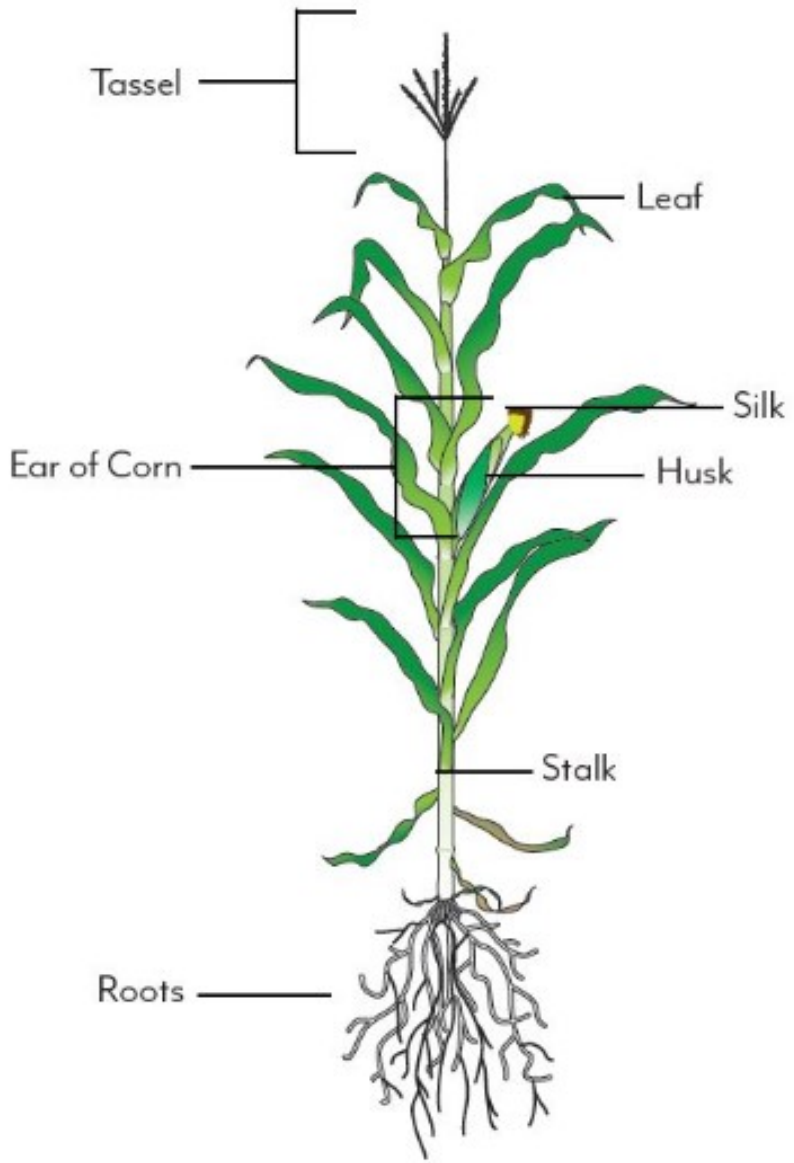

6
C
CARBON
12.011


2.5 km
N

Carbon Credit Pricing by Type

Project Type:	Volume Sold (MtCO2e):	Average Price:	Price Range:
Wind	12.8	$1.9	$0.3 - $18
REDD+	11	$3.3	$0.8 - $20+
Landfill methane	7.9	$2	$0.2 - $19
Tree planting	3	$7.5	$2.2 - $20+
Clean cookstoves	3	$4.9	$2 - $20+
Run-of-river hydro	1.5	$1.4	$0.2 - $8
Water/purification	1.2	$3.8	$1.7 - $9
Improved forest management	0.8	$9.6	$2 - $17.5
Biomass/biochar	0.7	$3	$0.9 - $20+
Energy efficiency - industrial-focused	0.7	$4.1	$0.1 - $20
Biogas	0.6	$5.9	$1 - $20+
Energy efficiency - community-focused	0.6	$9.4	$3.3 - $20+
Transportation	0.5	$2.9	$2.2 - $6.8
Fuel switching	0.5	$11.4	$3.5 - $20+
Solar	0.3	$4.1	$1 - $9.8
Livestock methane	0.2	$7	$4 - $20+
Geothermal	0.1	$4	$2.5 - $8
Agro-forestry	0.1	$9.9	$9 - $11

