Understanding Ag

Taking the Next Step

By: Shane New

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

Mineral Depletion In Vegetables

Average of 27 kinds of vegetables …

- Copper declined by 76%
- Calcium declined by 46%
- Iron declined by 27%
- Magnesium declined by 24%
- Potassium declined by 16%

Ref: David Thomas

Mineral Depletion In Meat

Average of 10 kinds of meat …

- Copper declined by 24%
- Calcium declined by 41%
- Iron declined by 54%
- Magnesium declined by 10%
- Potassium declined by 16%

Ref: David Thomas

AN INDIVIDUAL TODAY WOULD HAVE TO CONSUME:

- TWICE AS MUCH MEAT
- THREE TIMES AS MUCH FRUIT
- FOUR TIMES AS MANY VEGETABLES

- TO GET THE SAME AMOUNT OF MINERALS AND TRACE ELEMENTS AS COMPARED TO THOSE FOODS IN 1940!

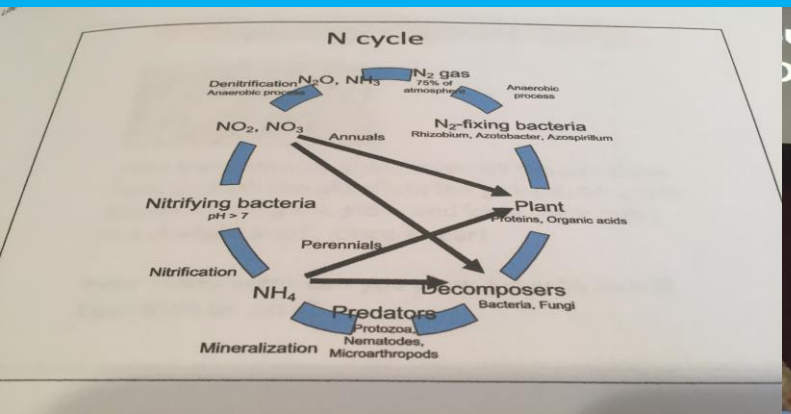

The United States now ranks near the top in incidents of
ADD/ADHD
Cancer
Parkinson's
Osteoporosis
Alzheimer's
Auto-Immune Diseases

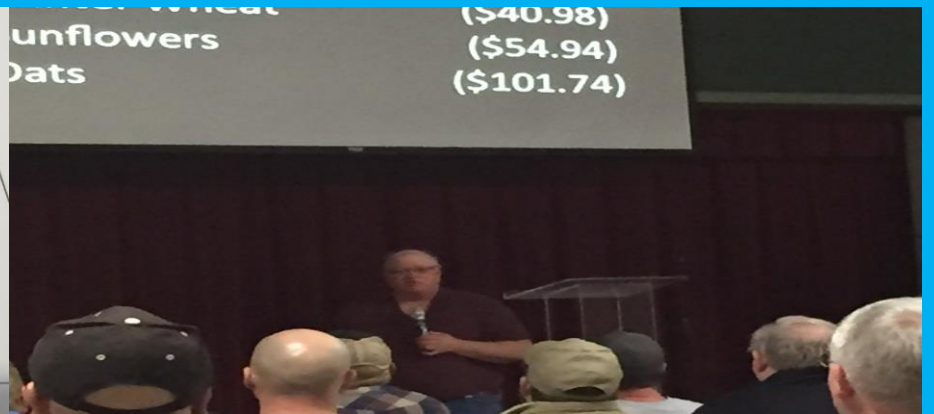
Mimicking the architecture of what was once here

