Understanding Ag

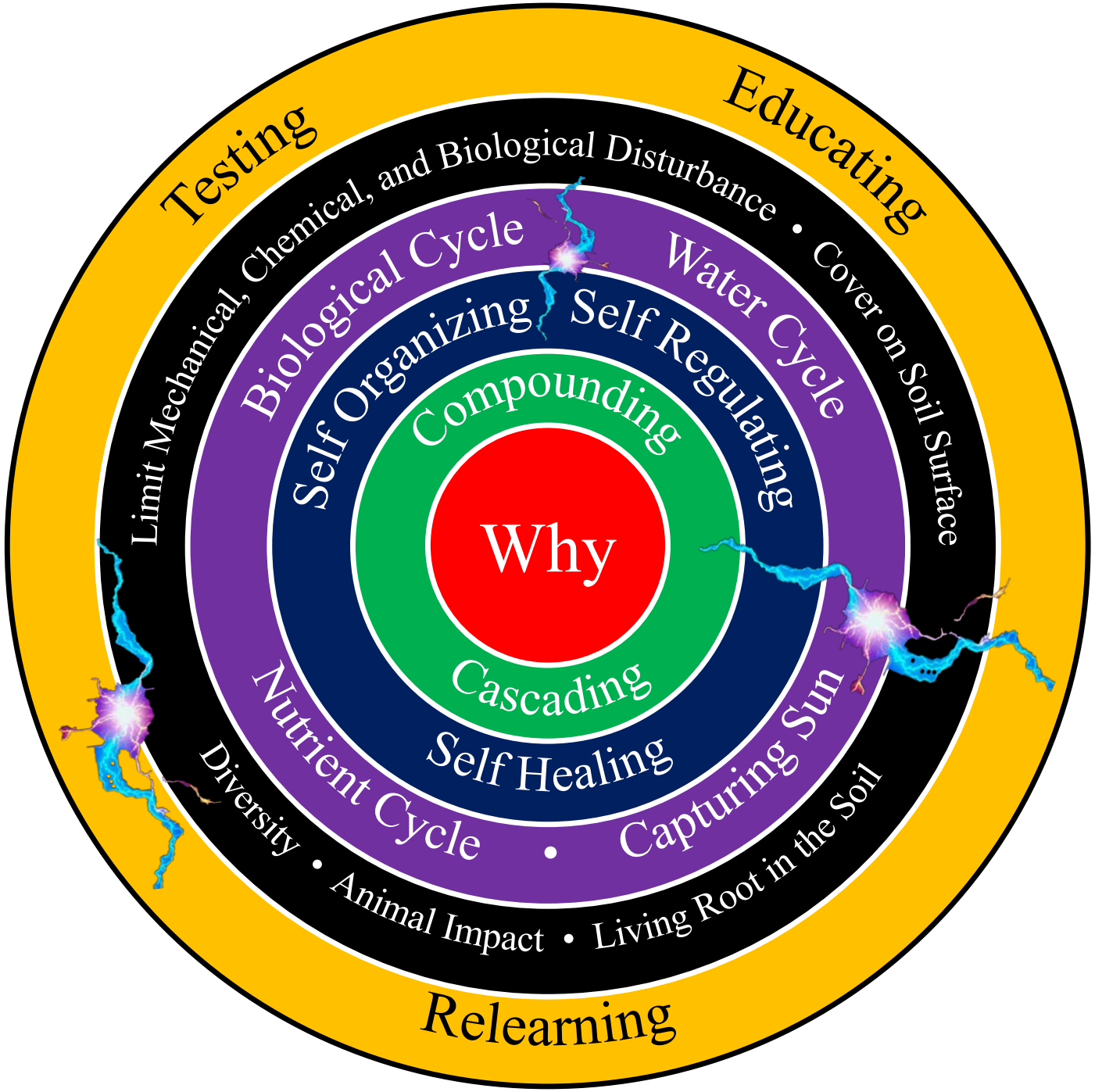
Taking the Next Step

By: Shane New

THERE ARE ONLY 2 THINGS WE CAN CONTROL

1. HOW WE THINK

2. HOW WE PERCEIVE


Testing
Educating
Relearning
Limit Mechanical, Chemical, and Biological Disturbance • Cover on Soil Surface
Diversity • Animal Impact • Living Root in the Soil
Biological Cycle
Water Cycle
Nutrient Cycle • Capturing Sun
Self Organizing
Self Regulating
Self Healing
Compounding
Cascading
Why