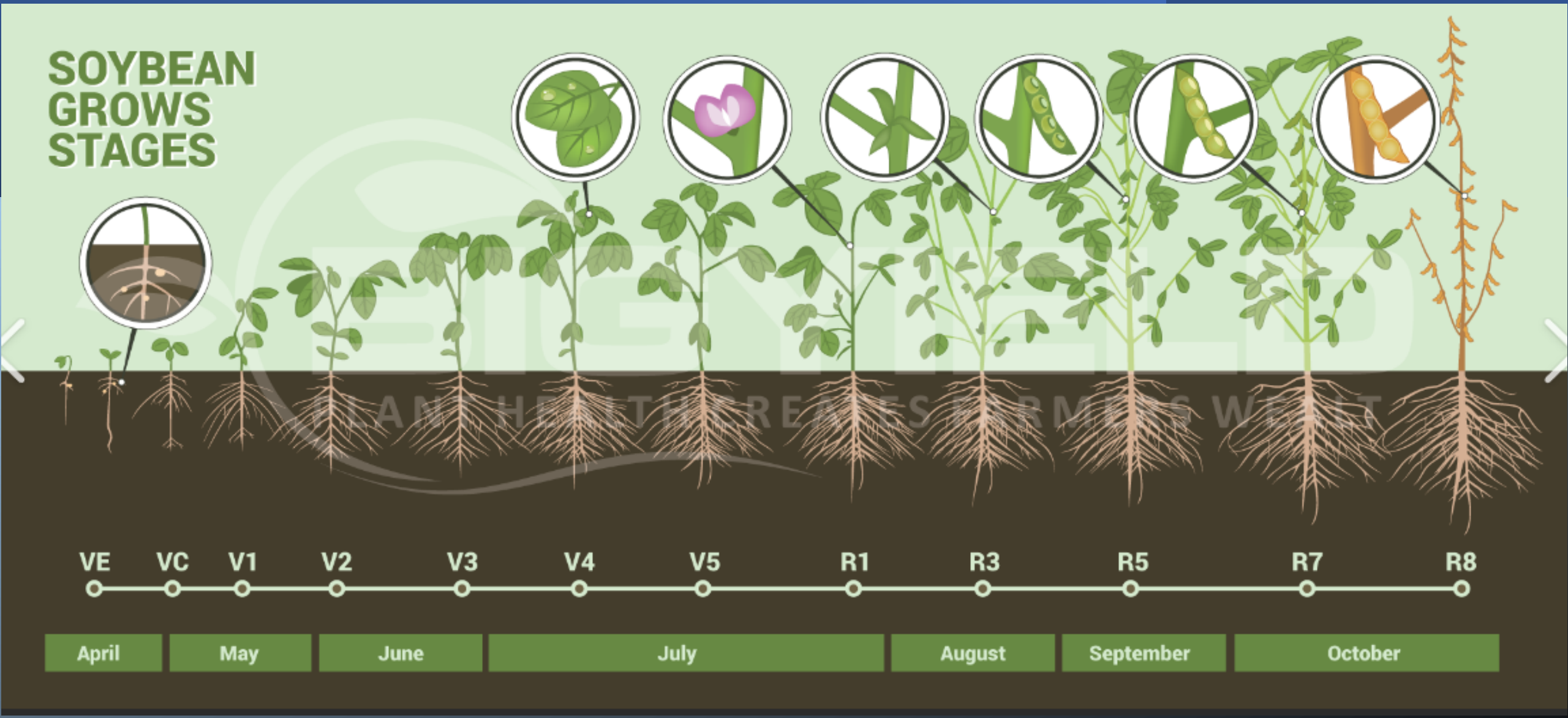

COULD CARBON CREDITS
BE WORTH $50 PER ACRE?