RELEARNING

EDUCATING

TESTING

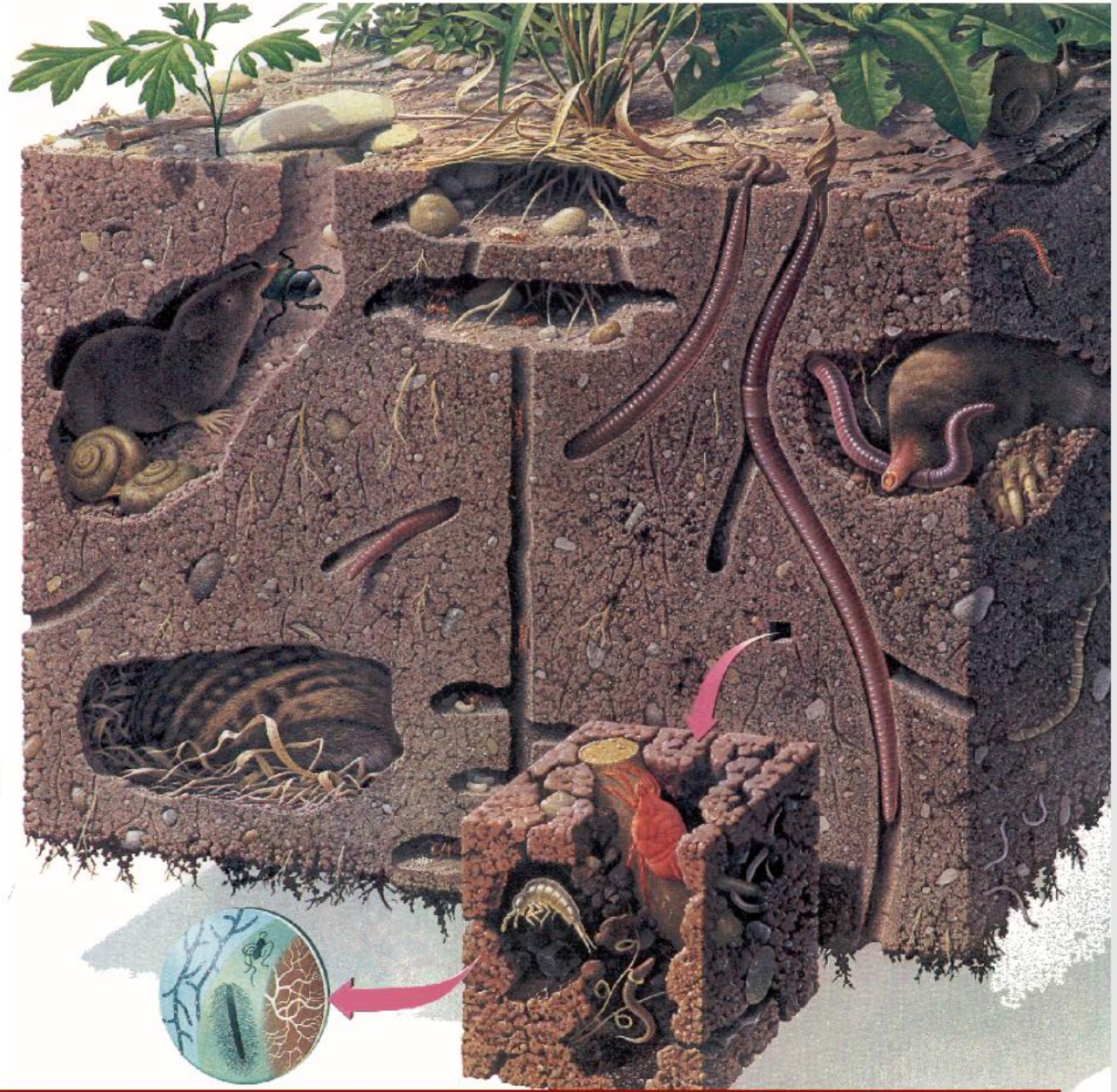




90% of Soil function is mediated by microbes

Microbes depend on plants

So how we manage plants is critical



The rumen is to the cow what the soil is to the plant


H360
JOHN DEERE
6150M


Mother Nature Does No
Mechanical Chemical or Biological
Disturbance


12,000 Lbs. annual soil loss per acre per year on average
Source NRCS


Tampas, CO June 12, 2014