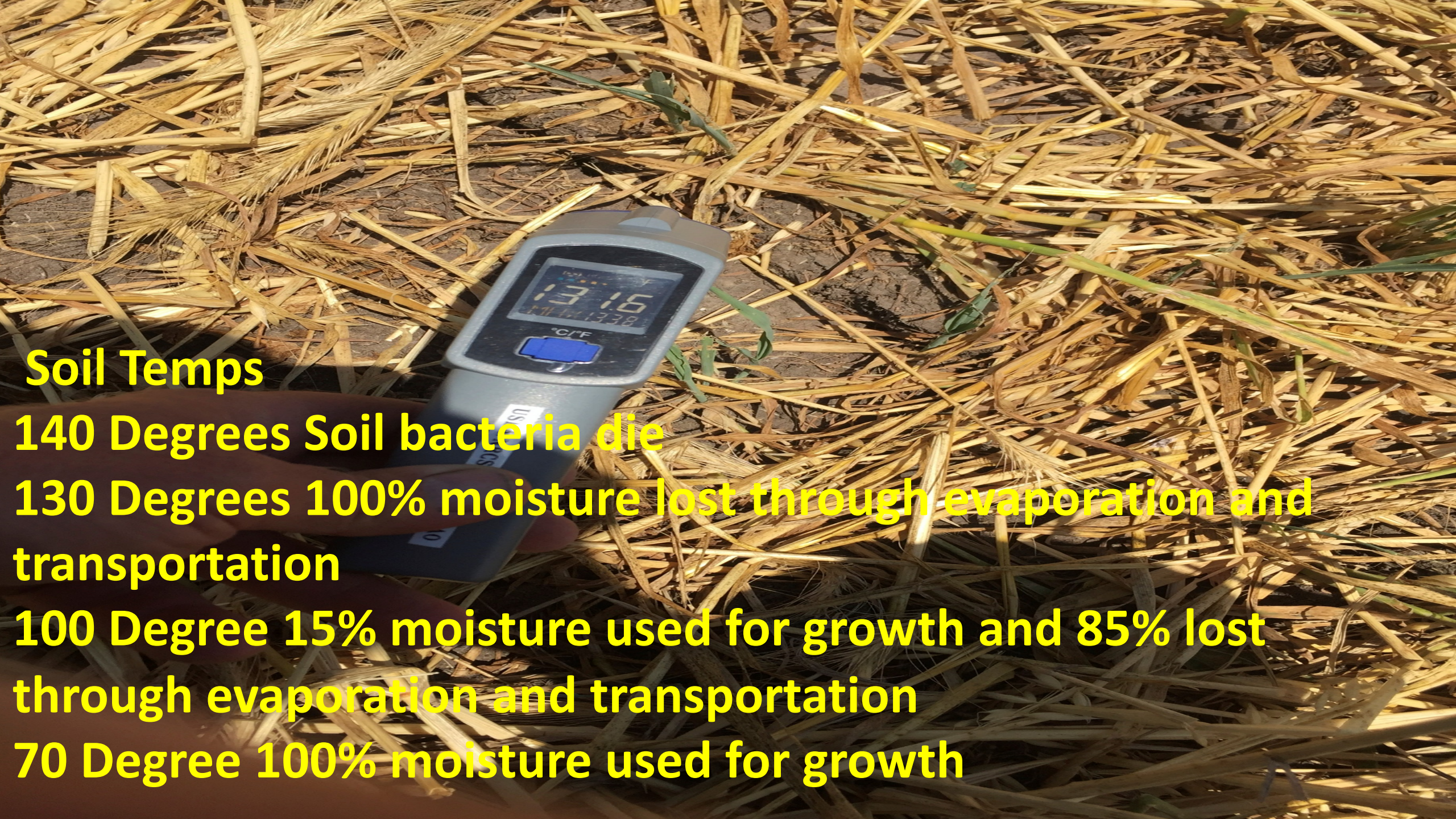

Mother Nature Does No Mechanical Chemical or Biological Disturbance


Tampas, CO June 12, 2014


April 14, 1935


12,000 Lbs. annual soil loss per acre United States average
Source NRCS

Build Cover on the Soil Surface



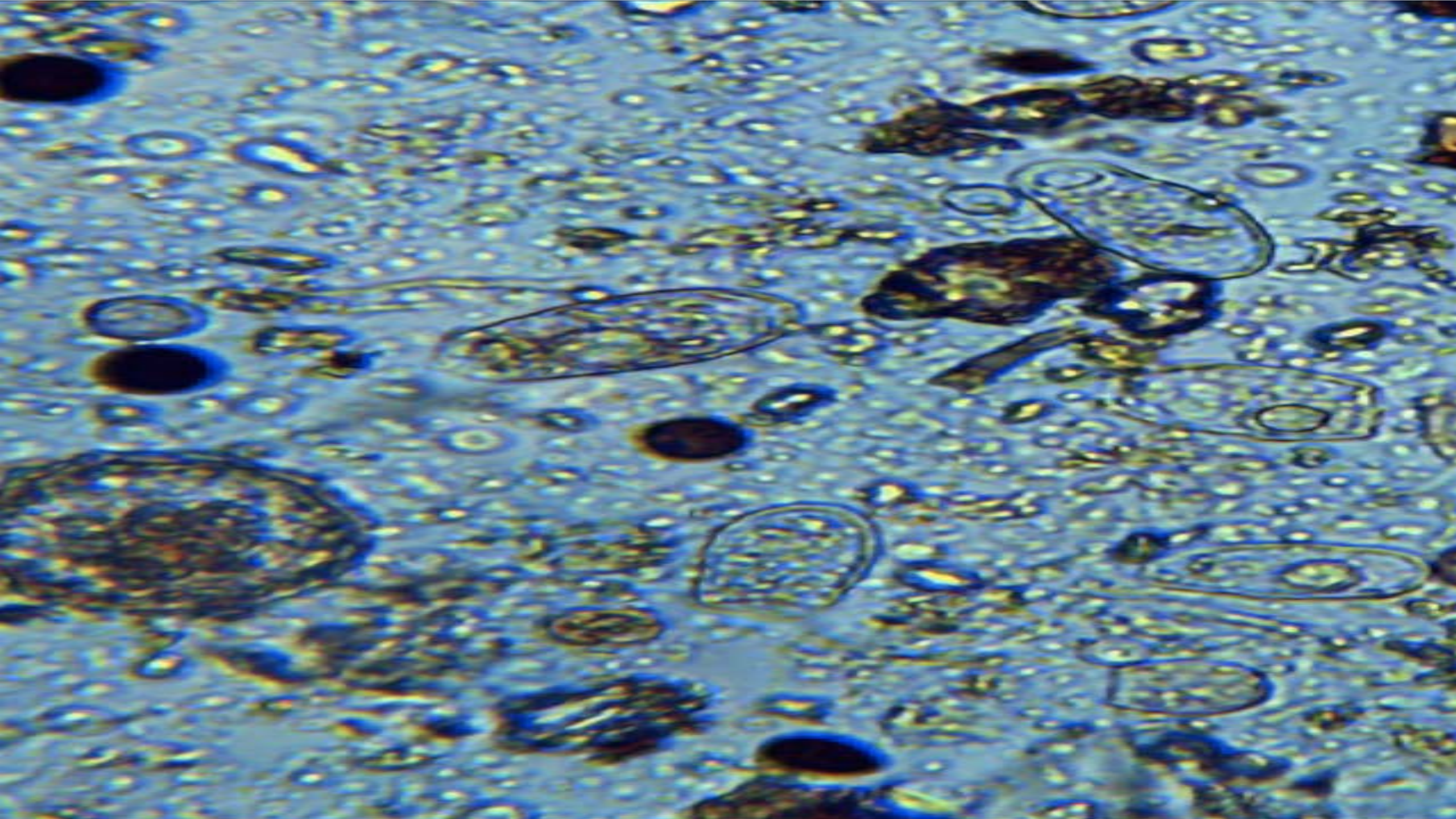
Soil Temps

140 Degrees Soil bacteria die

130 Degrees 100% moisture lost through evaporation and transportation

100 Degree 15% moisture used for growth and 85% lost through evaporation and transportation

70 Degree 100% moisture used for growth

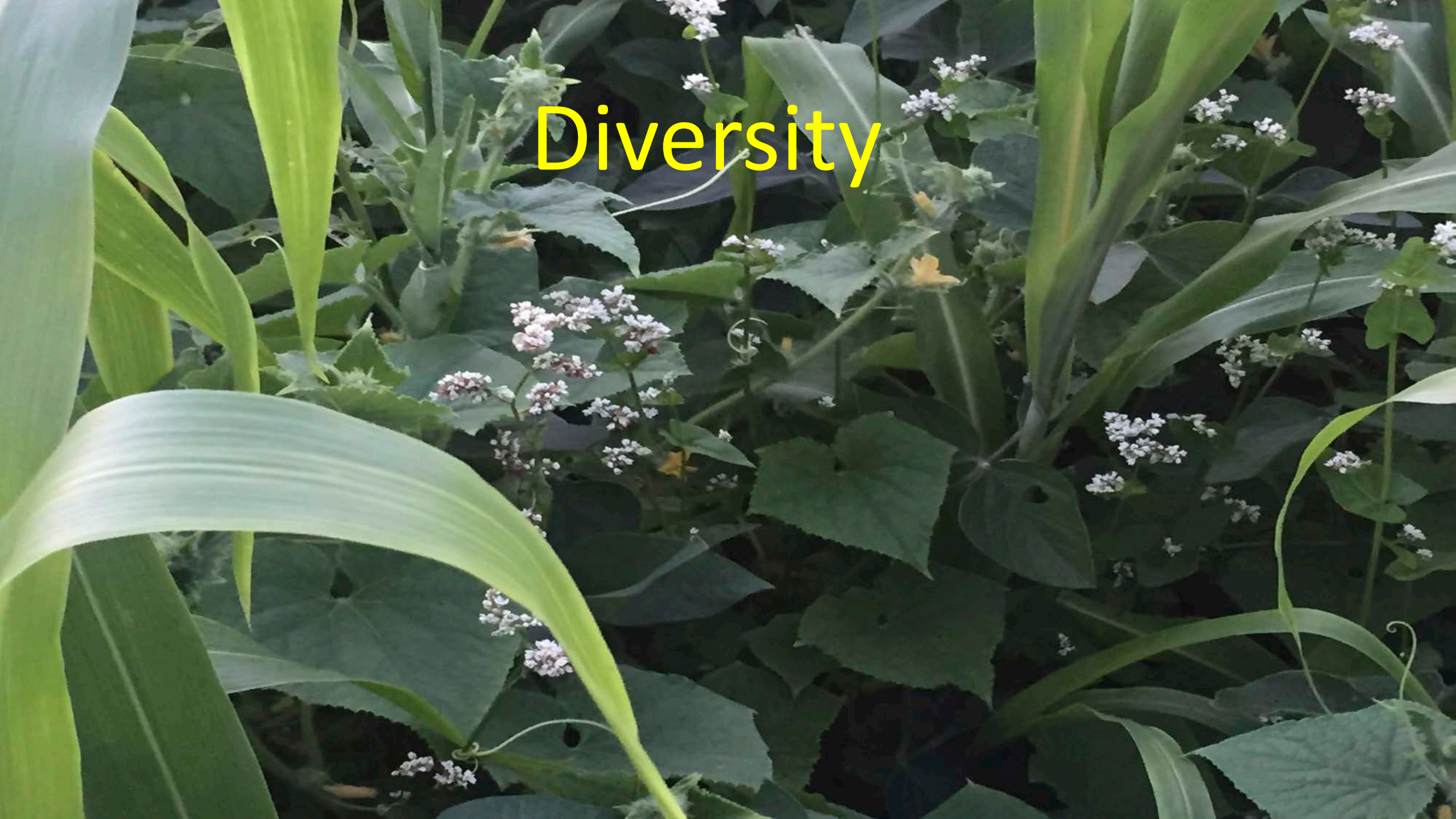


- Now the C:N ratio of the protozoa is 30:1 and the bacteria is 5:1

- So the protozoa eats all 6 bacteria and meets his C:N ratio. What's he doing with the excess N?

N N N N N

- Making it available to be utilized by the plant


Diversity

© A.

