Thoughts on Soils

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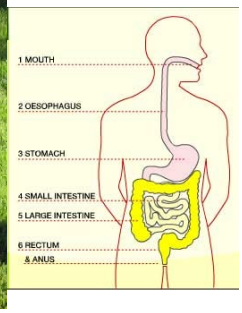
My favorite definition of soil. "The interface between the living and the dead"

One body's (corpse) decomposition is another body's life.

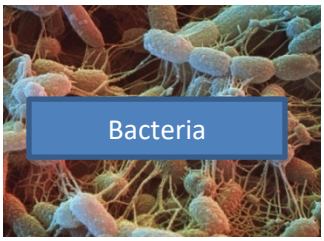


When we eat plant or animal material, we bring the external environment inside ourselves and re-animate the material, make it come alive again, as it is incorporated into our body.

"Soil" has been used as a term for what comes out the end of a digestive system. I think that is a very poor definition because it equates the material with "waste" when it is

Soil aggregates are like grapes, fragile.

Bacteria fix nitrogen in nodules on roots (below)



Inside the soil, air (with nitrogen & carbon), water, and minerals knit dead, separate components, into new living beings, mostly bacteria or fungi. These in turn are eaten by the next highest trophic level. The tiny dead bodies of bacteria are slow release sacs of nutrients. Their glues and gums and glomulins make soil sticky and give it "grapes". The ability of a soil to "cluster" or aggregate means air pockets can form and more life-from-dead-component transformations can take place. Soil is alive! Soil organisms, by both weight and activity are the most important livestock on my farm. I am a soil livestock farmer. Active soil is the foundation of sustainable farming, gardening and managed grazing.

Conventional farming treats soil in a mechanistic way. Tractor & plow ignore the structure (grapes) of soil. Plowing ruins pore spaces, organic matter and water holding capacity. Conventional ag adds chemical nutrients as salt based fertilizer.

Conventional farming kills the soil and the feed the plant junk food.

The dominant view is that soil is just a medium that holds plants in place and synthetic nutrients must be applied - is not sustainable. Synthetic nitrogen leaching is not good, but it is unavoidable as farms try to maximize nitrogen fertilizers for highest yield. Conversely, sac-body, gummy-worm- nitrogen does not leach. It is slow release. Salty synthetic fertilizers make a hostile habitat for soil livestock. If we could see sick soil, like we can see a sick cow….we would be aghast at the devastation we've caused.

In modern ag, soil is viewed as a disposal area on which to spread liquid manure. Soil is a problem child that farmers try to keep on fields and out of water. Soil is viewed as continually, incrementally, unavoidably being degraded. It is a commodity that modern agriculture will eventually, regrettably, use up, oh well. Annual tillage oxidizes soil carbon and good spongy organic matter. Agriculture undoubtedly contributes to climate change, flash flooding and water pollution. Heavy equipment crushes the fragile, wonderful, "grapes" of soil aggregates and degrades soil. Continuous corn & soybeans, & continuous plow, - soil grapes are all gone – cement feet result.

"Pardon me oh thou bleeding piece of earth that I am meek and gentle with these thy butchers" - Shakespeare

Sustainable farmers understand that soil is alive – a biological system. We try to foster the soil livestock. There is a complex world of soil life that we've only just begun to explore. We've forgotten (most never knew) that 90% of vascular plants typically have a mycchorhizal association that works with roots to reach further and deliver nutrients. .

Organic farmers feed the soil; then let soil feed the plant.

Organic farmers mother the soil. Organic farmers bank wealth in the soil for their children's children. We respect all life, even a bacterium. We cheer on soil life and its magic of resurrection.

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