April 14, 1935

Build Cover on the Soil Surface

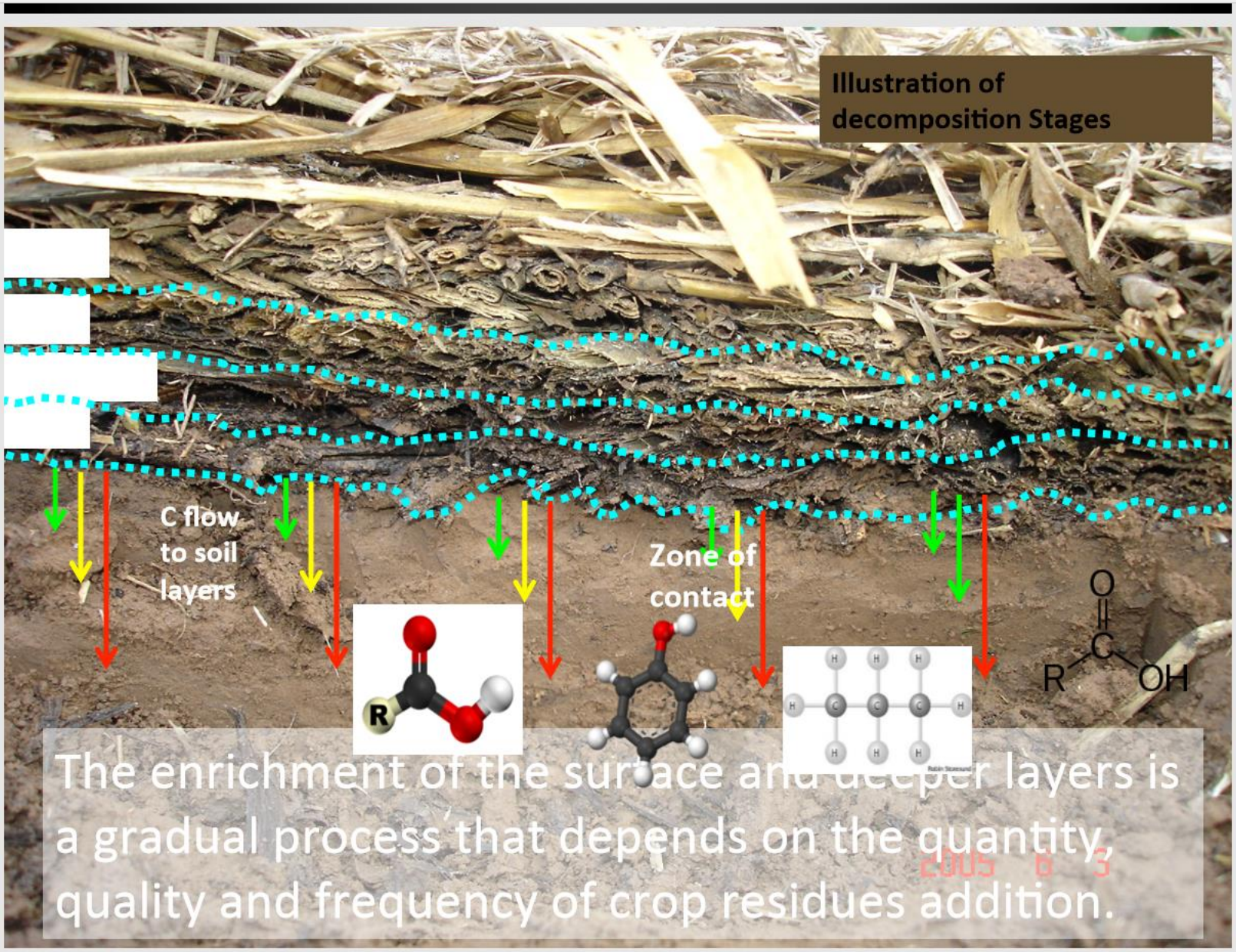


Illustration of decomposition Stages
C flow to soil layers
Zone of contact
R
O
C
R
OH
The enrichment of the surface and deeper layers is a gradual process that depends on the quantity, quality and frequency of crop residues addition.

Soil Temps

s

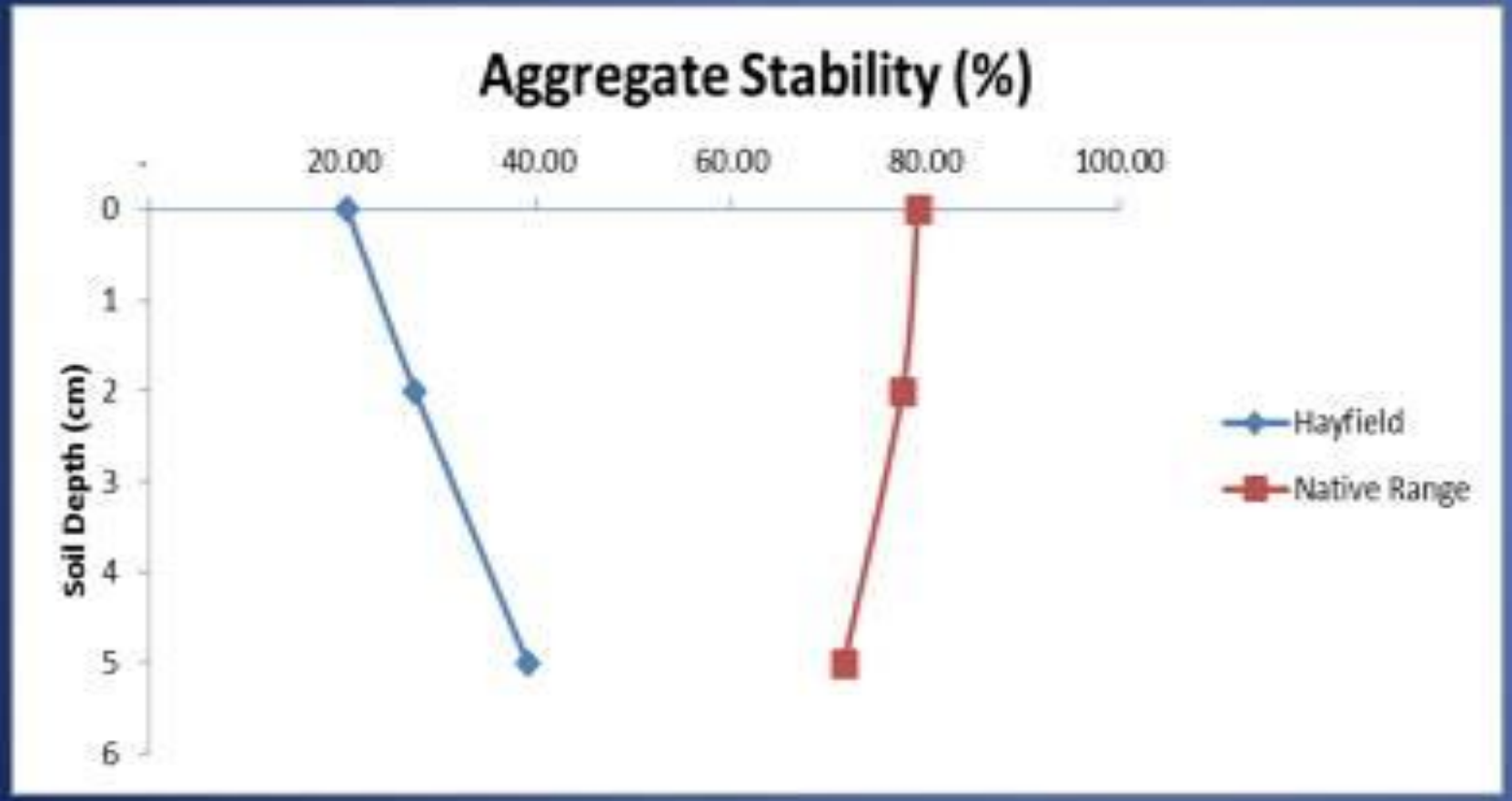
70 Degrees Fahrenheit 90% moisture used for plant growth