Man-Made Chemistry

Nature's Chemistry
ROOT EXDUATES

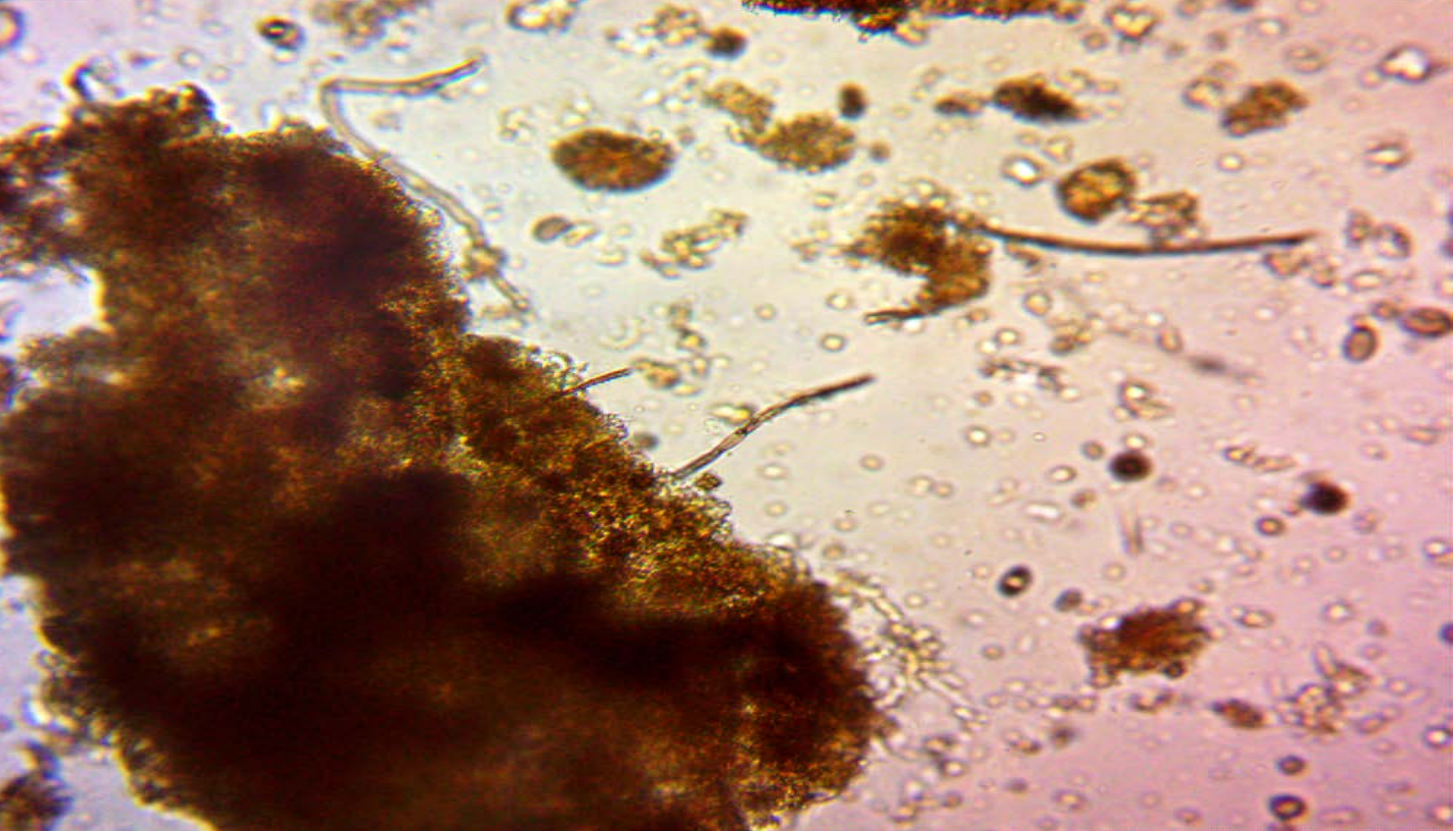
NH_4

NH_4F

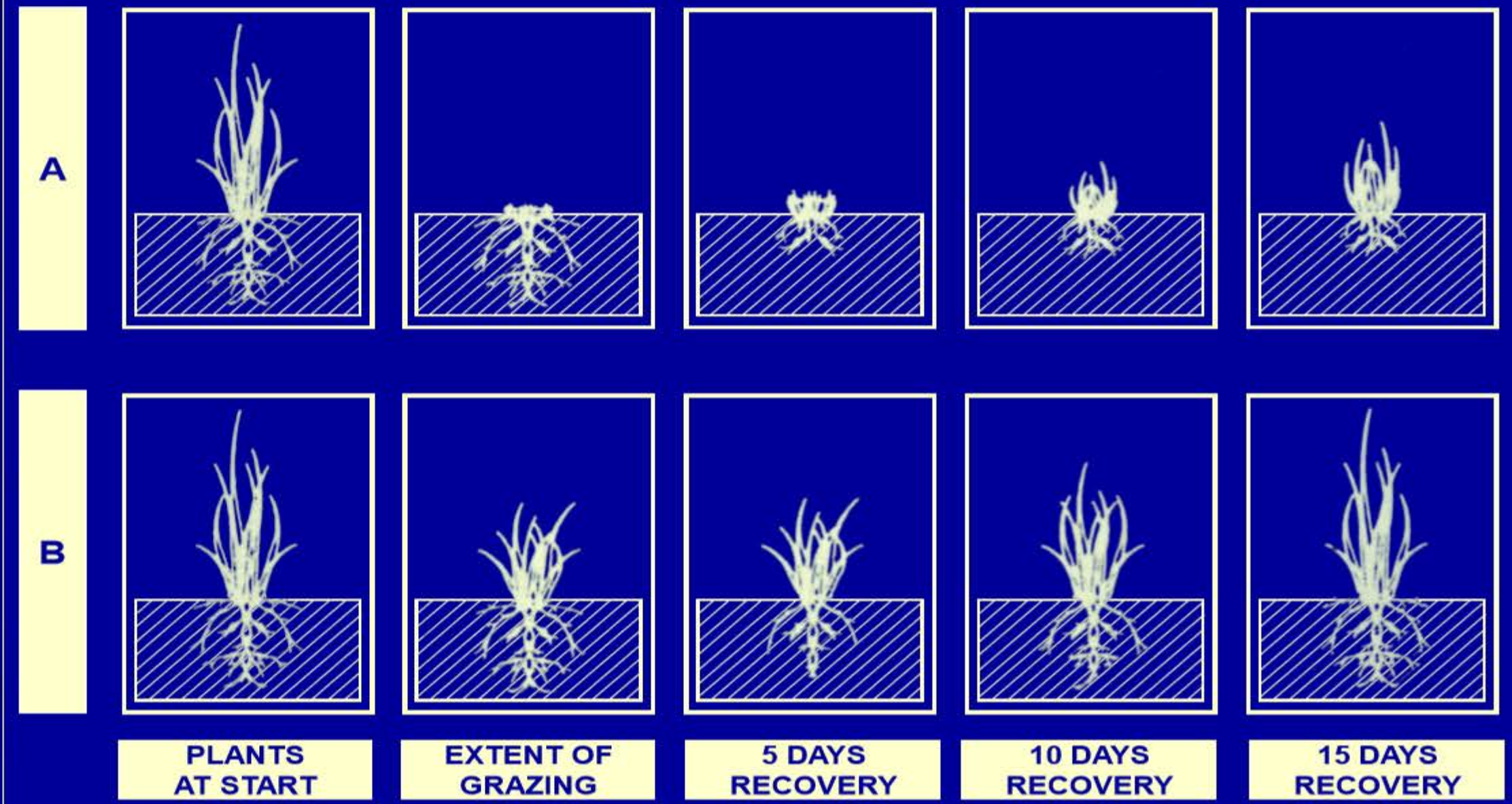
H_2SO_4

$NH_4CH_3CO_2$

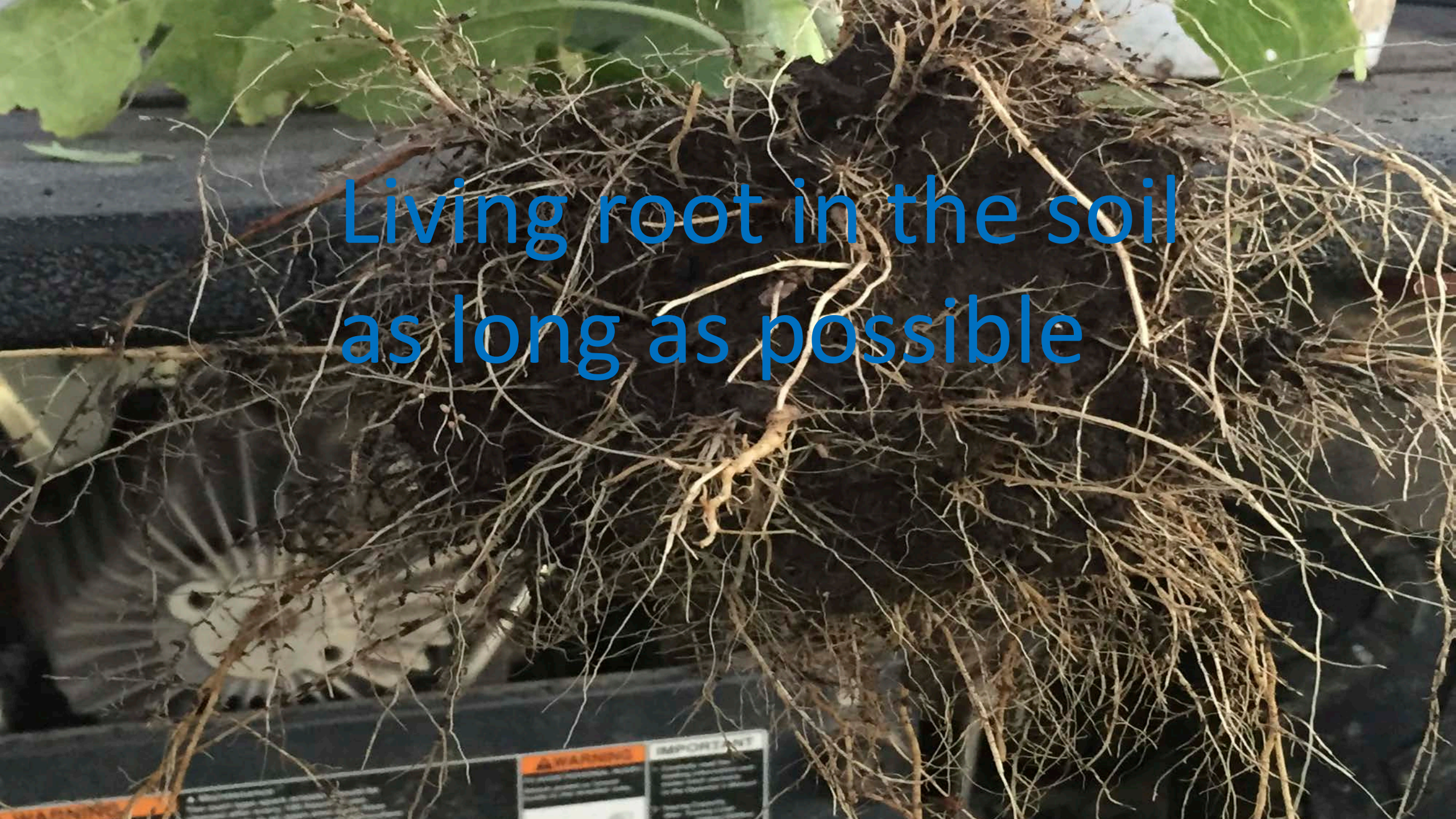
C_2H4O2



Animal Impact


A
B
PLANTS AT START
EXTENT OF GRAZING
5 DAYS RECOVERY
10 DAYS RECOVERY
15 DAYS RECOVERY

- Carbon is the Soil's currency
- There are only 2 things you can do with Carbon
- 1. Sequester back into the Soil
