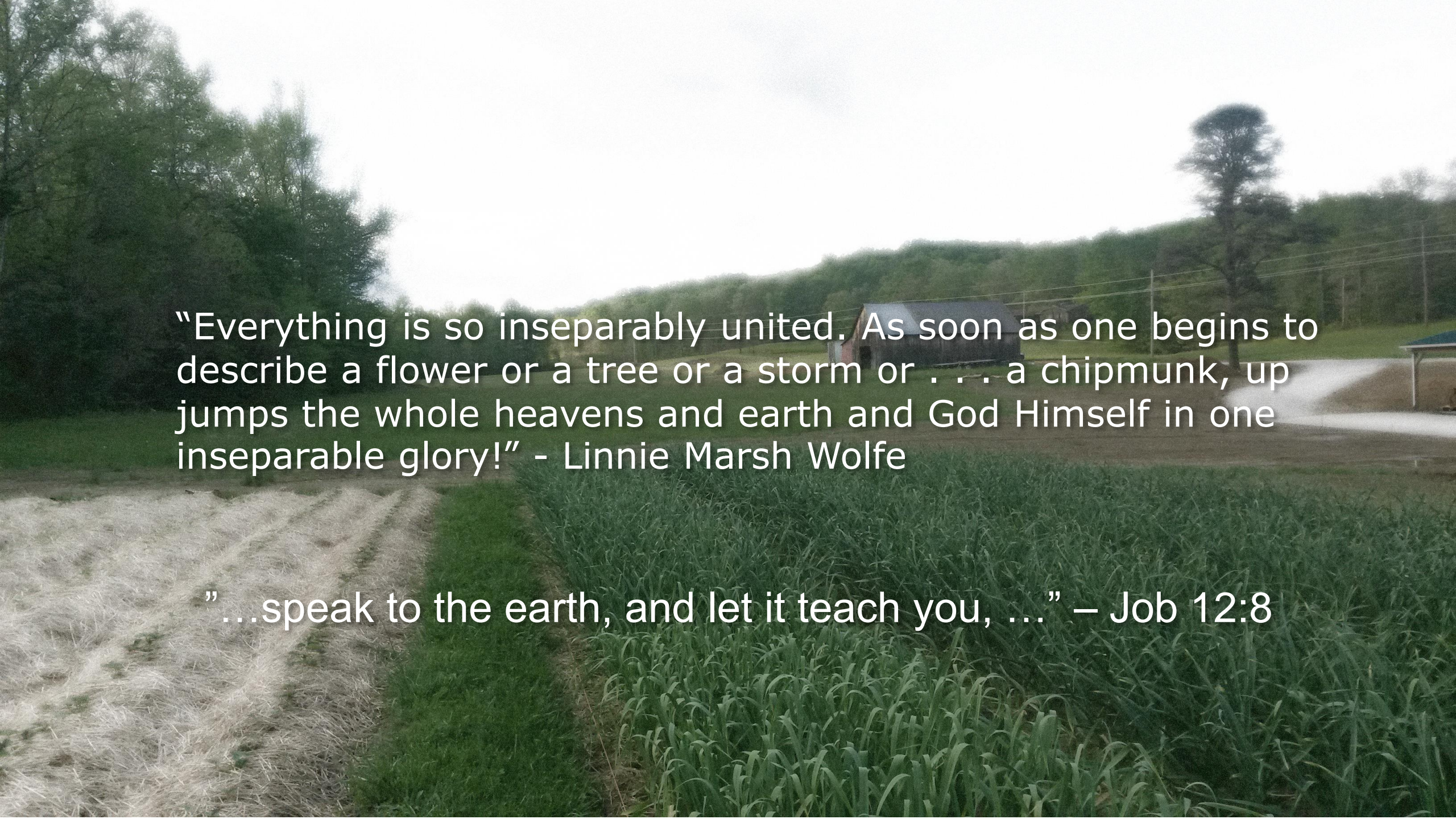


A rural landscape featuring a field of corn in the foreground, a barn in the middle ground, and a line of trees in the background. The sky is overcast.

SOIL FERTILITY FUNDAMENTALS:

WHAT COULD POSSIBLY GO WRONG?