140 Degrees Fahrenheit Soil bacteria die

130 Degrees Fahrenheit 100% moisture lost through evaporation and transportation

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

Mellette County, Kube soil

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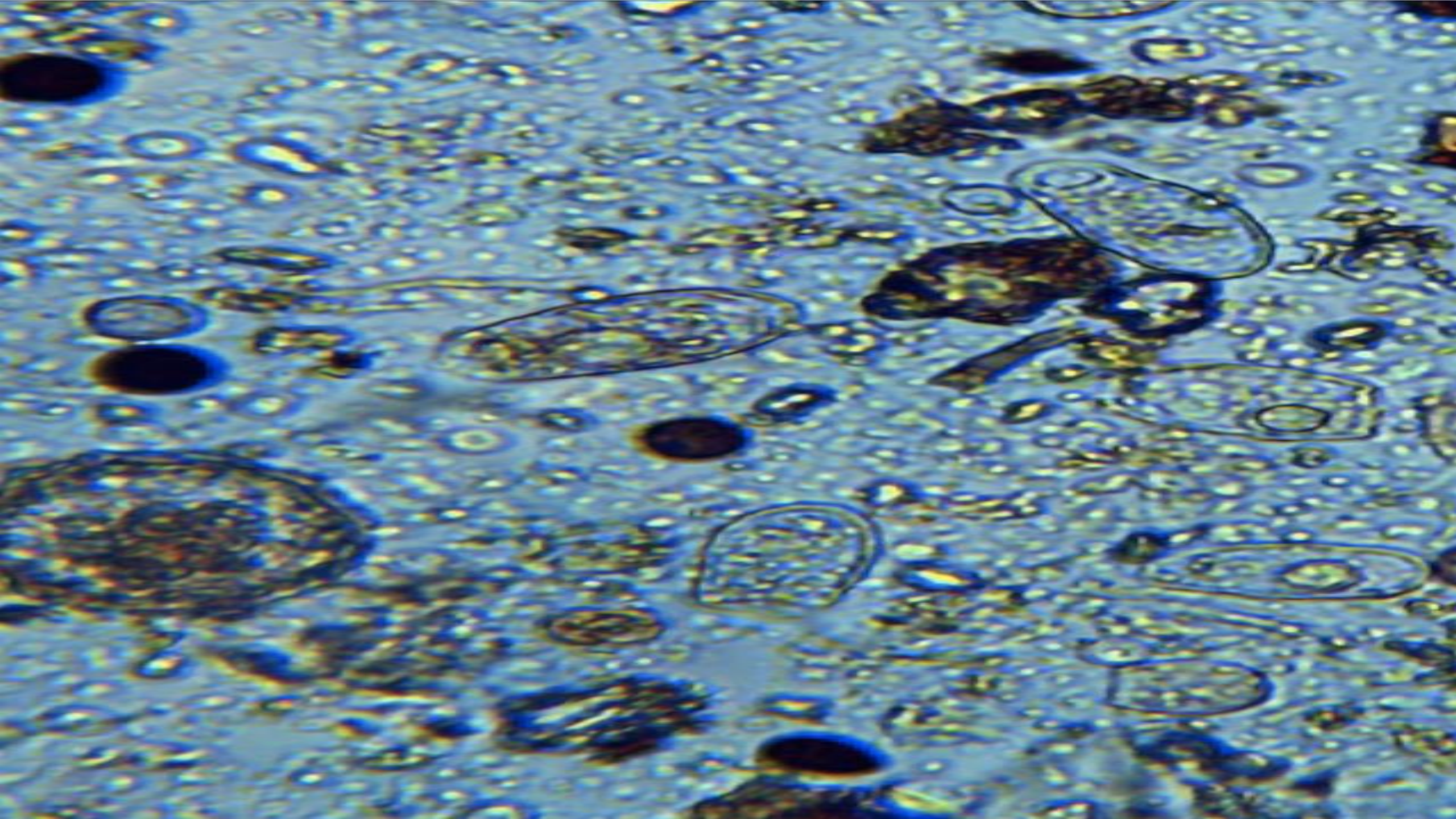
