

THE THREE MAIN FACTORS WHICH AFFECT SOIL HEALTH

Physical: Physical refers to the soils structure, texture, particle sizes and density and all other factors which relate to the term tilthe, which is the looseness or ease of tillage. The term tilthe was developed to describe how easily soil is tilled; this does not mean you have to till to have good tilthe. Good tilthe allows for better water uptake, increased efficiency of nutrients, better aeration, and erosion resistance.

Chemical: Chemical refers to the soil's nutrient content and balance. This content and balance is based on the nutrient elements which are essential for plant growth and development. We usually call this "fertility," but really that term includes the physical and biological factors also. The soils CEC (cation exchange capacity) or the soils ability to hold nutrients, as well as pH, are factors which affect the soils chemical properties.

Biological: Biological refers to the soil life—the billions of living organisms that inhabit soil. Most soil life is microscopic so we rarely consider their impact, but they may have the greatest impact on plant life and increasing yield. There are good soil organisms and bad soil organisms. Some good soil organisms include: earthworms, fungi, and bacteria, which help break down residue as well as control certain pathogens and other problematic organisms. The bad soil organisms include: disease causing microbes, certain nematodes, and rootworms.

WHY THE SOIL IS SO IMPORTANT TO OUR SUCCESS

Soil health is the most important factor in determining yield. Feeding the plant alone will not achieve ultimate yields and will inevitably be too costly. You must feed the soil and allow the soil to feed the plant. The natural state of plant life is to be fed by the soil, not you.

Why is it so important to build soil health? The soil is the foundation for all forms of life and the majority of products we know in this world. The soil is what produces the plant which we harvest to produce income. Building soil health improves the health of all other things which are built on the soil foundation. It is our job as farmers to be stewards of the land, we should improve the soil's condition, not deplete it.

This pyramid illustrates how all life is built upon the soil foundation.