A photograph of a rural landscape. In the foreground, a dirt road with tire tracks runs from the bottom left towards the center. To the right of the road is a field of tall, green corn plants. In the background, there is a dark wooden barn with a grey roof. To the right of the barn, a large tree stands near a white structure. The background is filled with a dense line of green trees under a bright, overcast sky.

“Everything is so inseparably united. As soon as one begins to describe a flower or a tree or a storm or . . . a chipmunk, up jumps the whole heavens and earth and God Himself in one inseparable glory!” - Linnie Marsh Wolfe

“...speak to the earth, and let it teach you, ...” – Job 12:8



“ . . . for he causes His sun to rise on the evil and the good, and sends rain on the righteous and the unrighteous.” – Matthew 5:45

A rural landscape featuring a field of young corn plants in the foreground. To the left, there is a path covered in straw. In the middle ground, a wooden barn with a grey roof stands on a grassy slope. The background consists of a dense forest of green trees under a bright, overcast sky. The text "Seeds want to grow." is overlaid in white on the middle ground.

Seeds want to grow.



A photograph of a rural landscape. In the foreground, there is a field of green crops, possibly corn, with a path of dry straw or hay leading through it. In the middle ground, a large, weathered wooden barn with a grey roof stands on a grassy slope. To the right of the barn, there is a large, dark tree and a white structure, possibly a covered walkway or a small building. The background consists of a dense line of green trees under a bright, overcast sky. The text "What is organic growth?" is overlaid in white, with the subtitle "Seeing what you look at." below it.

What is organic growth?
Seeing what you look at.