- 2. Oxidize back into the atmosphere

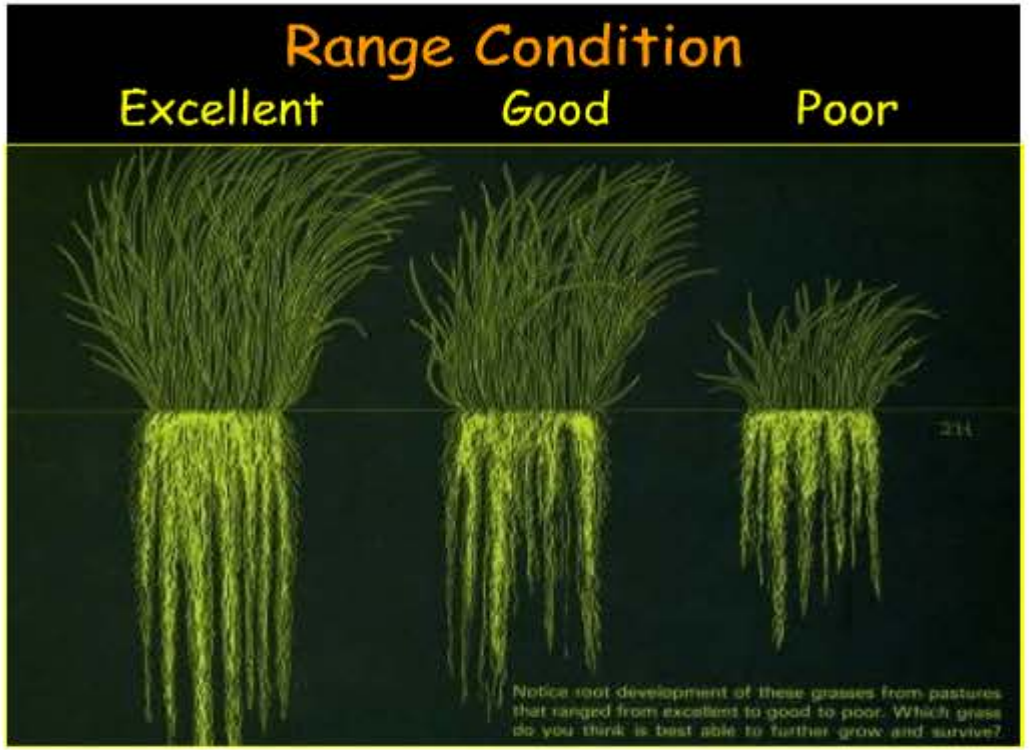

Living root in the soil
as long as possible

Freedom

- Contact: Shane New
- Cell Phone: 785-224-0042
- Follow us on Facebook: New Family Farms
- Email: newshane@rocketmail.com

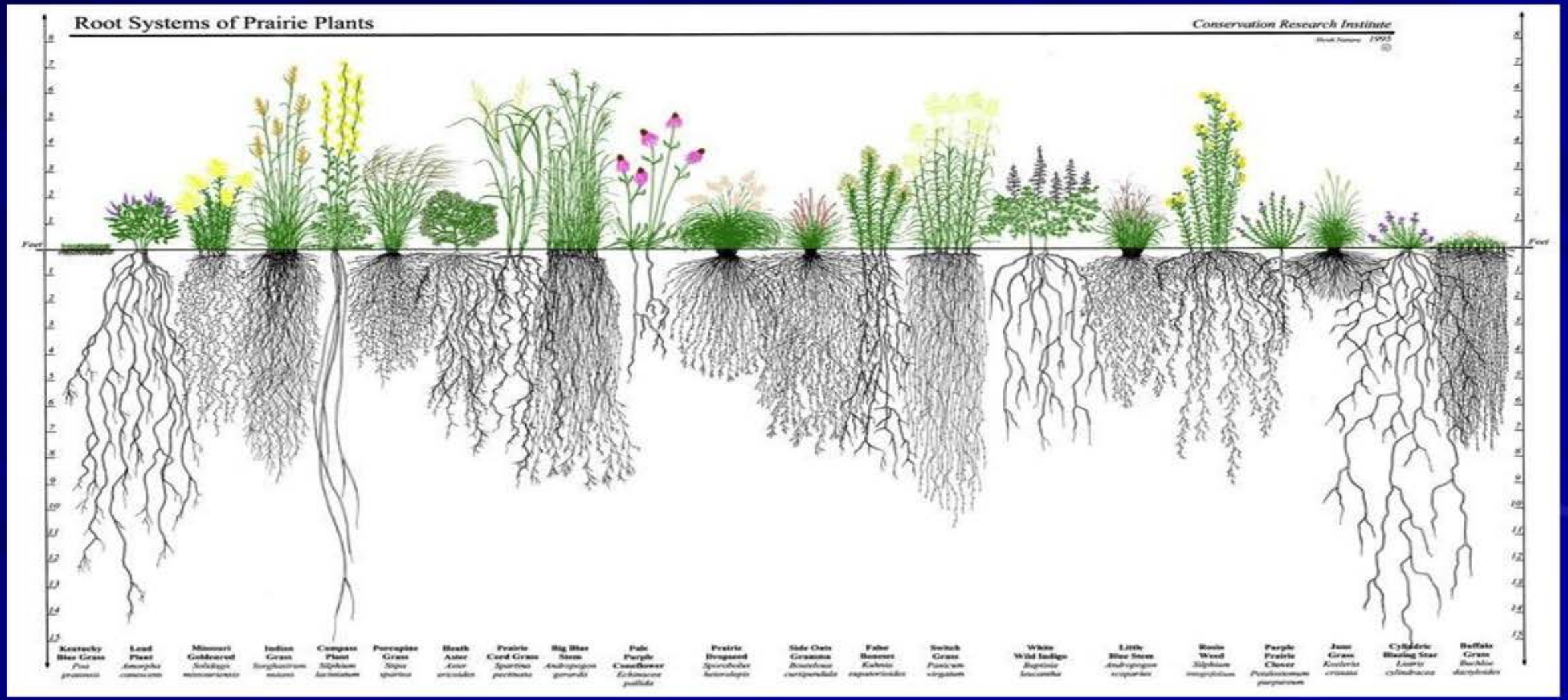
Decrease drought impacts

% Leaf Volume Removed	% Root Growth Stoppage
10%	0%
20%	0%
30%	0%
40%	0%
50%	2-4%
60%	50%
70%	78%
80%	100%
90%	100%