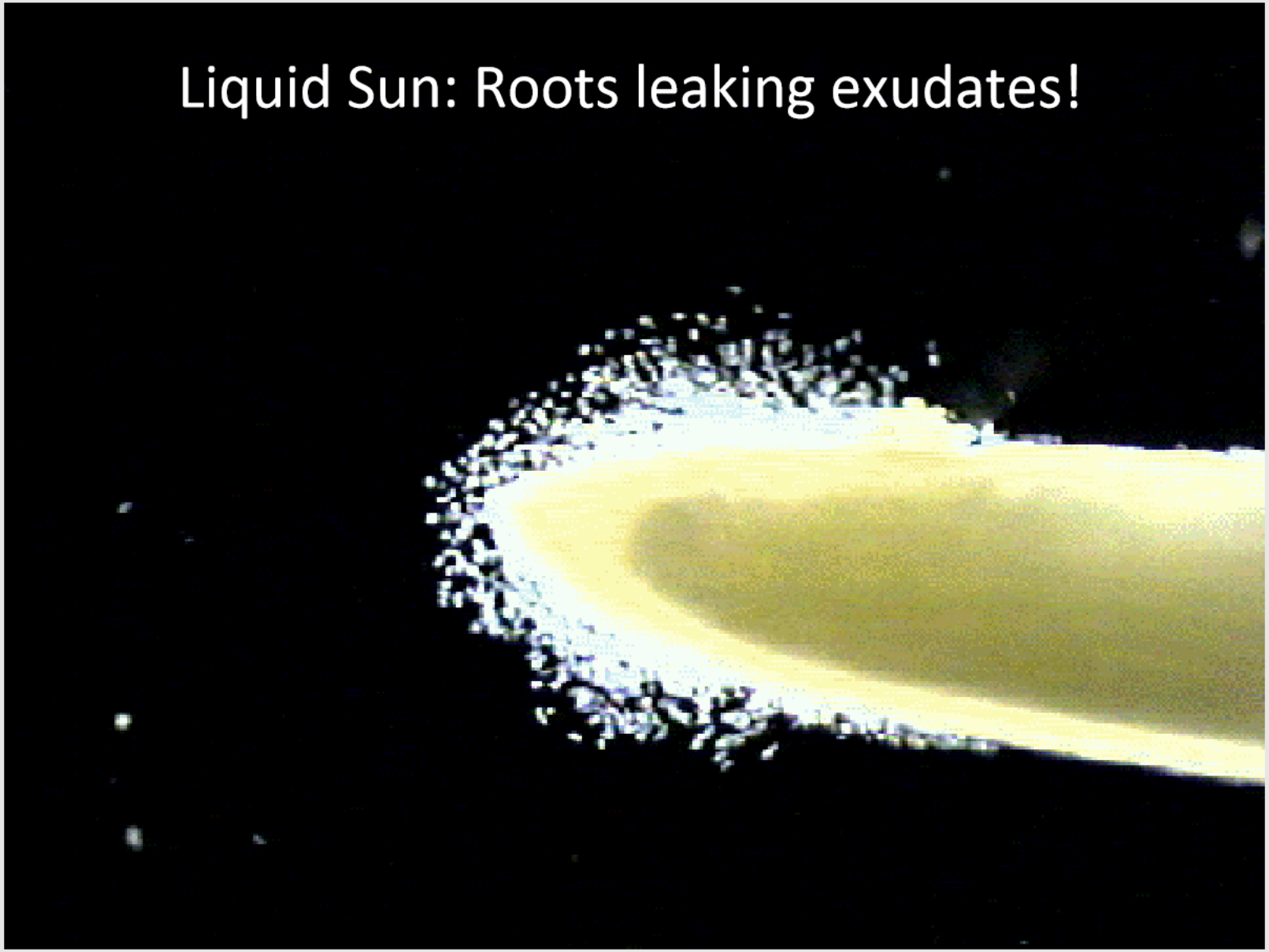
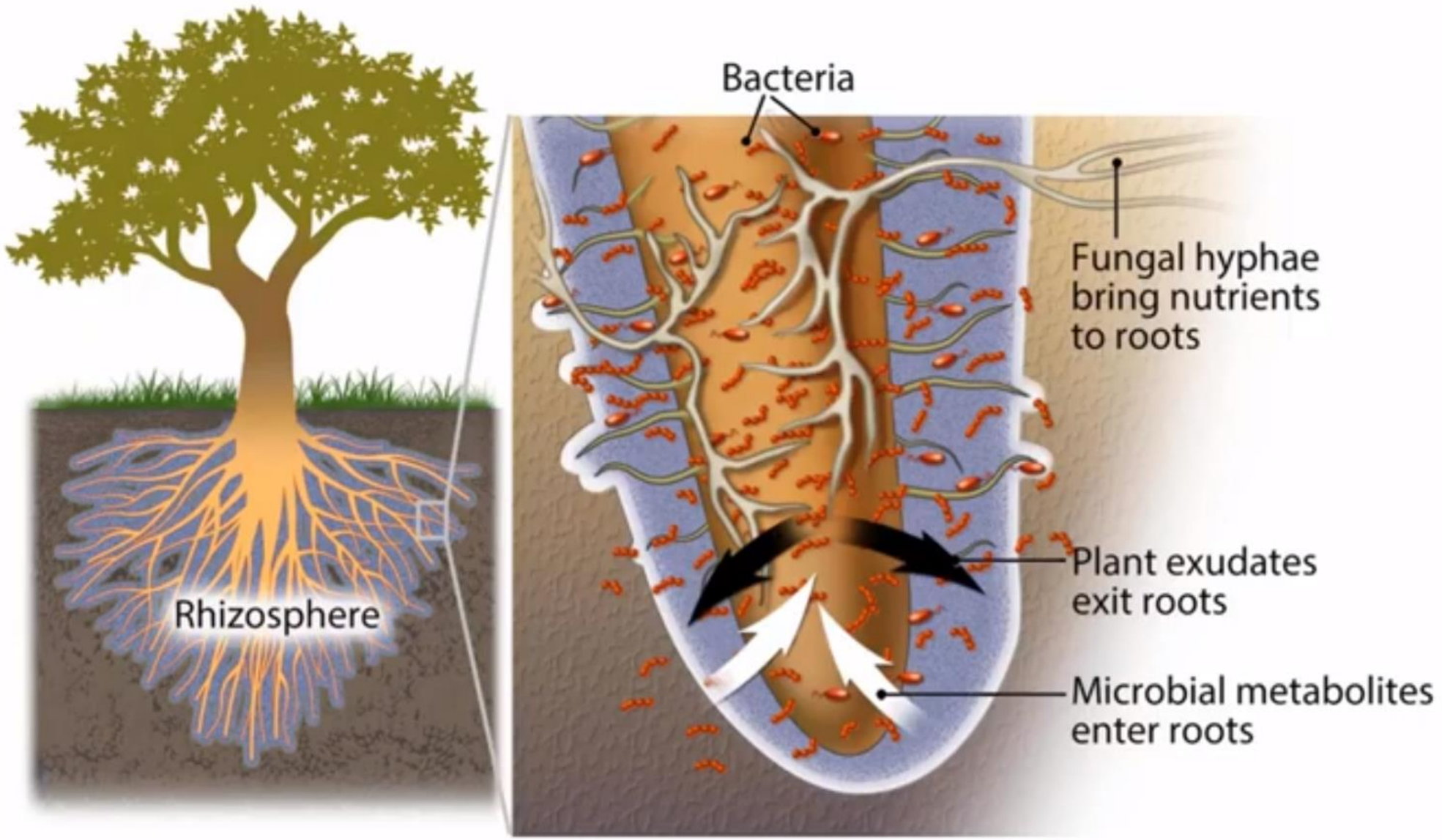
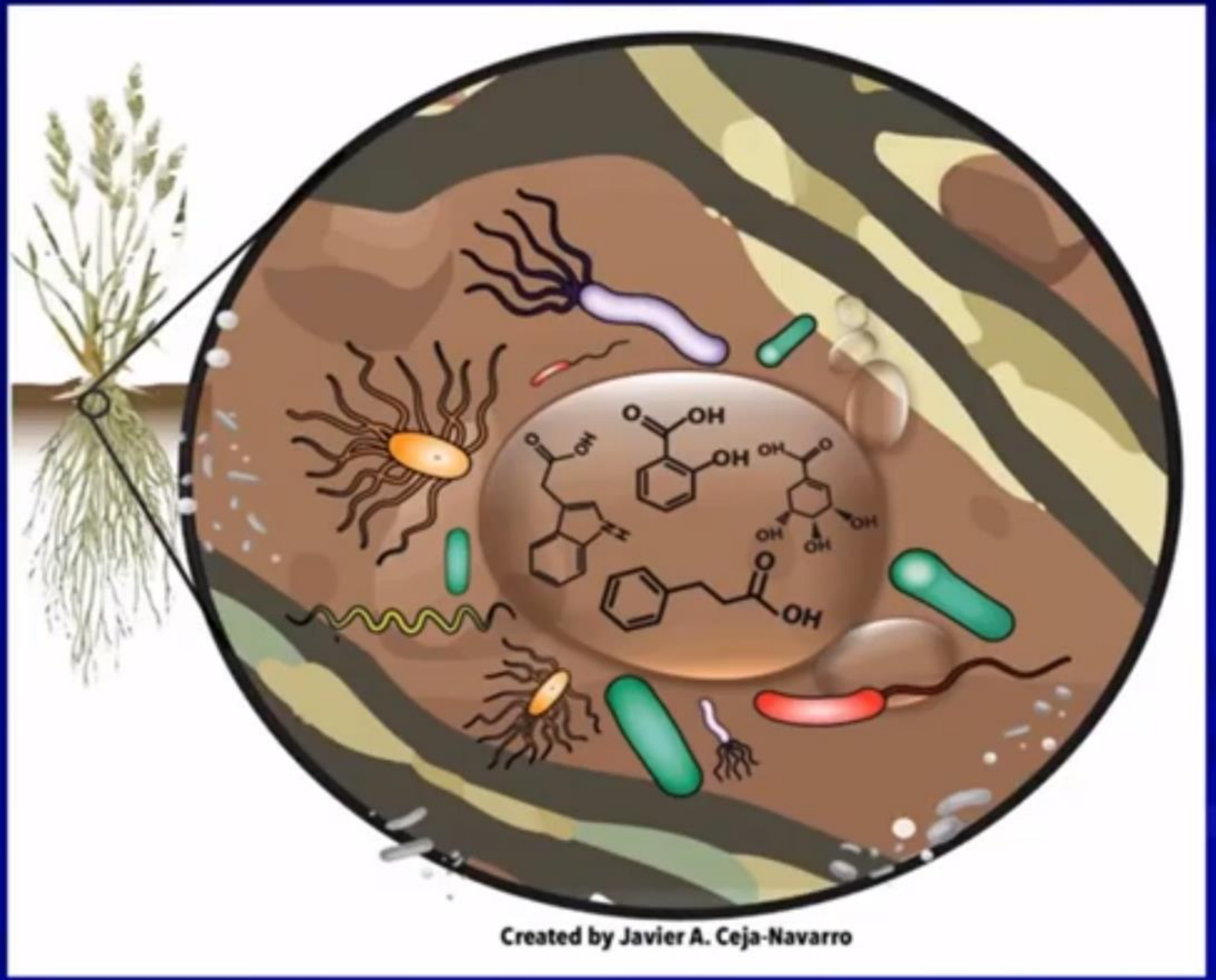
1590