3.6 ton Carbon

3.6 ton Carbon


3.6 ton Carbon


SOYBEAN GROWS STAGES
VE
VC
V1
V2
V3
V4
V5
R1
R3
R5
R7
R8
April
May
June
July
August
September
October


8 ton Carbon

Carbon Revenue

- James Hansen, retired NASA Scientist
  - Proposed a $15 tax for carbon emissions
  - Proposed a $15 tax credit for carbon sequestered
- Corn carbon credit of $150 per acre
- Soybean carbon credit of $120 per acre
- Cover Crops ???

Cover Crop Systems

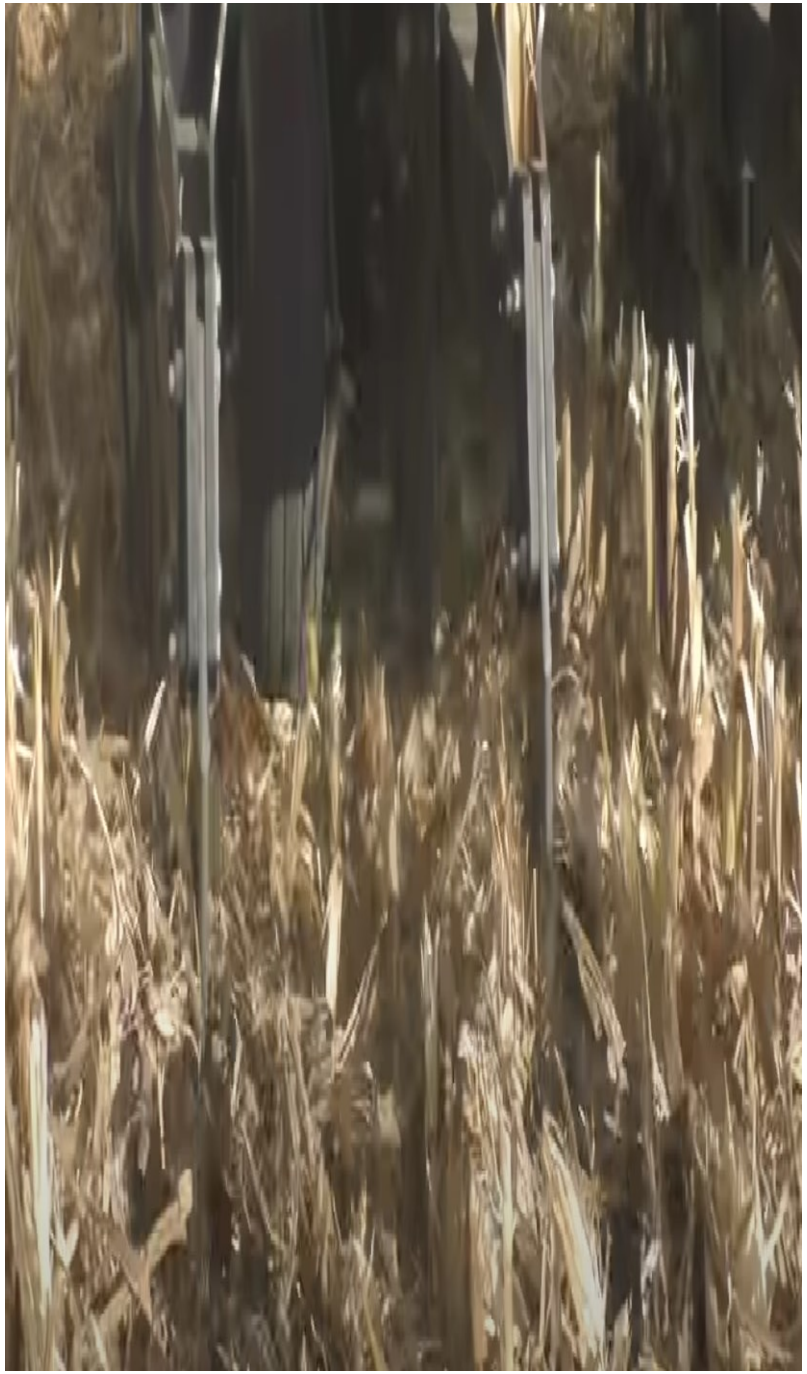

SEEDING RATES
BOB OATS
80LB/A
PLANTING DATE: 10/23/22


SEEDING RATES
TRITICALE
60LB/A
PLANTING DATE: 10/23/22

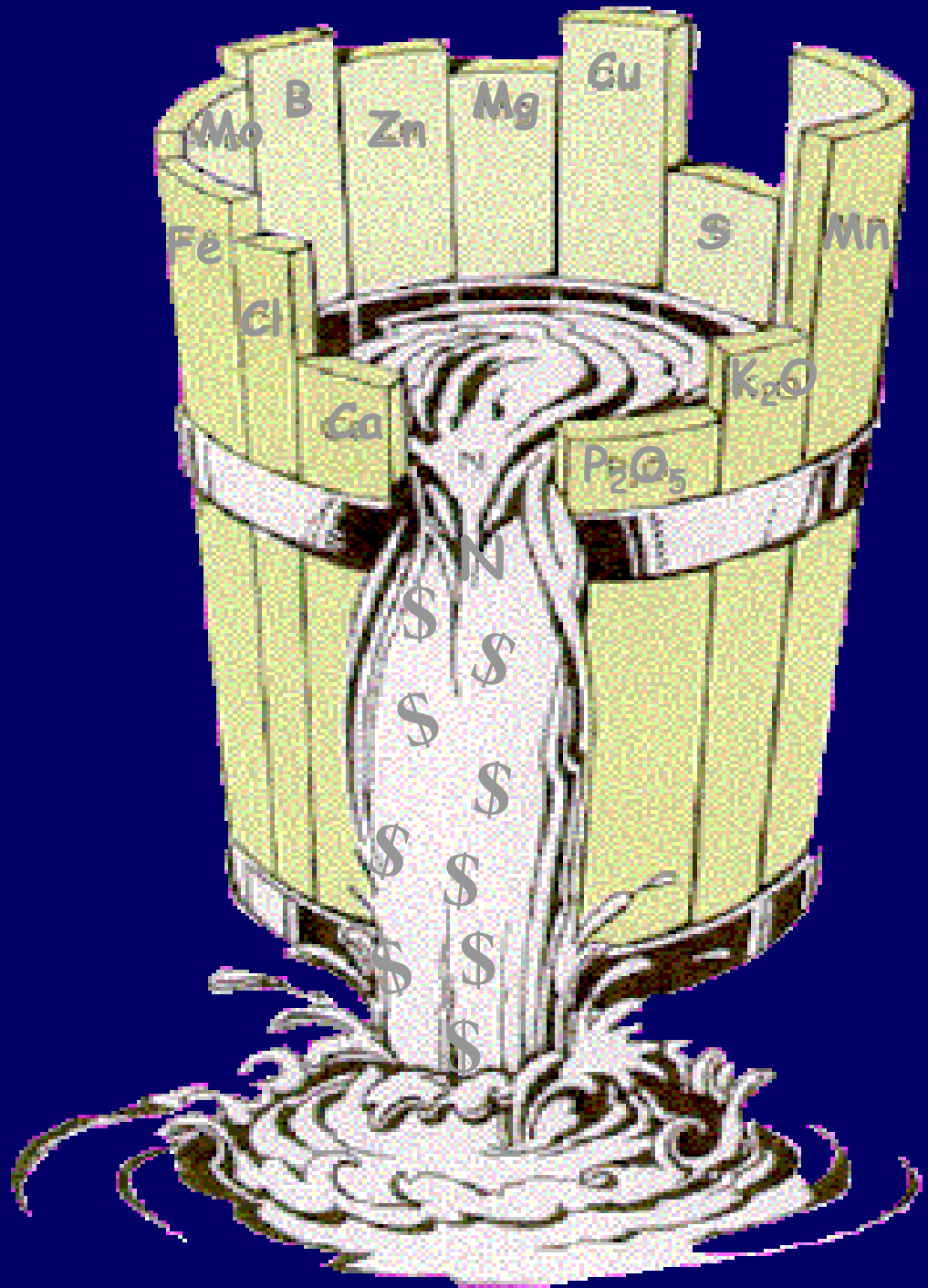

SEEDING RATES
RYE
40LB/A
PLANTING DATE: 10/23/22