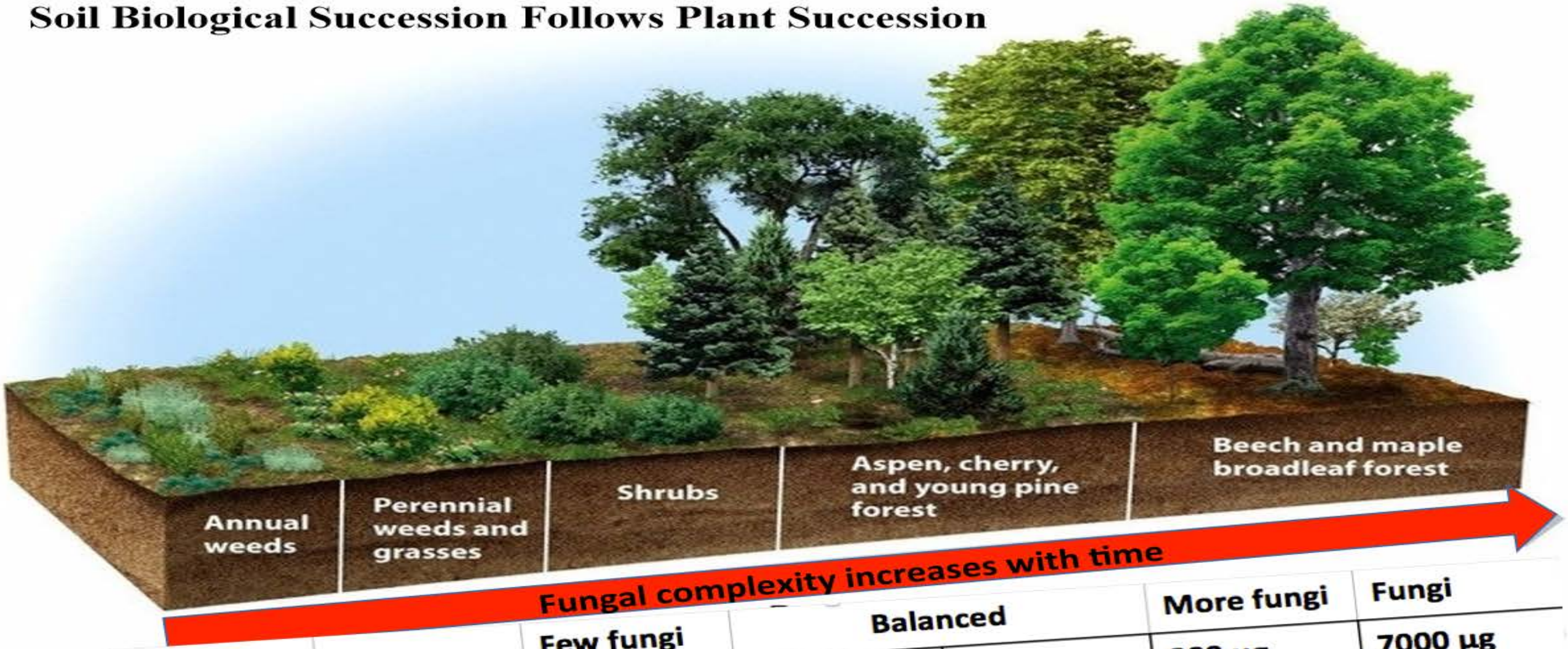
Courtesy: R. Teague, TAMU

Approximately 2/3 Of Your OM Increase Will Come From Roots!




H360
JOHN DEERE
6150M

Soil Biological Succession Follows Plant Succession



		Few fungi	Balanced		More fungi	Fungi
Bacteria						
Fungi	0 µg	10 µg	250 µg	600 µg	800 µg	7000 µg
Bacteria	10 µg	100 µg	500 µg	600 µg	500 µg	700 µg

Dr. Elaine Ingham

JOB 12: 7

But ask the beasts and they will teach you; the birds of heaven, and they will tell you or the bushes of the earth and they will teach you and the fish of the sea will declare to you

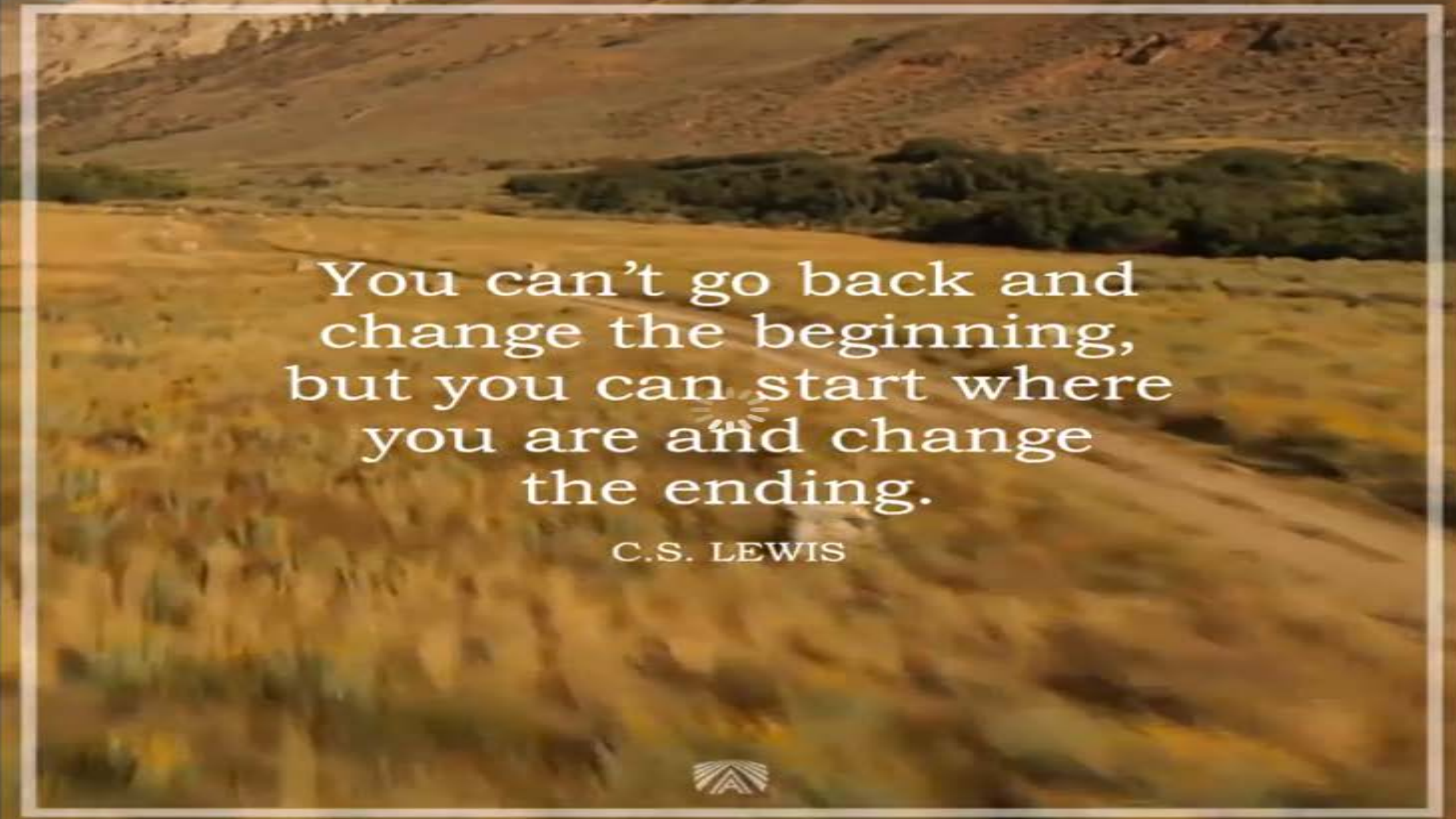
Regenerative Grazing Research Shows:

- Ecological function and profitability increase with increasing number of paddocks.
- Short periods of grazing with adequate recovery gave the greatest profit and ecological function.
- Adjusting grazing management with changing conditions increases ecological function and profitability.
- Fixed management protocols reduced benefits.
- Profitability decreases if recovery is too short or too long.
- Stocking rates can be increased without damaging ecological function as number of paddocks is increased

Teague et al. 2015. Journal of Environmental Management

This soil is naked, hungry, thirsty and running a fever!

Ray Archuleta 2007


You can't go back and
change the beginning,
but you can start where
you are and change
the ending.
C.S. LEWIS