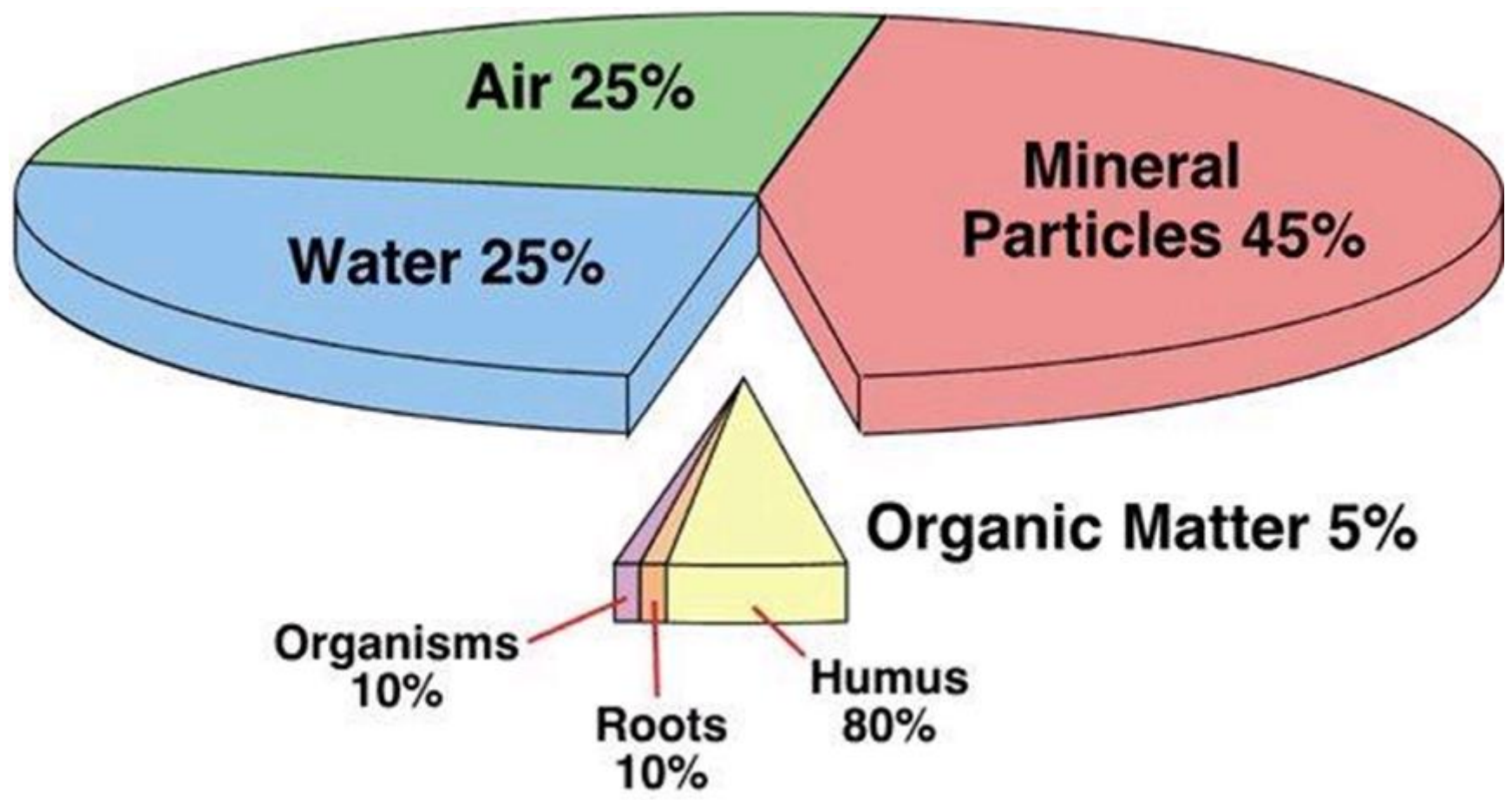




Intervention: Imposed or imparted?

A photograph of a rural landscape. In the foreground, there is a field of tall, green corn plants. To the left of the corn, there is a path or area covered in dry, light-colored straw or hay. In the middle ground, a large, dark wooden barn with a grey roof stands on a grassy slope. Behind the barn, there are more trees and a hillside covered in green foliage. A utility pole with power lines is visible to the right of the barn. The sky is overcast and grey. The text "Is there an ideal/model soil?" is overlaid in white on the middle ground.

Is there an ideal/model soil?



Different schools of thought

- Conventional – Selective chemistry mediation
- Organic – Farm generated mediation
- Bio-Dynamic – Holistic, esoteric mediation
- Permaculture – Natural ecosystem mediation
- Biological – Microbial mediation
- Albrecht/CEC – Complete and balanced chemistry mediation
- Regenerative – Microbial mediation



Soil health principles

- Complete and balanced chemistry
- Living roots in the ground.
- Keep it covered
- Diversity
- Minimal disturbance
- Know your context

A rural landscape featuring a dirt road on the left, a field of green crops in the foreground, a barn in the middle ground, and a line of trees in the background under a cloudy sky.

How the soil actually works to provide nourishment to growing plants.

- Colloidal exchange complex (clay, humus, root)
- O.M./Humus Storage
- Microbial action/interaction