Diversity


Liquid Sun: Roots leaking exudates!


Bacteria
Fungal hyphae bring nutrients to roots
Plant exudates exit roots
Microbial metabolites enter roots
Rhizosphere



Microbes that flourish in the area around plant roots take up specific organic acids from the root exudates. (Credit: Javier Ceja-Navarro)

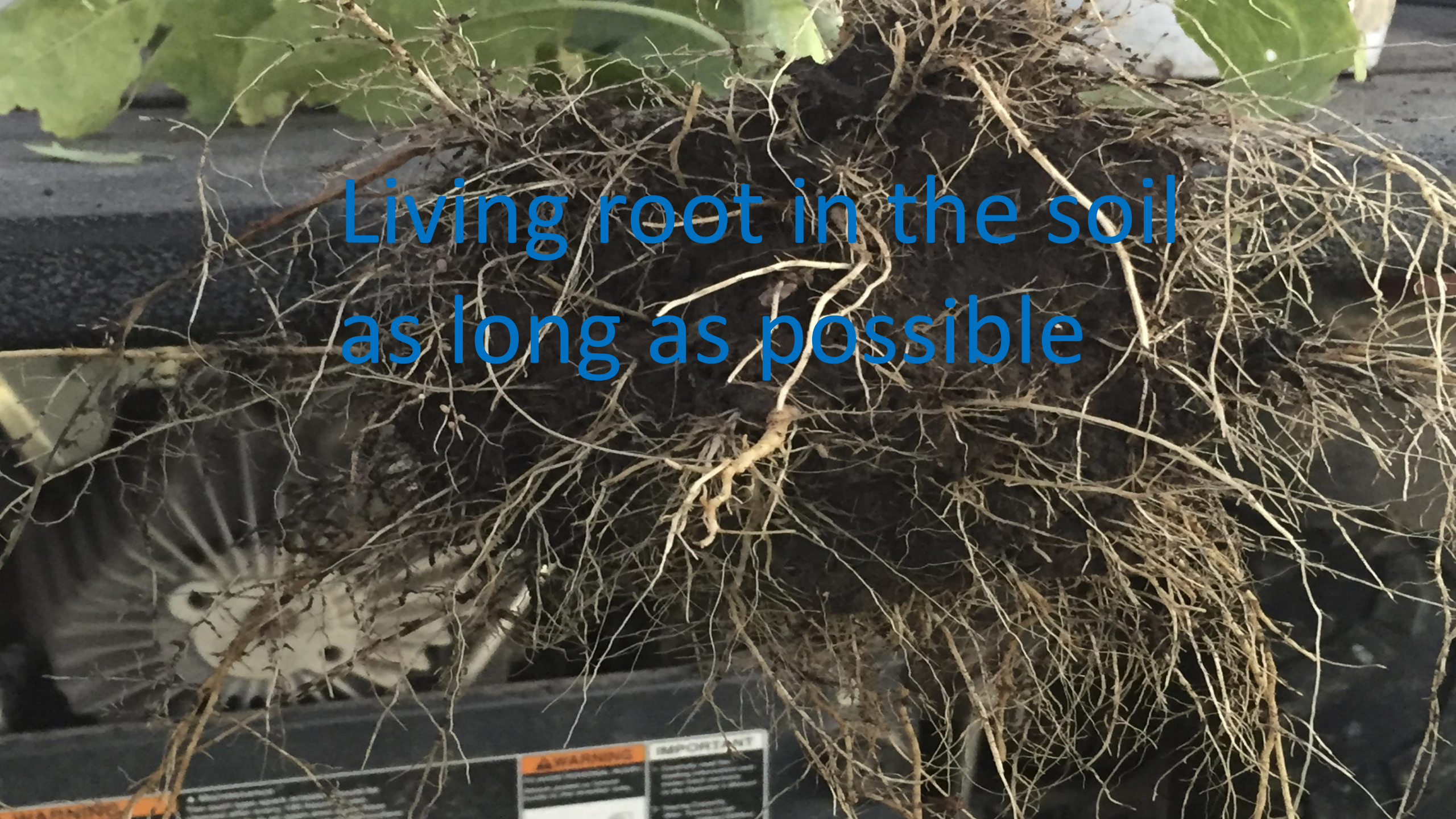
https://newscenter.lbl.gov/2018/03/22/plants-really-do-feed-their-friends/