WARNING
WARNING
IMPORTANT


Kubota


NEW


Shane

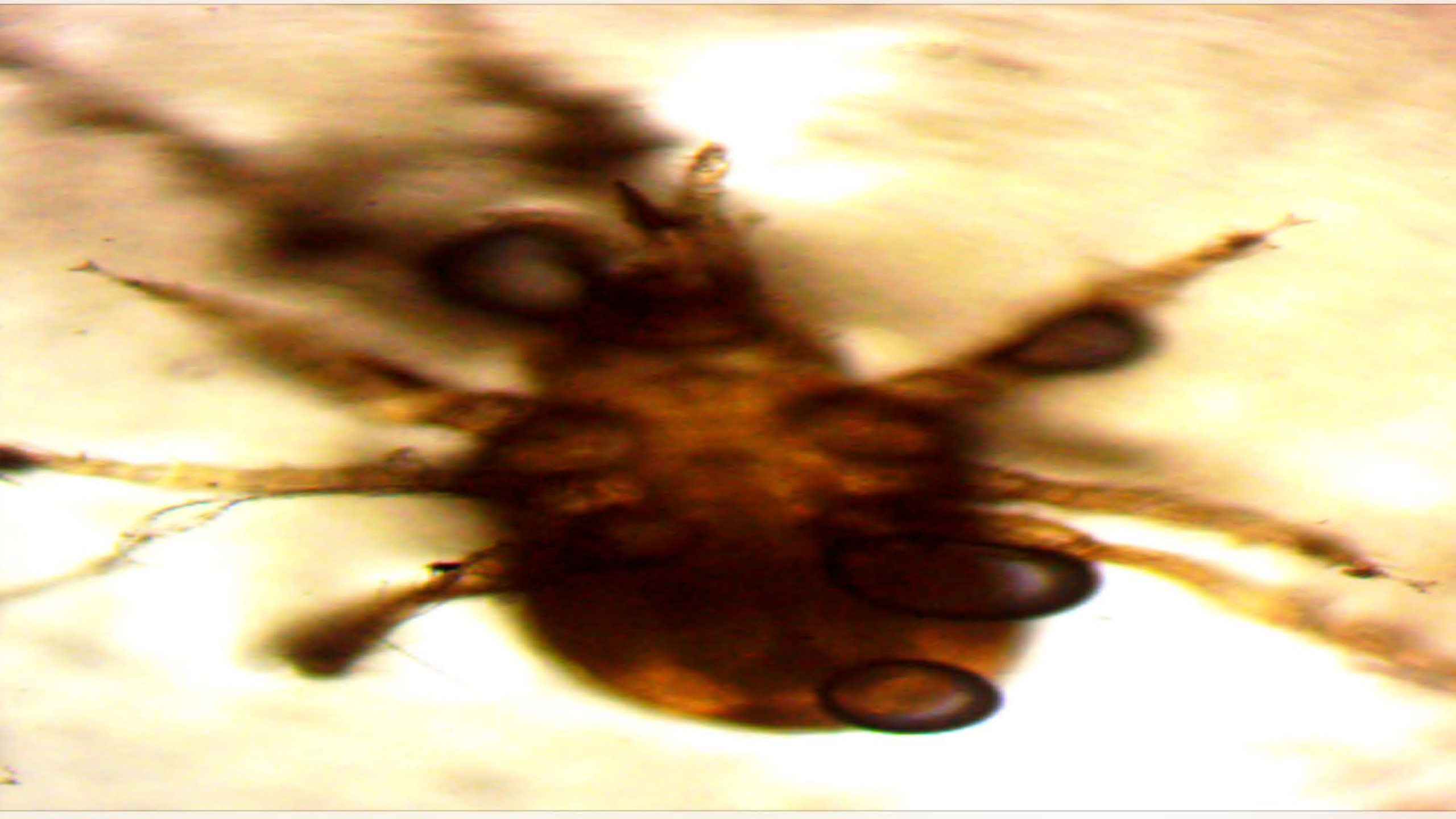
William Clark on July 4, 1804

- *"The Plains of this countrey are covered with a Leek Green Grass, well calculated for the sweetest and most norushing hay [7]—interspersed with Cops [copses] of trees, Spreding their lofty branchs over Pools Springs or Brooks of fine water. Groops of Shrubs covered with the most delicious froot is to be seen in every direction, and nature appears to have exerted herself to butify the Senery by the variety of flours (raiseing) Delicately and highly flavered raised above the Grass, which Strikes & profumes the Sensation, and amuses the mind throws it into Conjecterng the cause of So magnificent a Senerey [several words illegible, crossed out] in a Country thus Situated far removed from the Sivilised world to be enjoyed by nothing but the Buffalo Elk Deer & Bear in which it abounds & [page torn] Savage Indians."*

- Recorded in Doniphan County, KS (far northeast) from a point overlooking the Missouri near St Joseph, MO.

- https://lewisandclarkjournals.unl.edu/item/lc.jrn.1804-07-04

We are going to focus on the 5 principles



- We need to understand C:N ratios Think of bacteria as bags of nutrients C:N of 5:1 The protozoa has a C:N of 30:1 So the protozoa eats one bacteria
- Whats the protozoa C:N now 25:ok
- So what happens with the next 5 bacteria he eats? The excess N becomes soluable

Bio corn

WARD Laboratories, Inc.

Ag Testing - Consulting

2016 Certified by NFTA

Account No. : 17591

NIR Analysis Report

NEW, SHANE
11760 254TH RD
HOLTON KS 66436

Invoice No. : 1245894
Date Received : 10/06/2017
Date Reported : 10/09/2017
Lab Number : 9526

Results For : SHANE NEW
Sample ID :
Description : WHOLE CORN

	Analysis As Received	Analysis Dry Basis
Moisture, %	14.65	0.00
Dry Matter, %	85.35	100.00
PROTEIN		
Crude Protein, %	7.2	8.4
FIBERS		
Acid Detergent Fiber, %	3.4	4.0
Neutral Detergent Fiber, %	10.2	12.0
ENERGIES		
TDN Est., %	73.5	86.2
Net Energy Lact, MCal/lb	0.7637	0.8947
Net Energy Maint, MCal/lb	0.8243	0.9657
Net Energy Gain, MCal/lb	0.5639	0.6606
Metabolizable Energy MCal/lb	1.2075	1.4147
QUALITY VALUE		
Relative Feed Value		665
MINERALS		
*Calcium, % Ca	0.04	0.05
*Phosphorus, % P	0.24	0.28
*Potassium, % K	0.32	0.38
*Magnesium, % Mg	0.10	0.12
*Zinc, ppm Zn	21.6	25.4
*Iron, ppm Fe	83	97
*Manganese, ppm Mn	5	5
*Copper, ppm Cu	2.1	2.4
*Sulfur, % S	0.09	0.11
*Sodium, % Na	0.01	0.01
*Molybdenum, ppm Mo	0.33	0.39

*-Result By Wet Chemistry
Mineral Analysis by ICAP as of January 19, 2009

Reviewed By : Rebecca Kern **10/10/2017** **Copy : 1** **Page 1 of 1**

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Fax: 308-234-1940
web site
www.wardlab.com
4007 Cherry Ave., P.O. Box 788
Kearney, Nebraska 68848-0788

WARD Laboratories, Inc.

Ag Testing - Consulting

Account No. : 17591

Biological Soil Analysis Report

NEW, SHANE
11760 254TH RD
HOLTON KS 66436

Invoice No. : 1244434
Date Received : 09/21/2017
Date Reported : 09/25/2017

Results For : SHANE NEW
Sample ID 1 : SAMPLE 1
Sample ID 2 :
Lab No. : 10666

Sample ID 3 :
Sample ID 4 :

Haney - Soil Health Analysis

1:1 Soil pH	5.9	ICAP Sulfur, ppm S	11
1:1 Soluble Salts, mmho/cm	0.24	ICAP Calcium, ppm Ca	524
Excess Lime Rating	NONE	ICAP Magnesium, ppm Mg	152
Organic Matter, %LOI	5.9	ICAP Sodium, ppm Na	54
WDRF Buffer pH	6.3	ICAP Aluminum, ppm Al	472.90
Soil Respiration CO_2-C, ppm C	98.1	**Calculations**	
Water Extract		Microbially Active Carbon (%MAC)	15.7
Total Nitrogen, ppm N	49.7	Organic C : Organic N	15.6
Organic Nitrogen, ppm N	39.8	Organic N : Inorganic N	4.2
Total Organic Carbon, ppm C	623	Organic Nitrogen Release, ppm N	25.1
H3A Extract		Organic Nitrogen Reserve, ppm N	14.7
Nitrate, ppm NO_3-N	6.3	Organic Phosphorus Release, ppm P	5.8
Ammonium, ppm NH_4-N	3.1	Organic Phosphorus Reserve, ppm P	6.5
Inorganic Nitrogen, ppm N	9.4	**Soil Health**	
Total (ICAP) Phosphorus, ppm P	36	Soil Health Calculation	26.25
Inorganic (FIA) Phosphorus, ppm P	24.2	Cover Crop Suggestion	10% Legume 90% Grass
Organic Phosphorus, ppm P	6.5		
ICAP Potassium, ppm K	80		
ICAP Zinc, ppm Zn	1.35		
ICAP Iron, ppm Fe	326.5		
ICAP Manganese, ppm Mn	6.0		
ICAP Copper, ppm Cu	0.88		

Reviewed By : Lance Gunderson

9/26/2017

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Ag Testing - Consulting

Haney - Soil Health Analysis Contd.