The difference between Photosynthetic production and biosynthetic production

Photosynthetic

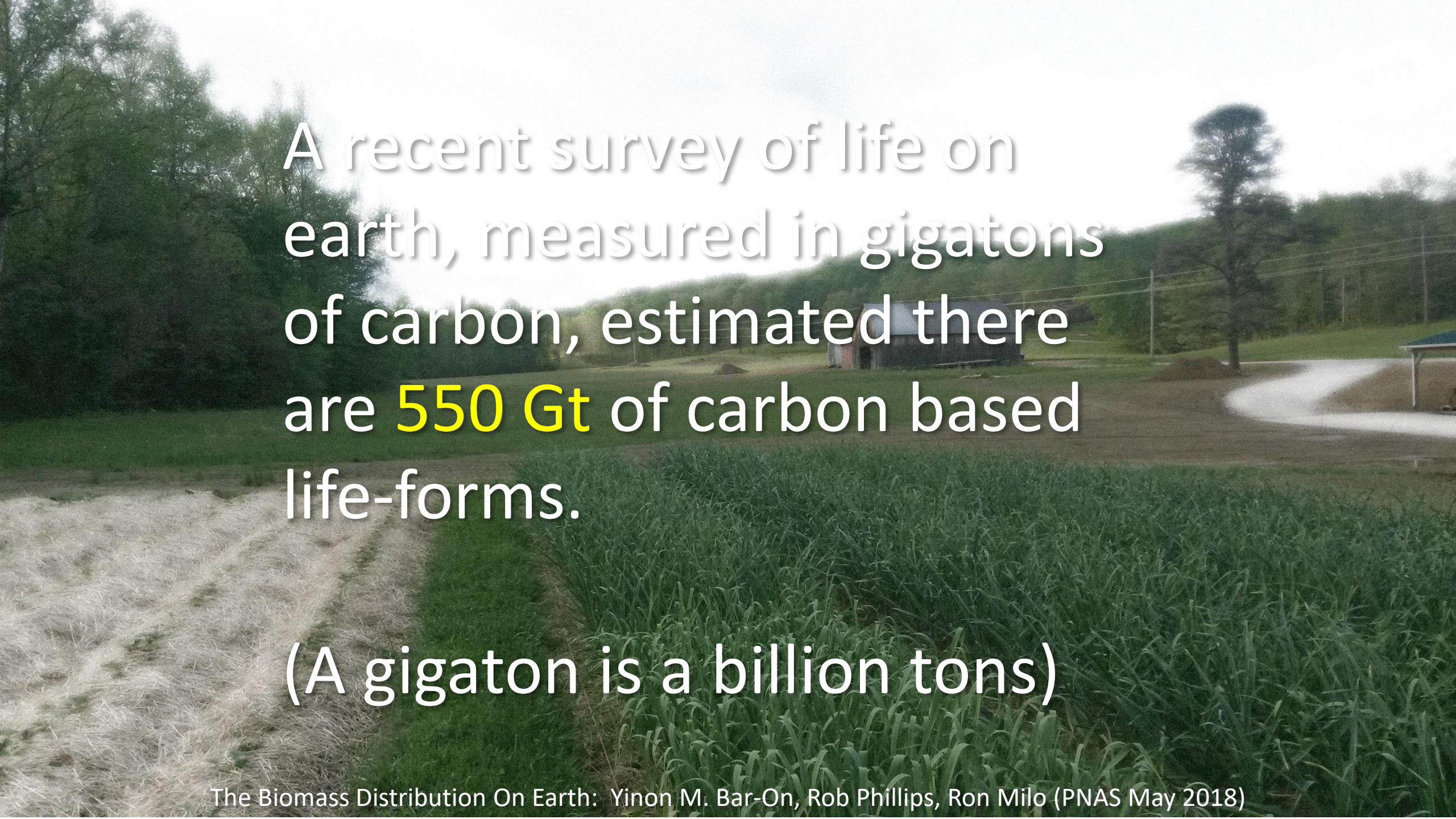
- Produces carbonaceous bulk
- Primarily energy/calories
- Yield driven

Biosynthetic

- Produces mineralized, proteinaceous bulk
- Complete food source
- Quality driven