SEEDING RATES
BLACK OATS
40LB/A
PLANTING DATE: 10/23/22

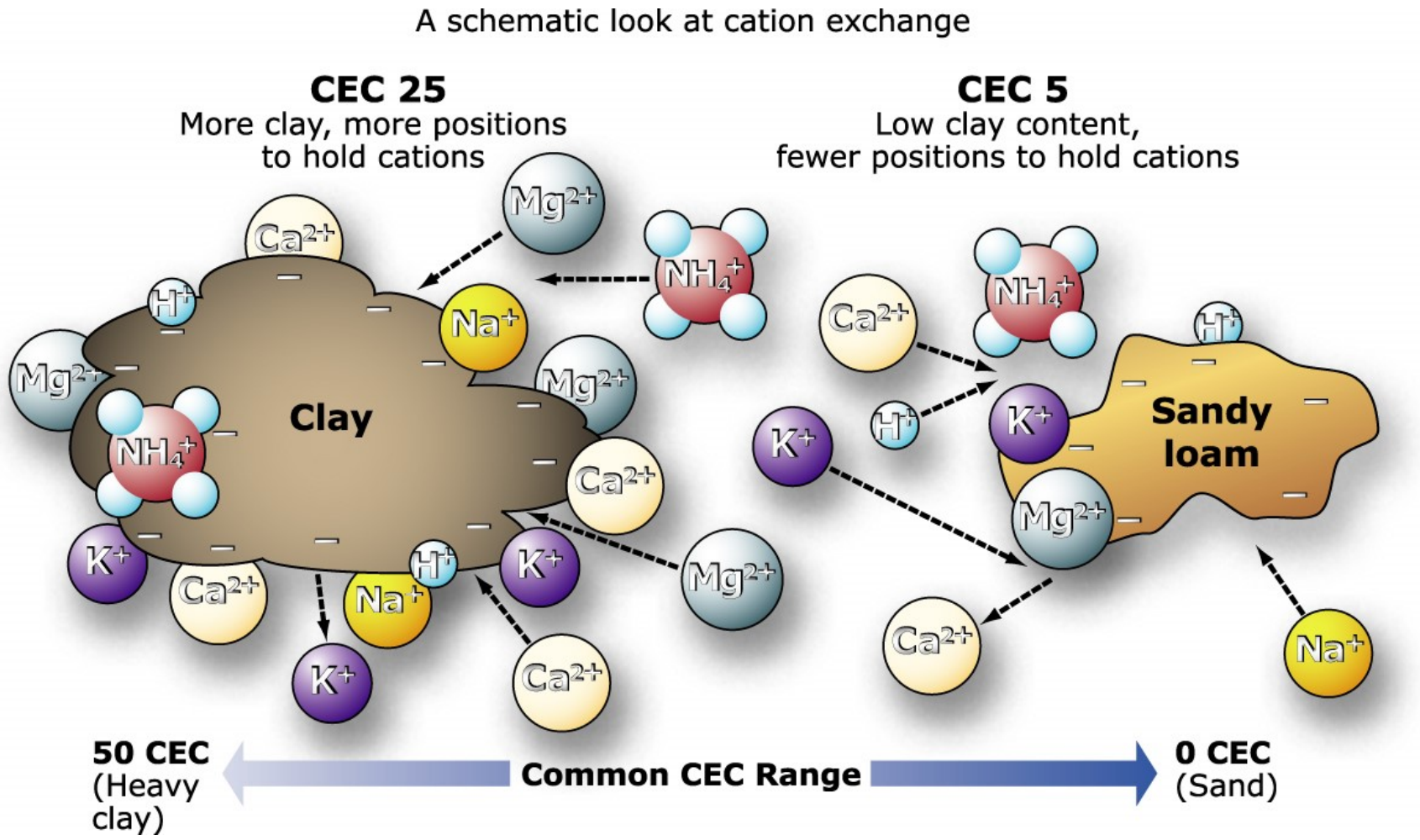

Primary Vertical Tillage Done Right



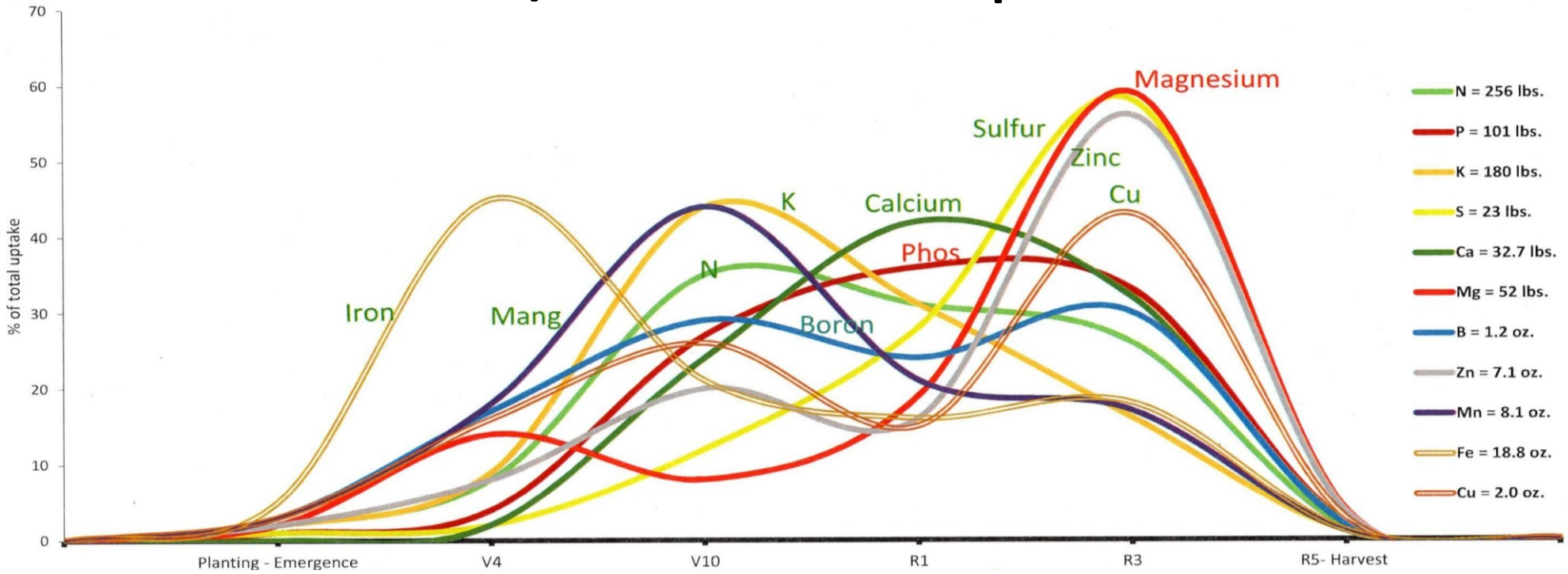



Mo
B
Zn
Mg
Cu
Fe
Cl
S
Mn
Ca
K_2O
P_2O_5
N
$

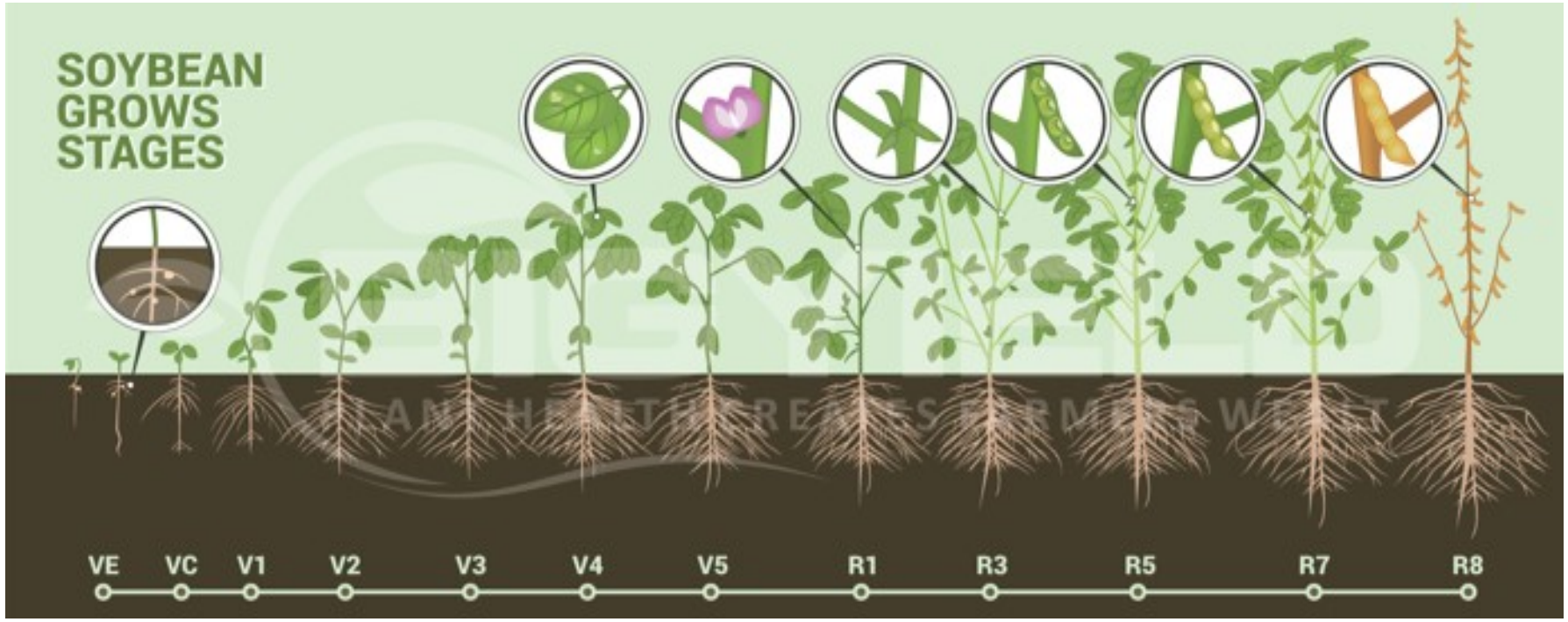
CATION EXCHANCE CAPACITY



230 bu/ac corn nutrient uptake