Nutrient Quantity Available for Next Crop	
Nitrogen, lbs N/A	82.8
Phosphorus, lbs P_2O_5/A	68.9
Potassium, lbs K_2O/A	95.5
Nutrient Value, $/A	127.60

Nitrogen Savings by using the Haney Test	
Traditional evaluation, lbs N/A	15.2
Haney Test N evaluation, lbs N/A	82.8
Nitrogen Difference, lbs N/A	67.6
N savings, $/A	43.24

Recommendations
In Actual Pounds of Plant Nutrients per Acre

N Credit : Clover - 75

Sub-Soils :

Crop	(Haney) Triticale, T/A
Yield	10
Nitrogen N	220
Phosphorus P_2O_5	35
Potassium K_2O	100
Sulfur S	31
Zinc Zn	0
Magnesium Mg	0
Iron Fe	0
Manganese Mn	0
Copper Cu	0
Lime, ECC Tons/Acre	0.0

Crop	(Haney) Triticale, T/A
Yield	12
Nitrogen N	300
Phosphorus P_2O_5	45
Potassium K_2O	125
Sulfur S	41
Zinc Zn	0
Magnesium Mg	0
Iron Fe	0
Manganese Mn	0
Copper Cu	0
Lime, ECC Tons/Acre	0.0

mt - fhsuc hotmail .com

Reviewed By : Lance Gunderson

9/26/2017

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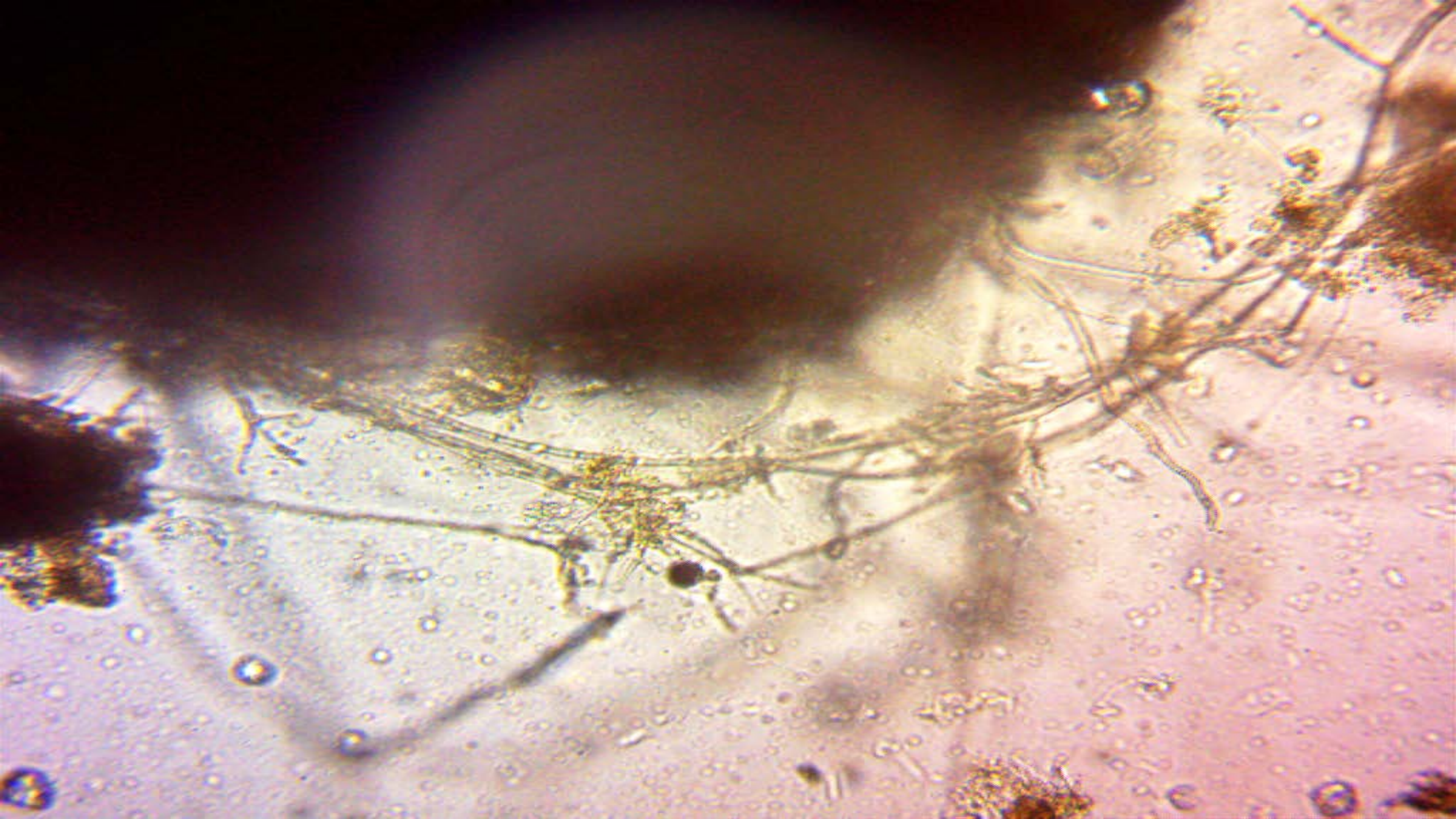

Rain Fall Simulator

NEW
Family Farms

LANDSTREAM
GROW STRONG LAND

Re

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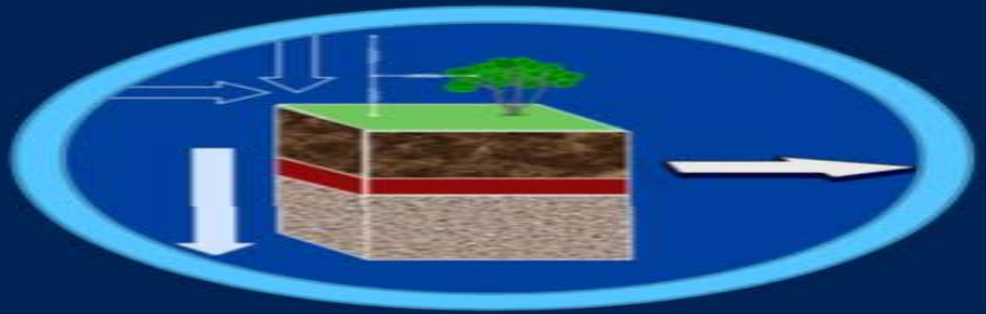
INT
• S
• L
• M

3

NEW Family Farms



Outreach

Budget & Timeline

4

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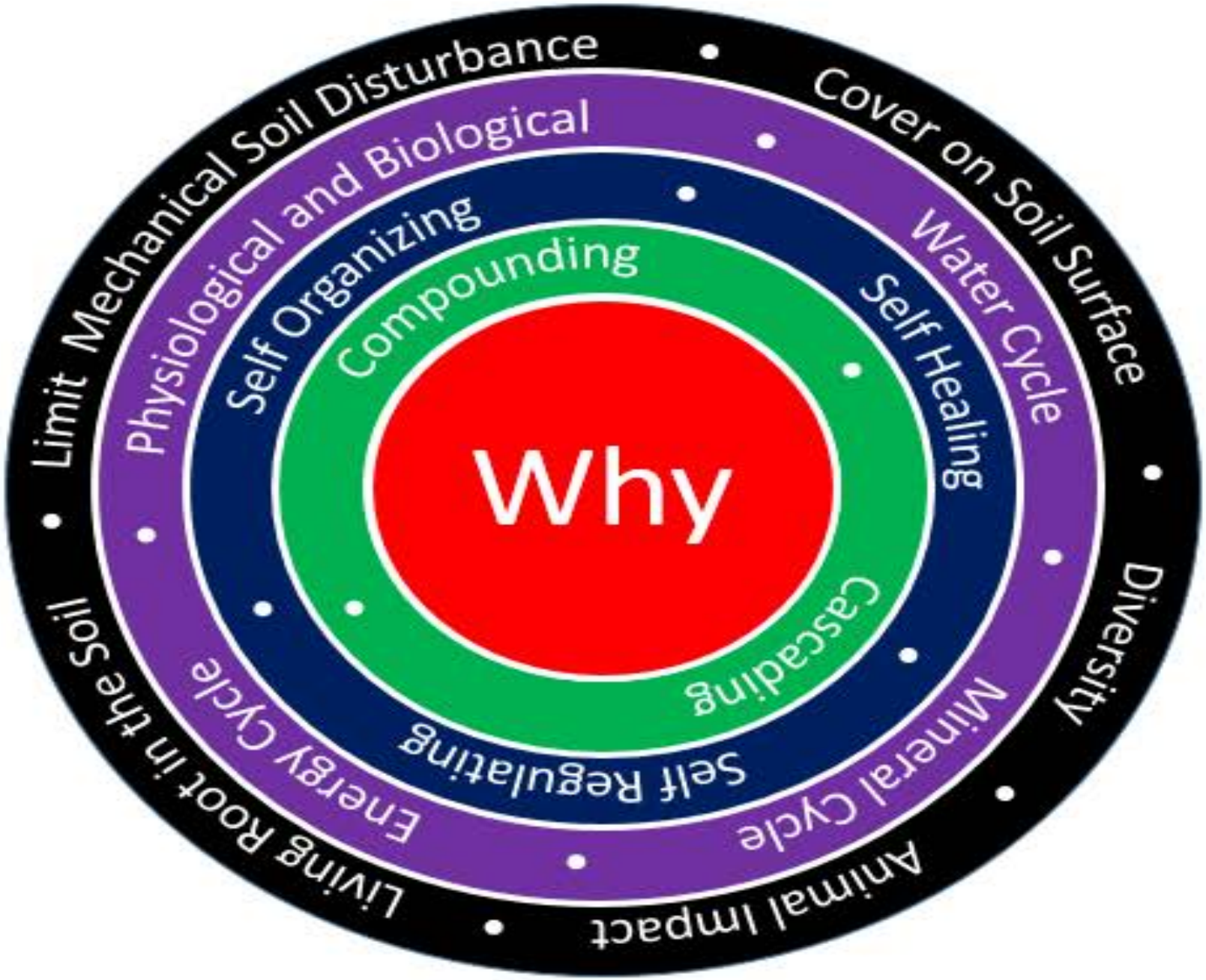
Whole