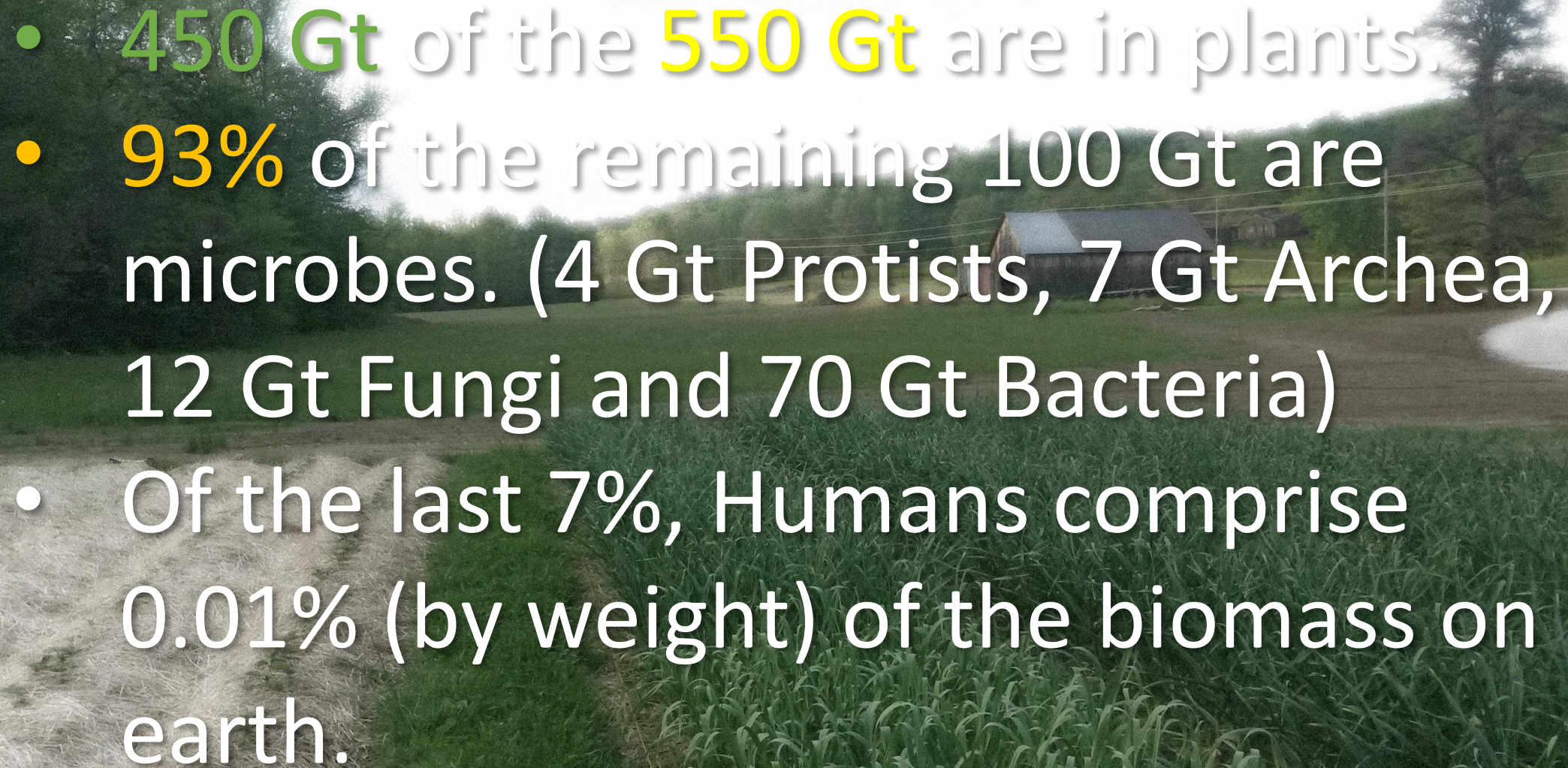
A rural landscape featuring a field of green crops in the foreground, a dirt road on the left, and a barn in the background. The scene is set against a backdrop of trees and a cloudy sky. The text "Feed the soil and let the soil feed the crop" is overlaid in white.

Feed the soil and let the
soil feed the crop



A recent survey of life on earth, measured in gigatons of carbon, estimated there are **550 Gt** of carbon based life-forms.

(A gigaton is a billion tons)