Soybeans



	VE	V2	V4	R1	R2	R3	R4	R5	R6	R7	R8
DAE	10 (7-21)	30 (30-35)	35 (35-40)	45 (40-55)	50 (45-55)	60 (50-70)	70 (65-75)	80 (85-95)	90 (85-95)	110 (105-115)	120 (105-125)
	Vegetative Stage			Early Reproductive		Mid Reproductive		Late Reproductive		Maturity	
DM	gs	2	2	16	10	18	7	13	24	7	1
H_2O		3	3	12	10	12	17	18	16	7	2
N	gs	5	5	12	13	13	10	12	25	5	0
P	gs	3	2	18	12	15	10	10	25	5	0
K	gs	3	2	21	12	19	11	12	18	2	0
Ca	gs	3	3	15	8	11	15	13	26	5	1
Mg	gs	2	4	17	10	9	10	10	20	10	8
S	gs	3	3	11	15	20	12	10	18	8	4
B	gs	3	2	16	10	12	12	9	24	11	1
Cu	gs	4	2	17	16	11	8	7	16	11	8
Fe	gs	7	10	21	20	12	1	-3	15	15	2
Mn	gs	5	2	13	13	12	15	10	18	7	5
Zn	gs	4	2	10	14	10	10	5	25	20	-2