Monitoring

- Solar radiation
- Weather
- Vegetation
- Soil properties
- Infiltration
- Surface water
- Groundwater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Limit Mechanical Soil Disturbance
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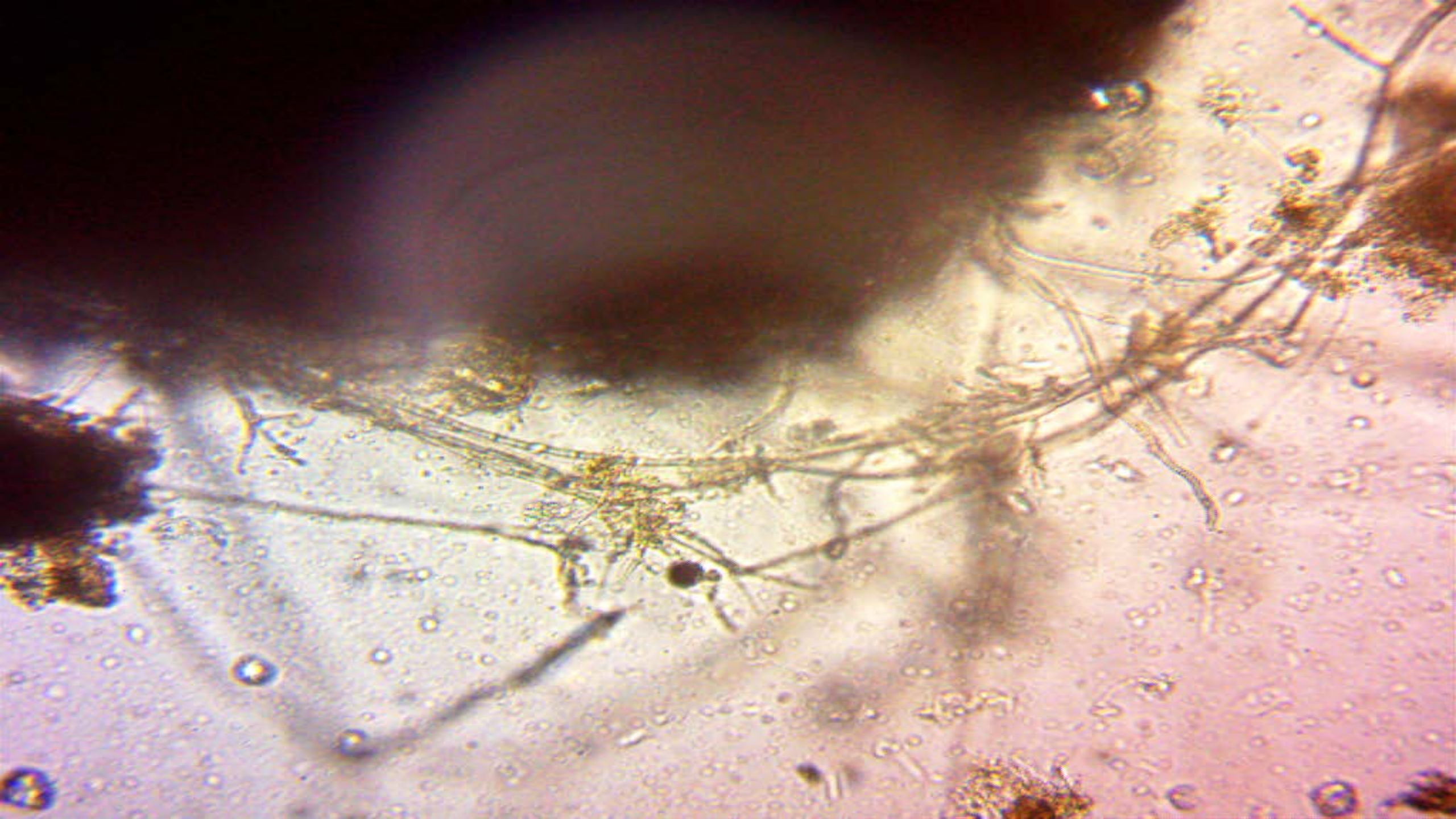
CASE

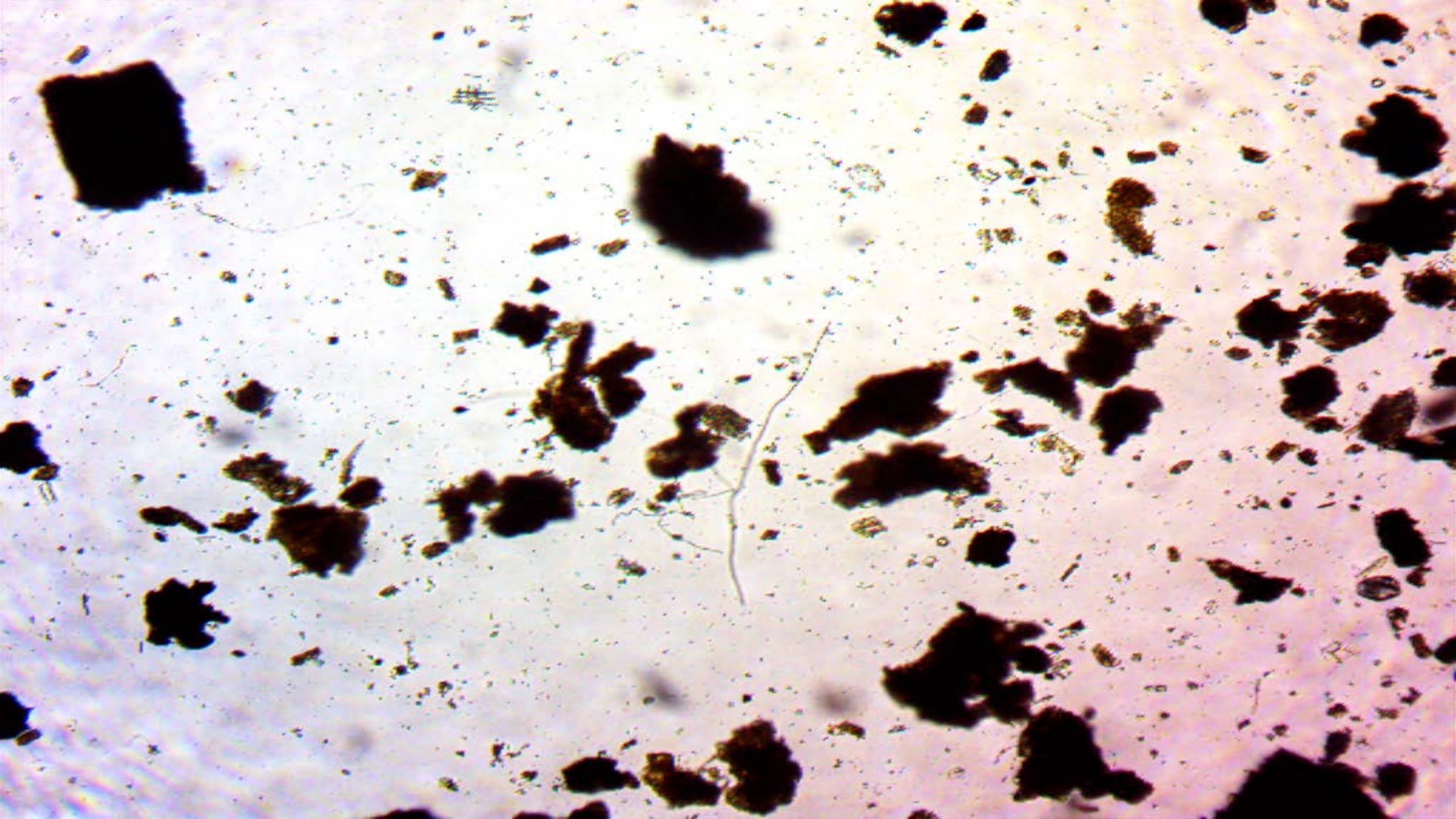


Mother Nature Does No Mechanical Chemical or Biological Disturbance

NEW
Family Farms

LANDSTREAM

GROW STRONG LAND




°C/°F

Understanding The Principles Of Mother Nature and Mimicking Them In Production Agriculture

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REUTERS

SUSTAINABILITY

Only 60 Years of Farming Left If Soil Degradation Continues

Generating three centimeters of top soil takes 1,000 years, and if current rates of degradation continue all of the world's top soil could be gone within 60 years, a senior UN official said

By Chris Arsenault (Thomson Reuters Foundation), Dec. 5, 2014

The causes include chemical-intensive farming, plowing or tilling, current livestock management, deforestation, and global warming. About 1/3 of the world's soil has already been degraded.

Cover on Soil Surface
Diversity
Animal Impact
Living Root in Circle
No Mechanical Soil Disturbance
Quality of Life
Water Cycle
Mineral Cycle
Energy Cycle
Self Healing
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Compounding
Cascading Effects
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