

Healthy soil is the foundation of the all farming systems. It produces healthy crops that in turn produce healthy foods and healthy livestock, “**Healthy soils, healthy plants, healthy livestock**”. Plants obtain nutrients from two natural sources: organic matter and minerals both of which are vital for soil and plant health. The mineral portion of the soil comes from the surrounding geology of the landscape. Organic matter includes any plant or animal material that returns to the soil and goes through the decomposition process. In addition to providing nutrients and habitat to organisms living in the soil, organic matter also binds soil particles into aggregates that improve the water holding capacity of soil.

Soil organic matter affects the chemical and physical properties of the soil which is why soil is said to be a living entity. Organic matter decomposing into a healthy soil is teeming with microscopic and larger organisms that perform many vital functions including converting dead and decaying matter as well as minerals to plant nutrients. **Soil organisms** depend on the plants for nutrients and plants depend on organic matter for nutrients. Organisms feed on different organic matter so their biological activity depends on the continuous supply of varied organic matter. Soil organic matter and the rate of it breaking down affect soil structure and porosity; water infiltration and moisture holding capacity and it also affects the diversity and biological activity of soil organisms which again, provide the nutrients available to plants. Without these organisms in the soil, the complete system of the soils’ function is shutdown and that function is to supply the plants with nutrients, create a natural pesticide for disease and enhance habitats for larger microorganisms such as the ground beetle who consume weeds seeds on a daily basis. Soil organic matter is a basis for all natural systems – plants, water movement, habitats, pesticide control, weed control and many others. **Healthy soils, healthy plants, healthy livestock.**



The nutrient exchange between organic matter, water and soil is essential to soil fertility and need to be maintained and managed for sustainable production purposes. Where cropping practices are consistent, restoring the organic matter and nutrient contents to the soil environment is extremely important, otherwise the nutrient cycles are broken, soil fertility declines and the balance in the agro-ecosystem is destroyed. This balance is the **Law of Return – what we take from the soil, we must return to the soil**. An imbalance in the soil will effect health of the plant and in the long run will weaken the overall health of the soil, producing lower yields and lower nutrition for livestock.

You see, many common agricultural practices, especially plowing, disking, burning or tillage of any kind accelerate the decomposition of soil organic matter and without replacing this organic matter, the soil is left for erosion by wind and water and the microbial habitats within the soil starve and are constantly being destroyed thus are weakened. In conventional farming the application of pesticides, herbicides and fertilizers is common and expensive. By understanding organic matter and its function in the soil and altering cropping, grazing, or pasture maintenance practices, soil health can be restored. By altering management practices and restoring soil health, the use of pesticides, herbicides and fertilizers can be greatly reduced and production yields will maintain if not increase due to a vital nutrient supply from the practice of continually building organic matter. **A healthy soil will produce long term consistent yields at a lower cost.**

Alternative practices such as cover crops, interseeding, compost, diverse crop rotation, manure, and no till farming will all create additional organic matter and stabilize the soil structure for better drainage, infiltration, nutrient content, and increased microbial action.

With all this said, I would be more than happy to meet with you, on your farm or in our office to discuss these practices and other options to improve your soil organic matter. I will also be offering a **workshop in the near future** to talk about soil organic matter and the vital importance of soil health. NRCS has many opportunities to increase soil organic matter and there will be more in the near future so please feel free to call our office for any information or questions you might have on this subject or any other subject pertaining to your land.

Be well and thanks for reading,

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