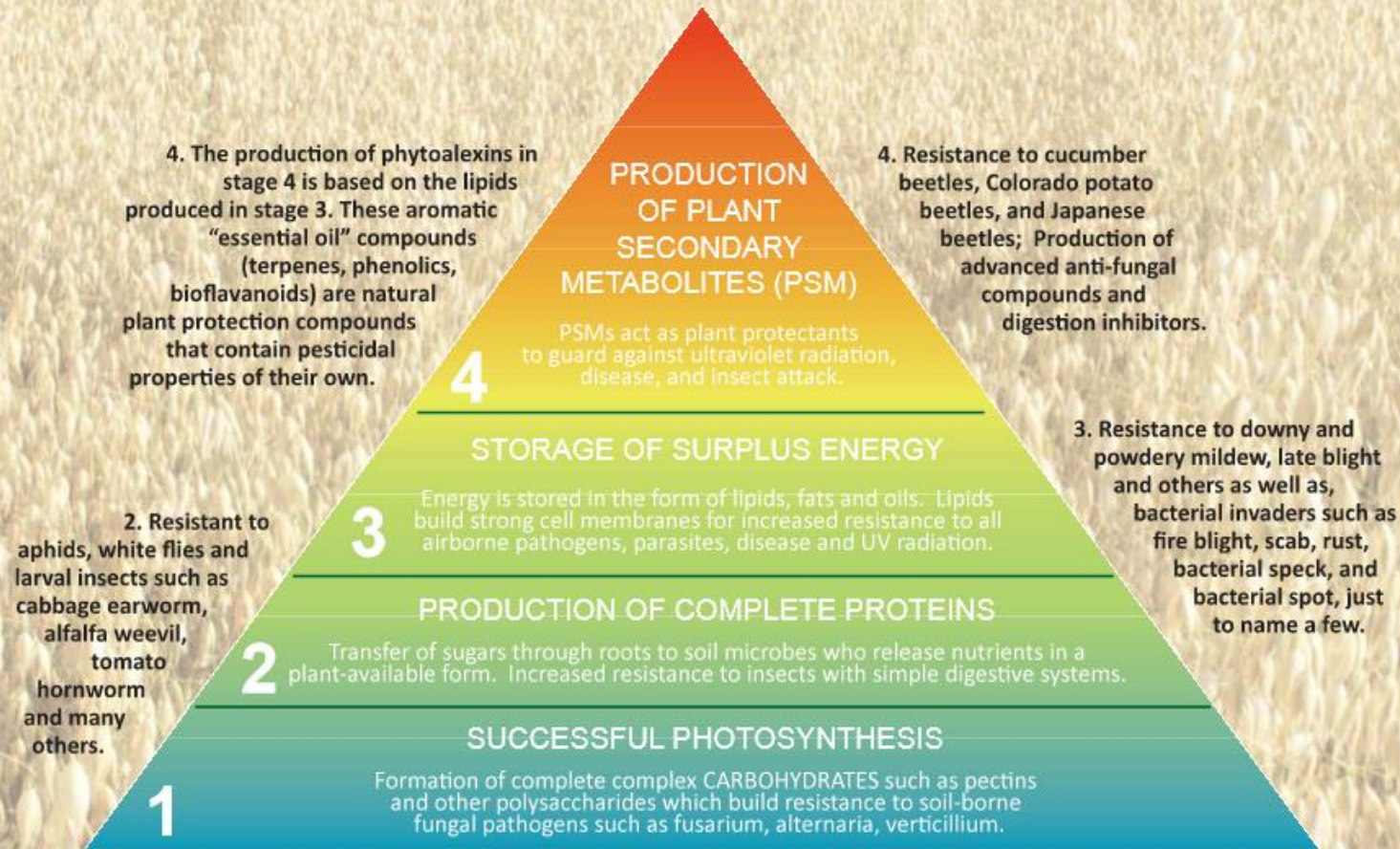
- 
- 450 Gt of the 550 Gt are in plants.
 - 93% of the remaining 100 Gt are microbes. (4 Gt Protists, 7 Gt Archea, 12 Gt Fungi and 70 Gt Bacteria)
 - Of the last 7%, Humans comprise 0.01% (by weight) of the biomass on earth.

Insects and diseases

A rural landscape featuring a field of young corn plants in the foreground. To the left, there is a field of dry, yellowed hay. In the background, a barn with a grey roof is visible, surrounded by green trees and a grassy hillside under an overcast sky.

Optimal Nutrition Enables Advanced Function in Plants

As soils and crops transition toward biological farming practices, they pass through stages of increasingly better health. The progression toward better health restores the natural and biological abilities of the plant and soil system. Innate characteristics and advanced functions are enabled such as immunity to soil and airborne pathogens, resistance to insects, production of lipids which strengthen cell membranes for tastier, more storable fruit, and more.