KC
CARHARTT

Frank Egler (ecologist)

Nature is not more complicated than we think

Nature is more complicated than we can think


Living root in the soil
as long as possible

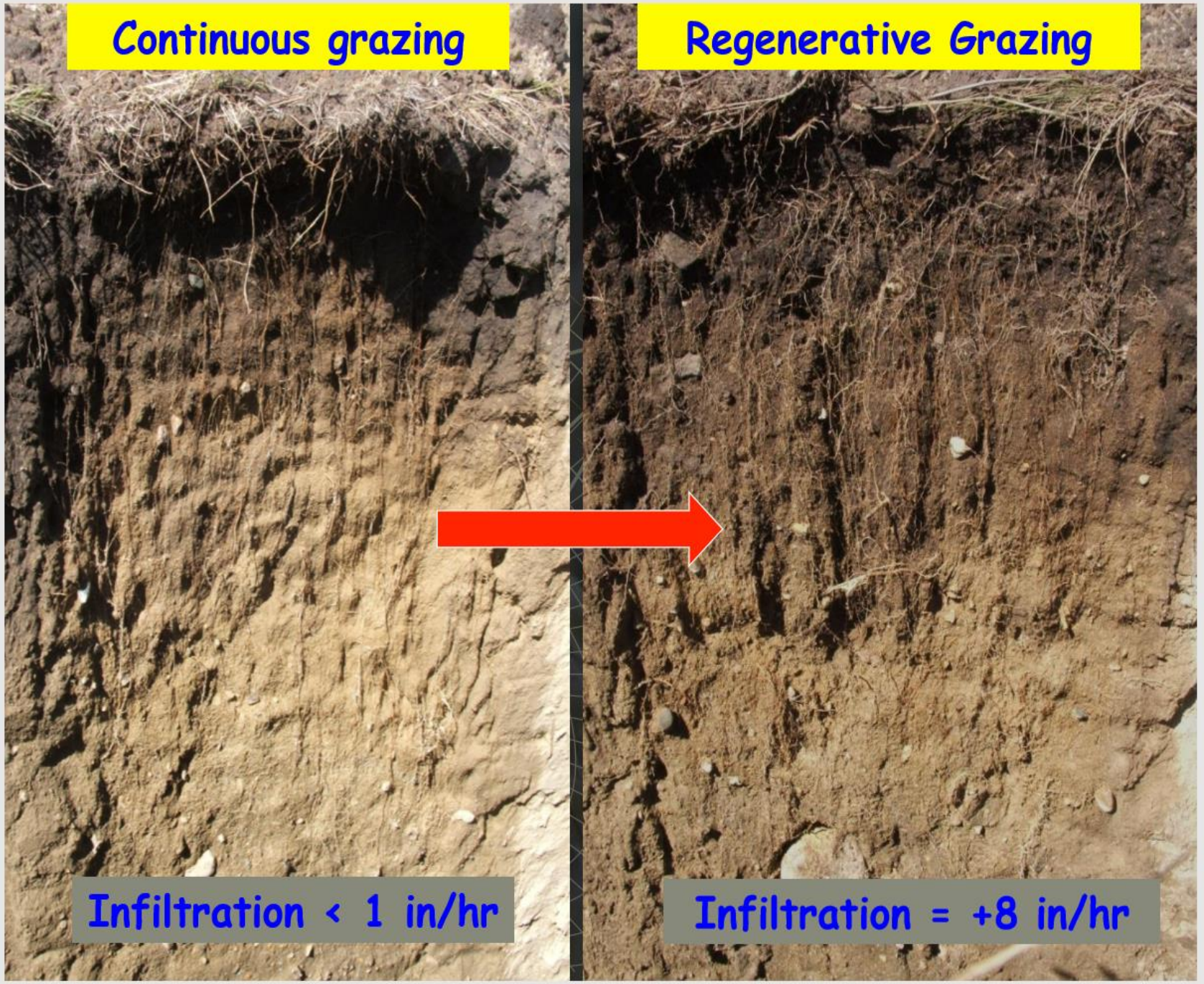

Plant and Soil are One
Ray Archuleta


FESCO
MASSEY FERGUSON 1165

Animal Impact


WALLENSTEIN
WALLENSTEIN


SEED OATS


Continuous grazing
Regenerative Grazing
Infiltration < 1 in/hr
Infiltration = +8 in/hr

It’s not change we are looking for It’s Understanding

Through Understanding change will occur

Freedom

UnderstandingAG

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