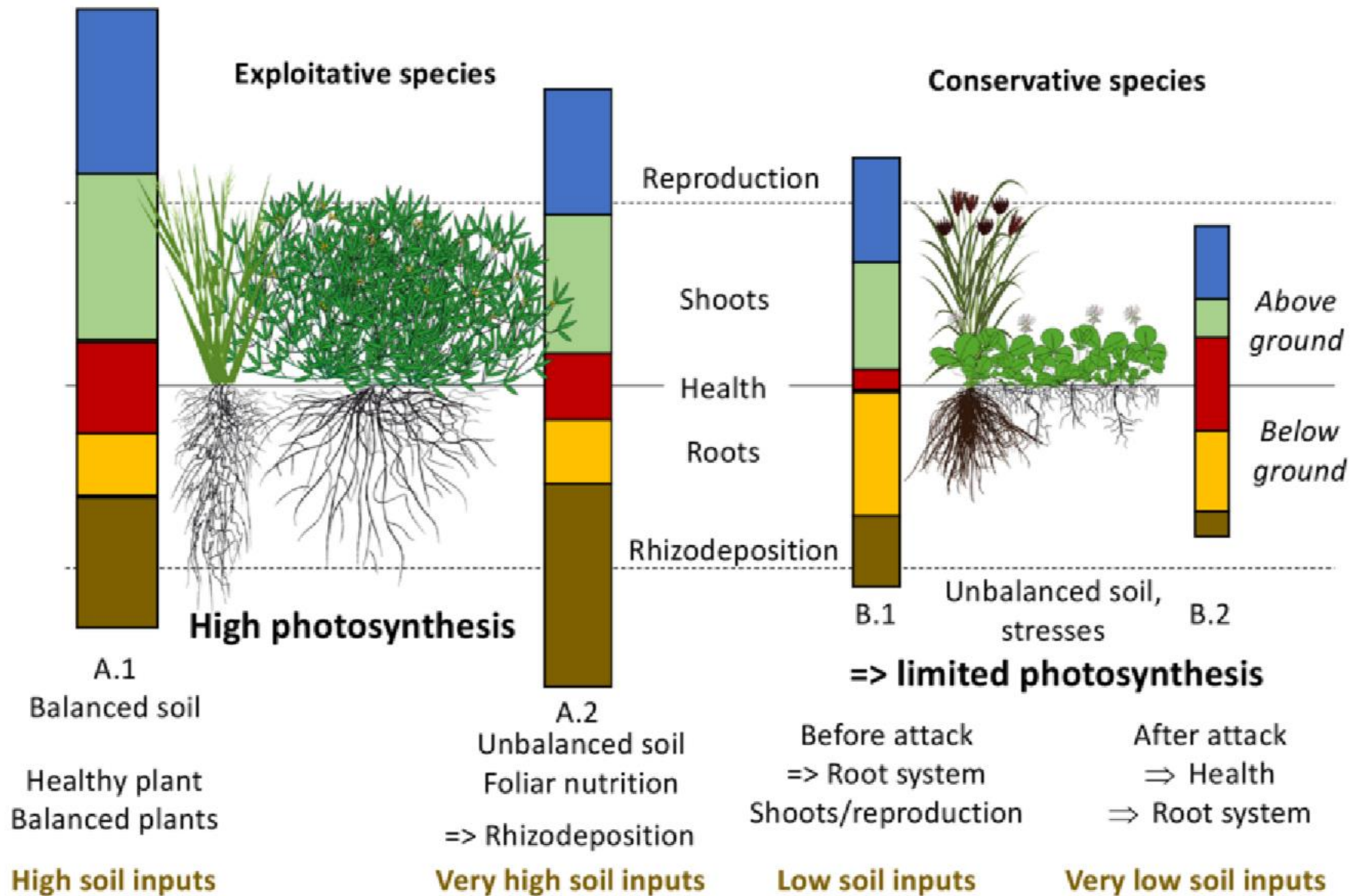


If we wish to produce "food as medicine" this is where the medicine is.

A rural landscape featuring a field of green crops in the foreground, a dirt path, a barn, and trees in the background. The text "Weeds Causes" is overlaid in the center.

Weeds Causes

- Parent material
- Environmental influences
- Incomplete and/or imbalanced mineralization
- Inappropriate porosity and/or capillarity



A rural landscape featuring a large wooden barn with a grey roof in the middle ground. To the left, there is a dense line of green trees. In the foreground, there are rows of green crops, possibly corn, and a path of dry straw. The background shows a rolling green hill under a bright, overcast sky. A large, dark tree stands on the right side of the image. The word "Questions?" is overlaid in white text in the center of the image.

Questions?

